APPENDIX H: TRANSPORTATION STUDY

Fehr & Peers,
Olympic & Hill Project
Draft Transportation Impact Study,
January 2018

FORM GEN. 160A (Rev. 1/82)

CITY OF LOS ANGELES

INTER-DEPARTMENTAL CORRESPONDENCE

1030 S. Hill St
DOT Case No. CEN 17-45630

Date: July 12, 2017

To: Nicholas Hendricks, Senior City Planner
Department of City Planning

From: Wes Pringle, Transportation Engineer
Department of Transportation

Subject: **TRANSPORTATION IMPACT ASSESSMENT FOR THE PROPOSED MIXED-USE DEVELOPMENT PROJECT LOCATED AT 1030 SOUTH HILL STREET**

The Department of Transportation (DOT) has reviewed the traffic impact analysis, dated June 2017 prepared by Fehr & Peers, for the proposed mixed-use development located on the southeast corner of the intersection of Olympic Boulevard and Hill Street within the Central City Community Plan area of the City of Los Angeles. In order to evaluate the effects of the project's traffic on the available transportation infrastructure, the significance of the project's traffic impacts is measured in terms of change to the volume-to-capacity (V/C) ratio between the "future no project" and the "future with project" scenarios. This change in the V/C ratio is compared to established threshold standards to assess the project-related traffic impacts. Based on DOT's traffic impact criteria[1], the traffic study included the detailed analysis of 13 intersections and determined that the project-related traffic would significantly impact one of the study intersections as summarized in **Attachment 1**. The implementation of a Transportation Demand Management (TDM) program has been proposed to alleviate the effects of this impacted intersection.

DISCUSSION AND FINDINGS

A. Project Description

The project proposes to replace an existing public parking lot with a mixed-use development consisting of the construction of 700 apartment units, 7,000 square feet of retail space, and 8,000 square feet of quality restaurant space. The project would provide up to 1,075 vehicle parking spaces and 786 bicycle parking spaces on-site. Vehicular access to underground parking will be accommodated via one driveway on Hill Street and one driveway from the Blackstone Court alley with access off Olympic Boulevard. The project is expected to be completed by year 2022.

[1] Per the DOT Traffic Study Policies and Procedures, a significant impact is identified as an increase in the Critical Movement Analysis (CMA) value, due to project related traffic, of 0.01 or more when the final ("with project") Level of Service (LOS) is LOS E or F; an increase of 0.020 or more when the final LOS is LOS D; or an increase of 0.040 or more when the final LOS is LOS C.

B. Trip Generation

The project is estimated to generate a net increase of approximately 3,392 daily trips, 242 trips during the a.m. peak hour and 285 trips during the p.m. peak hour. The trip generation estimates are based on rates published by the Institute of Transportation Engineers (ITE) Trip Generation, 9th Edition, 2012. A copy of the trip generation table can be found in **Attachment 2**.

C. Traffic Impacts

The study estimates that the project would result in significant traffic impacts (pre-mitigation) at the intersection of Olympic Boulevard and Hill Street under Future Year 2022 plus Project conditions during the p.m. peak hour. The developer has proposed a TDM program as a mitigation measure for this intersection. The design features recommended to be included in the TDM program are found in the Project Requirements section of this traffic assessment letter.

D. Freeway Analysis

The transportation impact analysis included a freeway impact analysis that was prepared in accordance with the State-mandated Congestion Management Program (CMP) administered by the Los Angeles County Metropolitan Transportation Authority (MTA). According to this analysis, the project would not result in significant traffic impacts on any of the evaluated freeway mainline segments. To comply with the Freeway Impact Analysis Agreement executed between Caltrans and DOT in October 2013, the study also included a screening analysis to determine if additional evaluation of freeway mainline and ramp segments was necessary beyond the CMP requirements. The project did not meet or exceed any of the four thresholds defined in the latest agreement, updated in December 2015. Exceeding one of the four screening criteria would require the applicant to work directly with Caltrans to prepare more detailed freeway analyses. No additional freeway analysis was required.

PROJECT REQUIREMENTS

A. Construction Impacts

DOT recommends that a construction work site traffic control plan be submitted to DOT for review and approval prior to the start of any construction work. The plan should show the location of any roadway or sidewalk closures, traffic detours, haul routes, hours of operation, protective devices, warning signs and access to abutting properties. DOT also recommends that construction related traffic be restricted to off-peak hours to the extent possible.

B. Transportation Demand Management (TDM) Program

The purpose of a TDM plan is to reduce the use of single occupant vehicles (SOV) by increasing the number of trips by walking, bicycle, carpool, vanpool and transit. A TDM plan should include design features, transportation services, education, and incentives intended to reduce the amount of SOV during commute hours. Through strategic building design and orientation, this project can facilitate access to transit, can provide a pedestrian-friendly environment, can promote non-automobile travel and can support the goals of a trip-reduction program.

A final TDM program approved by DOT is required prior to the issuance of the first certificate of occupancy for the project. The TDM program should include, but not be limited to the following strategies:

- Provide an internal Transportation Management Coordination Program with an on-site transportation coordinator;
- Administrative support for the formation of carpools/vanpools;
- Design the project to ensure a bicycle, transit, and pedestrian friendly environment;
- Establish bike and walk to work promotions;
- Provide unbundled parking that separates the cost of obtaining assigned parking spaces from the cost of purchasing or renting residential units;
- Accommodate flexible/alternative work schedules and telecommuting programs;
- Coupled with the unbundled parking, provide on-site car share amenities for residents;
- Guaranteed ride home program;
- A provision requiring compliance with the State Parking Cash-out Law in all leases;
- Coordinate with DOT to determine if the project location is eligible for a future Integrated Mobility Hub (which can include space for a bike share kiosk, and/or parking spaces on-site for car-share vehicles);
- Provide on-site transit routing and schedule information;
- Provide a program to discount transit passes for residents/employees possibly through negotiated bulk purchasing of passes with transit providers;
- Provide rideshare matching services;
- Preferential rideshare loading/unloading or parking location;
- Contribute a one-time fixed fee contribution of **$50,000** to be deposited into the City's Bicycle Plan Trust Fund to implement bicycle improvements in the vicinity of the project.

C. Highway Dedication and Street Widening Requirements

On January 20, 2016, the City Council adopted the Mobility Plan 2035 which represents the new Mobility Element of the General Plan. A key feature of the updated plan is to revise street standards in an effort to provide a more enhanced balance between traffic flow and other important street functions including transit routes and stops, pedestrian environments, bicycle routes, building design and site access, etc. Per the new Mobility Element, **Hill Street** has been designated as a Modified Avenue II which would require a 28-foot half-width roadway within a 46-foot half-width right-of-way and **Olympic Boulevard** has been designated as a Modified Avenue I which would require a 38-foot half-width roadway within a 53-foot half-width right-of-way. **Blackstone Court**, the alley adjacent to the project running parallel to Hill Street and south of Olympic Boulevard should be dedicated and widened in order to facilitate two-way traffic. The applicant should check with Bureau of Engineering's Land Development Group to determine the specific highway dedication, street widening and/or sidewalk requirements for this project.

D. Parking Requirements

The traffic study indicated that the project would provide up to 1,075 vehicle parking spaces and 786 bicycle parking spaces on-site. The applicant should check with the Department of Building and Safety on the number of Code-required parking spaces needed for the project.

E. Driveway Access and Circulation

The traffic study indicates that two proposed driveways will provide access to the building's underground parking, including shared access for residents and retail and restaurant customers. The conceptual site plan for the project illustrated in **Attachment 3** is acceptable to DOT. However, the review of this study does not constitute approval of the driveway dimensions, access and circulation scheme. Those require separate review and approval and should be coordinated with DOT's Citywide Planning Coordination Section (201 N. Figueroa Street, 4th Floor, Station 3, @ 213-482-7024). In order to minimize and prevent last minute building design changes, the applicant should contact DOT, prior to the commencement of building or parking layout design efforts, for driveway width and internal circulation requirements. New driveways should be Case 2 - designed with a recommended width of 30 feet for two-way operations or 16 feet for one-way operations. Delivery truck loading and unloading should take place on site with no vehicles having to back into the project via the proposed project driveways on any adjacent street. However, the truck loading dock off of the alley (Blackstone Court) is acceptable.

F. Development Review Fees

An ordinance adding Section 19.15 to the Los Angeles Municipal Code relative to application fees paid to DOT for permit issuance activities was adopted by the Los Angeles City Council in 2009 and updated in 2014. This ordinance identifies specific fees for traffic study review, condition clearance, and permit issuance. The applicant shall comply with any applicable fees per this ordinance.

If you have any questions, please contact Vicente Cordero at (818) 374-4697.

Attachments

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c: Shawn Kuk, Council District 14
Mehrdad Moshksar, Central District Office, DOT
Taimour Tanavoli, Citywide Planning Coordination Section, DOT
Carl Mills, Central District, BOE
Amanda Heike, Fehr & Peers

Attachment 1

Volume to Capacity Ratios (v/c) and Levels of Service (LOS)
1030 South Hill Street

TABLE 8
OLYMPIC & HILL PROJECT
FUTURE YEAR (2022) PLUS PROJECT INTERSECTION LEVELS OF SERVICE AND IMPACT ANALYSIS

NO.	INTERSECTION	PEAK HOUR	FUTURE (2022)		FUTURE (2022) + PROJECT		V/C INCREASE	SIGNIFICANT IMPACT?
			V/C	LOS	V/C	LOS		
1	Grand Ave & Olympic Blvd	AM	0.533	A	0.539	A	0.006	No
		PM	0.794	C	0.803	D	0.009	No
2	Olive St & 9th St	AM	0.541	A	0.545	A	0.004	No
		PM	0.582	A	0.586	A	0.004	No
3	Olive St & Olympic Blvd	AM	0.584	A	0.590	A	0.006	No
		PM	0.740	C	0.743	C	0.003	No
4	Olive St & 11th Street	AM	0.431	A	0.447	A	0.016	No
		PM	0.643	B	0.653	B	0.010	No
5	Hill St 8th St	AM	0.615	B	0.625	B	0.010	No
		PM	0.786	C	0.797	C	0.011	No
6	Hill St & 9th St	AM	0.594	A	0.607	B	0.013	No
		PM	0.673	B	0.683	B	0.010	No
7	Hill St & Olympic Blvd	AM	0.519	A	0.548	A	0.029	No
		PM	0.825	D	0.847	D	0.022	**Yes**
8	Hill St & 11th St	AM	0.322	A	0.341	A	0.019	No
		PM	0.687	B	0.697	B	0.010	No
9	Hill St & 12th St	AM	0.492	A	0.504	A	0.012	No
		PM	0.578	A	0.605	B	0.027	No
10	Broadway & 9th St	AM	0.481	A	0.486	A	0.005	No
		PM	0.721	C	0.729	C	0.008	No
11	Broadway & Olympic Blvd	AM	0.545	A	0.563	A	0.018	No
		PM	0.833	D	0.847	D	0.014	No
12	Broadway & 11th St	AM	0.317	A	0.319	A	0.002	No
		PM	0.675	B	0.695	B	0.020	No
13	Main St & Olympic Blvd	AM	0.541	A	0.551	A	0.010	No
		PM	0.880	D	0.894	D	0.014	No

TABLE 10
OLYMPIC & HILL PROJECT
FUTURE YEAR (2022) PLUS PROJECT WITH MITIGATION INTERSECTION LEVELS OF SERVICE AND IMPACT ANALYSIS

NO.	INTERSECTION	PEAK HOUR	FUTURE (2022)		FUTURE (2022) + PROJECT		V/C INCREASE	SIGNIFICANT IMPACT?	FUTURE + PROJECT WITH MITIGATION		V/C INCREASE	SIGNIFICANT IMPACT?
			V/C	LOS	V/C	LOS			V/C	LOS		
7	Hill St & Olympic Blvd	AM	0.519	A	0.548	A	0.029	No	0.545	A	0.026	No
		PM	0.825	D	0.847	D	0.022	**Yes**	0.844	D	0.019	No

Attachment 2

Project Trip Generation Estimates
1030 South Hill Street

TABLE 4
OLYMPIC & HILL PROJECT
VEHICLE TRIP GENERATION ESTIMATE

Land Use	ITE Land Use Code	Size	Trip Generation Rates [a]							Estimated Trip Generation						
				AM Peak Hour			PM Peak Hour				AM Peak Hour Trips			PM Peak Hour Trips		
			Daily	Rate	In%	Out%	Rate	In%	Out%	Daily	In	Out	Total	In	Out	Total
PROPOSED PROJECT																
High-Rise Residential [e]	222,232	700 DU	4.20	0.34	19%	81%	0.38	62%	38%	2,940	45	193	238	165	101	266
Internal Capture [b]			*3%*		*2%*	*1%*		*5%*	*9%*	*(88)*	*(1)*	*(2)*	*(3)*	*(9)*	*(9)*	*(18)*
Net External Vehicle Trips										2,852	44	191	235	156	92	248
Retail	820	7 ksf	42.70	0.96	62%	38%	3.71	48%	52%	299	4	3	7	12	14	26
Less: Internal Capture [b]			*39%*		*14%*	*40%*		*60%*	*54%*	*(117)*	*(1)*	*(1)*	*(2)*	*(7)*	*(8)*	*(15)*
Less: Transit Credit [c]			*5%*	*15%*			*15%*			*(9)*	*0*	*0*	*0*	*(1)*	*(1)*	*(2)*
Total Driveway Trips										173	3	2	5	4	5	9
Less: Pass-by [d]			*50%*	*50%*			*50%*			*(86)*	*(1)*	*(1)*	*(2)*	*(2)*	*(2)*	*(4)*
Net External Vehicle Trips										87	2	1	3	2	3	5
Quality Restaurant	931	8 ksf	89.95	0.81	82%	18%	7.49	67%	33%	720	5	1	6	40	20	60
Less: Internal Capture [b]			*24%*		*33%*	*0%*		*25%*	*47%*	*(173)*	*(2)*	*0*	*(2)*	*(10)*	*(9)*	*(19)*
Less: Transit Credit [c]			*8%*	*15%*			*15%*			*(44)*	*0*	*0*	*0*	*(5)*	*(2)*	*(7)*
Total Driveway Trips										503	3	1	4	25	9	34
Less: Pass-by [d]			*10%*	*10%*			*10%*			*(50)*	*0*	*0*	*0*	*(2)*	*0*	*(2)*
Net External Vehicle Trips										453	3	1	4	23	9	32
TOTAL PROJECT DRIVEWAY TRIPS										3,528	50	194	244	185	106	291
NET EXTERNAL VEHICLE TRIPS										3,392	49	193	242	181	104	285

Notes:

[a] Source: Institute of Transportation Engineers (ITE), *Trip Generation, 9th Edition* , 2012.

[b] Internal capture represents the percentage of trips between land uses that occur within the site. This percentage is informed by the Trip Generation for Mixed-Use Development calculation methodology described in Chapter 6 of the ITE *Trip Generation Handbook* , 3rd edition, 2014. Internalization percentages are derived from *NCHRP Report 684: Enhancing Internal Trip Capture Estimation for Mixed-Use Developments* , Transportation Research Board, 2011.See Attachment B for detailed calculation tables. The daily credit is assumed to be 75% of peak hour credits taken.

[c] The transit credit is based on LADOT's *Traffic Study Policies and Procedures* , December 2016. The guidelines state that up to 15% transit credit may be taken for projects within 1/4 mile walking distance of a transit station or of a RapidBus stop. The nearest RapidBus service is provided by Route 728 on Olympic Boulevard and Hill Street and Route 794 on Hill Street, adjacent to the project site. The daily credit is assumed to be 75% of peak hour credits taken.

[d] The pass-by credit is based on Attachment I of LADOT's *Traffic Study Policies and Procedures* , December 2016.

[e] For flexibility, the trip generation analysis uses the most conservative (highest) rates for high-rise apartments versus high-rise condominiums: ITE code 222 (high-rise apartment) for daily trips and ITE code 232 (high-rise condominium) for peak hour trips. Since the high-rise residences in the ITE database are generally in urban areas with transit service, no additional transit credit was taken to provide a conservative estimate.

Attachment 3

Conceptual Site Plan - 1030 South Hill Street

Olympic & Hill Project

Draft Transportation Impact Study

Prepared by

FEHR & PEERS

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January 2018

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1. INTRODUCTION

This report documents the assumptions, methodologies, and findings of a study conducted by Fehr & Peers to evaluate the potential traffic impacts of the proposed project, located at 1030 South Hill Street, on the southeast corner of the Olympic Boulevard & Hill Street intersection in the City of Los Angeles. This study was conducted as part of an environmental document being prepared for the proposed Project.

PROJECT DESCRIPTION

The proposed Project is on Hill Street between 11th Street and Olympic Boulevard. The adjacent land uses include a public parking lot to the north, a dance club to the south, and restaurant uses to the east and west. Figure 1 illustrates the location of the proposed Project in relation to the surrounding street system. Regional access to the project site is provided by Interstate 10 (I-10), with access ramps approximately 0.7 miles to the west, and Interstate 110 (I-110), with access ramps approximately 0.7 miles to the south and US Highway 101 (US-101), with access ramps approximately 1.5 miles to the north. The Project is located approximately a half mile northeast of the Metro Pico Station and approximately 0.7 miles southeast of the 7th Street/Metro Center Station. The project site is currently a public parking lot.

The Project as analyzed in this study involves the construction of 700 apartment units, 7,000 square feet of retail space, and 8,000 square feet of quality restaurant space.

Access will be provided to underground parking via two driveways: one on Hill Street and one from the Blackstone Court alley with access off Olympic Boulevard. Both driveways will allow for full access, including right-in, right-out, left-in, and left-out movements. The loading area for the Project is located on Level 1 of the project building accessible off Blackstone Court alley. A site plan of the Project is presented in Figure 2.

STUDY SCOPE

The scope of work for this study was determined in consultation with the Los Angeles Department of Transportation (LADOT). The base assumptions and technical methodologies were discussed with LADOT as part of the study approach and agreed to in a memorandum of understanding dated April 2017. The MOU is included in Appendix A to this document.

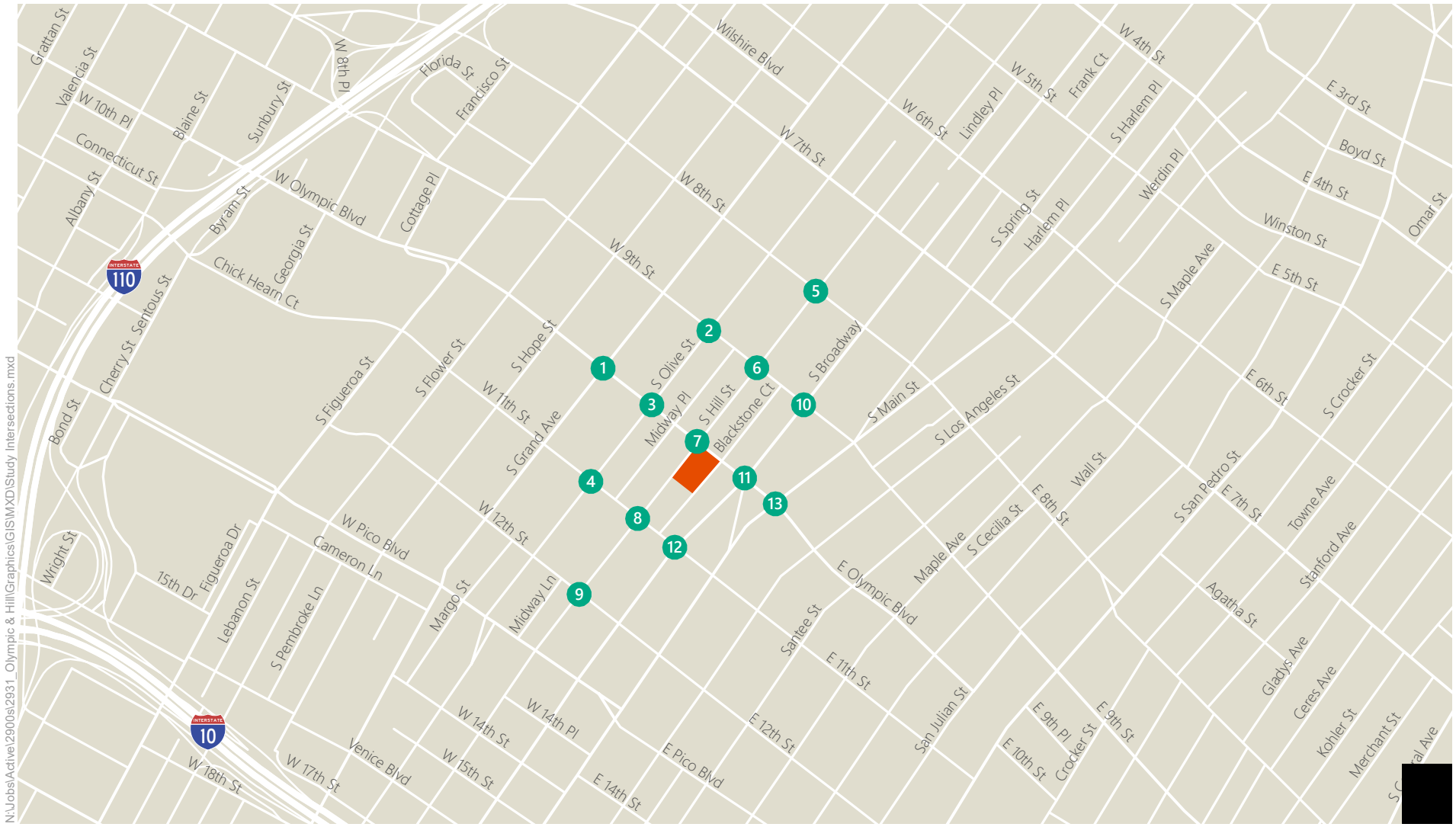

Figure 1

Study Intersections

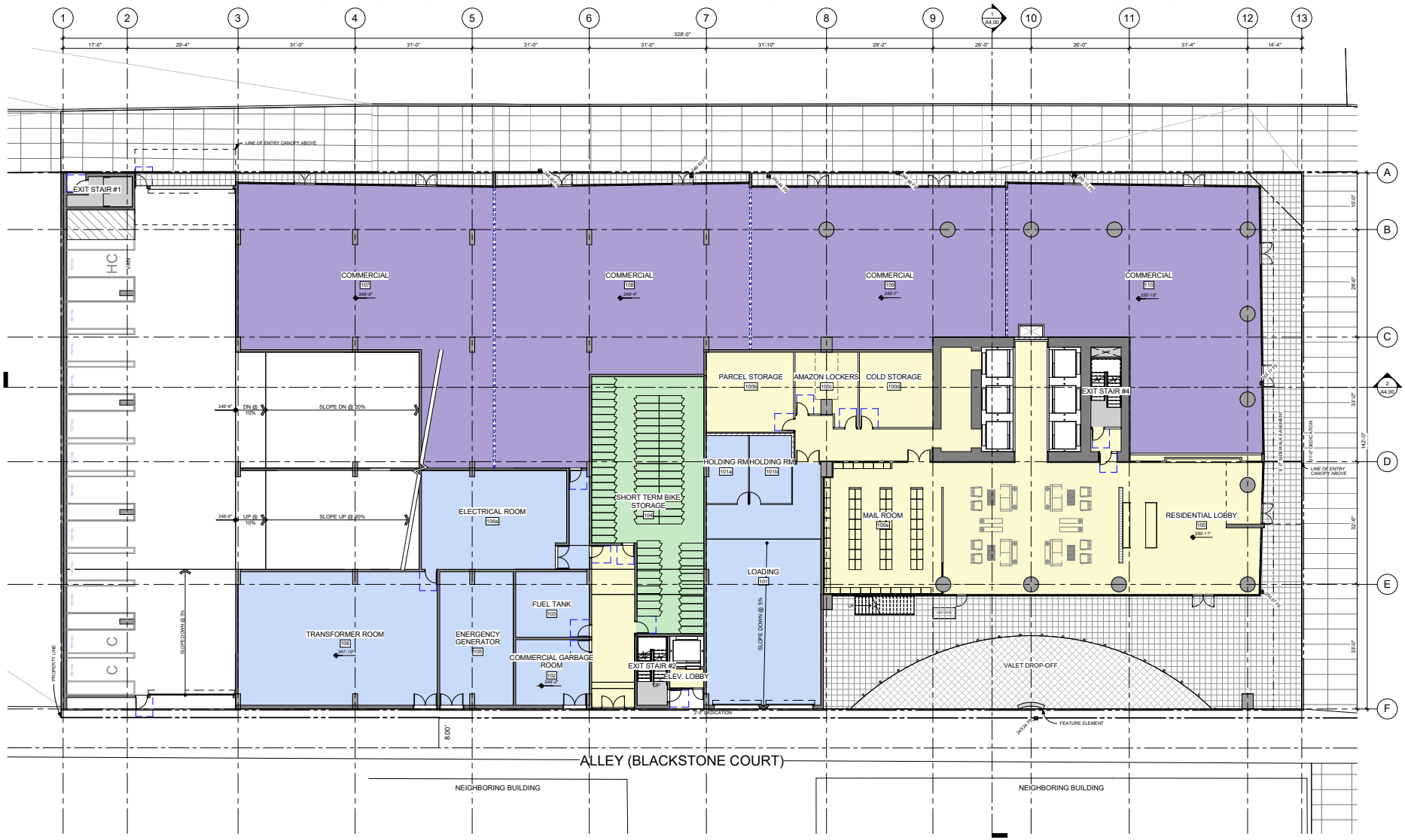

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Figure 2

Site Plan

TRAFFIC SCENARIOS

The study assumes that the Project would be completed by year 2022 and is directed at analyzing the potential Project-generated traffic impact on the local street system under both existing and future year traffic conditions. The following traffic scenarios have been developed and analyzed as part of this study:

- Existing Conditions – The analysis of existing traffic conditions is intended to provide a basis for the remainder of the study. The existing conditions analysis includes a description of the transportation system serving the project site, existing traffic volumes, and an assessment of the operating conditions at the study analysis locations described below.
- Existing plus Project Conditions – This traffic scenario provides projected traffic volumes and an assessment of operating conditions under existing conditions with the addition of Project-generated traffic. The impacts of the proposed Project on existing traffic operating conditions were then identified.
- Future Base (Year 2022) Conditions – Future traffic projections without the proposed Project were developed for the year 2022. The objective of this analysis was to project future traffic growth and operating conditions that could be expected to result from regional growth, related projects, and transportation network changes in the vicinity of the project site by the year 2022.
- Future (Year 2022) plus Project Conditions – This traffic scenario provides projected traffic volumes and an assessment of operating conditions under future conditions with the addition of Project-generated traffic. The impacts of the proposed Project on future traffic operating conditions were then identified.

STUDY LOCATIONS

Thirteen signalized intersections were selected for analysis in consultation with LADOT.

Signalized Intersections

The following 13 signalized intersections, illustrated in Figure 1, were identified in conjunction with LADOT to be analyzed as part of the scope of work for this Project:

1. Grand Avenue & Olympic Boulevard
2. Olive Street & 9th Street
3. Olive Street & Olympic Boulevard
4. Olive Street & 11th Street
5. Hill Street & 8th Street
6. Hill Street & 9th Street
7. Hill Street & Olympic Boulevard
8. Hill Street & 11th Street
9. Hill Street & 12th Street
10. Broadway & 9th Street
11. Broadway & Olympic Boulevard
12. Broadway & 11th Street
13. Main Street & Olympic Boulevard

Freeway Analysis

The *Agreement Between City of Los Angeles and Caltrans District 7 on Freeway Impact Analysis Procedures* (October 2013, as amended in December 2015), sets forth criteria for when a freeway impact analysis should be conducted. Since the Freeway Agreement is about to expire, to better align with the State's multimodal transportation and environmental action goals, Caltrans is pursuing vehicle miles traveled (VMT) as the metric of project impacts. Until further revision of these guidelines; however, per LADOT's *Transportation Impact Study Guidelines*, December 2016, all projects for which a traffic is required shall conduct a freeway impact screening analysis. LADOT determined as part of the traffic study memorandum of understanding for this Project that the Project would not meet the criteria requiring a freeway impact analysis (see Appendix A). Accordingly, no further analysis under the City's amended agreement with Caltrans was required.

ORGANIZATION OF REPORT

This report is divided into nine chapters, including this introduction. Chapter 2 describes the existing conditions, including an inventory of streets, highways, and transit service in the study area, a summary of existing traffic volumes, and an assessment of existing operating conditions. The methodologies used to develop traffic forecasts for the Existing, Existing plus Project, Future Base, and Future plus Project scenarios, as well as the forecasts themselves, are included in Chapter 3. Chapter 4 presents an assessment of potential intersection traffic impacts of the proposed Project under both existing and future conditions. Chapter 5 provides an analysis of the Congestion Management Plan (CMP). Chapter 6 provides an assessment of the proposed Project's access scheme, and Chapter 7 provides an analysis of parking for the Project. Chapter 8 summarizes the construction impact analysis. Chapter 9 provides the summary and conclusions.

2. EXISTING CONDITIONS

A comprehensive data collection effort was undertaken to develop a detailed description of existing conditions in the study area. The assessment of conditions relevant to this study includes a description of the study area, an inventory of the local street system in the vicinity of the project site, a review of traffic volumes on these facilities, an assessment of the resulting operating conditions, and a summary of the current transit service and bicycle and pedestrian facilities in the study area. A detailed description of these elements is presented in this chapter.

STUDY AREA

The project site is within the Central City Community Plan area of the City of Los Angeles. The study area selected for analysis extends to include South Grand Avenue to the west, South Main Street to the east, West 8th Street to the north, and West 12th Street to the south. All of the streets in the study area are under the jurisdiction of the City of Los Angeles.

EXISTING STREET SYSTEM

The characteristics of the major roadways serving the study area are described below. The street descriptions include the designation of the roadway under the *Mobility Plan 2035, An Element of the General Plan* adopted by the Los Angeles City Council in January 2016.

Major arterials serving the study area include Olympic Boulevard in the east/west direction. Interstate 10 lies approximately 0.7 miles south of the site, State Route 110 lies approximately 0.7 miles to the west of the site, and US-101 lies approximately 1.5 miles northeast of the site. Each of these interstates provides regional access to and from the study area.

FREEWAYS

- **Interstate 10** runs in an east/west direction and extends from the Pacific Ocean eastward through Los Angeles County and beyond. In the vicinity of the study area, the freeway provides three lanes in each direction. Ramps are provided at Grand Avenue and Maple Avenue.
- **State Route 110** runs in a north/south direction and extends from Pasadena to San Pedro. In the vicinity of the study area, the freeway provides five southbound lanes and four northbound lanes. Ramps are provided at Olympic Boulevard and 8th Street.
- **US-101** runs in the southeast/northwest direction, extending from downtown Los Angeles through Hollywood and the San Fernando Valley and beyond. In the vicinity of the study area, the Hollywood freeway provides four lanes in each direction plus auxiliary lanes. Ramps are provided at Broadway and Los Angeles Street.

EAST/WEST STREETS

- **West 8th Street** is designated as an Avenue II that runs one way in the westbound direction. Within the study area, West 8th Street has two westbound travel lanes. Parking is generally permitted on both sides of the street and left-turn pockets are present at major intersections.

- **West 9th Street** is designated an Avenue II north of the project site that runs one way in the eastbound direction. West 9th Street has two eastbound travel lanes. Parking is permitted on both sides of the street.

- **East Olympic Boulevard** runs north of the project site with two travel lanes in each direction. Olympic Boulevard is designated as a Boulevard II east of Broadway and between Hope Street and Figueroa Street. Between Broadway and Hope Street, Olympic Boulevard is designated as an Avenue I. Parking is permitted on the south side of the street in non-peak periods. Left-turn pockets are present at major intersections. Olympic Boulevard is part of the Vehicle Enhanced Network.

- **West 11th Street** runs south of the project site with two westbound travel lanes. Parking is permitted on both sides of the street. In the study area, 11th Street is part of the Neighborhood Enhanced Network.

- **West 12th Street** runs south of the project site with two travel lanes in the eastbound direction and turn pockets are major intersections. Parking is permitted on both sides of the street.

NORTH/SOUTH STREETS

- **South Grand Avenue** is designated as an Avenue II that runs west of the project site with three travel lanes in the southbound direction. Parking is permitted on both sides of the street. In the study area, Grand Avenue is part of the Pedestrian Enhanced District. Grand Avenue is part of the Tier 1 Bicycle Enhanced Network.

- **South Olive Street** is designated as an Avenue II that runs west of the project site with three northbound travel lanes. Parking is permitted on both sides of the street. In the study area, Olive Street is part of the Pedestrian Enhanced District. Olive Street is part of the Tier 1 Bicycle Enhanced Network.

- **South Hill Street** is designated as an Avenue II that runs east of the project site with two travel lanes in each direction. In the immediate vicinity of the project, parking is prohibited along the west side of the street during the AM and PM peak periods Monday through Friday and is permitted from 8:00 AM to 8:00 PM on Saturdays. During these times, one northbound travel lane is provided. Parking is permitted on the east side of the street. Hill Street is part of the Neighborhood Enhanced Network and Pedestrian Enhanced District.

- **South Broadway** is designated as an Avenue II that runs west of the project site with two northbound travel lanes and one southbound travel lane. Parking is prohibited along the east side of the street during the AM peak period and is prohibited along the west side of the street during the PM peak period. Left-turn pockets are present at major intersections. In the study area, Broadway is part of the Pedestrian Enhanced District.

- **South Main Street** is designated as an Avenue II that runs east of the project site with two northbound lanes and one southbound lane. Parking is provided on both sides of the street. Main Street is part of the Tier 1 Bike Enhanced Network.

Lane configurations of the study intersections are provided in Appendix B.

EXISTING PUBLIC TRANSIT SERVICE

The project site is served by a high level of public transit. Figure 3A shows the various Metro bus routes, rapid bus routes, and Metro Rail lines providing service in the study area. Figure 3B shows the bus routes operated by other operators in the study area. The Project is located approximately one half-mile northeast of the Metro Pico Station and approximately 0.7 miles southeast of the 7th Street/Metro Center Station. Thirty-seven local, limited, express, rapid, and shuttle bus routes run within a ¼-mile of the project site, including: Metro local, Metro Rapid, Foothill Transit rapid, DASH, LADOT Commuter Express, and Big Blue Bus rapid routes. Table 1 details the transit service near the project site.

EXISTING BICYCLE AND PEDESTRIAN FACILITIES

Figure 4 shows citywide existing and planned designated bicycle facilities in the project area. As shown in the figure, Grand Avenue, Olive Street, and Main Street each have bicycle lanes. West 11th Street, east of Broadway, also has a bicycle lane. Approximately ½ mile north of the project site, West 7th Street includes a bicycle lane. Figueroa Street has peak hour bus lanes with bicycles permitted south of 7th Street and a bicycle lane north of Wilshire Boulevard.

The *Mobility Plan 2035* identifies corridors proposed to receive improved bicycle, pedestrian and vehicle infrastructure improvements. Tier 1 Protected Bicycle Lanes are bicycle facilities that are separated from vehicular traffic. Tier 2 and Tier 3 Bicycle Lanes are facilities on roadways with striped separation. Tier 2 Bicycle Lanes are those more likely to be built by 2035. The Mobility Plan 2035 identifies Hill Street and Hope Street as part of the Neighborhood Enhanced Network. Figueroa Street, Hope Street, Grand Avenue, Olive Street, and Main Street are part of the Tier 1 Bike Lane Network.

The Neighborhood Enhanced Network is the network of locally-serving streets planned to contain traffic calming measures that close the gaps between streets with bicycle facilities. Several streets in the study area are included within the planned Neighborhood Enhanced Network, including Hope Street, Hill Street, and 11th Street. The study area generally has a mature network of pedestrian facilities including sidewalks, crosswalks and pedestrian safety features. Approximately 8- to 18-foot sidewalks are provided throughout the study area.

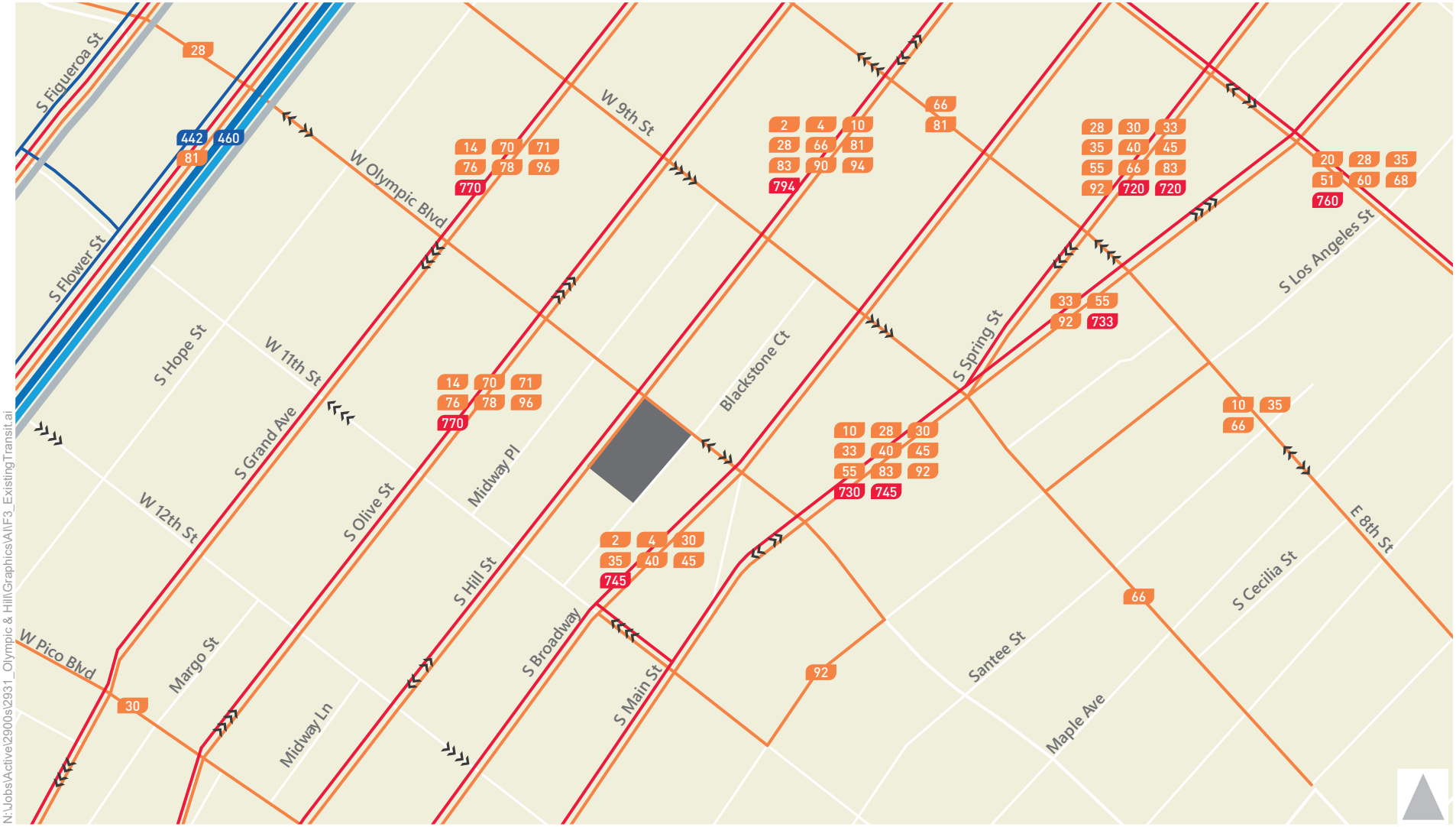

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Figure 3-A

Existing Transit - Los Angeles Metropolitan Transportation Authority

Figure 3-B

Existing Transit - Other Transit Operators

TABLE 1
OLYMPIC & HILL PROJECT
EXISTING TRANSIT SERVICE

Transit Route	Operator	Service Type	Service From	Via (within study	Weekday Headways AM	PM
R10	Big Blue Bus	Rapid	Downtown LA to Downtown Santa Moni	Olive St	20-25 mins	20-30 mins.
Silver Streak	Foothill Transit	Express	Downtown LA to Montclair	Olive St	10-20 mins	10 mins.
Downtown D	LADOT DASH	Shuttle	Union Station to South Park	Hill St	5 mins.	5-15 mins.
Downtown E	LADOT DASH	Shuttle	City West to Fashion District	Pico Blvd	5 mins.	5 mins.
Downtown F	LADOT DASH	Shuttle	Downtown LA to Exposition Park	Flower St	10 mins.	10 mins.
409	LADOT Commuter Express	Local/Limited	Downtown LA to East Glendale	Hill St	15-20 mins	15-20 mins.
422	LADOT Commuter Express	Local/Limited	Thousand Oaks to Downtown LA	Flower St	15-20 mins	15-20 mins.
431	LADOT Commuter Express	Local/Limited	Westwood to Downtown LA	Olive St	25-35 mins	25-35 mins.
437	LADOT Commuter Express	Local/Limited	Venice to Downtown LA	Olive St	15-25 mins	15-55 mins.
438	LADOT Commuter Express	Local/Limited	Redondo Beach to Downtown LA	Flower St	10-30 mins	10-15 mins.
448	LADOT Commuter Express	Local/Limited	Palos Verdes to Downtown LA	Flower St	15-25 mins	15-35 mins.
2/302	Metro	Local/Limited	Pacific Palisades to Downtown LA	Hill St	10-20 mins	15-25 mins.
4	Metro	Local	Downtown LA to Santa Monica	Hill St	10-15 mins	10-20 mins.
10	Metro	Local	West Hollywood to Downtown LA	Main St	5-20 mins.	10-15 mins.
14	Metro	Local	Beverly Hills to Downtown LA	Olive St	5-10 mins.	5-10 mins.
28/728	Metro	Local/Rapid	Century City to Eagle Rock	Olympic Blvd	10-15 mins	10-20 mins.
30/330	Metro	Local/Limited	West Hollywood to East Los Angeles	Broadway	5-10 mins.	5-10 mins.
33/733	Metro	Local/Rapid	Santa Monica to Downtown LA	Main St	5-20 mins.	10 mins.
35	Metro	Local	Fairfax Transit Hub to Downtown LA	Broadway	10-15 mins	10-15 mins.
40	Metro	Local	South Bay Galleria to Downtown LA	Broadway	10-15 mins	15-20 mins.
45/745	Metro	Local/Rapid	Harbor Freeway Station to Downtown LA	Broadway	5-10 mins.	10-15 mins.
55/355	Metro	Local/Limited	Downtown LA to Willowbrook	Main St	10-20 mins	10-20 mins.
66	Metro	Local	Wilshire Center to Montebello	9th St	5-10 mins.	5-10 mins.
70/770	Metro	Local/Rapid	El Monte to Downtown LA	Olive St	10-15 mins	15-20 mins.
71	Metro	Local	Cal State LA to Downtown LA	Olive St	20 mins.	20-40 mins.
76	Metro	Local	El Monte to Downtown LA	Olive St	15 mins.	15-20 mins.
78/79/378	Metro	Local/Limited	Arcadia to Downtown LA	Olive St	10 mins.	10 mins.
81	Metro	Local	South LA to Eagle Rock	Flower St	20-30 mins	20-30 mins.
83	Metro	Local	Downtown LA to Eagle Rock	Hill St	20-30 mins	20-30 mins.
90/91	Metro	Local	Downtown LA to Sylmar	Hill St	15-20 mins	15-20 mins.
92	Metro	Local	Downtown LA to Burbank	Olympic Blvd	15-20 mins	15-20 mins.
94/794	Metro	Local/Rapid	Downtown LA to Sylmar	Hill St	10-20 mins	20-30 mins.
96	Metro	Local	Downtown LA to Burbank Station	Olive St	30 mins.	30 mins.
442	Metro	Local/Limited	Hawthorne to Downtown LA	Flower St	30 mins.	30 mins.
460	Metro	Local/Express	Downtown LA to Anaheim	Flower St	20 mins.	20-30 mins.
Blue	Metro	Heavy Rail	Downtown LA to Long Beach	Flower St	5-10 mins.	5-10 mins.
Expo	Metro	Heavy Rail	Downtown LA to Santa Monica	Flower St	5-10 mins.	10-15 mins

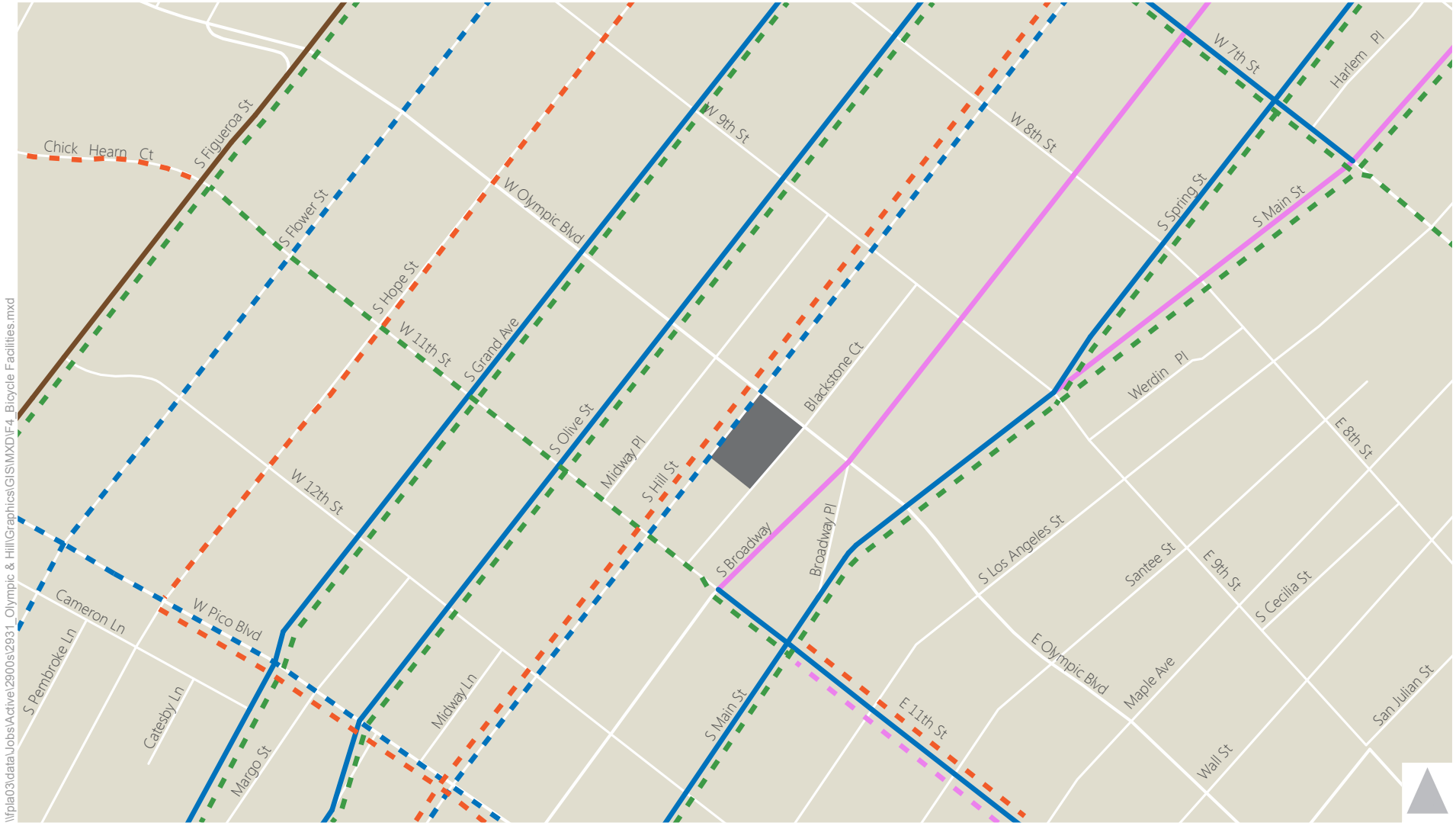


Figure 4

Existing and Planned Bicycle Facilities

EXISTING TRAFFIC VOLUMES AND LEVEL OF SERVICE

This section presents existing base peak hour traffic volumes, describes the methodology used to assess the traffic conditions at each intersection, and analyzes the resulting operating conditions at each, indicating volume-to-capacity (V/C) ratios and levels of service (LOS).

EXISTING TRAFFIC VOLUMES

Weekday AM and PM peak hour turning movement counts for seven of the 13 study intersections were provided by LADOT and were collected on Thursday, May 7, 2015. An annual growth rate of 1% per year was applied to these volumes to estimate 2017 volumes. New weekday AM and PM peak hour turning movement counts were collected at the remaining six study intersections on Thursday, March 23, 2017. The existing weekday morning and afternoon peak hour volumes at the study intersections are provided in Appendix B. Count sheets for these intersections are contained in Appendix C.

LEVEL OF SERVICE METHODOLOGY

A variety of standard methodologies are available to analyze LOS. According to *Transportation Impact Study Guidelines* (LADOT, December 2016), this study is required to use the Critical Movement Analysis (CMA) method of intersection capacity calculation (Transportation Research Board, 1980) to analyze signalized intersections in the City of Los Angeles. The V/C ratio is then used to find the corresponding LOS based on the definitions in Table 2A. Under the CMA methodology, a V/C ratio is generated for each study intersection based on factors such as the volume of traffic and the number of lanes providing for such vehicle movement and an LOS grade.

For the driveway analysis in Chapter 6, the *Highway Capacity Manual* (HCM) (Transportation Research Board, 2010) methodology was used to analyze the delay. Under HCM methodology, delay is calculated in seconds and given an LOS grade, as shown in Table 2B.

TABLE 2A
LEVEL OF SERVICE DEFINITIONS FOR SIGNALIZED INTERSECTIONS
CMA METHODOLOGY

Level of Service	Volume/Capacity Ratio	Definition
A	0.000 - 0.600	EXCELLENT. No vehicle waits longer than one red light and no approach phase is fully used.
B	>0.600 - 0.700	VERY GOOD. An occasional approach phase is fully utilized; many drivers begin to feel somewhat what restricted within groups of vehicles.
C	>0.700 - 0.800	GOOD. Occasionally drivers may have to wait through more than one red light; backups may develop behind turning vehicles.
D	>0.800 - 0.900	FAIR. Delays may be substantial during portions of the rush hours, but enough lower volume periods occur to permit clearing of developing lines, preventing excessive backups.
E	>0.900 - 1.000	POOR. Represents the most vehicles intersection approaches can accommodate; may be long lines of waiting vehicles through several signal cycles.
F	> 1.000	FAILURE. Backups from nearby locations or on cross streets may restrict or prevent movement of vehicles out of the intersection approaches. Tremendous delays with continuously increasing queue lengths

Source:

Transportation Research Circular No. 212, Interim Materials on Highway Capacity, Transportation Research Board, 1980.

TABLE 2B
LEVEL OF SERVICE DEFINITIONS FOR
STOP-CONTROLLED INTERSECTIONS

Level of Service	Average Control Delay (seconds/vehicle)
A	≤ 10.0
B	> 10.0 and ≤ 15.0
C	> 15.0 and ≤ 25.0
D	> 25.0 and ≤ 35.0
E	> 35.0 and ≤ 50.0
F	> 50.0

Source:
Highway Capacity Manual, Transportation Research Board, 2010.

The City of Los Angeles' Automated Traffic Surveillance and Control (ATSAC) system is a computer-based traffic signal control system that monitors traffic conditions and system performance to allow ATSAC-operations to manage signal timing to improve traffic flow conditions. The Adaptive Traffic Control System (ATCS) is an enhancement to ATSAC and provides fully traffic-adaptive signal control based on real-time traffic conditions. All of the study intersections located in the City of Los Angeles are currently operating under the City's ATSAC system and ATCS control. ATSAC and ATCS provide improved operating conditions. Therefore, in accordance with City of Los Angeles procedures, a credit of 0.07 V/C reduction was applied at each intersection where ATSAC is implemented and an additional 0.03 V/C reduction was applied at each intersection where ATCS is implemented.

EXISTING LEVELS OF SERVICE

Existing year traffic volumes presented in Appendix B were analyzed using the intersection capacity analysis methodology described above to determine the existing operating conditions at the study intersections. Table 3 summarizes the results of the analysis of the existing weekday morning and afternoon peak hour V/C ratio and corresponding LOS at each of the analyzed intersections. As indicated, all of the 13 intersections analyzed for impacts operate at LOS B or better during both peak periods. Analysis sheets are provided in Appendix D.

TABLE 3
OLYMPIC & HILL PROJECT
EXISTING CONDITIONS INTERSECTION LEVELS OF SERVICE

NO.	INTERSECTION	PEAK HOUR	EXISTING (2017)	
			V/C	LOS
1	Grand Ave &	AM	0.374	A
	Olympic Blvd	PM	0.545	A
2	Olive St &	AM	0.479	A
	9th St	PM	0.471	A
3	Olive St &	AM	0.501	A
	Olympic Blvd	PM	0.624	B
4	Olive St &	AM	0.283	A
	11th Street	PM	0.413	A
5	Hill St	AM	0.448	A
	8th St	PM	0.547	A
6	Hill St &	AM	0.401	A
	9th St	PM	0.465	A
7	Hill St &	AM	0.387	A
	Olympic Blvd	PM	0.614	B
8	Hill St &	AM	0.131	A
	11th St	PM	0.422	A
9	Hill St &	AM	0.367	A
	12th St	PM	0.364	A
10	Broadway &	AM	0.330	A
	9th St	PM	0.497	A
11	Broadway &	AM	0.429	A
	Olympic Blvd	PM	0.606	B
12	Broadway &	AM	0.173	A
	11th St	PM	0.393	A
13	Main St &	AM	0.408	A
	Olympic Blvd	PM	0.639	B

3. TRAFFIC PROJECTIONS

PROJECT TRAFFIC

The development of traffic forecasts for the proposed Project involves the use of a 3-step process: trip generation, trip distribution, and traffic assignment.

PROJECT TRIP GENERATION

As discussed in Chapter 1, the proposed Project consists of 700 apartment units, 7,000 square feet of retail space, and 8,000 square feet of quality restaurant space. Trip generation rates from *Trip Generation, 9th Edition* (Institute of Transportation Engineers [ITE], 2012) were used to estimate the number of trips associated with the project and are presented in Table 4.

The City of Los Angeles' Transportation Impact Study Guidelines state that developments within a ¼-mile walking distance of a transit station, or of a Rapid Bus stop, may qualify for up to a 15% transit credit. There are six rapid bus lines accessible within a ¼-mile walking distance of the project site. The Rapid Bus line 794 has a bus stop located on Hill Street, immediately north of Olympic Boulevard. Accordingly, a transit credit of 15% was applied to the Project's retail and quality restaurant uses. The daily transit credit is assumed to be 75% of the average of AM and PM peak hour credit.

Per LADOT's Transportation Impact Study Guidelines, Attachment 1 Policy on Pass-By Trips, a 50% pass-by credit was applied to the project's retail use, and a 10% pass-by credit was applied to the quality restaurant use. Pass-by credits account for the patrons making an intermediate stop on the way from an origin to a primary trip destination without a route diversion. These trips would be attracted from traffic passing the site on Hill Street, Olympic Boulevard, and other nearby streets.

Internal trip credits can be defined as a reduction that can be applied to the trip generation estimates for individual land uses to account for trips internal to the site. These are trips usually made via walking within the site. The percentages are informed by the Trip Generation for Mixed-Use Development calculation methodology described in Chapter 6 of the ITE *Trip Generation Handbook*, *3rd Edition* (2014). Internalization percentages were derived from Transportation Research Board (TRB) National Cooperative Highway Research Program (NCHRP) Report 684: *Enhancing Internal Trip Capture Estimation for Mixed-Use Developments*. Based on the NCHRP analysis, the internal trip credits shown in Table 5 were used. The internal trip calculation analysis sheets are provided in the MOU shown in Appendix A.

TABLE 5 – INTERNAL TRIP CREDITS

Land Use	Daily*	AM Peak Hour		PM Peak Hour	
		Inbound	Outbound	Inbound	Outbound
High-Rise Residential	3%	2%	1%	5%	9%
Retail	39%	14%	40%	60%	54%
Quality Restaurant	24%	33%	0%	25%	47%

Source:
TRB NCHRP Report 684: *Enhancing Internal Trip Capture Estimation for Mixed-Use Developments*
*Daily internal capture assumed 75% of the peak hour capture.

As shown in Table 4, the project is projected to generate an estimated net increase of 3,392 daily trips, including 242 trips (49 inbound/193 outbound) during the AM peak hour and 285 trips (181 inbound/104 outbound) during the PM peak hour.

TABLE 4
OLYMPIC & HILL PROJECT
VEHICLE TRIP GENERATION ESTIMATE

Land Use	ITE Land Use Code	Size	Trip Generation Rates [a]							Estimated Trip Generation							
			Daily	AM Peak Hour			PM Peak Hour			Daily	AM Peak Hour Trips			PM Peak Hour Trips			
				Rate	In%	Out%	Rate	In%	Out%		In	Out	Total	In	Out	Total	
PROPOSED PROJECT																	
High-Rise Residential [e]	222,232	700 DU	4.20	0.34	19%	81%	0.38	62%	38%	2,940	45	193	238	165	101	266	
Internal Capture [b]			*3%*		*2%*	*1%*		*5%*	*9%*	*(88)*	*(1)*	*(2)*	*(3)*	*(9)*	*(9)*	*(18)*	
Net External Vehicle Trips										2,852	44	191	235	156	92	248	
Retail	820	7 ksf	42.70	0.96	62%	38%	3.71	48%	52%	299	4	3	7	12	14	26	
Less: Internal Capture [b]			*39%*		*14%*	*40%*		*60%*	*54%*	*(117)*	*(1)*	*(1)*	*(2)*	*(7)*	*(8)*	*(15)*	
Less: Transit Credit [c]			*5%*	*15%*			*15%*			*(9)*	*0*	*0*	*0*	*(1)*	*(1)*	*(2)*	
Total Driveway Trips										173	3	2	5	4	5	9	
Less: Pass-by [d]			*50%*	*50%*			*50%*			*(86)*	*(1)*	*(1)*	*(2)*	*(2)*	*(2)*	*(4)*	
Net External Vehicle Trips										87	2	1	3	2	3	5	
Quality Restaurant	931	8 ksf	89.95	0.81	82%	18%	7.49	67%	33%	720	5	1	6	40	20	60	
Less: Internal Capture [b]			*24%*		*33%*	*0%*		*25%*	*47%*	*(173)*	*(2)*	*0*	*(2)*	*(10)*	*(9)*	*(19)*	
Less: Transit Credit [c]			*8%*	*15%*			*15%*			*(44)*	*0*	*0*	*0*	*(5)*	*(2)*	*(7)*	
Total Driveway Trips										503	3	1	4	25	9	34	
Less: Pass-by [d]			*10%*	*10%*			*10%*			*(50)*	*0*	*0*	*0*	*(2)*	*0*	*(2)*	
Net External Vehicle Trips										453	3	1	4	23	9	32	
TOTAL PROJECT DRIVEWAY TRIPS										3,528	50	194	244	185	106	291	
NET EXTERNAL VEHICLE TRIPS										3,392	49	193	242	181	104	285	

Notes:

[a] Source: Institute of Transportation Engineers (ITE), *Trip Generation, 9th Edition* , 2012.

[b] Internal capture represents the percentage of trips between land uses that occur within the site. This percentage is informed by the Trip Generation for Mixed-Use Development calculation methodology described in Chapter 6 of the ITE *Trip Generation Handbook* , 3rd edition, 2014. Internalization percentages are derived from *NCHRP Report 684: Enhancing Internal Trip Capture Estimation for Mixed-Use Developments* , Transportation Research Board, 2011.See Attachment B for detailed calculation tables. The daily credit is assumed to be 75% of peak hour credits taken.

[c] The transit credit is based on LADOT's *Traffic Study Policies and Procedures* , December 2016. The guidelines state that up to 15% transit credit may be taken for projects within 1/4 mile walking distance of a transit station or of a RapidBus stop. The nearest RapidBus service is provided by Route 728 on Olympic Boulevard and Hill Street and Route 794 on Hill Street, adjacent to the project site. The daily credit is assumed to be 75% of peak hour credits taken.

[d] The pass-by credit is based on Attachment I of LADOT's *Traffic Study Policies and Procedures* , December 2016.

[e] For flexibility, the trip generation analysis uses the most conservative (highest) rates for high-rise apartments versus high-rise condominiums: ITE code 222 (high-rise apartment) for daily trips and ITE code 232 (high-rise condominium) for peak hour trips. Since the high-rise residences in the ITE database are generally in urban areas with transit service, no additional transit credit was taken to provide a conservative estimate.

PROJECT TRAFFIC DISTRIBUTION

The geographic distribution of trips generated by the proposed Project is dependent on characteristics of the street system serving the project site; the level of accessibility of routes to and from the proposed project site; locations of employment and commercial centers to which residents of the Project would be drawn; and residential areas from which the commercial visitors would be drawn. A select zone analysis was conducted for the proposed uses using the City of Los Angeles' Travel Demand Model to inform the general distribution pattern for this study. The distribution of project trips is illustrated in Figure 5.

PROJECT TRAFFIC ASSIGNMENT

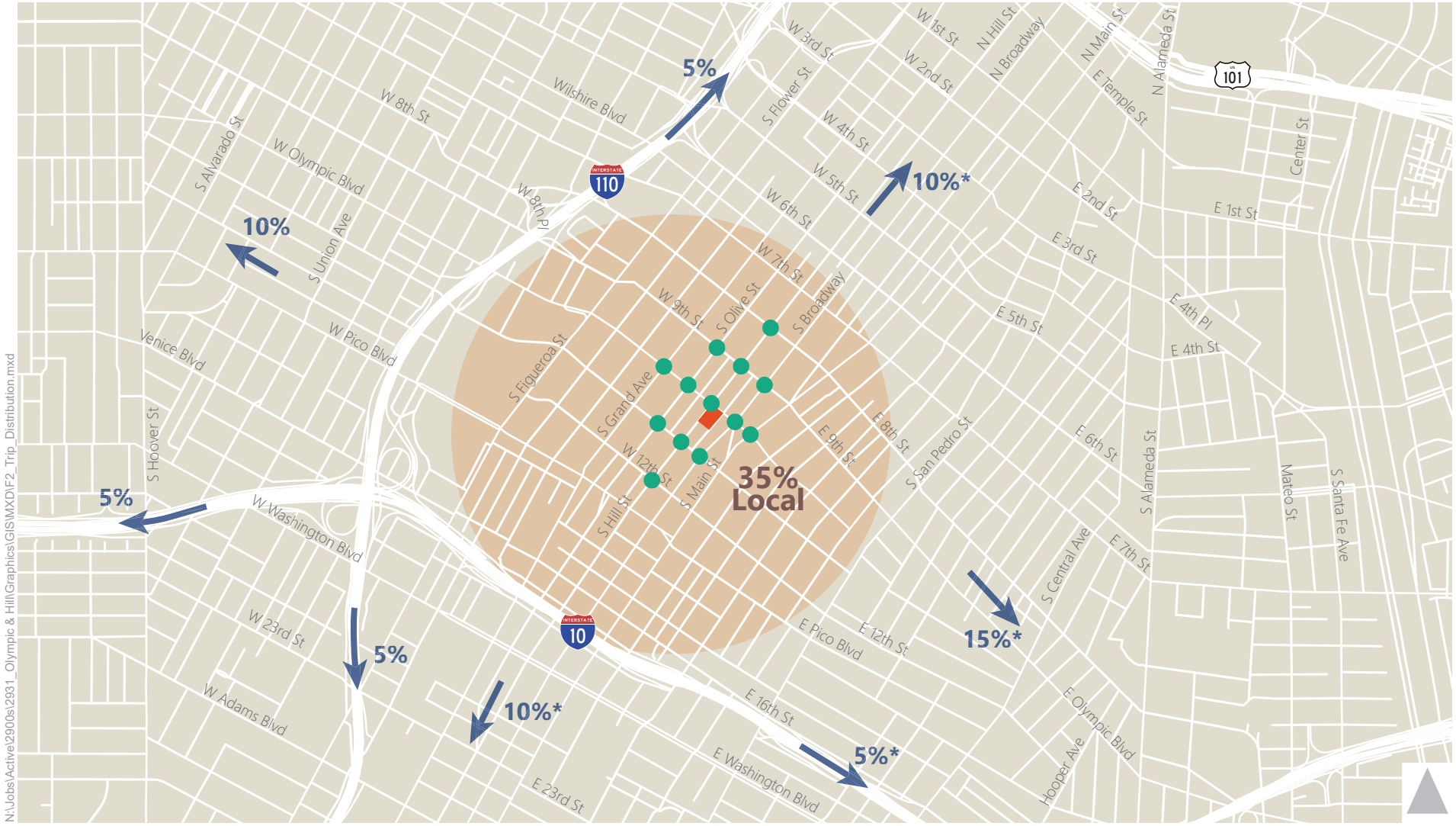
The traffic to be generated by the proposed Project was assigned to the street network using the distribution pattern described in Figure 5. Appendix B provides the assignment of the proposed Project-generated peak hour traffic volumes at the analyzed intersections during the AM and PM peak hours. The assignment of traffic volumes took into consideration the locations of the proposed Project driveways on Hill Street and Olympic Boulevard.

PROJECT DRIVEWAYS

As discussed, both driveways will allow full access to the building's underground parking, including shared access for residents and retail and restaurant customers.

EXISTING PLUS PROJECT TRAFFIC CONDITIONS

The Project traffic estimated and assigned to the study intersections was added to the existing traffic volumes to estimate Existing plus Project traffic volumes. Turning movement traffic volumes for the Existing plus Project scenario are provided in Appendix B. Analysis sheets are provided in Appendix D.



Study Intersections Project Site

*Some trips ultimately distributed onto freeways.

Figure 5

Trip Distribution

FUTURE YEAR 2022 TRAFFIC CONDITIONS

To evaluate the potential impacts of the proposed Project on future (Year 2022) conditions, it was necessary to develop estimates of future traffic conditions in the area both without and with Project traffic. First, estimates of traffic growth were developed for the study area to forecast future conditions without the Project. These forecasts included traffic increases as a result of both regional ambient traffic growth and traffic generated by specific developments in the vicinity of the Project (related projects).

These projected traffic volumes, identified herein as the Future Base conditions, represent the future conditions without the proposed Project. The traffic generated by the proposed Project was then estimated and assigned to the surrounding street system. Project traffic was added to the Future Base conditions to form Future (year 2022) plus Project traffic conditions, which were analyzed to determine the incremental traffic impacts attributable to the Project itself.

The assumptions and analysis methodology used to develop each of the future year scenarios discussed above are described in more detail in the following sections.

BACKGROUND OR AMBIENT GROWTH

Based on historic trends and at the direction of LADOT, it was established that an ambient growth factor of 1% per year should be applied to adjust the existing base year traffic volumes to reflect the effects of regional growth and development by year 2022. This adjustment was applied to the existing (year 2017) traffic volume data to reflect the effect of ambient growth by the year 2022.

RELATED PROJECT TRAFFIC GENERATION AND ASSIGNMENT

Future Base traffic forecasts include the effects of known specific projects, called related projects, expected to be implemented in the vicinity of the proposed project site prior to the buildout date of the proposed Project. The list of related projects was prepared based on data from LADOT. A total of 111 cumulative projects were identified in the study area; these projects are listed in Table 6 and illustrated in Figure 6.

Trip Generation

Trip generation estimates for the related projects were calculated using a combination of previous study findings, publicly available environmental documentation, and trip generation rates contained in *Trip Generation, 9th Edition*. Table 6 presents the resulting trip generation estimates for these related projects. These projections are conservative in that they do not in every case account for either the existing uses to be removed or the possible use of non-motorized travel modes (transit, walking, etc.). Traffic mitigation measures associated with the related projects are also not in every case accounted for in the analysis.

TABLE 6
OLYMPIC & HILL PROJECT
RELATED PROJECTS

No.	Project Location	Land Use	Size		Estimated Trip Generation [a]					
					AM Peak Hour Trips			PM Peak Hour Trips		
					In	Out	Total	In	Out	Total
1	400 W Washington Bl	School	21300	Enrollment	336	127	463	574	268	842
2	225 S Los Angeles St	Condominiums	300	Units	88	136	224	75	52	126
		Retail	3.4	ksf						
3	1027 W Wilshire Blvd	Condominiums	402	Units	21	92	113	83	53	136
		Retail	4728	ksf						
4	1133 S Hope St	Other			20	74	94	91	50	141
5	437 S Hill St	Apartments	600	Units	44	122	167	162	97	259
		Other	13.872	ksf						
6	1115 S Hill St	Mixed Use			-45	40	-5	50	-7	43
7	1102 W 6th St	Apartments	648	Units	61	195	256	232	155	387
		Retail	39.996	ksf						
8	2455 S Figueroa St	Apartments	145	Units	8	51	59	54	28	82
9	1130 W Wilshire Blvd	Office	88.224	ksf	92	12	104	28	61	89
		Other	2	ksf						
		Other	0.248	ksf						
		Other	5.375	ksf						
10	848 S Grand Av	Condominiums	420	Units	66	144	210	212	165	377
		Retail	38.5	ksf						
		Mixed Use								
11	1430 Beverly Blvd	Apartments	144	Units	13	49	60	47	25	73
12	250 S Hill St	Condominiums	330	Units	21	73	94	66	42	108
		Retail	12	ksf						
13	902 W Washington Blvd	Other	142	Units	2	25	27	35	16	51
14	900 W Wilshire Bl	Mixed Use			725	75	800	94	764	858
15	220 E Washington Bl	Retail	7.75	ksf	38	118	156	125	53	178
		Other	7.75	ksf						
		Apartments	357	Units						
		Mixed Use								
16	2100 S Figueroa St	Condominiums	291	Units	-82	66	-16	67	-28	39
		Retail	7.134	ksf						
17	1435 W 3rd St	Apartments	122	Units	11	42	53	41	25	66
		Retail	5	ksf						
18	899 S Francisco St	Condominiums	836	Units	307	318	625	387	512	899
		Office	988.23	ksf						
		Other	480	Rooms						
		Retail	49	ksf						
		Mixed Use								
19	150 N Los Angeles St	Office	712.5	ksf	930	118	1048	435	942	1374
		Retail	35	ksf						
		Other	2.5	ksf						
20	1300 S Hope St	Apartments	419	Units	88	105	194	136	102	238
		Retail	42	ksf						
21	928 S Broadway	Apartments	670	Units	21	229	250	272	109	381
		Condominiums	17	Units						
		Retail	58.8	ksf						

No.	Project Location	Land Use	Size		Estimated Trip Generation [a]					
					AM Peak Hour Trips			PM Peak Hour Trips		
					In	Out	Total	In	Out	Total
22	1200 S Grand Av	Apartments	640	Units	92	148	240	181	134	315
		Retail	45	ksf						
23	1329 W 7th St	Apartments	94	Units	13	37	53	39	22	61
		Retail	2	ksf						
24	534 S Main St	Apartments	160	Units	52	75	127	87	58	145
		Retail	18	ksf						
		Other	3.5	ksf						
		Other	3.5	ksf						
25	840 S Olive St	Condominiums	303	Units	81	166	247	174	96	270
		Other	9.68	ksf						
		Retail	1.5	ksf						
26	950 E 3rd St	School	532	Other	162	177	339	245	212	458
		Retail	30.062	ksf						
		Apartments	635	Units						
27	1057 S San Pedro St	Other	254.5	ksf	837	434	1271	632	957	1589
		Retail	224.86	ksf						
		Other	744	Seats						
		Apartments	877	Units						
		Condominiums	68	Units						
		Other	210	Rooms						
		Office	217.38	ksf						
		Office	77.264	ksf						
28	1700 W Olympic Bl	Other	160	Rooms	44	32	76	45	42	87
29	233 W Washington Bl	Apartments	160	Units	25	66	81	89	71	160
		Retail	24	ksf						
30	400 S Broadway	Apartments	450	Units	36	147	183	139	73	212
		Retail	7.5	ksf						
		Other	5	ksf						
31	920 S Hill St	Apartments	239	Units	23	84	107	87	50	137
		Retail	5.4	ksf						
32	955 S Broadway	Apartments	201	Units	21	72	93	74	43	117
		Retail	6	ksf						
33	1212 S Flower St	Condominiums	730	Units	78	233	311	229	121	350
		Retail	10.5	ksf						
		Office	70.465	ksf						
34	820 S Olive St	Apartments	589	Units	63	202	264	195	106	302
		Retail	4.5	ksf						
35	601 S Main St	Condominiums	452	Units	36	144	179	152	87	238
		Retail	25	ksf						
36	1111 S Broadway	Mixed Use			144	176	319	258	274	532
37	1148 S Broadway	Apartments	94	Units	8	30	38	21	18	50
		Retail	2.5	ksf						
38	1120 S Grand Av	Apartments	666	Units	42	127	170	136	93	229
		Other	0	Rooms						
39	1230 S Olive St	Apartments	362	Units	31	126	157	127	69	196
		Retail	4	ksf						
40	1247 S Grand Av	Apartments	118	Units	10	41	51	42	25	67
		Retail	5.125	ksf						
41	1400 S Figueroa St	Apartments	106	Units	10	38	48	39	22	61
		Retail	4.834	ksf						
42	1550 W 8th St	Office	33.957	ksf	29	4	33	6	26	32

No.	Project Location	Land Use	Size		Estimated Trip Generation [a]					
					AM Peak Hour Trips			PM Peak Hour Trips		
					In	Out	Total	In	Out	Total
43	940 S Figueroa St	Theatre	1942	Seats	5	4	9	99	35	134
		Other	10.056	ksf						
		Other	5.119	ksf						
44	1036 S Grand Av	Other	7.149	ksf	2	3	5	27	14	41
45	963 E 4th St	Office	78.6	ksf	106	22	128	113	138	251
		Retail	25	ksf						
		Other	20	ksf						
46	1335 W 1st St	Apartments	101	Units	10	40	50	42	24	66
		Retail	3.514	ksf						
47	1150 W Wilshire Blvd	Apartments	80	Units	-22	26	4	39	-5	34
		Other	4.589	ksf						
48	737 S Spring St	Apartments	320	Units	72	141	213	167	116	283
		Other	25	ksf						
49	1218 W Ingraham St	Apartments	80	Units	8	33	41	33	17	50
50	555 S Mateo St	Retail	153	ksf	5	30	35	220	205	425
51	1147 E Palmetto	Mixed Use			73	141	215	147	83	230
52	742 S Hartford Av	Apartments	58	Units	5	21	26	20	11	31
53	732 S Spring St	Apartments	400	Units	59	152	211	164	104	268
		Other	15	ksf						
54	340 S Hill St	Apartments	428	Units	34	129	163	141	79	219
		Other	6.7	ksf						
55	1728 W 7th St	Other	9.6	ksf	-30	-40	-70	50	14	64
		Other	3.5	ksf						
56	1145 W 7th St	Condominiums	126	Units	4	66	70	67	35	102
		Apartments	100	Units						
		Retail	7.2	ksf						
57	360 S Alameda St	Apartments	55	Units	25	33	58	35	26	61
		Other	2.5	ksf						
		Other	6.3	ksf						
58	1900 S Broadway	Condominiums	900	Units	390	552	942	637	566	1203
		Apartments	550	Units						
		Other	210	Rooms						
		Retail	143.1	ksf						
		Office	180	ksf						
		Other	17.6	ksf						
		Other	8	ksf						
59	1302 W Washington Bl	Other	16.572	ksf	-33	-18	-51	21	12	33
60	1929 W Pico Bl	School	480	Enrollment	140	66	206	20	42	62
61	118 S Astronaut E.S. Onizuka S	Apartments	77	Units	-1	20	19	19	6	25
62	1525 E Industrial St	Apartments	328	Units	58	73	131	86	69	155
		Office	27.3	ksf						
		Retail	6.4	ksf						
		Other	5.7	ksf						
63	649 S Wall St	Office	66	Employees	24	5	29	3	24	27
		Other	55	Beds						
64	300 S Main St	Apartments	471	Units	143	243	386	257	153	410
		Other	27.78	ksf						
		Retail	5.19	ksf						
65	850 S Hill St	Mixed Use	300	Units	28	106	134	116	65	181
		Retail	3.5	ksf						
		Other	3.5	ksf						

No.	Project Location	Land Use	Size		Estimated Trip Generation [a]					
					AM Peak Hour Trips			PM Peak Hour Trips		
					In	Out	Total	In	Out	Total
66	400 S Alameda St	Other	66	Rooms	19	17	36	23	14	37
		Other	2.13	ksf						
		Retail	840	ksf						
67	700 W 9th St	Condominiums	629	Units	37	146	183	143	95	238
		Retail	27	ksf						
68	649 S Olive St	Other	241	Rooms	6	44	109	63	60	123
69	1111 W 6th St	Apartments	369	Units	-71	117	46	104	-51	53
		Other	18.6	ksf						
		Other	2.2	ksf						
		Other	1.2	ksf						
70	1633 W 11th St	School	460	Seats	194	158	352	29	37	66
71	1229 S Grand Av	Condominiums	161	Units	23	62	85	62	33	95
		Other	3	ksf						
72	675 S Bixel St	Apartments	425	Units	74	173	247	184	116	300
		Other	126	Rooms						
		Retail	4.874	ksf						
73	740 S Hartford Av	Apartments	80	Units	7	30	37	29	15	45
74	1235 W 7th St	Condominiums	303	Units	23	95	118	100	54	154
		Retail	5.96	ksf						
75	940 S Hill St	Apartments	232	Units	20	80	100	115	53	168
		Other	14	ksf						
76	1322 W Linwood Ave	Apartments	84	Units	5	30	35	28	14	42
77	719 E 5th St	Apartments	160	Units	15	58	73	61	37	96
		Retail	7.5	ksf						
78	1340 S Olive St	Apartments	156	Units	51	82	133	89	57	146
		Retail	5	ksf						
		Other	10	ksf						
79	1334 S Flower St	Apartments	146	Units	-1	49	48	51	16	67
		Other	6.27	ksf						
80	929 E 2nd St	Retail	40.034	ksf	61	9	70	101	88	189
		Retail	0.985	ksf						
		Other	7.843	ksf						
		Other	10.369	ksf						
		Office	40.249	ksf						
		Other	5.383	ksf						
		Other	0.049	ksf						
81	633 S Spring St	Other	176	Rooms	83	33	116	97	99	196
		Other	8.43	ksf						
		Other	5.29	ksf						
82	1020 S Figueroa St	Condominiums	650	Units	204	274	478	312	227	539
		Other	300	Rooms						
		Retail	40	ksf						
		Other	40	ksf						
83	1800 E 7th St	Apartments	122	Units	26	45	71	45	37	82
		Office	13.6	ksf						
84	720 W Washington Blvd	Apartments	105	Units	7	12	19	13	12	25
85	1400 S Flower St	Apartments	147	Units	-1	49	48	51	17	68
		Retail	6.921	ksf						
86	1930 W Wilshire Blvd	Apartments	478	Units	-44	128	85	103	-41	61
		Other	850	Seats						
		Other	50	Enrollment						
		Other	220	Rooms						

No.	Project Location	Land Use	Size		Estimated Trip Generation [a]					
					AM Peak Hour Trips			PM Peak Hour Trips		
					In	Out	Total	In	Out	Total
87	130 S Beaudry Av	Apartments	230	Units	8	76	84	76	29	105
		Other	9	ksf						
88	495 S Hartford Av	Apartments	220	Units	16	63	79	62	34	96
89	1122 W Washington Bl	Office	60	ksf	107	29	136	57	146	203
90	744 S Figueroa St	Apartments	438	Units	38	148	186	176	94	270
		Retail	10.156	ksf						
91	815 W Olympic Bl	Other	346	Rooms	137	133	270	167	165	332
		Retail	61.149	ksf						
		Office	36256	ksf						
92	243 W Adams Bl	Apartments	300	Units	5	99	104	72	10	82
		Retail	2.5	ksf						
		Other	2.5	ksf						
93	433 S Main St	Condominiums	161	Rooms	85	147	62	66	48	113
		Mixed Use	6.9	ksf						
94	926 W James M Wood Bl	Other	225	Rooms	59	42	101	59	56	115
95	459 S Hartford Av	Apartments	101	Units	15	15	31	22	22	44
96	1100 S Main St	Apartments	379	Units	9	103	112	78	14	92
97	1250 S Figueroa St	Other	25.81	ksf	192	125	317	203	212	415
		Other	1162	Rooms						
		Other	6.573	ksf						
		Other	6.573	ksf						
98	2005 W James M Wood Bl	Other	100	Rooms	24	18	42	20	18	38
99	717 S Maple Ave [b]	Apartments	452	Units	54	190	244	206	124	330
100	527 N Spring St	Retail	2.89	ksf	49	118	167	189	131	320
		Apartments	345	Units						
		Restaurant	11	ksf						
		Retail	23	ksf						
		Retail	21	ksf						
101	333 S. Alameda St [b]	Apartments	994	Units	134	260	394	390	329	719
		Retail	100	ksf						
102	765 Wall St [a]	Office	53.2	ksf	108	82	191	164	141	305
		Apartments	323	Units						
		Retail	8.8	ksf						
		Other	125	Persons						
		Other	66.2	ksf						
103	668 S. Alameda St [a]	Apartments	475	Units	198	356	553	319	204	523
		Retail	45	ksf						
		Warehouse	130	ksf						
104	640 S. Alameda St [a]	Hotel	412	Rooms	1199	1369	2567	1246	1133	2379
		Apartments	1305	Units						
		Office	253.5	ksf						
		School	29.3	ksf						
		Retail	127.6	ksf						
		Art Space	23	ksf						
105	520 S. Mateo St [a]	Apartments	30	Units	77	227	304	255	133	388
		Office	15	ksf						
		Retail	15	ksf						
		Restaurant	15	ksf						
106	1100 E. 5th St [a]	Apartments	218	ksf	22	89	111	131	83	214
		Open Space	22	ksf						
107	330 S. Alameda St [a]	Apartments	186	Units	92	155	248	138	90	227
		Retail	22	ksf						

No.	Project Location	Land Use	Size		Estimated Trip Generation [a]					
					AM Peak Hour Trips			PM Peak Hour Trips		
					In	Out	Total	In	Out	Total
108	232 W 2nd St [a]	Condominiums	107	Units	743	150	893	183	684	867
		Office	534	ksf						
		Retail	7.2	ksf						
109	2222 S. Figueroa St [a]	Condominiums	645	ksf	85	336	421	371	190	561
		Apartments	364	Units						
110	445 South Colyton [b]	Shopping Center	24.95	ksf	103	115	218	132	54	186
		Restaurant	25.38	ksf						
		Hotel	113	rooms						
		Residential	129	du						
		Art Gallery/Schoo	13.5	ksf						
111	747 Warehouse St [b]	Condominiums	310	du	155	167	322	154	178	332
		Retail	11.375	ksf						
		Production Space	117	ksf						

Notes:

ksf = one thousand square feet

DU= dwelling units

n/a = not available

[a] Projects were not included in information provided by LADOT. Projects and land use from LADCP Major Projects Website: https://ladcp.maps.arcgis.com/apps/MapJournal/index.html?appid=b06f97ccf94741fdaad27443013eead1. Trip generation estimates based on ITE rates.

[b] Projects were not included in information provided by LADOT. Projects and land use from third party research. Trip generation estimates based on ITE rates.

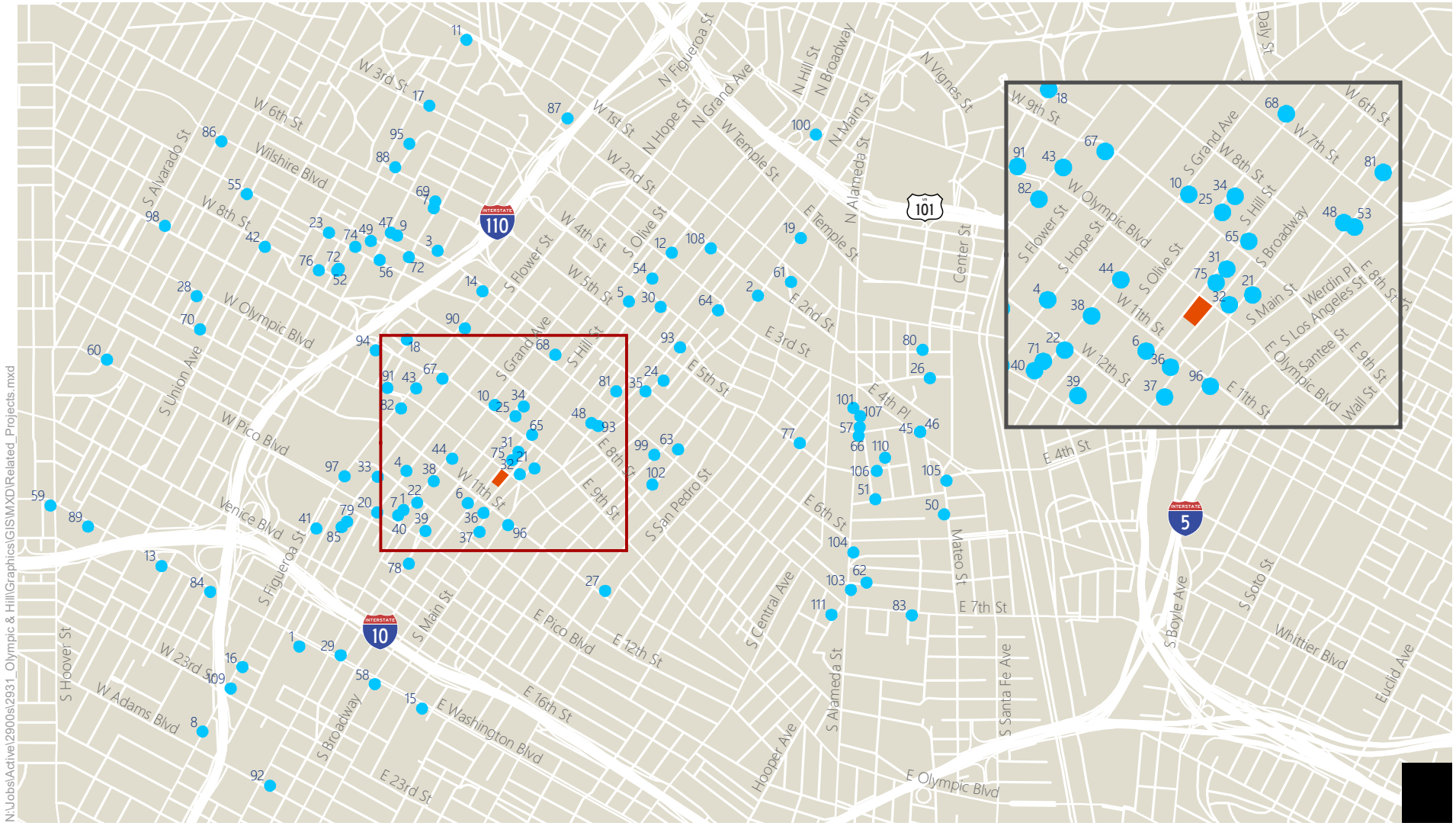


Figure 6

Related Projects

Trip Distribution

The geographic distribution of the traffic generated by the related projects is dependent on several factors. These factors include the type and density of the proposed land uses, the geographic distribution of population from which employees and potential patrons of proposed commercial developments may be drawn, the locations of employment and commercial centers to which residents of residential projects may be drawn, and the location of the projects in relation to the surrounding street system. Additionally, if the traffic study or environmental document for a related project was available, the trip distribution from that study was used.

Traffic Assignment

Using the estimated trip generation and trip distribution patterns described above, traffic generated by the related projects was assigned to the street network.

TRANSPORTATION INFRASTRUCTURE PROJECTS

Due to the construction of the 936 S. Olive Street building, the existing lane geometry on Olive Street under existing conditions was reduced by one through lane to accommodate construction. However, in the future year, it was assumed the lane geometry would return to its original configuration of three northbound lanes. Therefore, the Future Year and Future Year plus Project scenarios reflect the original lane geometry.

In addition, a number of roadway improvements, as well as bikeway and streetscape projects are anticipated to be completed in the project vicinity. These planned projects would reduce capacity on some of the roadways in the project study area. These planned projects are as follows:

- **Los Angeles Streetcar** project's proposed route will be along Broadway and 11th Street. An alternative route on Hill Street and 9th Street is also under consideration. As the project is not currently funded for construction, lane geometry and volume changes as a result of this project were not included in this analysis.

- **Broadway Streetscape Master Plan (BSMP)** has reduced Broadway to two travel lanes in the northbound direction and one travel lane in the southbound direction. In addition, southbound motorists are prohibited from making left turns at the intersections from Broadway to the cross streets. Currently, right turns are permitted along the southbound direction of Broadway as part of the recently implemented Broadway Dress Rehearsal. The existing lane configuration, which was implemented as part of the Broadway Dress Rehearsal, is reflected in the existing conditions analysis and would be maintained in the future scenarios. Should the Los Angeles Streetcar project secure funding, additional lane geometry changes from the BSMP would be constructed to accommodate the Los Angeles Streetcar. For purposes of this traffic analysis, additional lane geometry and volume changes on Broadway were not incorporated into the future year analyses.

- **MyFigueroa Corridor Streetscape** project consists of 4.5 miles of new bicycle facilities and streetscape improvements. As part of the project, a buffered bicycle lane would be installed on 11th Street. One of the two existing westbound travel lanes would be eliminated from Broadway to Olive Street, thus reducing the roadway to one lane in the westbound direction to accommodate the project. Relevant Figueroa Streetscape Project striping plans are provided in Appendix E. With the reduction of a westbound travel lane on 11th Street, traffic volumes on 11th Street are anticipated to shift to parallel facilities. In order to estimate the number of vehicular trips that could be diverted to parallel facilities, a model run for the lane reduction on 11th Street was conducted using the City of Los Angeles' travel demand model. The model indicated that with the westbound lane reduction, approximately 10% of AM and PM peak hour trips would be diverted to parallel facilities. This would result in the diversion of a nominal amount of AM peak hour trips and approximately 80 westbound PM peak hour trips to parallel facilities, such as Olympic, 8th, Hill Street, Broadway, Olive Street, and Main Street.

FUTURE YEAR 2022 BASE TRAFFIC VOLUMES

Future year 2022 base weekday AM and PM peak hour traffic volumes and lane geometries for the analyzed intersections are provided in Appendix B. The Future Base traffic conditions represent an estimate of future conditions without the proposed Project inclusive of the ambient background growth and related projects traffic.

FUTURE PLUS PROJECT TRAFFIC PROJECTIONS

The proposed Project traffic volumes were added to the year 2022 Future Base traffic projections, resulting in Future (year 2022) plus Project AM and PM peak hour traffic volumes. As provided in Appendix B, the Future (year 2022) plus Project scenario presents future traffic conditions with the completion of the proposed Project.

4. INTERSECTION TRAFFIC IMPACT ANALYSIS

The traffic impact analysis evaluates the projected LOS at each study intersection under the Existing plus Project and Future (year 2022) plus Project conditions to estimate the incremental increase in the V/C ratio caused by the proposed Project. This provides the information needed to assess the potential impact of the Project using significance criteria established by LADOT.

CRITERIA FOR DETERMINATION OF SIGNIFICANT TRAFFIC IMPACT

The City of Los Angeles has established threshold criteria to determine significant traffic impact of a proposed project in its jurisdiction. Under the LADOT guidelines, an intersection would be significantly impacted with an increase in V/C ratio equal to or greater than 0.04 for intersections operating at LOS C, equal to or greater than 0.02 for intersections operating at LOS D, and equal to or greater than 0.01 for intersections operating at LOS E or F after the addition of project traffic. Intersections operating at LOS A or B after the addition of the project traffic are not considered significantly impacted regardless of the increase in V/C ratio. The following summarizes the impact criteria:

LOS	Final V/C Ratio	Project-Related Increase in V/C
C	> 0.700 - 0.800	equal to or greater than 0.040
D	> 0.800 - 0.900	equal to or greater than 0.020
E or F	> 0.900	equal to or greater than 0.010

EXISTING PLUS PROJECT IMPACT ANALYSIS

EXISTING PLUS PROJECT TRAFFIC LEVEL OF SERVICE

The Existing plus Project traffic volumes presented in Appendix B were analyzed to determine the projected V/C ratios and LOS for each of the analyzed intersections under this scenario. Table 7 summarizes the Existing plus Project LOS. Analysis sheets are provided in Appendix D. As indicated in Table 7, all 13 signalized intersections are projected to operate at LOS B or better during both peak hours.

EXISTING PLUS PROJECT INTERSECTION IMPACTS

As shown in Table 7, after applying the aforementioned City of Los Angeles significant impact criteria, it is determined that the proposed Project would not result in significant impacts under Existing plus Project conditions at any of the study intersections.

TABLE 7
OLYMPIC & HILL PROJECT
EXISTING PLUS PROJECT INTERSECTION LEVELS OF SERVICE AND IMPACT ANALYSIS

NO.	INTERSECTION	PEAK HOUR	EXISTING		EXISTING + PROJECT		V/C INCREASE	SIGNIFICANT IMPACT?
			V/C	LOS	V/C	LOS		
1	Grand Ave &	AM	0.374	A	0.380	A	0.006	No
	Olympic Blvd	PM	0.545	A	0.555	A	0.010	No
2	Olive St &	AM	0.479	A	0.485	A	0.006	No
	9th St	PM	0.471	A	0.476	A	0.005	No
3	Olive St &	AM	0.501	A	0.508	A	0.007	No
	Olympic Blvd	PM	0.624	B	0.627	B	0.003	No
4	Olive St &	AM	0.283	A	0.292	A	0.009	No
	11th Street	PM	0.413	A	0.419	A	0.006	No
5	Hill St	AM	0.448	A	0.458	A	0.010	No
	8th St	PM	0.547	A	0.559	A	0.012	No
6	Hill St &	AM	0.401	A	0.415	A	0.014	No
	9th St	PM	0.465	A	0.474	A	0.009	No
7	Hill St &	AM	0.387	A	0.421	A	0.034	No
	Olympic Blvd	PM	0.614	B	0.635	B	0.021	No
8	Hill St &	AM	0.131	A	0.147	A	0.016	No
	11th St	PM	0.422	A	0.435	A	0.013	No
9	Hill St &	AM	0.367	A	0.379	A	0.012	No
	12th St	PM	0.364	A	0.391	A	0.027	No
10	Broadway &	AM	0.330	A	0.335	A	0.005	No
	9th St	PM	0.497	A	0.505	A	0.008	No
11	Broadway &	AM	0.429	A	0.447	A	0.018	No
	Olympic Blvd	PM	0.606	B	0.619	B	0.013	No
12	Broadway &	AM	0.173	A	0.174	A	0.001	No
	11th St	PM	0.393	A	0.408	A	0.015	No
13	Main St &	AM	0.408	A	0.418	A	0.010	No
	Olympic Blvd	PM	0.639	B	0.652	B	0.013	No

FUTURE PLUS PROJECT IMPACT ANALYSIS

FUTURE BASE TRAFFIC CONDITIONS

The year 2022 Future Base peak hour traffic volumes were analyzed to determine the projected V/C ratio and LOS for each of the analyzed intersections. Table 8 summarizes the future LOS. All of the 13 signalized intersections analyzed for impacts are projected to operate at LOS D or better during the morning and afternoon peak hours under Future Base conditions. None of the study intersections are projected to operate at LOS E or worse during either of the peak hours under Future Base conditions.

FUTURE PLUS PROJECT TRAFFIC CONDITIONS

The resulting Future (year 2022) plus Project peak hour traffic volumes, provided in Appendix B, were analyzed to determine the projected future operating conditions with the addition of the proposed Project traffic. The results of the Future (year 2022) plus Project analysis are also presented in Table 8, with analysis sheets provided in Appendix D. All of the 13 signalized intersections analyzed for impacts are projected to operate at LOS D or better during the morning and afternoon peak hours under Future (year 2022) plus Project conditions.

FUTURE (YEAR 2022) PLUS PROJECT INTERSECTION IMPACTS

As shown in Table 8, using the criteria for determination of significant impacts, it is determined that the proposed Project would result in a significant impact at Olympic Boulevard & Hill Street (intersection #7) under Future (year 2022) plus Project conditions during the PM peak hour.

TABLE 8
OLYMPIC & HILL PROJECT
FUTURE YEAR (2022) PLUS PROJECT INTERSECTION LEVELS OF SERVICE AND IMPACT ANALYSIS

NO.	INTERSECTION	PEAK HOUR	FUTURE (2022)		FUTURE (2022) + PROJECT		V/C INCREASE	SIGNIFICANT IMPACT?
			V/C	LOS	V/C	LOS		
1	Grand Ave &	AM	0.533	A	0.539	A	0.006	No
	Olympic Blvd	PM	0.794	C	0.803	D	0.009	No
2	Olive St &	AM	0.541	A	0.545	A	0.004	No
	9th St	PM	0.582	A	0.586	A	0.004	No
3	Olive St &	AM	0.584	A	0.590	A	0.006	No
	Olympic Blvd	PM	0.740	C	0.743	C	0.003	No
4	Olive St &	AM	0.431	A	0.447	A	0.016	No
	11th Street	PM	0.643	B	0.653	B	0.010	No
5	Hill St	AM	0.615	B	0.625	B	0.010	No
	8th St	PM	0.786	C	0.797	C	0.011	No
6	Hill St &	AM	0.594	A	0.607	B	0.013	No
	9th St	PM	0.673	B	0.683	B	0.010	No
7	Hill St &	AM	0.519	A	0.548	A	0.029	No
	Olympic Blvd	PM	0.825	D	0.847	D	0.022	**Yes**
8	Hill St &	AM	0.322	A	0.341	A	0.019	No
	11th St	PM	0.687	B	0.697	B	0.010	No
9	Hill St &	AM	0.492	A	0.504	A	0.012	No
	12th St	PM	0.578	A	0.605	B	0.027	No
10	Broadway &	AM	0.481	A	0.486	A	0.005	No
	9th St	PM	0.721	C	0.729	C	0.008	No
11	Broadway &	AM	0.545	A	0.563	A	0.018	No
	Olympic Blvd	PM	0.833	D	0.847	D	0.014	No
12	Broadway &	AM	0.317	A	0.319	A	0.002	No
	11th St	PM	0.675	B	0.695	B	0.020	No
13	Main St &	AM	0.541	A	0.551	A	0.010	No
	Olympic Blvd	PM	0.880	D	0.894	D	0.014	No

MITIGATION MEASURES

The mitigation program for the Project includes a Transportation Demand Management (TDM) program. This section describes the proposed transportation mitigation program for the Project and evaluates the effectiveness of the program in mitigating the significant project impacts described in the previous section. The mitigation program has been developed in discussions with LADOT, which has approved the approaches, analysis methods, and assumptions used to complete this analysis.

TRANSPORTATION DEMAND MANAGEMENT PLAN

A transportation demand management program will be prepared as part of the Project. Several TDM program elements are project features proposed for implementation. Other TDM program elements would be developed in the preparation of a detailed TDM plan.

TDM Project Design Features

Several project design features would be expected to enhance the usage of walking, biking, and transit modes as alternatives to the automobile, including:

- Site Design – The site will be designed to encourage walking, biking, and transit. Amenities would include:
    - New sidewalks and street trees along the perimeter
    - Improved street and pedestrian lighting

Potential Additional TDM Program Elements

A TDM plan that will detail additional program elements beyond the site design features described above will be prepared. Additional TDM program elements could include measures such as unbundled parking although the exact measures to be implemented will be determined when the plan is prepared. The City of Los Angeles requires that the TDM plan be prepared during construction, with the final TDM plan approved by LADOT prior to the City's issuance of the certificate of occupancy for the Project. Implementation of the TDM plan occurs after building occupancy.

- Unbundled Parking – Unbundling parking typically separates the cost of purchasing or renting parking spaces from the cost of the purchasing or renting a dwelling unit. Saving money on a dwelling unit by forgoing a parking space acts as an incentive that minimizes auto ownership. Similarly, paying for parking (by purchasing or leasing a space) acts as a disincentive that discourages auto ownership and trip-making.

- Bicycle Parking – As described in Chapter 7, the Project will provide both long term and short term bicycle parking. In addition, the Project could provide complementary amenities such as a self-service bike repair area.

The TDM+ tool developed by Fehr & Peers was used to quantify the potential trip reduction for the Project due to implementation of these TDM measures. The TDM+ tool is based on research conducted by Fehr & Peers under contract to the California Air Pollution Control Officers Association (CAPCOA) and elsewhere. It considers a variety of TDM strategies and the setting in which they may apply, estimates effectiveness for each, and applies caps when appropriate (for example, simply aggregating the effectiveness of individual TDM measures can sometimes yield a result that is overblown since more than one measure may be targeting the same trip). With the TDM+ tool, it was estimated that a net overall reduction in trips of approximately 15% could be achieved. The results of the TDM+ tool analysis are presented in Appendix F.

Upon discussion with LADOT, a 15% TDM credit was applied to the residential trip generation estimates for the Project. The mitigated trip generation estimate for the Project are presented in Table 9. Table 10 shows LOS and significant impact analysis results after implementation of the TDM program under Existing and Future plus Project conditions. After applying the aforementioned mitigation, the significant impact at the intersection of Olympic Boulevard & Hill Street would be reduced to a less than significant.

5. REGIONAL TRANSPORTATION SYSTEM IMPACT ANALYSIS

This section presents an analysis of potential impacts on the regional transportation system. This analysis was conducted in accordance with the procedures outlined in *Congestion Management Program for Los Angeles County* (CMP) (Metro, 2010). The CMP requires that, when an environmental impact report is prepared for a project, traffic and transit impact analyses be conducted for select regional facilities based on the quantity of project traffic expected to use those facilities.

In addition, *Agreement Between City of Los Angeles and Caltrans District 7 on Freeway Impact Analysis Procedures* sets forth criteria for when a freeway impact analysis should be conducted. In December 2015, the City of Los Angeles and Caltrans District 7 signed an extension of the agreement and adjusted the ramp capacity to 850 vehicles per hour per lane for the freeway ramp screening analysis. LADOT determined as part of the traffic study memorandum of understanding for the project (see Appendix A) that the project would not meet these criteria for requiring a freeway impact analysis.

The CMP guidelines require that the first issue to be addressed is the determination of the geographic scope of the study area. The criteria for determining the study area for CMP arterial monitoring intersections and for freeway monitoring locations are:

- All CMP arterial monitoring intersections where the proposed project will add 50 or more trips during either the AM or PM peak hours of adjacent street traffic.

- All CMP mainline freeway monitoring locations where the proposed project will add 150 or more trips, in either direction, during either the AM or PM peak hours.

SIGNIFICANT TRAFFIC IMPACT CRITERIA

The CMP traffic impact analysis guidelines establish that a significant project impact occurs when a certain threshold is exceeded. If the proposed project increases traffic demand on a CMP facility by 2% of capacity ($V/C \geq 0.02$), causing LOS F ($V/C > 1.00$), a significant impact would occur. If the facility is already at LOS F, a significant impact occurs when the proposed project increases traffic demand on a CMP facility by 2% of capacity ($V/C \geq 0.02$).

ARTERIAL MONITORING ANALYSIS

None of the study area intersections are CMP arterial monitoring locations. The CMP arterial monitoring station closest to the proposed project site is located at Wilshire Boulevard & Alvarado Street located approximately 1.5 miles northwest of the project site. Based on the Project trip distribution and trip generation, the Project is not expected to add 50 peak hour vehicle trips through the CMP arterial monitoring station. Project trips are anticipated to disperse among the transportation network due to the extended distance between the project site and the monitoring station. The proposed Project is not expected to add enough new traffic to exceed the arterial analysis criteria of 50 vehicle trips at the above-mentioned location. Therefore, no further CMP arterial analysis is required.

FREEWAY ANALYSIS

Regional access to the project site is provided by the Interstate 10, State Route (SR) 110, and US-101 Freeways. Interstate 10 lies approximately 0.7 miles south of the site, State Route 110 lies approximately 0.7 miles to the west of the site, and US-101 lies approximately 1.5 miles northeast of the site. The CMP freeway monitoring stations closest to the project site include the I-10 Freeway at Budlong Avenue, SR 110 at the US-101 Freeway interchange, and US-101 Freeway north of Vignes Street.

Based on the project distribution patterns shown in Figure 5, approximately 5% of project traffic is expected to travel through all three monitoring stations. According to the trip generation estimates shown in Table 4, the project is projected to result in an increase of 12 trips in the morning peak hour and 14 trips in the evening peak hours at the monitoring stations. Since fewer than 150 trips would be added during the AM or PM peak hours in either direction at any of the freeway segments in the vicinity of the study area, no further analysis of the freeway segments is required for CMP purposes.

REGIONAL TRANSIT IMPACT ANALYSIS

Potential increases in transit person trips generated by the proposed project were estimated. Appendix B-4 of the 2010 CMP provides a methodology for estimating the number of transit trips expected to result from a proposed project based on the projected number of vehicle trips. This methodology assumes an average vehicle ridership (AVR) factor of 1.4 in order to estimate the number of person trips to and from the project and then provides guidance regarding the percentage of person trips assigned to public transit depending on the type of use (commercial/other versus residential) and the proximity to transit services. Appendix B-4 of the 2004 CMP recommends observing the fixed-route local bus services within ¼ mile of the project site and express bus routes and rail service within two miles of the project site.

The project site is served by a high level of public transit. Figure 3A shows the various Metro bus routes, rapid bus routes, and Metro Rail lines providing service in the study area. Figure 3B shows the bus routes operated by other operators in the study area. The Project is located approximately one half-mile northeast of the Metro Pico Station and approximately 0.7 miles southeast of the 7th Street/Metro Center Station. Thirty-seven local, limited, express, rapid, and shuttle bus routes run within a ¼-mile of the project site, including: Metro local, Metro Rapid, Foothill Transit rapid, DASH, LADOT Commuter Express, and Big Blue Bus rapid routes. Table 1 details the transit service near the project site.

As part of the trip generation estimates presented in Table 4, no transit credit was taken on the residential land use. A transit credit of 15% was taken, in consultation with LADOT, for the commercial land uses. Excluding the transit credit in Table 4, the proposed project would have an estimated increase in vehicle trip generation of approximately 242 net vehicle trips during the AM peak hour and 294 during the PM peak hour before the transit credit. Applying the AVR factor of 1.4 to the estimated vehicle trips would result in an estimated increase of approximately 339 and 412 person trips during the AM and PM peak hours, respectively. Applying the 15% transit trips, the project would generate an estimated increase of 51 transit trips during the AM peak hour and 62 transit trips during the PM peak hour. Given the frequency of the transit service in close proximity to the project site, the incremental transit riders resulting from the Project are not anticipated to result in a significant impact on the transit lines serving the area.

TABLE 9
OLYMPIC & HILL PROJECT
MITIGATED VEHICLE TRIP GENERATION ESTIMATE

Land Use	ITE Land Use Code	Size	Trip Generation Rates [a]							Estimated Trip Generation						
				AM Peak Hour			PM Peak Hour				AM Peak Hour Trips			PM Peak Hour Trips		
			Daily	Rate	In%	Out%	Rate	In%	Out%	Daily	In	Out	Total	In	Out	Total
PROPOSED PROJECT																
High-Rise Residential [e]	222,232	700 DU	4.20	0.34	19%	81%	0.38	62%	38%	2,940	45	193	238	165	101	266
Internal Capture [b]			*3%*		*2%*	*1%*		*5%*	*9%*	*(88)*	*(1)*	*(2)*	*(3)*	*(9)*	*(9)*	*(18)*
Less: TDM Credit			*15%*	*15%*			*15%*			*(427)*	*(6)*	*(28)*	*(34)*	*(23)*	*(13)*	*(36)*
Net External Vehicle Trips										2,425	38	163	201	133	79	212
Retail	820	7 ksf	42.70	0.96	62%	38%	3.71	48%	52%	299	4	3	7	12	14	26
Less: Internal Capture [b]			*39%*		*14%*	*40%*		*60%*	*54%*	*(117)*	*(1)*	*(1)*	*(2)*	*(7)*	*(8)*	*(15)*
Less: Transit Credit [c]			*5%*	*15%*			*15%*			*(9)*	*0*	*0*	*0*	*(1)*	*(1)*	*(2)*
Total Driveway Trips										173	3	2	5	4	5	9
Less: Pass-by [d]			*50%*	*50%*			*50%*			*(86)*	*(1)*	*(1)*	*(2)*	*(2)*	*(2)*	*(4)*
Net External Vehicle Trips										87	2	1	3	2	3	5
Quality Restaurant	931	8 ksf	89.95	0.81	82%	18%	7.49	67%	33%	720	5	1	6	40	20	60
Less: Internal Capture [b]			*24%*		*33%*	*0%*		*25%*	*47%*	*(173)*	*(2)*	*0*	*(2)*	*(10)*	*(9)*	*(19)*
Less: Transit Credit [c]			*8%*	*15%*			*15%*			*(44)*	*0*	*0*	*0*	*(5)*	*(2)*	*(7)*
Total Driveway Trips										503	3	1	4	25	9	34
Less: Pass-by [d]			*10%*	*10%*			*10%*			*(50)*	*0*	*0*	*0*	*(2)*	*0*	*(2)*
Net External Vehicle Trips										453	3	1	4	23	9	32
TOTAL PROJECT DRIVEWAY TRIPS										3,101	44	166	210	162	93	255
NET EXTERNAL VEHICLE TRIPS										2,965	43	165	208	158	91	249

Notes:

[a] Source: Institute of Transportation Engineers (ITE), *Trip Generation, 9th Edition* , 2012.

[b] Internal capture represents the percentage of trips between land uses that occur within the site. This percentage is informed by the Trip Generation for Mixed-Use Development calculation methodology described in Chapter 6 of the ITE *Trip Generation Handbook* , 3rd edition, 2014. Internalization percentages are derived from *NCHRP Report 684: Enhancing Internal Trip Capture Estimation for Mixed-Use Developments* , Transportation Research Board, 2011.See Attachment B for detailed calculation tables. The daily credit is assumed to be 75% of peak hour credits taken.

[c] The transit credit is based on LADOT's *Traffic Study Policies and Procedures* , December 2016. The guidelines state that up to 15% transit credit may be taken for projects within 1/4 mile walking distance of a transit station or of a RapidBus stop. The nearest RapidBus service is provided by Route 728 on Olympic Boulevard and Hill Street and Route 794 on Hill Street, adjacent to the project site. The daily credit is assumed to be 75% of peak hour

[d] The pass-by credit is based on Attachment I of LADOT's *Traffic Study Policies and Procedures* , December 2016.

[e] For flexibility, the trip generation analysis uses the most conservative (highest) rates for high-rise apartments versus high-rise condominiums: ITE code 222 (high-rise apartment) for daily trips and ITE code 232 (high-rise condominium) for peak hour trips. Since the high-rise residences in the ITE database are generally in urban areas with transit service, no additional transit credit was taken to provide a conservative estimate.

TABLE 10
OLYMPIC & HILL PROJECT
FUTURE YEAR (2022) PLUS PROJECT WITH MITIGATION INTERSECTION LEVELS OF SERVICE AND IMPACT ANALYSIS

NO.	INTERSECTION	PEAK HOUR	FUTURE (2022)		FUTURE (2022) + PROJECT		V/C INCREASE	SIGNIFICANT IMPACT?	FUTURE + PROJECT WITH MITIGATION		V/C INCREASE	SIGNIFICANT IMPACT?
			V/C	LOS	V/C	LOS			V/C	LOS		
7	Hill St &	AM	0.519	A	0.548	A	0.029	No	0.545	A	0.026	No
	Olympic Blvd	PM	0.825	D	0.847	D	0.022	**Yes**	0.844	D	0.019	No

6. SITE ACCESS

The proposed Project would have two driveways:

- Full-access driveway on Hill Street
- Full-access driveway to and from the alley, Blackstone Court

The loading area for the site will be located on-site on Level 1 of the project, accessible from the Blackstone Court alley.

LEVEL OF SERVICE ANALYSIS FOR PROJECT DRIVEWAYS

A level of service analysis was conducted to evaluate the ability of the Project's access plan to accommodate the anticipated traffic levels at the Project access points.

The Hill Street driveway will be unsignalized and was analyzed using the 2-way Stop methodology from the HCM. An analysis was not conducted of the driveway onto the alley as the alley is not a classified street on the roadway network. The HCM methodology determines the average vehicle delay for the stop-controlled approach to find the corresponding LOS based on the definitions presented in Table 2B. Driveway analysis LOS worksheets are included in Appendix D. Table 11 shows the results of the LOS analysis at the unsignalized driveway.

TABLE 11 – DRIVEWAY SERVICE AND IMPACT ANALYSIS

Driveway Location	Peak Hour	Existing plus Project (2017)		Future plus Project (2022)	
		Delay (seconds)	LOS	Delay (seconds)	LOS
Hill Street Driveway	AM PM	15.7 18.1	C C	20.7 41.7	C E

As shown, the Hill Street driveway is projected to operate at acceptable LOS (LOS D or better) under Existing plus Project (2017) conditions. Under Future plus Project conditions, the Hill Street driveway is projected to operate at LOS C during the AM peak hour and LOS E during the PM peak hour.

The City of Los Angeles has not adopted specific impact criteria for driveway operations. It is common for vehicles turning from a driveway onto a major street to wait to enter the major street. The poor level of service is only experienced by motorists on the project site, primarily by vehicles turning left out onto Hill Street.

7. PARKING

This section presents the analysis of the Project's parking requirements using the City of Los Angeles' municipal parking code (LAMC). The LAMC contains a series of provisions affecting the required parking supply for the Project. The applicable LAMC code requirements are as follows:

- LAMC Section 12.21A4, which establishes the basic ratios for required vehicle parking spaces for various land uses. For residential land uses within the Central City Area, per LAMC Section 12.21A.4(p), the requirements include the provision of one space per unit for units with less than three habitable rooms and 1.25 spaces per unit for units with more than three habitable rooms. The Project is also located in the Downtown Business District per LAMC Section 12.21A.4(x), as such, the Project is required to provide one space for every 1,000 square feet of combined gross floor area of commercial office, business, retail, restaurant, bar and related uses, trade schools, or research and development buildings.

- LAMC Section 12.21A16, which implements the City's Ordinance No. 182386 by establishing minimum requirements for bicycle parking spaces. Residential units are required to provide one short-term bicycle parking space per 10 residential units and one long-term bicycle parking space per unit. Retail and restaurant uses are required to provide one short-term and one long-term bicycle parking space per 2,000 square feet of space.

Table 12A summarizes the basic vehicle parking requirement for the Project per LAMC. As shown in Table 12A, the basic code requirement for the new uses is for 855 vehicle spaces. However, the Project also intends to provide an additional 220 parking spaces for use by the adjacent office building. Table 12B summarizes the bicycle parking requirement for the Project per LAMC Section 12.21A16. As shown in the table, the Project would be required to provide a minimum of 786 bicycle parking spaces (78 short-term and 708 long-term) for the new uses. The Project will provide sufficient vehicle and bicycle parking to meet City code requirements.

TABLE 12A
OLYMPIC & HILL PROJECT
VEHICLE PARKING SPACES REQUIRED BY CITY CODE
BASED ON APARTMENTS

Land Use	Size	Vehicle Parking Ratio [a]	Required Vehicle Spaces
Apartment [b]	140 3 or less habitable rooms	1 spaces per unit	140
	560 4+ habitable rooms	1.25 spaces per unit	700
	700 units		840
Retail [c]	7 ksf	1 spaces per ksf	7
Restaurant [c]	8 ksf	1 spaces per ksf	8
Total Project Code Requirement			855
Additional Parking Spaces for Adjacent Office Building			220
Project Site Total			1,075

TABLE 12B
OLYMPIC & HILL PROJECT
BICYCLE PARKING SPACES REQUIRED BY CITY CODE

		Short-Term Bicycle Parking		Long-Term Bicycle Parking		Total
Land Use	Size	Bicycle Parking Ratio [d]	Required Bicycle Spaces	Bicycle Parking Ratio [d]	Required Bicycle Spaces	Required Bicycle Spaces
Apartment	700 units	1 per 10 du	70	1 per 1 du	700	770
Retail	7 ksf	1 per 2,000 sf	4	1 per 2,000 sf	4	8
Restaurant	8 ksf	1 per 2,000 sf	4	1 per 2,000 sf	4	8
Total Code Requirement			78		708	786

Notes:

[a] Source: City of Los Angeles Municipal Code, Section 12.21A.4.

[b] Per LAMC 12.21A.4(p), project site is located in the Central City Area. As such, the project is subject to reduced parking rates of 1 space per dwelling unit for properties with three or less habitable rooms per unit and 1.25 spaces per unit of more than three habitable rooms.

[c] Per LAMC 12.21A.4(x), project site is located in the Downtown Business District. As such, reduced parking rates of 1 spaces per 1,000 sf of office, commercial, and business space applies.

[d] Source: City of Los Angeles Municipal Code, Section 12.21A.16.

8. CONSTRUCTION PERIOD IMPACT ANALYSIS

CONSTRUCTION IMPACT CRITERIA

LADOT generally considers construction-related traffic to cause adverse but not significant impacts because, while sometimes inconvenient, construction-related traffic effects are temporary. LADOT requires implementation of worksite traffic control plans to ensure that any construction-related effects are minimized to the greatest extent possible.

The LA CEQA Thresholds Guide provides four categories to be considered in regards to in-street construction impacts: temporary traffic impacts, temporary loss of access, temporary loss of bus stops or rerouting of bus lines, and temporary loss of on-street parking (LA CEQA Threshold Guide, pages L.8-2 through L.8-4). The factors to be considered in each of these categories as established in the LA CEQA Threshold Guide are as follows:

- Temporary Traffic Impacts:
  - The length of time of temporary street closures or closures of two or more traffic lanes;
  - The classification of the street (major arterial, state highway) affected;
  - The existing traffic levels and LOS on the affected street segments and intersections;
  - Whether the affected street directly leads to a freeway on- or off-ramp or other state highway;
  - Potential safety issues involved with street or lane closures;
  - The presence of emergency services (fire, hospital, etc.) located nearby that regularly use the affected street.
- Temporary Loss of Access:
  - The length of time of any loss of vehicular or pedestrian access to a parcel fronting the construction area;
  - The availability of alternative vehicular or pedestrian access within ¼ mile of the lost access;
  - The type of land uses affected, and related safety, convenience, and/or economic issues.
- Temporary Loss of Bus Stops or Rerouting of Bus Lines:
  - The length of time that an existing bus stop would be unavailable or that existing service would be interrupted;
  - The availability of a nearby location (within ¼ mile) to which the bus stop or route can be temporarily relocated;
  - The existence of other bus stops or routes with similar routes/ destinations within a ¼mile radius of the affected stops or routes;
  - Whether the interruption would occur on a weekday, weekend or holiday, and whether the existing bus route typically provides service that/those day(s).
- Temporary Loss of On-Street Parking:
  - The current utilization of existing on-street parking;
  - The availability of alternative parking locations or public transit options (e.g. bus, train) within ¼ mile of the project site;
  - The length of time that existing parking spaces would be unavailable.

It should be noted, however, that SB 743 as implemented in California Public Resources Code Section 21099 provides that parking impacts of a residential, mixed- use residential, or employment center project on an infill site within a transit priority area shall not be considered significant impacts on the environment. This guidance supersedes the significance guidance in the *LA CEQA Threshold Guide*.

The LAMC (Section 41.40) provides that construction activities are limited to the hours from 7:00 AM to 9:00 PM on weekdays and from 8:00 AM to 6:00 PM on Saturdays and holidays. No construction is permitted on Sundays.

CONSTRUCTION TRAFFIC

Construction of the Project is anticipated to begin in November 2018 and expected to take approximately 30 months to complete. The construction is anticipated to involve five key phases:

(1) Site Preparation: setting up operations, establishing access for trucks, and removing asphalt – one week

(2) Grading: excavating and cutting and filling of land to ensure the proper base and slope for the construction foundation – 6 months

(3) Building Construction: structural concrete work, building framing and finishes, including rough framing, exterior skin, and interior unit finishes - 18 months

(4) Architectural Coating: application of coatings to both the interior and exterior of the building including parking lot striping and painting of the walls of parking structures – 5 months

(5) Paving: laying of concrete or asphalt in and around the site – 1 month

Hauling Activity

Hauling activity is expected to occur during two phases of construction (Site Preparation and Grading). Hauling hours are anticipated to be 7:00 AM to 4:00 PM, Monday through Friday, and 8:00 AM to 6:00 PM on Saturdays. The haul route for the project will most likely be southbound on either Hill Street or Broadway to the I-10 Freeway. Trucks are expected to be staged on-site or in the roadway, where parking and travel lanes would be closed.

Equipment and Delivery Activity

In addition to hauling, the site is also expected to generate equipment and delivery trucks during both phases. One example would be concrete delivery. Other materials could include plumbing supplies, electrical fixtures, and items used in furnishing the building. These materials would be delivered to the site and stored on-site. These deliveries are expected to occur in variously sized vehicles including small delivery trucks to cement mixer trucks and 18-wheel trucks. Additionally, construction equipment would have to be delivered to the site. This equipment could include cranes, bulldozers, excavators, and other large items of machinery. Most of the heavy equipment is expected to be transported to the site on large trucks such as 18-wheelers or other similar vehicles.

CONSTRUCTION EMPLOYEES

The number of construction workers would vary throughout the construction period with the building construction phase generating the highest number of trips. During the site preparation phase and the first portion of the building construction, while the parking levels are under construction, it is anticipated that construction employees will park in a parking lot nearby.

CONSTRUCTION IMPACT ASSESSMENT

The *LA CEQA Threshold Guide* provides four categories to be considered in regards to in-street construction impacts: temporary traffic impacts, temporary loss of access, temporary loss of bus stops or rerouting of bus lines, and temporary loss of on-street parking (*LA CEQA Threshold Guide*, pages L.8-2 through L.8-4). The factors to be considered in each of these categories, and the assessment of the project against these factors, is presented in Table 13 and discussed below.

TEMPORARY TRAFFIC IMPACTS

Full-time closure of the sidewalk and one parking lane on a portion of Hill Street, on the east side along the project frontage, is anticipated for the duration of the project. Additionally, one vehicular travel lane along the project frontage would be closed for a portion of the construction phase. Pedestrian and vehicular access to nearby businesses will remain open during the construction period. Hill Street is classified as an Avenue II.

Full-time closure of the sidewalk on Olympic Boulevard, on the south side along the project frontage, is anticipated for the duration of the project. Additionally, one vehicular travel lane along the project frontage would be closed for a portion of the construction phase. Olympic Boulevard is classified as an Avenue I. In addition, there are no emergency services in the immediate vicinity of the affected streets. Since the closures during construction would be for the parking lane and one travel lane each on Hill Street and Olympic Boulevard, the temporary construction impacts on the roadway network would be considered less than significant.

The intersection of Hill Street & Olympic Boulevard operates at LOS A in the AM peak hour and LOS B in the PM peak hour under existing conditions and would to operate at LOS A during the AM peak hour and at LOS D during the PM peak hour under cumulative conditions. The intersection of Hill Street & 11th Street operates at LOS A during both peak hours under existing conditions and would operate at LOS A during the AM peak hour and LOS B during the PM peak hour under cumulative conditions. The intersection of Broadway & Olympic Boulevard operates at LOS A during the AM peak hour and LOS B during the PM peak hour under existing conditions and would operate at LOS A during the AM peak hour and LOS D during the PM peak hour, under cumulative conditions.

Worksite traffic control plans would be prepared for any temporary vehicle lane, parking lane, or sidewalk closures in accordance with applicable City and MUTCD guidelines.

TEMPORARY LOSS OF ACCESS

Pedestrian and vehicular access to properties located near the project site will be open and unobstructed for the duration of construction. Since the Project construction would not block any vehicle or pedestrian access to other parcels fronting the construction area, impacts would be less than significant.

TEMPORARY LOSS OF BUS STOPS OR REROUTING OF BUS LINES

A bus stop is located on Hill Street along the project frontage that currently serves nine different local, limited, rapid, and shuttle bus services. This stop would need to be relocated during construction of the Project. Since many of the bus routes turn from Hill Street onto Olympic Boulevard or 11th Street, the bus stop might be relocated further south on the same block, just north of 11th Street, in order to minimize disruption and obviate rerouting. Doing so would require temporarily closing five additional on-street parking spaces on Hill Street, the significance of which is discussed below. There are no bus stops near the project site on Olympic Boulevard. With relocation of the bus stop on the same block, the construction impacts on transit operations would be less than significant.

TEMPORARY LOSS OF ON-STREET PARKING

Construction would require temporary parking restrictions along the project frontage of Hill Street to accommodate the construction area footprint for throughout the duration of construction. A total of four metered spaces would require temporary parking restrictions during this time, but could extend for the entire duration of construction. Additionally, in order to accommodate relocation of the bus stop from the project frontage to just north of 11th Street, five metered spaces would require parking restrictions during project construction. Per the provisions in the California Public Resources Code Section 21099, which implements SB 743, parking impacts of a residential, mixed-use residential, or employment center project on an infill site within a transit priority area shall not be considered significant impacts on the environment. As such, temporary parking impacts would be less than significant.

TABLE 13
OLYMPIC & HILL PROJECT
CONSTRUCTION IMPACT SIGNIFICANCE FACTORS

Significance Factor [a]	**Assessment**	**Conclusion**
Per the *LA CEQA Thresholds Guide* , the determination of significance shall be made on a case-by-case basis, considering the following factors:		
Temporary Traffic Impacts:		
• The length of time of temporary street closures or closures of two or more traffic lanes; • The classification of the street (major arterial, state highway) affected; • The existing traffic levels and level of service (LOS) on the affected street segments and intersections; • Whether the affected street directly leads to a freeway on- or off-ramp or other state highway; • Potential safety issues involved with street or lane closures; • The presence of emergency services (fire, hospital, etc.) located nearby that regularly use the affected street.	• Temporary street closures or closures of two or more traffic lanes are not anticipated. • The streets affected by any temporary lane or sidewalk closures (Hill St and Olympic Blvd) are an Avenue II and Avenue I, respectively. • The intersection of Hill Street & Olympic Boulevard operates at LOS A in the AM peak hour and LOS B in the PM peak hours under existing conditions and would continue to operate at LOS A during the AM peak hour and at LOS D during the PM peak hour under cumulative conditions. The intersection of Hill Street & 11th Street operates at LOS A during both peak hours under existing conditions and would continue to operate at LOS A during both the AM peak hour and LOS B during the PM peak hour s under cumulative conditions. The intersection of Broadway & Olympic Boulevard operates at LOS A in during the AM peak hour and LOS B during the PM peak hourboth peak hours under existing conditions and would operate at LOS A during the AM peak hour and LOS D during the PM peak hour, under cumulative conditions. • None of the affected streets directly lead to a freeway on- or off-ramp or other state highways. • Worksite traffic control plans would be prepared for any temporary lane closures in accordance with applicable City and MUTCD guidelines. • There are no emergency services located within the immediate vicinity of the affected streets.	• Less than significant.
Temporary Loss of Access:		
• The length of time of any loss of vehicular or pedestrian access to a parcel fronting the construction area; • The availability of alternative vehicular or pedestrian access within ¼ mile of the lost access; • The type of land uses affected, and related safety, convenience, and/or economic issues.	• Blockage of existing vehicle or pedestrian access to parcels fronting the construction area is not anticipated. Pedestrian and vehicular access to nearby businesses will remain open during the construction period.	• Less than significant.
Temporary Loss of Bus Stops or Rerouting of Bus Lines:		
• The length of time that an existing bus stop would be unavailable or that existing service would be interrupted; • The availability of a nearby location (within ¼ mile) to which the bus stop or route can be temporarily relocated; • The existence of other bus stops or routes with similar routes/ destinations within a ¼mile radius of the affected stops or routes; • Whether the interruption would occur on a weekday, weekend or holiday, and whether the existing bus route typically provides service that/those day(s).	• There is a bus stop on Hill St along the Project frontage that currently serves 9 different local, limited, rapid, and shuttle bus services. Many of these routes turn from Hill St onto Olympic Blvd or 11th St. Therefore, the bus stop might be relocated further south on the same block, just north of 11th Street, in order to minimize disruption and obviate rerouting. Doing so would require temporarily closing 5 additional on-street parking spaces, the significance of which is discussed below. There are no bus stops near the project site on Olympic Blvd.	• Less than significant.
Temporary Loss of On-Street Parking:		
• The current utilization of existing on-street parking; • The availability of alternative parking locations or public transit options (e.g. bus, train) within ¼ mile of the project site; • The length of time that existing parking spaces would be unavailable.	• Construction would require temporary parking restrictions along the project frontage of Hill Street to accommodate the construction area footprint. A total of four metered spaces would require temporary parking restrictions. • Five additional metered space would require temporary parking restrictions, if the bus stop at Hill St and Olympic Blvd is re-located further south, during construction. • Numerous public transit options are available within 1/4 mile of the Project site, including: Metro Blue/Expo Line Pico Station and 35 local, limited, express, rapid, and shuttle bus routes.	• Less than significant in accordance with SB 743/Public Resources Code Section 21099.

Note:
SB 743 as implemented in California Public Resources Code Section 21099 provides that parking impacts of a residential, mixed- use residential, or employment center project on an infill site within a transit priority area shall not be considered significant impacts on the environment. This guidance supersedes the significance guidance in the LA CEQA Threshold Guide.

CONSTRUCTION PERIOD TRIP GENERATION

A construction period trip generation analysis was conducted for each phase of construction to estimate daily, morning and evening peak hour passenger car equivalent (PCE) trips. Construction workers often travel to and from a worksite outside of the typical peak commute hours. For the purpose of the analysis, it was assumed that up to 40% of the construction workers will arrive during the peak morning commute hour and 40% will depart during the peak evening commute hour. Haul and delivery/equipment trucks were assumed to occur evenly throughout the 9-hour construction day. A PCE factor of 2.5 was used for vendor, haul, and delivery trucks.

Table 14 shows a summary of construction period trip generation under each phase of construction. Table 15 shows a summary of construction period trip generation under each phase of construction in passenger car equivalents. As shown, the peak construction activity day would occur during Phase 3. On a peak construction activity day during Phase 3, a total of up to 940 daily PCE trips are estimated to occur, of which 166 PCE trips would occur during each of the morning and evening peak hours. As such, the peak construction activity would generate fewer daily and peak hour trips than are projected for the Project once it is completed and occupied.

Although significant construction impacts are not anticipated, the influx of this material and equipment could create less than significant impacts on the adjacent roadway network based on the following considerations:

- There may be intermittent periods when large numbers of material deliveries are required, such as when concrete trucks will be needed for the parking garage and the buildings.
- Some of the materials and equipment could require the use of large trucks (18-wheelers), which could create additional congestion on the adjacent roadways.
- Delivery vehicles may need to park temporarily on adjacent roadways as they deliver their items. Based on experience, it is not uncommon for these types of deliveries to result in temporary lane closures.

CONSTRUCTION MITIGATION MEASURES

As shown in Table 13, impacts related to construction traffic were found to be less than significant. In addition, the peak construction activity will generate fewer daily and peak hour trips than are projected for the Project once it is completed and occupied. Construction mitigation measures are not required; however, the following will be implemented prior to construction:

- As traffic lane, parking lane and/or sidewalk closures are anticipated, worksite traffic control plan(s), approved by the City of Los Angeles, should be implemented to route vehicular traffic, bicyclists, and pedestrians around any such closures.

- Ensure that access will remain unobstructed for land uses in proximity to the project site during project construction.

Coordinate with the City and emergency service providers to ensure adequate access is maintained to the project site and neighboring businesses and residences.

TABLE 14
OLYMPIC & HILL PROJECT
CONSTRUCTION PERIOD TRIP GENERATION - VEHICLE TRIPS

Phase	Daily Trips [1]	AM Peak Hour Trips			PM Hour Trips		
		In	Out	Total	In	Out	Total
Site Preparation							
Construction Worker Trips[2]	5	1	0	1	0	1	1
Haul Truck Trips [3]	28	2	2	4	0	0	0
Delivery/Equipment Truck Trips [3]	10	1	1	2	1	1	2
Phase 1 Total	***43***	***4***	***3***	***7***	***1***	***2***	***3***
Grading							
Construction Worker Trips[2]	13	3	0	3	0	3	3
Haul Truck Trips [3]	200	11	11	22	0	0	0
Delivery/Equipment Truck Trips [3]	0	0	0	0	0	0	0
Phase 2 Total	***213***	***14***	***11***	***25***	***0***	***3***	***3***
Building Construction							
Construction Worker Trips[2]	690	138	0	138	0	138	138
Haul Truck Trips [3]	0	0	0	0	0	0	0
Delivery/Equipment Truck Trips [3]	100	6	6	12	6	6	12
Phase 3 Total	***790***	***144***	***6***	***150***	***6***	***144***	***150***
Archtectural Coating							
Construction Worker Trips[2]	138	28	0	28	0	28	28
Haul Truck Trips [3]	0	0	0	0	0	0	0
Delivery/Equipment Truck Trips [3]	50	3	3	6	3	3	6
Phase 4 Total	***188***	***31***	***3***	***34***	***3***	***31***	***34***
Paving							
Construction Worker Trips[2]	13	3	0	3	0	3	3
Haul Truck Trips [3]	0	0	0	0	0	0	0
Delivery/Equipment Truck Trips [3]	25	1	1	2	1	1	2
Phase 5 Total	***38***	***4***	***1***	***5***	***1***	***4***	***5***

Notes:

[1] - Daily trips were provided by Eyestone Environmental.

[2] - Up to 40% of the construction workers were assumed to arrive during the morning peak hour of adjacent street traffic. A total of up to 40% worker were assumed to depart during the evening peak hour.

[3] - Daily haul and delivery/equipment truck trips were assumed to occur evenly throughout an 9-hour construction day. Therefore, the daily truck trips were divided by 9 hours to calculate AM peak hour truck trips. Haul trucks were assumed to not make trips after 4:00 PM and therefore do not have trips during the PM peak hour.

TABLE 15
OLYMPIC & HILL PROJECT
CONSTRUCTION PERIOD TRIP GENERATION - PASSENGER CAR EQUIVALENTS

Phase	Daily PCE Trips [1]	AM Peak Hour PCE Trips [1]			PM Hour PCE Trips [1]		
		In	Out	Total	In	Out	Total
Site Preparation							
Construction Worker Trips[2]	5	1	0	1	0	1	1
Haul Truck Trips [3]	70	4	4	8	0	0	0
Delivery/Equipment Truck Trips [3]	25	1	1	2	1	1	2
Phase 1 Total	***100***	***6***	***5***	***11***	***1***	***2***	***3***
Grading							
Construction Worker Trips[2]	13	3	0	3	0	3	3
Haul Truck Trips [3]	500	28	28	56	0	0	0
Delivery/Equipment Truck Trips [3]	0	0	0	0	0	0	0
Phase 2 Total	***513***	***31***	***28***	***59***	***0***	***3***	***3***
Building Construction							
Construction Worker Trips[2]	690	138	0	138	0	138	138
Haul Truck Trips [3]	0	0	0	0	0	0	0
Delivery/Equipment Truck Trips [3]	250	14	14	28	14	14	28
Phase 3 Total	***940***	***152***	***14***	***166***	***14***	***152***	***166***
Archtectural Coating							
Construction Worker Trips[2]	138	28	0	28	0	28	28
Haul Truck Trips [3]	0	0	0	0	0	0	0
Delivery/Equipment Truck Trips [3]	125	7	7	14	7	7	14
Phase 4 Total	***263***	***35***	***7***	***42***	***7***	***35***	***42***
Paving							
Construction Worker Trips[2]	13	3	0	3	0	3	3
Haul Truck Trips [3]	0	0	0	0	0	0	0
Delivery/Equipment Truck Trips [3]	63	3	3	6	3	3	6
Phase 5 Total	***76***	***6***	***3***	***9***	***3***	***6***	***9***

PCE - Passenger car equivalent

Notes:

[1] - Truck trips were converted into passenger car equivalents (PCE)

[2] - Up to 40% of the construction workers were assumed to arrive during the morning peak hour of adjacent street traffic. A total of up to 40% worker were assumed to depart during the evening peak hour.

[3] - Daily haul and delivery/equipment truck trips were assumed to occur evenly throughout an 9-hour construction day. Therefore, the daily truck trips were divided by 9 hours to calculate AM peak hour truck trips. Haul trucks were assumed to not make trips after 4:00 PM and therefore do not have trips during the PM peak hour.

9. SUMMARY AND CONCLUSIONS

This study was undertaken to analyze the potential traffic impacts of the proposed development on Hill Street between West 11th Street and Olympic Boulevard. The following summarizes the results of this analysis:

- The Project involves the construction of 700 apartment units, 7,000 square feet of retail space, and 8,000 square feet of quality restaurant space.
- The proposed Project is located on Hill Street between West 11th Street and Olympic Boulevard. Inbound and outbound vehicular access will be provided by two separate driveways: one on Hill Street and one from the alley that runs parallel to Hill Street, Blackstone Court. The loading areas for the Project uses will be located on Level 1 of the project site.
- The project would generate an estimated net increase of 3,392 daily trips, including 242 trips during the AM peak hour and 285 trips during the PM peak hour without the TDM reduction.
- The LOS analysis for the Existing plus Project scenario determined that the Project would not result in significant impacts at any of the study intersections. The LOS analysis for the Future plus Project scenario determined that the Project would result in significant impacts at one study area intersection. The TDM program proposed as mitigation would fully mitigate the intersection impacts at the Hill Street & Olympic Boulevard intersection (#7) and reduce the net increased trips to 2965 daily trips, 208 AM peak hour trips and 249 PM peak hour trips.
- The Project is required to provide a total of 855 vehicle parking spaces using the basic code requirements and intends to provide an additional 220 spaces for use by an adjacent office building. The project is also require to provide 786 bicycle parking spaces (78 short-term and 708 long-term spaces) for new uses. The Project will meet the required vehicular and bicycle according to the LAMC.
- Impacts related to construction traffic were found to be less than significant. In addition, the peak construction activity will generate fewer daily and peak hour trips than are projected for the Project once it is completed and occupied. Therefore, construction mitigation measures are not required.

REFERENCES

2010 Highway Capacity Manual, Transportation Research Board, 2010.

City of Los Angeles Municipal Code

Enhancing Internal Trip Capture Estimation for Mixed-Use Developments NCHRP Report 684

Transportation Impact Study Guidelines, LADOT, December 2016.

Trip Generation, 9th Edition, Institute of Transportation Engineers, 2012.

APPENDIX A:
LADOT MOU

LADOT

Transportation Impact Study Memorandum of Understanding (MOU)

This MOU acknowledges that the Transportation Impact Study for the following Project will be prepared in accordance with the latest version of LADOT's Transportation Impact Study Guidelines:

I. PROJECT INFORMATION

Project Name: Olympic & Hill Development

Project Address: 1030 South Hill Street, Los Angeles, CA 90015

Project Description: See Figure 1A and 1B. Project includes 700 apartment/condominium units, 7,000 sf of retail, and 8,000 sf of high quality restaurant.

LADOT Project Case Number: _____ Project Site Plan attached? *(Required)* ■ Yes ☐ No

II. TRIP GENERATION See Figure 2

Geographic Distribution: N _____ % S _____ % E _____ % W _____ %

Illustration of Project trip distribution percentages at Study intersections attached? *(Required)* ☐ Yes ☐ No

Trip Generation Adjustments *(Exact amount of credit subject to approval by LADOT)*

	Yes	No
Transit Usage	■	☐
Transportation Demand Management	☐	■
Existing Active Land Use	☐	■
Previous Land Use	☐	■
Internal Trip	■	☐
Pass-By Trip	■	☐

Source of Trip Generation Rate(s)? ■ ITE 9th Edition ☐ Other: _____

Trip generation table including a description of the proposed land uses, ITE rates, estimated morning and afternoon peak hour volumes (ins/outs/totals), proposed trip credits, etc. attached? *(Required)* ■ Yes ☐ No

	IN	OUT	TOTAL
AM Trips	49	193	242
PM Trips	181	104	285

III. STUDY AREA AND ASSUMPTIONS

Project Buildout Year: 2022 Ambient or CMP Growth Rate: 1 % Per Yr.

Related Projects List, researched by the consultant and approved by LADOT, attached? *(Required)* ■ Yes ☐ No

Subject to Freeway Impact Analysis, in addition to CMP Analysis? *(Freeway analysis screening filter must be included in this MOU; selecting "yes" implies that at least one criteria was satisfied)* ☐ Yes ■ No

Map of Study Intersections attached? *(May be subject to LADOT revision after initial impact analysis)* ■ Yes ☐ No

Is this Project located on a street within the High Injury Network? ■ Yes ☐ No

IV. CONTACT INFORMATION

	CONSULTANT	DEVELOPER
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Approved by:	x _____	4/5/17	x _____	4/4/17
	Consultant's Representative	Date	LADOT Representative	Date

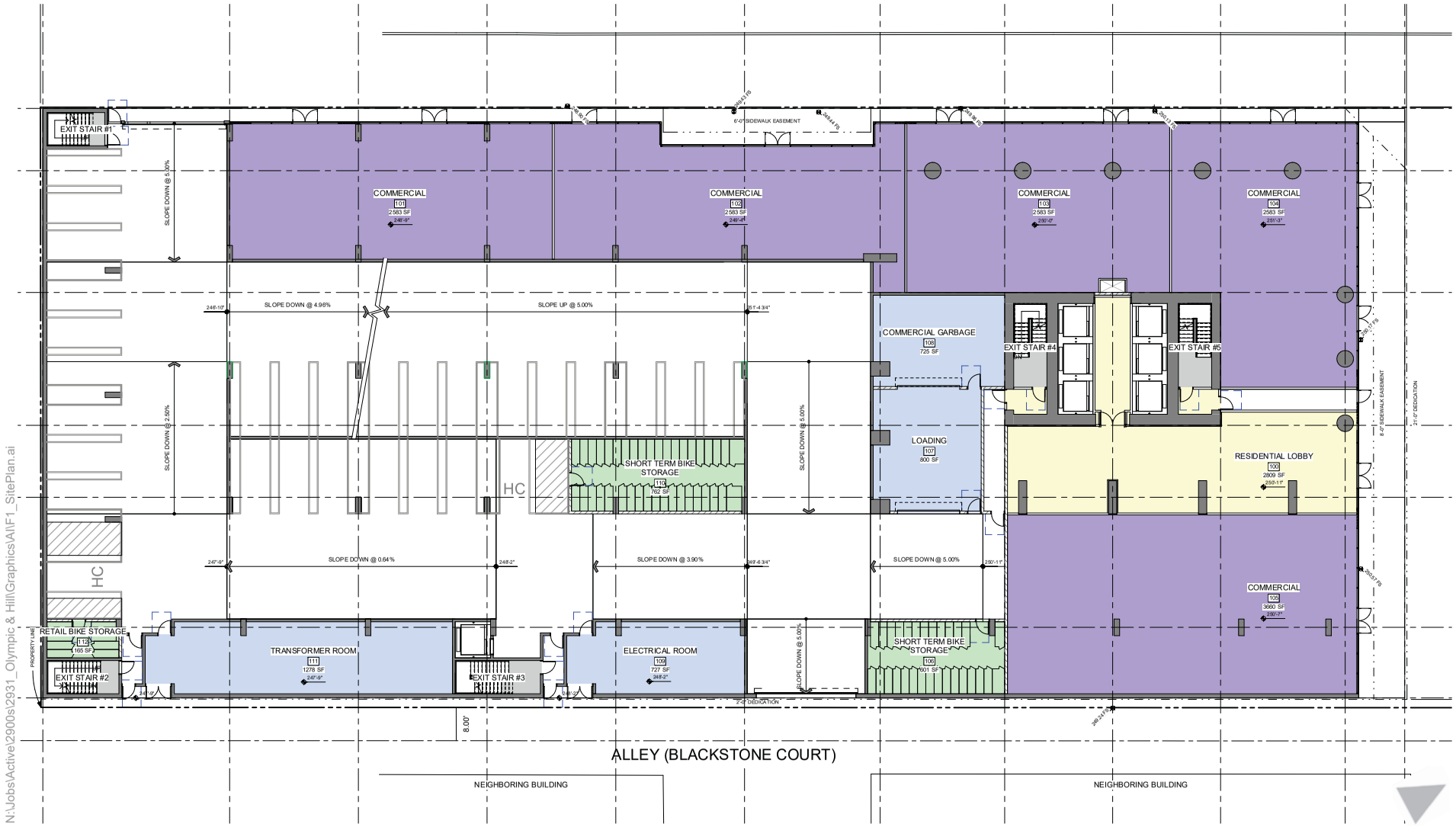

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Figure 1

Site Plan

TABLE 1
OLYMPIC & HILL PROJECT
PRELIMINARY VEHICLE TRIP GENERATION ESTIMATE

Land Use	ITE Land Use Code	Size	Trip Generation Rates [a]							Estimated Trip Generation						
				AM Peak Hour			PM Peak Hour				AM Peak Hour Trips			PM Peak Hour Trips		
			Daily	Rate	In%	Out%	Rate	In%	Out%	Daily	In	Out	Total	In	Out	Total
PROPOSED PROJECT																
High-Rise Residential [e]	222,232	700 DU	4.20	0.34	19%	81%	0.38	62%	38%	2,940	45	193	238	165	101	266
Internal Capture [b]			*3%*		*2%*	*1%*		*5%*	*9%*	*(88)*	*(1)*	*(2)*	*(3)*	*(9)*	*(9)*	*(18)*
Net External Vehicle Trips										2,852	44	191	235	156	92	248
Retail	820	7 ksf	42.70	0.96	62%	38%	3.71	48%	52%	299	4	3	7	12	14	26
Less: Internal Capture [b]			*39%*		*14%*	*40%*		*60%*	*54%*	*(117)*	*(1)*	*(1)*	*(2)*	*(7)*	*(8)*	*(15)*
Less: Transit Credit [c]			*5%*	*15%*			*15%*			*(9)*	*0*	*0*	*0*	*(1)*	*(1)*	*(2)*
Total Driveway Trips										173	3	2	5	4	5	9
Less: Pass-by [d]			*50%*	*50%*			*50%*			*(86)*	*(1)*	*(1)*	*(2)*	*(2)*	*(2)*	*(4)*
Net External Vehicle Trips										87	2	1	3	2	3	5
Quality Restaurant	931	8 ksf	89.95	0.81	82%	18%	7.49	67%	33%	720	5	1	6	40	20	60
Less: Internal Capture [b]			*24%*		*33%*	*0%*		*25%*	*47%*	*(173)*	*(2)*	*0*	*(2)*	*(10)*	*(9)*	*(19)*
Less: Transit Credit [c]			*8%*	*15%*			*15%*			*(44)*	*0*	*0*	*0*	*(5)*	*(2)*	*(7)*
Total Driveway Trips										503	3	1	4	25	9	34
Less: Pass-by [d]			*10%*	*10%*			*10%*			*(50)*	*0*	*0*	*0*	*(2)*	*0*	*(2)*
Net External Vehicle Trips										453	3	1	4	23	9	32
TOTAL PROJECT DRIVEWAY TRIPS										3,528	50	194	244	185	106	291
NET EXTERNAL VEHICLE TRIPS										3,392	49	193	242	181	104	285

Notes:

[a] Source: Institute of Transportation Engineers (ITE), *Trip Generation, 9th Edition* , 2012.

[b] Internal capture represents the percentage of trips between land uses that occur within the site. This percentage is informed by the Trip Generation for Mixed-Use Development calculation methodology described in Chapter 6 of the ITE *Trip Generation Handbook* , 3rd edition, 2014. Internalization percentages are derived from *NCHRP Report 684: Enhancing Internal Trip Capture Estimation for Mixed-Use Developments* , Transportation Research Board, 2011.See Attachment B for detailed calculation tables. The daily credit is assumed to be 75% of peak hour credits taken.

[c] The transit credit is based on LADOT's *Traffic Study Policies and Procedures* , December 2016. The guidelines state that up to 15% transit credit may be taken for projects within 1/4 mile walking distance of a transit station or of a RapidBus stop. The nearest RapidBus service is provided by Route 728 on Olympic Boulevard and Hill Street and Route 794 on Hill Street, adjacent to the project site. The daily credit is assumed to be 75% of peak hour credits taken.

[d] The pass-by credit is based on Attachment I of LADOT's *Traffic Study Policies and Procedures* , December 2016.

[e] For flexibility, the trip generation analysis uses the most conservative (highest) rates for high-rise apartments versus high-rise condominiums: ITE code 222 (high-rise apartment) for daily trips and ITE code 232 (high-rise condominium) for peak hour trips. Since the high-rise residences in the ITE database are generally in urban areas with transit service, no additional transit credit was taken to provide a conservative estimate.

TABLE 2
OLYMPIC & HILL PROJECT
RELATED PROJECTS

No.	Project Location	Land Use	Size		Estimated Trip Generation [a]						
					Daily Trips	AM Peak Hour Trips			PM Peak Hour Trips		
						In	Out	Total	In	Out	Total
1	400 W Washington Bl	School	21300	Enrollment		336	127	463	574	268	842
2	225 S Los Angeles St	Condominiums	300	Units	1910	88	136	224	75	52	126
		Retail	3.4	ksf							
3	1027 W Wilshire Blvd	Condominiums	402	Units	1498	21	92	113	83	53	136
		Retail	4728	ksf							
4	1133 S Hope St	Other			1543	20	74	94	91	50	141
5	437 S Hill St	Apartments	600	Units	3088	44	122	167	162	97	259
		Other	13.872	ksf							
6	1115 S Hill St	Mixed Use			543	-45	40	-5	50	-7	43
7	1102 W 6th St	Apartments	648	Units	4200	61	195	256	232	155	387
		Retail	39.996	ksf							
8	2455 S Figueroa St	Apartments	145	Units	870	8	51	59	54	28	82
9	1130 W Wilshire Blvd	Office	88.224	ksf	964	92	12	104	28	61	89
		Other	2	ksf							
		Other	0.248	ksf							
		Other	5.375	ksf							
10	848 S Grand Av	Condominiums	420	Units	3882	66	144	210	212	165	377
		Retail	38.5	ksf							
		Mixed Use									
11	1430 Beverly Blvd	Apartments	144	Units	780	13	49	60	47	25	73
12	250 S Hill St	Condominiums	330	Units	1217	21	73	94	66	42	108
		Retail	12	ksf							
13	902 W Washington Blvd	Other	142	Units	482	2	25	27	35	16	51
14	900 W Wilshire Bl	Mixed Use			3624	725	75	800	94	764	858
15	220 E Washington Bl	Retail	7.75	ksf	2113	38	118	156	125	53	178
		Other	7.75	ksf							
		Apartments	357	Units							
		Mixed Use									
16	2100 S Figueroa St	Condominiums	291	Units	870	-82	66	-16	67	-28	39
		Retail	7.134	ksf							
17	1435 W 3rd St	Apartments	122	Units	711	11	42	53	41	25	66
		Retail	5	ksf							
18	899 S Francisco St	Condominiums	836	Units	8010	307	318	625	387	512	899
		Office	988.225	ksf							
		Other	480	Rooms							
		Retail	49	ksf							
		Mixed Use									
19	150 N Los Angeles St	Office	712.5	ksf	13534	930	118	1048	435	942	1374
		Retail	35	ksf							
		Other	2.5	ksf							
20	1300 S Hope St	Apartments	419	Units	4280	88	105	194	136	102	238
		Retail	42	ksf							
21	928 S Broadway	Apartments	670	Units	4715	21	229	250	272	109	381
		Condominiums	17	Units							
		Retail	58.8	ksf							
22	1200 S Grand Av	Apartments	640	Units	4886	92	148	240	181	134	315
		Retail	45	ksf							
23	1329 W 7th St	Apartments	94	Units	662	13	37	53	39	22	61
		Retail	2	ksf							
24	534 S Main St	Apartments	160	Units	2213	52	75	127	87	58	145
		Retail	18	ksf							
		Other	3.5	ksf							
		Other	3.5	ksf							
25	840 S Olive St	Condominiums	303	Units	3071	81	166	247	174	96	270
		Other	9.68	ksf							
		Retail	1.5	ksf							
26	950 E 3rd St	School	532	Other	6372	162	177	339	245	212	458
		Retail	30.062	ksf							
		Apartments	635	Units							

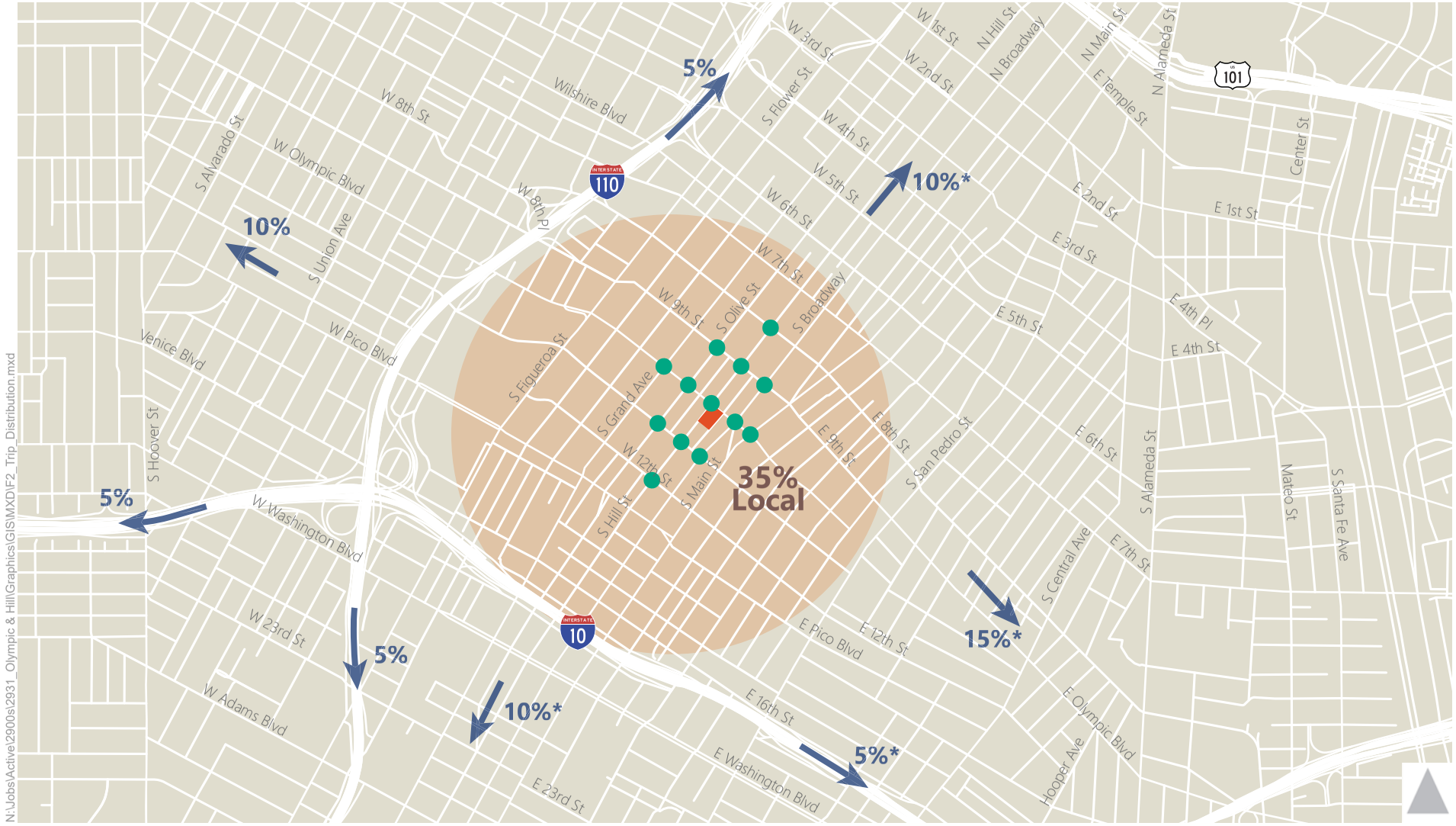
No.	Project Location	Land Use	Size		Estimated Trip Generation [a]						
					Daily	AM Peak Hour Trips			PM Peak Hour Trips		
					Trips	In	Out	Total	In	Out	Total
27	1057 S San Pedro St	Other	254.5	ksf	0	837	434	1271	632	957	1589
		Retail	224.862	ksf							
		Other	744	Seats							
		Apartments	877	Units							
		Condominiums	68	Units							
		Other	210	Rooms							
		Office	217.377	ksf							
		Office	77.264	ksf							
28	1700 W Olympic Bl	Other	160	Rooms	1157	44	32	76	45	42	87
29	233 W Washington Bl	Apartments	160	Units	1764	25	66	81	89	71	160
		Retail	24	ksf							
30	400 S Broadway	Apartments	450	Units	2266	36	147	183	139	73	212
		Retail	7.5	ksf							
		Other	5	ksf							
31	920 S Hill St	Apartments	239	Units	1476	23	84	107	87	50	137
		Retail	5.4	ksf							
32	955 S Broadway	Apartments	201	Units	1275	21	72	93	74	43	117
		Retail	6	ksf							
33	1212 S Flower St	Condominiums	730	Units	3956	78	233	311	229	121	350
		Retail	10.5	ksf							
		Office	70.465	ksf							
34	820 S Olive St	Apartments	589	Units	3309	63	202	264	195	106	302
		Retail	4.5	ksf							
35	601 S Main St	Condominiums	452	Units	2686	36	144	179	152	87	238
		Retail	25	ksf							
36	1111 S Broadway	Mixed Use			5198	144	176	319	258	274	532
37	1148 S Broadway	Apartments	94	Units	553	8	30	38	21	18	50
		Retail	2.5	ksf							
38	1120 S Grand Av	Apartments	666	Units	2730	42	127	170	136	93	229
		Other	0	Rooms							
39	1230 S Olive St	Apartments	362	Units	2114	31	126	157	127	69	196
		Retail	4	ksf							
40	1247 S Grand Av	Apartments	118	Units	763	10	41	51	42	25	67
		Retail	5.125	ksf							
41	1400 S Figueroa St	Apartments	106	Units	647	10	38	48	39	22	61
		Retail	4.834	ksf							
42	1550 W 8th St	Office	33.957	ksf	230	29	4	33	6	26	32
43	940 S Figueroa St	Theatre	1942	Seats	2237	5	4	9	99	35	134
		Other	10.056	ksf							
		Other	5.119	ksf							
44	1036 S Grand Av	Other	7.149	ksf	492	2	3	5	27	14	41
45	963 E 4th St	Office	78.6	ksf	2512	106	22	128	113	138	251
		Retail	25	ksf							
		Other	20	ksf							
46	1335 W 1st St	Apartments	101	Units	714	10	40	50	42	24	66
		Retail	3.514	ksf							
47	1150 W Wilshire Blvd	Apartments	80	Units	511	-22	26	4	39	-5	34
		Other	4.589	ksf							
48	737 S Spring St	Apartments	320	Units	3942	72	141	213	167	116	283
		Other	25	ksf							
49	1218 W Ingraham St	Apartments	80	Units	532	8	33	41	33	17	50
50	555 S Mateo St	Retail	153	ksf	4300	5	30	35	220	205	425
51	1147 E Palmetto	Mixed Use			2908	73	141	215	147	83	230
52	742 S Hartford Av	Apartments	58	Units	333	5	21	26	20	11	31
53	732 S Spring St	Apartments	400	Units	3409	59	152	211	164	104	268
		Other	15	ksf							
54	340 S Hill St	Apartments	428	Units	2361	34	129	163	141	79	219
		Other	6.7	ksf							
55	1728 W 7th St	Other	9.6	ksf	362	-30	-40	-70	50	14	64
		Other	3.5	ksf							
56	1145 W 7th St	Condominiums	126	Units	1084	4	66	70	67	35	102
		Apartments	100	Units							
		Retail	7.2	ksf							
57	360 S Alameda St	Apartments	55	Units	670	25	33	58	35	26	61
		Other	2.5	ksf							
		Other	6.3	ksf							

No.	Project Location	Land Use	Size		Estimated Trip Generation [a]						
					Daily	AM Peak Hour Trips			PM Peak Hour Trips		
					Trips	In	Out	Total	In	Out	Total
58	1900 S Broadway	Condominiums	900	Units	0	390	552	942	637	566	1203
		Apartments	550	Units							
		Other	210	Rooms							
		Retail	143.1	ksf							
		Office	180	ksf							
		Other	17.6	ksf							
		Other	8	ksf							
59	1302 W Washington Bl	Other	16.572	ksf	414	-33	-18	-51	21	12	33
60	1929 W Pico Bl	School	480	Enrollment	821	140	66	206	20	42	62
61	118 S Astronaut E.S. Onizuka St	Apartments	77	Units	97	-1	20	19	19	6	25
62	1525 E Industrial St	Apartments	328	Units	2288	58	73	131	86	69	155
		Office	27.3	ksf							
		Retail	6.4	ksf							
		Other	5.7	ksf							
63	649 S Wall St	Office	66	Employees	104	24	5	29	3	24	27
		Other	55	Beds							
64	300 S Main St	Apartments	471	Units	4691	143	243	386	257	153	410
		Other	27.78	ksf							
		Retail	5.19	ksf							
65	850 S Hill St	Mixed Use	300	Units	1970	28	106	134	116	65	181
		Retail	3.5	ksf							
		Other	3.5	ksf							
66	400 S Alameda St	Other	66	Rooms	508	19	17	36	23	14	37
		Other	2.13	ksf							
		Retail	840	ksf							
67	700 W 9th St	Condominiums	629	Units	2624	37	146	183	143	95	238
		Retail	27	ksf							
68	649 S Olive St	Other	241	Rooms	1674	6	44	109	63	60	123
69	1111 W 6th St	Apartments	369	Units	587	-71	117	46	104	-51	53
		Other	18.6	ksf							
		Other	2.2	ksf							
		Other	1.2	ksf							
70	1633 W 11th St	School	460	Seats	970	194	158	352	29	37	66
71	1229 S Grand Av	Condominiums	161	Units	1116	23	62	85	62	33	95
		Other	3	ksf							
72	675 S Bixel St	Apartments	425	Units	3461	74	173	247	184	116	300
		Other	126	Rooms							
		Retail	4.874	ksf							
73	740 S Hartford Av	Apartments	80	Units	479	7	30	37	29	15	45
74	1235 W 7th St	Condominiums	303	Units	1725	23	95	118	100	54	154
		Retail	5.96	ksf							
75	940 S Hill St	Apartments	232	Units	1881	20	80	100	115	53	168
		Other	14	ksf							
76	1322 W Linwood Ave	Apartments	84	Units	449	5	30	35	28	14	42
77	719 E 5th St	Apartments	160	Units	1033	15	58	73	61	37	96
		Retail	7.5	ksf							
78	1340 S Olive St	Apartments	156	Units	1700	51	82	133	89	57	146
		Retail	5	ksf							
		Other	10	ksf							
79	1334 S Flower St	Apartments	146	Units	796	-1	49	48	51	16	67
		Other	6.27	ksf							
80	929 E 2nd St	Retail	40.034	ksf	2014	61	9	70	101	88	189
		Retail	0.985	ksf							
		Other	7.843	ksf							
		Other	10.369	ksf							
		Office	40.249	ksf							
		Other	5.383	ksf							
		Other	0.049	ksf							
81	633 S Spring St	Other	176	Rooms	2045	83	33	116	97	99	196
		Other	8.43	ksf							
		Other	5.29	ksf							
82	1020 S Figueroa St	Condominiums	650	Units	6583	204	274	478	312	227	539
		Other	300	Rooms							
		Retail	40	ksf							
		Other	40	ksf							

No.	Project Location	Land Use	Size		Estimated Trip Generation [a]						
					Daily	AM Peak Hour Trips			PM Peak Hour Trips		
					Trips	In	Out	Total	In	Out	Total
83	1800 E 7th St	Apartments	122	Units	816	26	45	71	45	37	82
		Office	13.6	ksf							
84	720 W Washington Blvd	Apartments	105	Units	350	7	12	19	13	12	25
85	1400 S Flower St	Apartments	147	Units	801	-1	49	48	51	17	68
		Retail	6.921	ksf							
86	1930 W Wilshire Blvd	Apartments	478	Units	1355	-44	128	85	103	-41	61
		Other	850	Seats							
		Other	50	Enrollment							
		Other	220	Rooms							
87	130 S Beaudry Av	Apartments	230	Units	1159	8	76	84	76	29	105
		Other	9	ksf							
88	495 S Hartford Av	Apartments	220	Units	1033	16	63	79	62	34	96
89	1122 W Washington Bl	Office	60	ksf	2060	107	29	136	57	146	203
90	744 S Figueroa St	Apartments	438	Units	2972	38	148	186	176	94	270
		Retail	10.156	ksf							
91	815 W Olympic Bl	Other	346	Rooms	3915	137	133	270	167	165	332
		Retail	61.149	ksf							
		Office	36256	ksf							
92	243 W Adams Bl	Apartments	300	Units	990	5	99	104	72	10	82
		Retail	2.5	ksf							
		Other	2.5	ksf							
93	433 S Main St	Condominiums	161	Rooms	1859	85	147	62	66	48	113
		Mixed Use	6.9	ksf							
94	926 W James M Wood Bl	Other	225	Rooms	1562	59	42	101	59	56	115
95	459 S Hartford Av	Apartments	101	Units	361	15	15	31	22	22	44
96	1100 S Main St	Apartments	379	Units	385	9	103	112	78	14	92
97	1250 S Figueroa St	Other	25.81	ksf	5720	192	125	317	203	212	415
		Other	1162	Rooms							
		Other	6.573	ksf							
		Other	6.573	ksf							
98	2005 W James M Wood Bl	Other	100	Rooms	545	24	18	42	20	18	38
99	717 S Maple Ave [b]	Apartments	452	Units	3587	54	190	244	206	124	330
100	527 N Spring St	Retail	2.89	ksf	3585	49	118	167	189	131	320
		Apartments	345	Units							
		Restaurant	11	ksf							
		Retail	23	ksf							
		Retail	21	ksf							
101	333 S. Alameda St [b]	Apartments	994	Units	8445	134	260	394	390	329	719
		Retail	100	ksf							
102	765 Wall St [a]	Office	53.2	ksf	2499	108	82	191	164	141	305
		Apartments	323	Units							
		Retail	8.8	ksf							
		Other	125	Persons							
		Other	66.2	ksf							
103	668 S. Alameda St [a]	Apartments	475	Units	5174	198	356	553	319	204	523
		Retail	45	ksf							
		Warehouse	130	ksf							
104	640 S. Alameda St [a]	Hotel	412	Rooms	23975	1199	1369	2567	1246	1133	2379
		Apartments	1305	Units							
		Office	253.5	ksf							
		School	29.3	ksf							
		Retail	127.6	ksf							
		Art Space	23	ksf							
105	520 S. Mateo St [a]	Apartments	30	Units	4314	77	227	304	255	133	388
		Office	15	ksf							
		Retail	15	ksf							
		Restaurant	15	ksf							
106	1100 E. 5th St [a]	Apartments	218	ksf	1450	22	89	111	131	83	214
		Open Space	22	ksf							
107	330 S. Alameda St [a]	Apartments	186	Units	2227	92	155	248	138	90	227
		Retail	22	ksf							
108	232 W 2nd St [a]	Condominiums	107	Units	6686	743	150	893	183	684	867
		Office	534	ksf							
		Retail	7.2	ksf							
109	2222 S. Figueroa St [a]	Condominiums	645	ksf	6168	85	336	421	371	190	561
		Apartments	364	Units							

No.	Project Location	Land Use	Size		Estimated Trip Generation [a]						
					Daily	AM Peak Hour Trips			PM Peak Hour Trips		
					Trips	In	Out	Total	In	Out	Total
110	445 South Colyton [b]	Shopping Center	24.95	ksf	3883	103	115	218	132	54	186
		Restaurant	25.38	ksf							
		Hotel	113	rooms							
		Residential	129	du							
		Art Gallery/School	13.5	ksf							
111	747 Warehouse St [b]	Condominiums	310	du	3121	155	167	322	154	178	332
		Retail	11.375	ksf							
		Production Space	117	ksf							

Note:
ksf = one thousand square feet
DU= dwelling units
[a] Projects were not included in information provided by LADOT. Projects and land use from LADCP Major Projects Website:
https://ladcp.maps.arcgis.com/apps/MapJournal/index.html?appid=b06f97ccf94741fdaad27443013eead1. Trip generation estimates based on ITE rates.
[b] Projects were not included in information provided by LADOT. Projects and land use from third party research. Trip generation estimates based on ITE rates.



*Some trips ultimately distributed onto freeways.

Figure 2

Trip Distribution

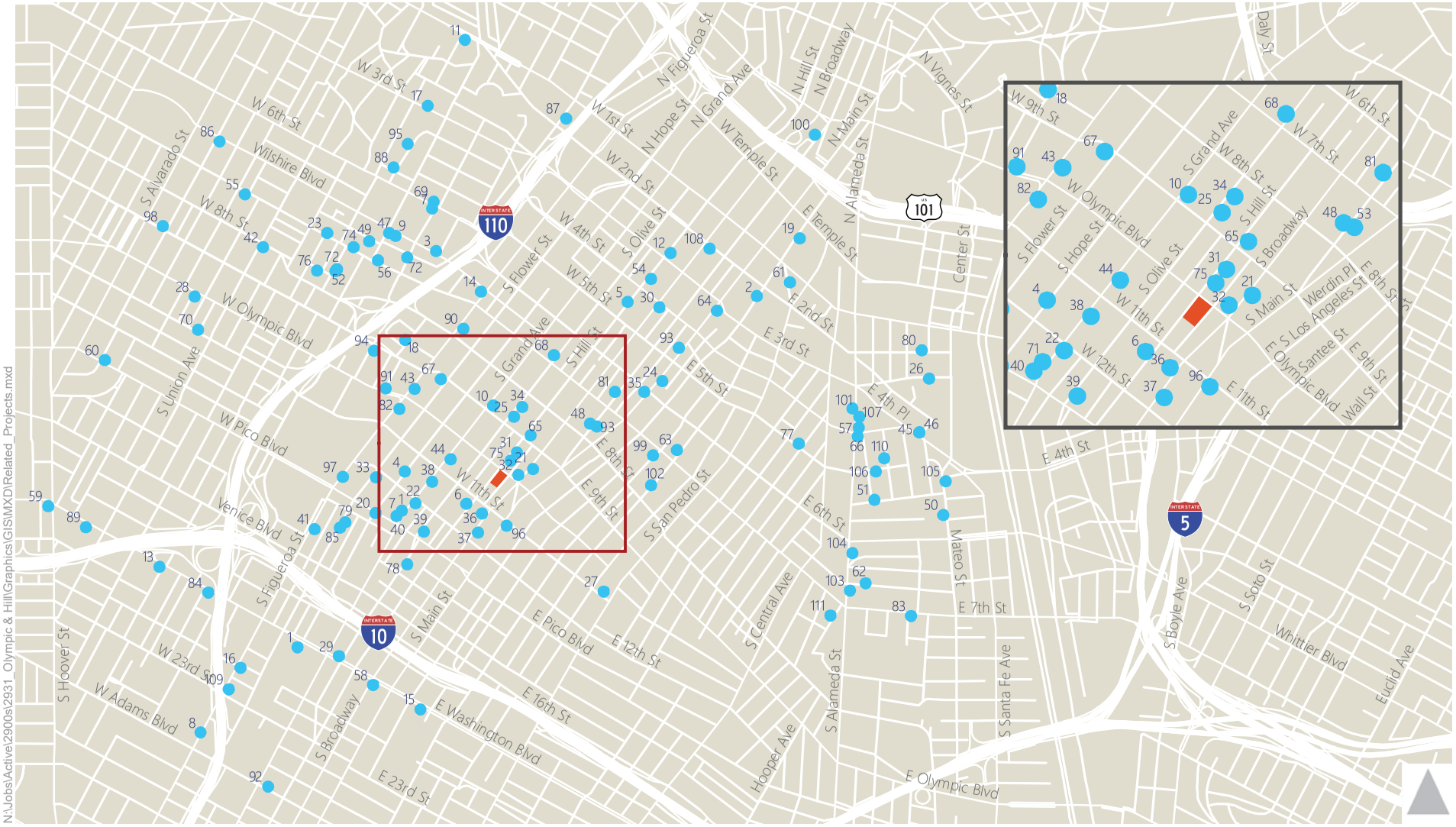


Figure 3

Related Projects

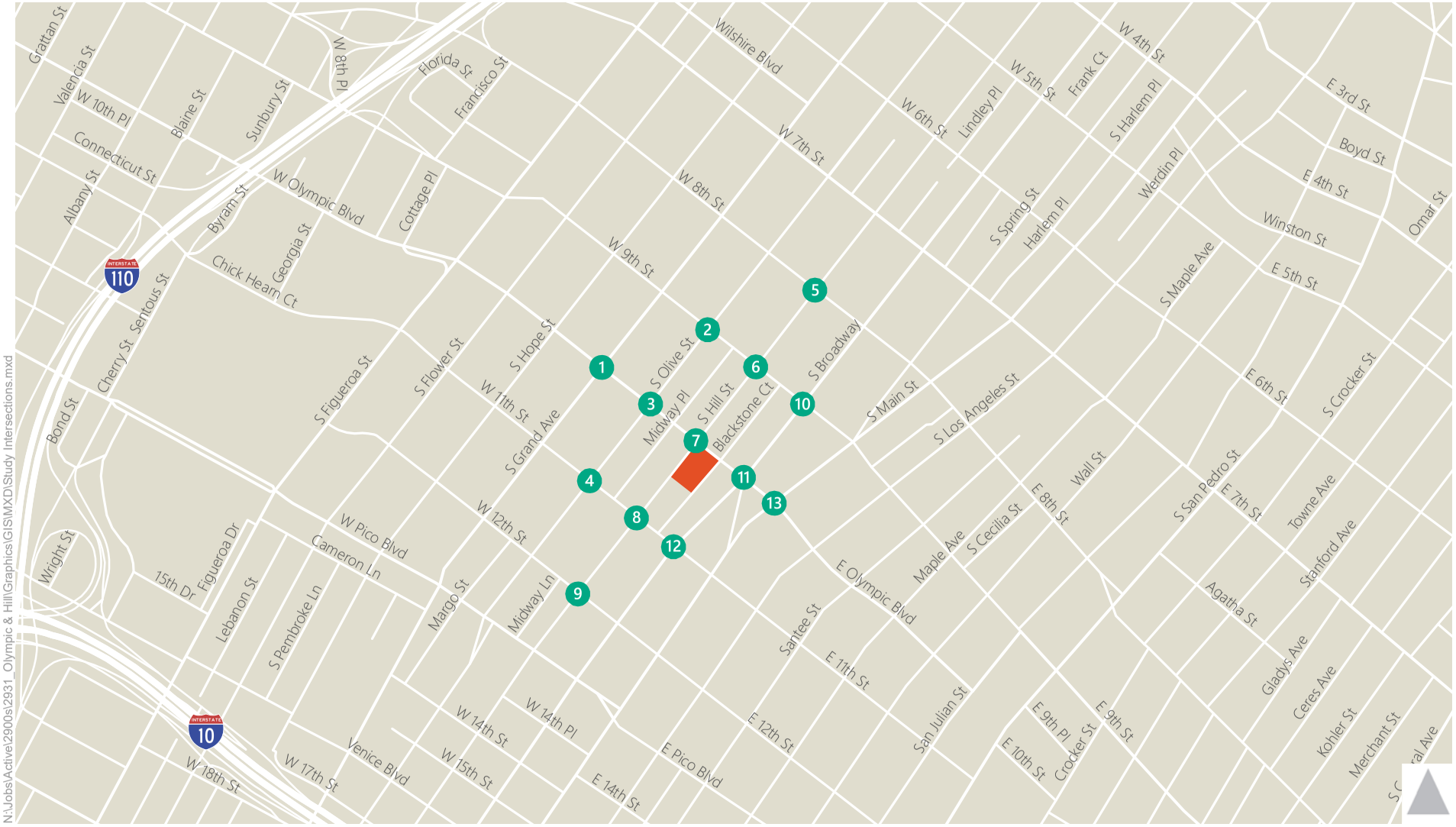


Figure 4

Study Intersections

FEHR PEERS

MOU ATTACHMENT A
FREEWAY SCREENING FOR OLYMPIC & HILL PROJECT IN ACCORDANCE WITH SCREENING CRITERIA DESCRIBED IN SECTION 3 OF THE "AGREEMENT BETWEEN CITY OF LOS ANGELES AND CALTRANS DISTRICT 7 ON FREEWAY IMPACT ANALYSIS PROCEDURES" (DECEMBER 2015)

INTRODUCTION

Section 3.1 of the "Agreement Between City of Los Angeles and Caltrans District 7 On Freeway Impact Analysis Procedures" originally dated October 2013 specifies the freeway mainline and ramp screening criteria for development projects in the City of Los Angeles. Section 3.1 was amended in December of 2015 with the following threshold criteria:

> "City will require Project applicants to work with Caltrans and prepare a Freeway Impact Analysis, utilizing Caltrans' "Guide for the Preparation of Traffic Impact Studies" ("TIS Guide"), for land use proposals that meet any of the following criteria:
> - The project's peak hour trips would result in a 1-percent or more increase to the freeway mainline capacity of a freeway segment operating at level-of-service (LOS) E or F (based on an assumed capacity of 2,000 vehicles per hour per lane); or
> - The project's peak hour trips would result in a 2-percent or more increase to the freeway mainline capacity of a freeway segment operating at LOS D (based on an assumed capacity of 2,000 vehicles per hour per lane); or
> - The project's peak hour trips would result in a 1-percent or more increase to the capacity of a freeway off-ramp operating at LOS E or F (based on an assumed ramp capacity of 850 vehicles per hour per lane); or
> - The project's peak hour trips would result in a 2-percent or more increase to the capacity of a freeway off-ramp operating at LOS D (based on an assumed ramp capacity of 850 vehicles per hour per lane)."

The purpose of this analysis is to apply the screening criteria to determine whether a Freeway Impact Analysis would be required for the project. The methodologies used to conduct the screening analysis for the project, and the results of the screening, are described below.

FREEWAY MAINLINE SEGMENT SCREENING

The Olympic & Hill project is located at 1030 South Hill Street, Los Angeles, CA, 90015 with direct regional access provided by two freeways: Interstate 110 (I-10) freeway and the Interstate (I-110) freeway. Four sections of these two freeways were selected for a freeway screening analysis:

- 1-10 Freeway west of Hoover Street – 3 lanes northbound and 3 lanes southbound
- 1-10 Freeway east of Maple Avenue – 4 lanes northbound and 4 lanes southbound
- I-110 Freeway south of 4th Street – 3 lanes northbound and 5 lanes southbound
- I-110 Freeway north of Adams Street – 3 lanes northbound and 5 lanes southbound

Project trips on the freeway facilities are shown in Table A1 and the mainline screening analysis is shown in Table A2. As shown in Table A2, the freeway capacity is 6,000 vph for 3 lanes, 8,000 vph for 4 lanes, and 10,000 vph for 5 lanes. The most rigorous trigger criteria for LOS E/F operations was used for the screening analysis. For LOS E or F operations, the threshold test is whether the project would use 1% of the available capacity (1,400 vph for 7 lanes, 1,200 vph for 6 lanes, 100 vph for 5 lanes, 80 vph for 4 lanes, and 60 vph for 3 lanes). Because no more than 14 project trips are expected to occur in any analyzed peak hour on any particular segment, the mainline screening threshold is not met and therefore a Freeway Impact Analysis is not required.

FREEWAY RAMP SCREENING

Project trips on the freeway off-ramp facilities are shown in Table A1 and the freeway off-ramp screening analysis is shown in Table A3. Four freeway off-ramps were selected for a freeway screening analysis. The most rigorous trigger criteria for LOS E/F operations was used for the screening analysis. To provide a conservative freeway ramp screening analysis, traffic volumes were consolidated onto just one off-ramp per direction of travel on the I-10 and I-110 freeways. For LOS E or F operations, the threshold test is whether the project would use 1% of the capacity (based on an assumed ramp capacity of 850 vehicles per hour per lane), or approximately 9 vph for 1 lane, 17 vph for 2-lanes, and 26 vph for 3-lanes. Peak hour project trips do not exceed the trigger for analysis at the Los Angeles, Grand, Olympic, and 9th Street off-ramps. The freeway off-ramp screening thresholds are not met at any of the ramp locations and a Freeway Impact Analysis is not required.

TABLE A1
OLYMPIC & HILL PROJECT
TRIP GENERATION AND FREEWAY SEGMENT AND RAMP TRIPS

Freeway Trip Percentage		Freeway Trips					
		AM Peak Hour			PM Peak Hour		
Direction	%	In	Out	Total	In	Out	Total
PROPOSED PROJECT TRIPS		49	193	242	181	104	285
Freeway Ramps							
I-10 WB Los Angeles Off	5%	2	10	12	9	5	14
I-10 EB Grand Off	5%	2	10	12	9	5	14
I-110 SB Olympic Off	5%	2	10	12	9	5	14
I-110 NB 9th Street Off	5%	2	10	12	9	5	14
Freeway Segments							
I-10 w/o Hoover Street	5%	2	10	12	9	5	14
I-10 e/o Maple Avenue	5%	2	10	12	9	5	14
I-110 s/o 4th Street	5%	2	10	12	9	5	14
I-110 n/o Adams Street	5%	2	10	12	9	5	14

TABLE A2

OLYMPIC & HILL - FREEWAY IMPACT ANALYSIS - FREEWAY MAINLINE SCREENING

PROJECT TRIP GENERATION

	AM Peak Hour		PM Peak Hour	
	In	Out	In	Out
Project Trip Generation	49	193	181	104

MAINLINE SCREENING

	AM Peak Hour		PM Peak Hour	
Freeway Segment	In	Out	In	Out
I-10 w/o Hoover Street	**NB**	**SB**	**NB**	**SB**
# of Lanes [a]	3	3	3	3
Capacity	6,000	6,000	6,000	6,000
Worst-case LOS	**E/F**	**E/F**	**E/F**	**E/F**
Trigger % [b]	1%	1%	1%	1%
Trigger	60	60	60	60
Project Trips	2	10	9	5
Exceed Trigger?	no	no	no	no
I-10 e/o Maple Avenue	**SB**	**NB**	**SB**	**NB**
# of Lanes [a]	4	4	4	4
Capacity	8,000	8,000	8,000	8,000
Worst-case LOS	**E/F**	**E/F**	**E/F**	**E/F**
Trigger % [b]	1%	1%	1%	1%
Trigger	80	80	80	80
Project Trips	2	10	9	5
Exceed Trigger?	no	no	no	no
I-110 s/o 4th Street	**NB**	**SB**	**NB**	**SB**
# of Lanes [a]	3	5	3	5
Capacity	6,000	10,000	6,000	10,000
Worst-case LOS	**E/F**	**E/F**	**E/F**	**E/F**
Trigger % [b]	1%	1%	1%	1%
Trigger	60	100	60	100
Project Trips	2	10	9	5
Exceed Trigger?	no	no	no	no
I-110 n/o Adams Street	**SB**	**NB**	**SB**	**NB**
# of Lanes [a]	5	3	5	3
Capacity	10,000	6,000	10,000	6,000
Worst-case LOS	**E/F**	**E/F**	**E/F**	**E/F**
Trigger % [b]	1%	1%	1%	1%
Trigger	100	60	100	60
Project Trips	2	10	9	5
Exceed Trigger?	no	no	no	no

Notes:

a. # of lanes does not include auxiliary or HOV lanes.

b. The worst-case assumption of LOS was used with the most strigent trigger thresholds: LOS E/F Threshold: 1% of capacity if LOS E or F, 2% of capacity if LOS D, using 2,000 vphpl capacity

TABLE A3
OLYMPIC & HILL - FREEWAY IMPACT ANALYSIS - FREEWAY RAMP SCREENING

PROJECT TRIP GENERATION

	AM Peak Hour		PM Peak Hour	
	In	Out	In	Out
Project Trip Generation	49	193	181	104

RAMP SCREENING

Off-Ramp	Peak Hour	Worst-Case Off-Ramp LOS [a]	Ramp Terminus # of Lanes	Ramp Terminus Trigger	Project Trips	Exceed Trigger?
I-10 WB Los Angeles Off	AM	E/F	2	17	2	no
	PM	E/F		17	9	no
I-10 EB Grand Off	AM	E/F	4	34	2	no
	PM	E/F		34	9	no
I-110 SB Olympic Off	AM	E/F	2	17	2	no
	PM	E/F		17	9	no
I-110 NB 9th Street Off	AM	E/F	3	26	2	no
	PM	E/F		26	9	no

Notes:

a. The worst-case assumption of LOS was used with the most stringent trigger thresholds: LOS E/F Threshold: 1% of capacity if ramp at LOS E or F, 2% if ramp at LOS D, using 850 vphpl ramp capacity

NCHRP 8-51 Internal Trip Capture Estimation Tool					
Project Name:	Onni Hill & Olympic			**Organization:**	Fehr & Peers
Project Location:				**Performed By:**	TPG
Scenario Description:	Option 3	475 du	36 ksf rest.	**Date:**	
Analysis Year:				**Checked By:**	
Analysis Period:	**AM Street Peak Hour**			**Date:**	

Table 1-A: Base Vehicle-Trip Generation Estimates (Single-Use Site Estimate)						
Land Use	Development Data (*For Information Only*)			Estimated Vehicle-Trips		
	ITE LUCs[1]	Quantity	Units	Total	Entering	Exiting
Office				0	0	0
Retail				7	4	3
Restaurant				6	5	1
Cinema/Entertainment				0		
Residential				238	45	193
Hotel				0		
All Other Land Uses[2]				0		
Total				251	54	197

Table 2-A: Mode Split and Vehicle Occupancy Estimates						
Land Use	Entering Trips			Exiting Trips		
	Veh. Occ.	% Transit	% Non-Motorized	Veh. Occ.	% Transit	% Non-Motorized
Office	1.10			1.10		
Retail	1.70			1.70		
Restaurant	1.70			1.70		
Cinema/Entertainment						
Residential	1.40			1.40		
Hotel						
All Other Land Uses[2]						

Table 3-A: Average Land Use Interchange Distances (Feet Walking Distance)						
Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office						
Retail						
Restaurant						
Cinema/Entertainment						
Residential						
Hotel						

Table 4-A: Internal Person-Trip Origin-Destination Matrix*						
Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		0	0	0	0	0
Retail	0		1	0	1	0
Restaurant	0	0		0	0	0
Cinema/Entertainment	0	0	0		0	0
Residential	0	1	2	0		0
Hotel	0	0	0	0	0	

Table 5-A: Computations Summary			
	Total	Entering	Exiting
All Person-Trips	356	79	277
Internal Capture Percentage	3%	6%	2%
External Vehicle-Trips[3]	246	52	194
External Transit-Trips[4]	0	0	0
External Non-Motorized Trips[4]	0	0	0

Table 6-A: Internal Trip Capture Percentages by Land Use		
Land Use	Entering Trips	Exiting Trips
Office	N/A	N/A
Retail	14%	40%
Restaurant	33%	0%
Cinema/Entertainment	N/A	N/A
Residential	2%	1%
Hotel	N/A	N/A

[1]Land Use Codes (LUCs) from *Trip Generation Informational Report* , published by the Institute of Transportation Engineers.

[2]Total estimate for all other land uses at mixed-use development site-not subject to internal trip capture computations in this estimator

[3]Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-A

[4]Person-Trips

*Indicates computation that has been rounded to the nearest whole number.

Estimation Tool Developed by the Texas Transportation Institute

Project Name:	Onni Hill & Olympic
Analysis Period:	**AM Street Peak Hour**

Table 7-A: Conversion of Vehicle-Trip Ends to Person-Trip Ends

Land Use	Table 7-A (D): Entering Trips			Table 7-A (O): Exiting Trips		
	Veh. Occ.	Vehicle-Trips	Person-Trips*	Veh. Occ.	Vehicle-Trips	Person-Trips*
Office	1.10	0	0	1.10	0	0
Retail	1.70	4	7	1.70	3	5
Restaurant	1.70	5	9	1.70	1	2
Cinema/Entertainment	1.00	0	0	1.00	0	0
Residential	1.40	45	63	1.40	193	270
Hotel	1.00	0	0	1.00	0	0

Table 8-A (O): Internal Person-Trip Origin-Destination Matrix (Computed at Origin)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		0	0	0	0	0
Retail	1		1	0	1	0
Restaurant	1	0		0	0	0
Cinema/Entertainment	0	0	0		0	0
Residential	5	3	54	0		0
Hotel	0	0	0	0	0	

Table 8-A (D): Internal Person-Trip Origin-Destination Matrix (Computed at Destination)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		2	2	0	0	0
Retail	0		5	0	1	0
Restaurant	0	1		0	3	0
Cinema/Entertainment	0	0	0		0	0
Residential	0	1	2	0		0
Hotel	0	0	1	0	0	

Table 9-A (D): Internal and External Trips Summary (Entering Trips)

Destination Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles[1]	Transit[2]	Non-Motorized[2]
Office	0	0	0	0	0	0
Retail	1	6	7	4	0	0
Restaurant	3	6	9	4	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	1	62	63	44	0	0
Hotel	0	0	0	0	0	0
All Other Land Uses[3]	0	0	0	0	0	0

Table 9-A (O): Internal and External Trips Summary (Exiting Trips)

Origin Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles[1]	Transit[2]	Non-Motorized[2]
Office	0	0	0	0	0	0
Retail	2	3	5	2	0	0
Restaurant	0	2	2	1	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	3	267	270	191	0	0
Hotel	0	0	0	0	0	0
All Other Land Uses[3]	0	0	0	0	0	0

[1]Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-A

[2]Person-Trips

[3]Total estimate for all other land uses at mixed-use development site-not subject to internal trip capture computations in this estimator

*Indicates computation that has been rounded to the nearest whole number.

NCHRP 8-51 Internal Trip Capture Estimation Tool						
Project Name:	Onni Hill & Olympic			**Organization:**	Fehr & Peers	
Project Location:				**Performed By:**	TPG	
Scenario Description:	Option 3	475 du	36 ksf rest.	**Date:**		
Analysis Year:				**Checked By:**		
Analysis Period:	**PM Street Peak Hour**			**Date:**		

Table 1-P: Base Vehicle-Trip Generation Estimates (Single-Use Site Estimate)						
Land Use	Development Data (*For Information Only*)			Estimated Vehicle-Trips		
	ITE LUCs[1]	Quantity	Units	Total	Entering	Exiting
Office				0	0	0
Retail				26	12	14
Restaurant				60	40	20
Cinema/Entertainment				0		
Residential				266	165	101
Hotel				0		
All Other Land Uses[2]				0		
Total				352	217	135

Table 2-P: Mode Split and Vehicle Occupancy Estimates						
Land Use	Entering Trips			Exiting Trips		
	Veh. Occ.	% Transit	% Non-Motorized	Veh. Occ.	% Transit	% Non-Motorized
Office	1.10			1.10		
Retail	1.70			1.70		
Restaurant	1.70			1.70		
Cinema/Entertainment						
Residential	1.40			1.40		
Hotel						
All Other Land Uses[2]						

Table 3-P: Average Land Use Interchange Distances (Feet Walking Distance)						
Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office						
Retail						
Restaurant						
Cinema/Entertainment						
Residential						
Hotel						

Table 4-P: Internal Person-Trip Origin-Destination Matrix*						
Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		0	0	0	0	0
Retail	0		7	0	6	0
Restaurant	0	10		0	6	0
Cinema/Entertainment	0	0	0		0	0
Residential	0	2	10	0		0
Hotel	0	0	0	0	0	

Table 5-P: Computations Summary			
	Total	Entering	Exiting
All Person-Trips	518	319	199
Internal Capture Percentage	16%	13%	21%
External Vehicle-Trips[3]	300	191	109
External Transit-Trips[4]	0	0	0
External Non-Motorized Trips[4]	0	0	0

Table 6-P: Internal Trip Capture Percentages by Land Use		
Land Use	Entering Trips	Exiting Trips
Office	N/A	N/A
Retail	60%	54%
Restaurant	25%	47%
Cinema/Entertainment	N/A	N/A
Residential	5%	9%
Hotel	N/A	N/A

[1]Land Use Codes (LUCs) from *Trip Generation Informational Report* , published by the Institute of Transportation Engineers.

[2]Total estimate for all other land uses at mixed-use development site-not subject to internal trip capture computations in this estimator

[3]Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-P

[4]Person-Trips

*Indicates computation that has been rounded to the nearest whole number.

Estimation Tool Developed by the Texas Transportation Institute

Project Name:	Onni Hill & Olympic
Analysis Period:	**PM Street Peak Hour**

Table 7-P: Conversion of Vehicle-Trip Ends to Person-Trip Ends

Land Use	Table 7-P (D): Entering Trips			Table 7-P (O): Exiting Trips		
	Veh. Occ.	Vehicle-Trips	Person-Trips*	Veh. Occ.	Vehicle-Trips	Person-Trips*
Office	1.10	0	0	1.10	0	0
Retail	1.70	12	20	1.70	14	24
Restaurant	1.70	40	68	1.70	20	34
Cinema/Entertainment	1.00	0	0	1.00	0	0
Residential	1.40	165	231	1.40	101	141
Hotel	1.00	0	0	1.00	0	0

Table 8-P (O): Internal Person-Trip Origin-Destination Matrix (Computed at Origin)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		0	0	0	0	0
Retail	0		7	1	6	1
Restaurant	1	14		3	6	2
Cinema/Entertainment	0	0	0		0	0
Residential	6	59	30	0		4
Hotel	0	0	0	0	0	

Table 8-P (D): Internal Person-Trip Origin-Destination Matrix (Computed at Destination)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		2	1	0	9	0
Retail	0		20	0	106	0
Restaurant	0	10		0	37	0
Cinema/Entertainment	0	1	2		9	0
Residential	0	2	10	0		0
Hotel	0	0	3	0	0	

Table 9-P (D): Internal and External Trips Summary (Entering Trips)

Destination Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles[1]	Transit[2]	Non-Motorized[2]
Office	0	0	0	0	0	0
Retail	12	8	20	5	0	0
Restaurant	17	51	68	30	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	12	219	231	156	0	0
Hotel	0	0	0	0	0	0
All Other Land Uses[3]	0	0	0	0	0	0

Table 9-P (O): Internal and External Trips Summary (Exiting Trips)

Origin Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles[1]	Transit[2]	Non-Motorized[2]
Office	0	0	0	0	0	0
Retail	13	11	24	6	0	0
Restaurant	16	18	34	11	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	12	129	141	92	0	0
Hotel	0	0	0	0	0	0
All Other Land Uses[3]	0	0	0	0	0	0

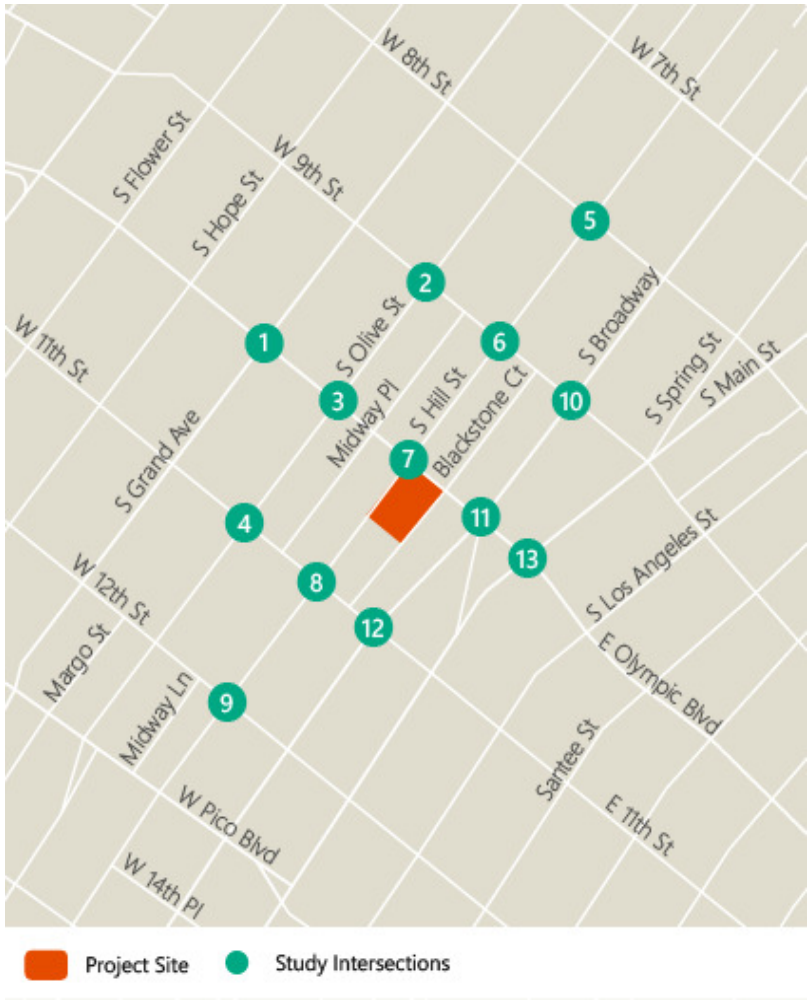
[1]Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-P

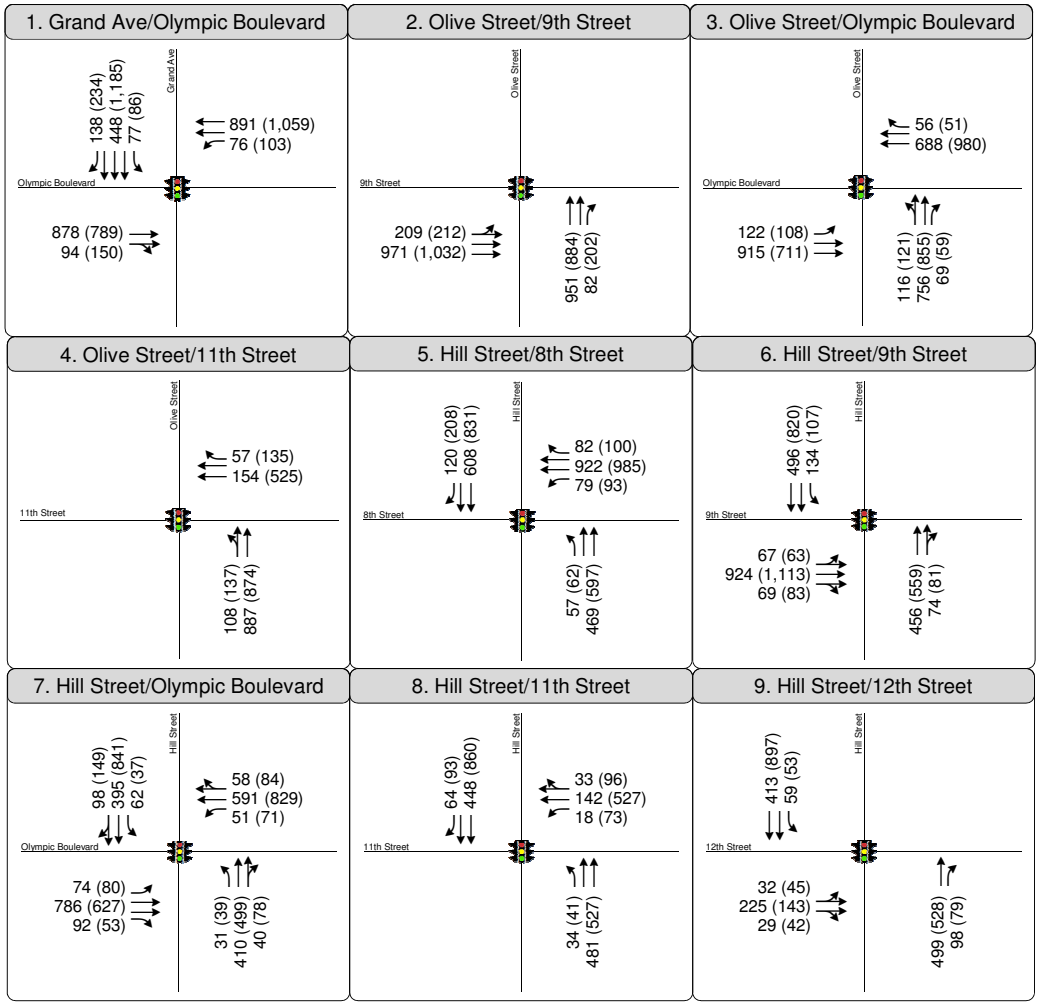
[2]Person-Trips

[3]Total estimate for all other land uses at mixed-use development site-not subject to internal trip capture computations in this estimator

*Indicates computation that has been rounded to the nearest whole number.

APPENDIX B:
PEAK HOUR TRAFFIC VOLUMES AND LANE CONFIGURATIONS

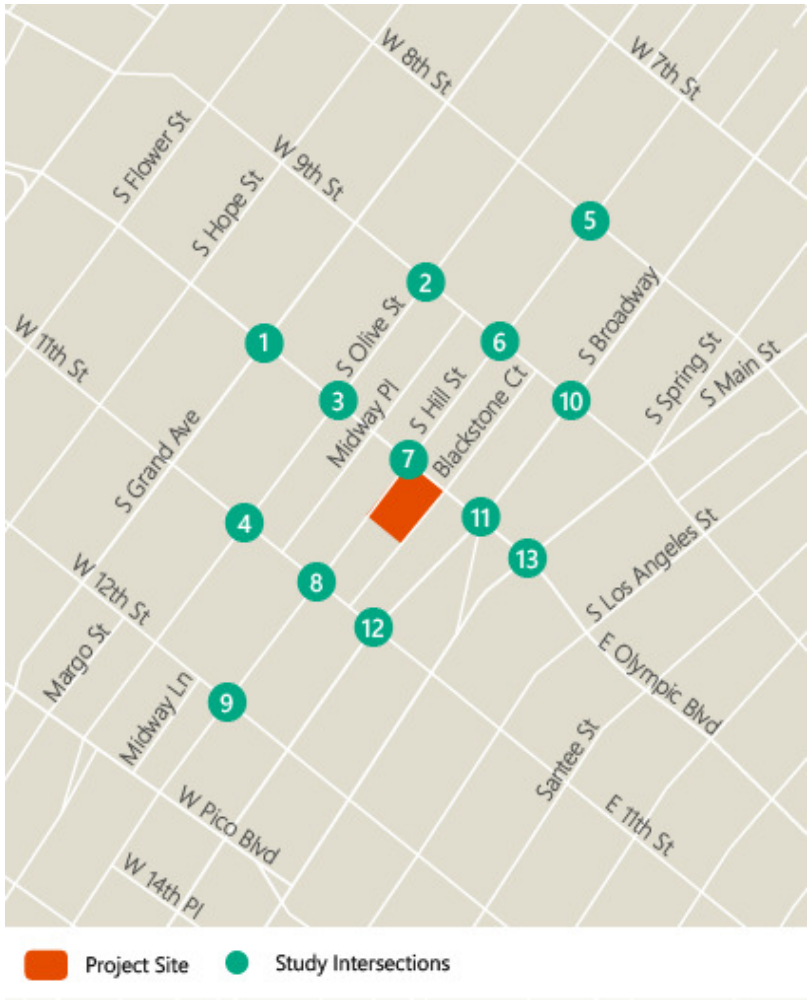


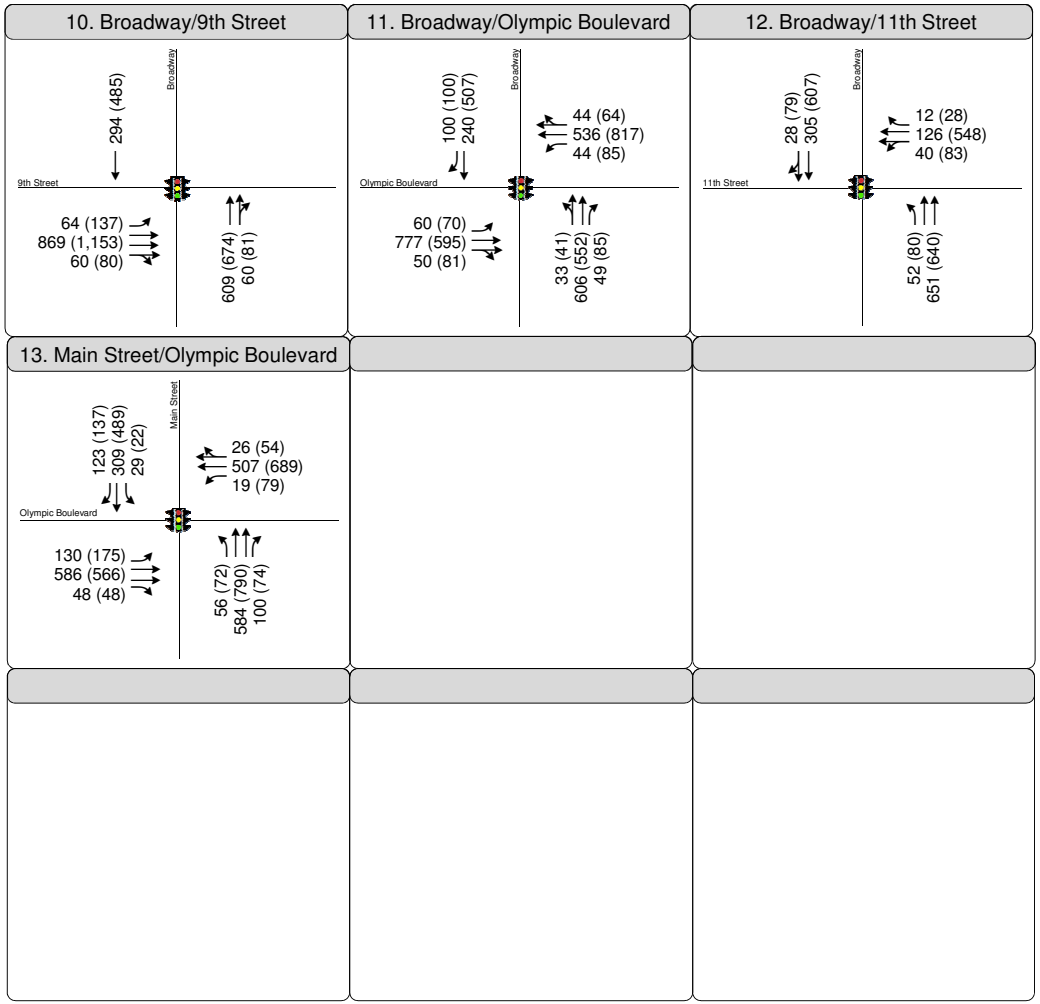


Appendix B

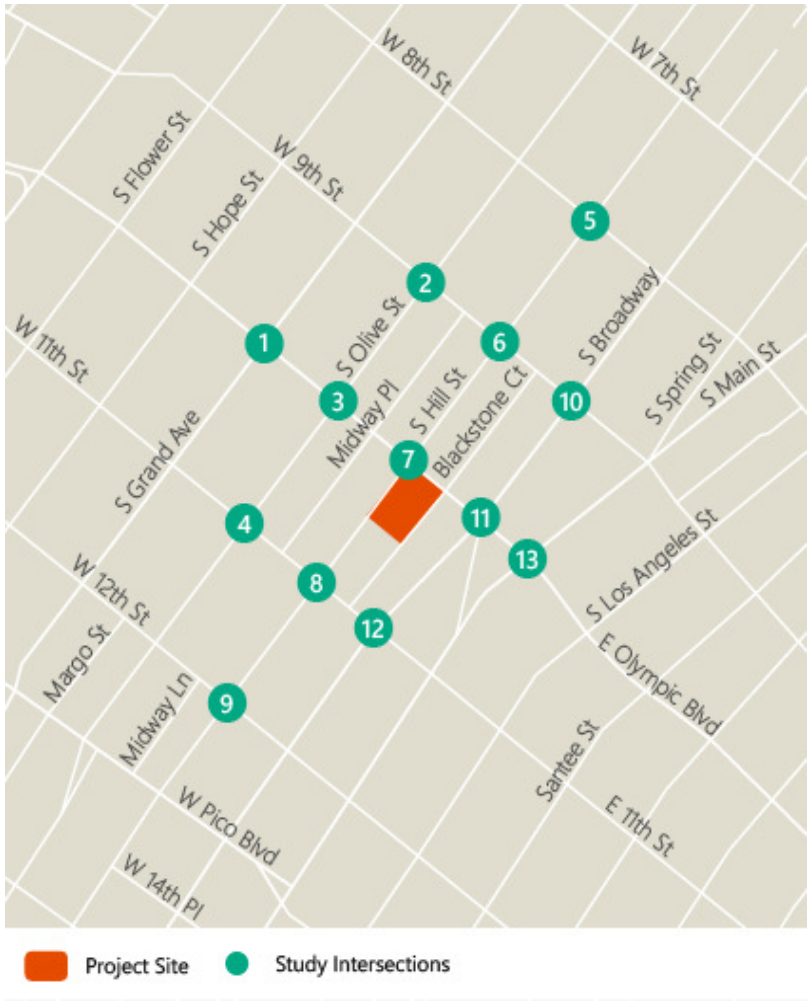
Peak Hour Traffic Volumes and Lane Configurations

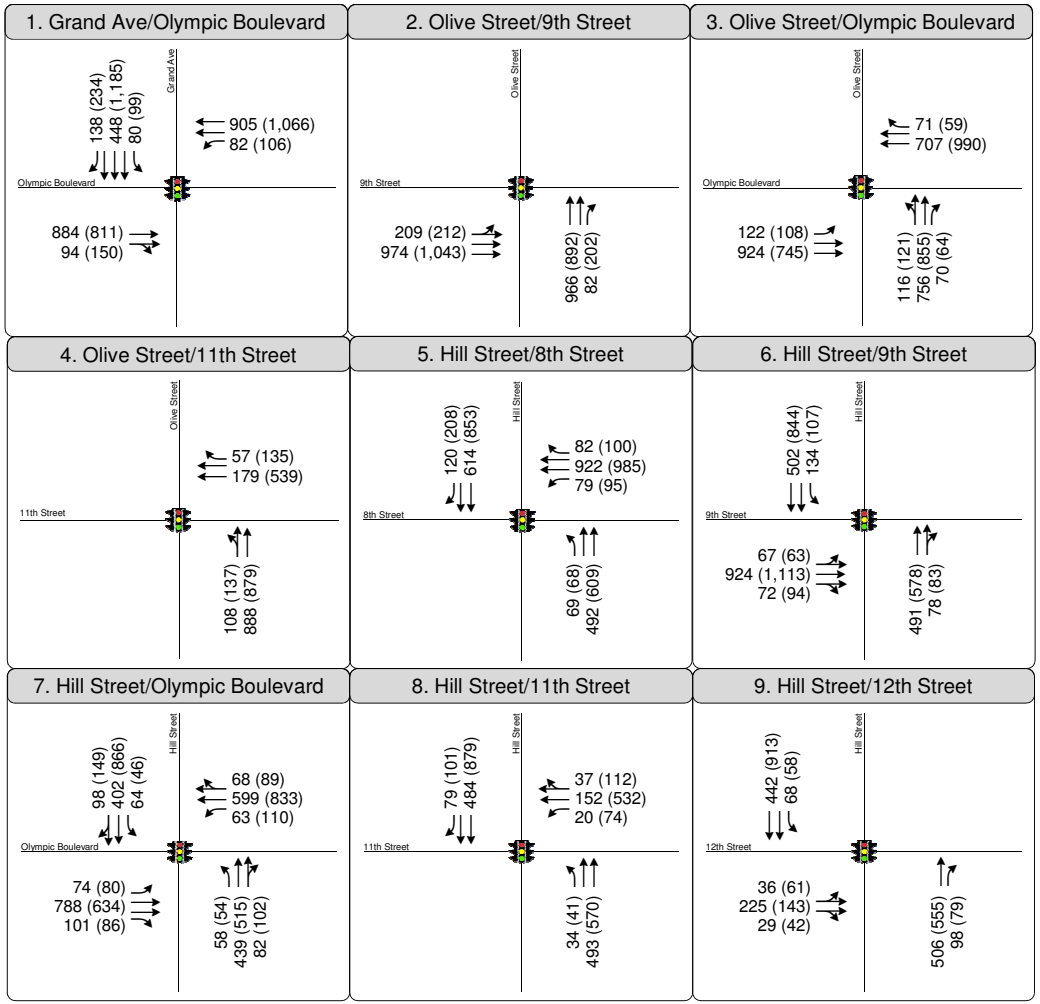
Existing (2017) Volumes





Appendix B
Peak Hour Traffic Volumes and Lane Configurations
Existing (2017) Volumes

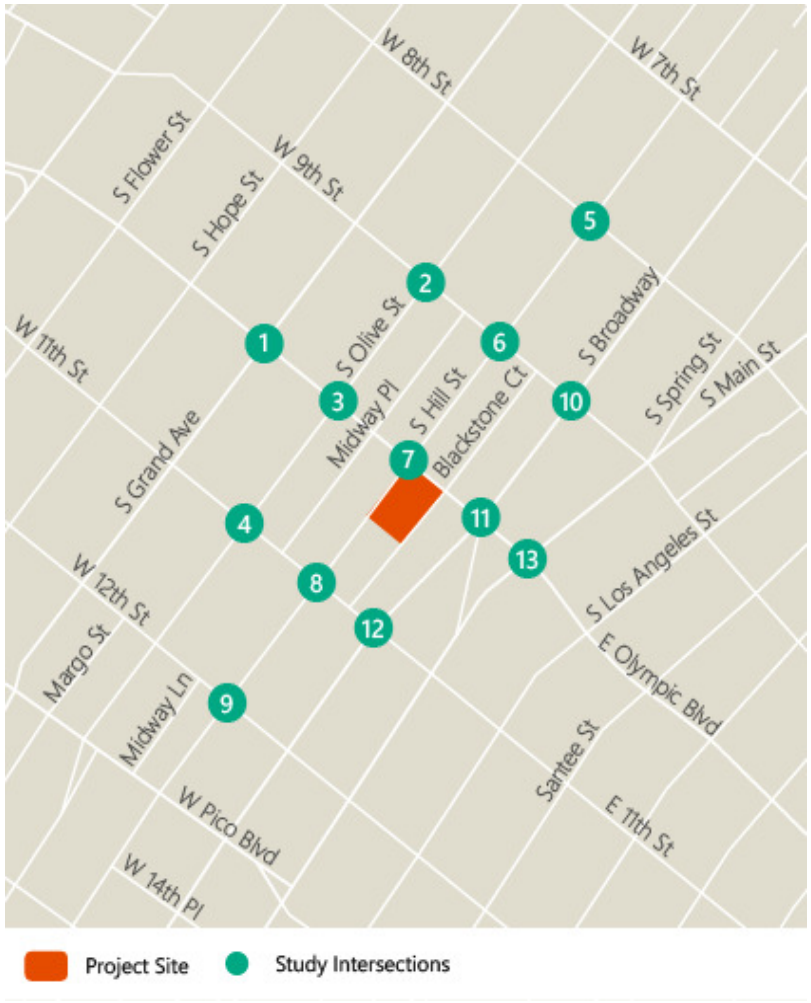


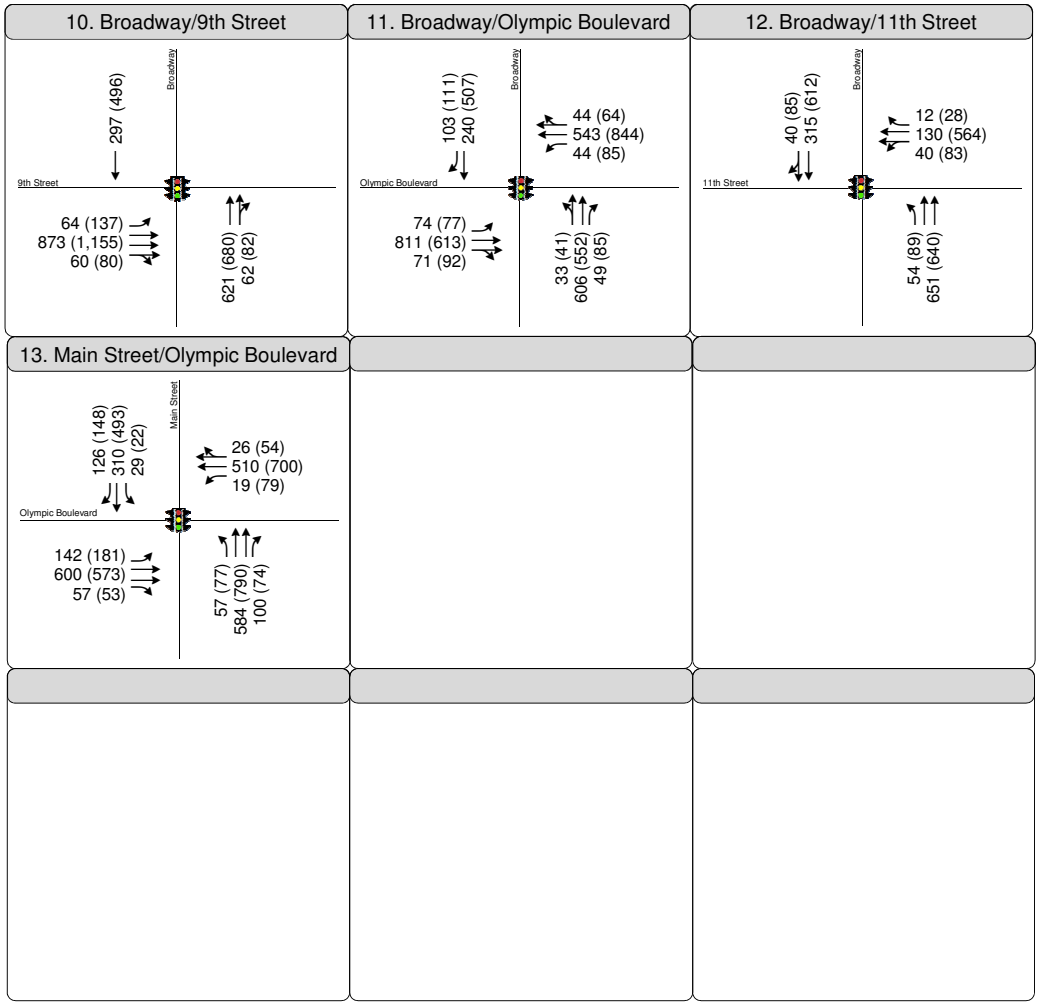


Appendix B

Peak Hour Traffic Volumes and Lane Configurations

Existing (2017) plus Project Volumes

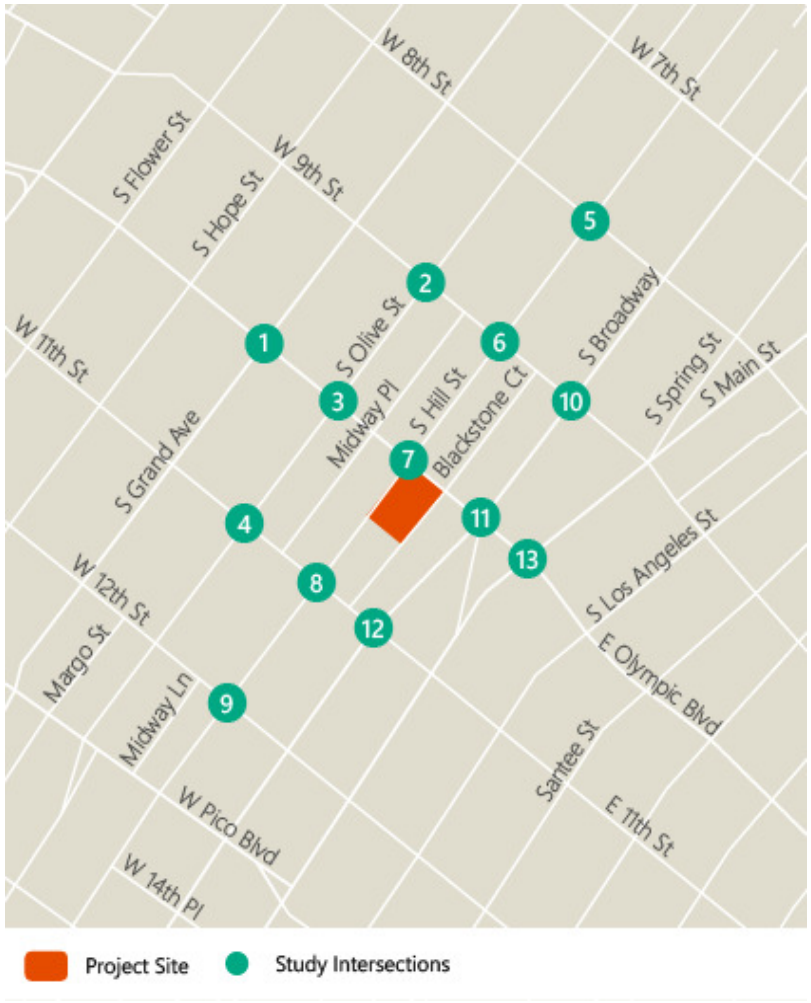


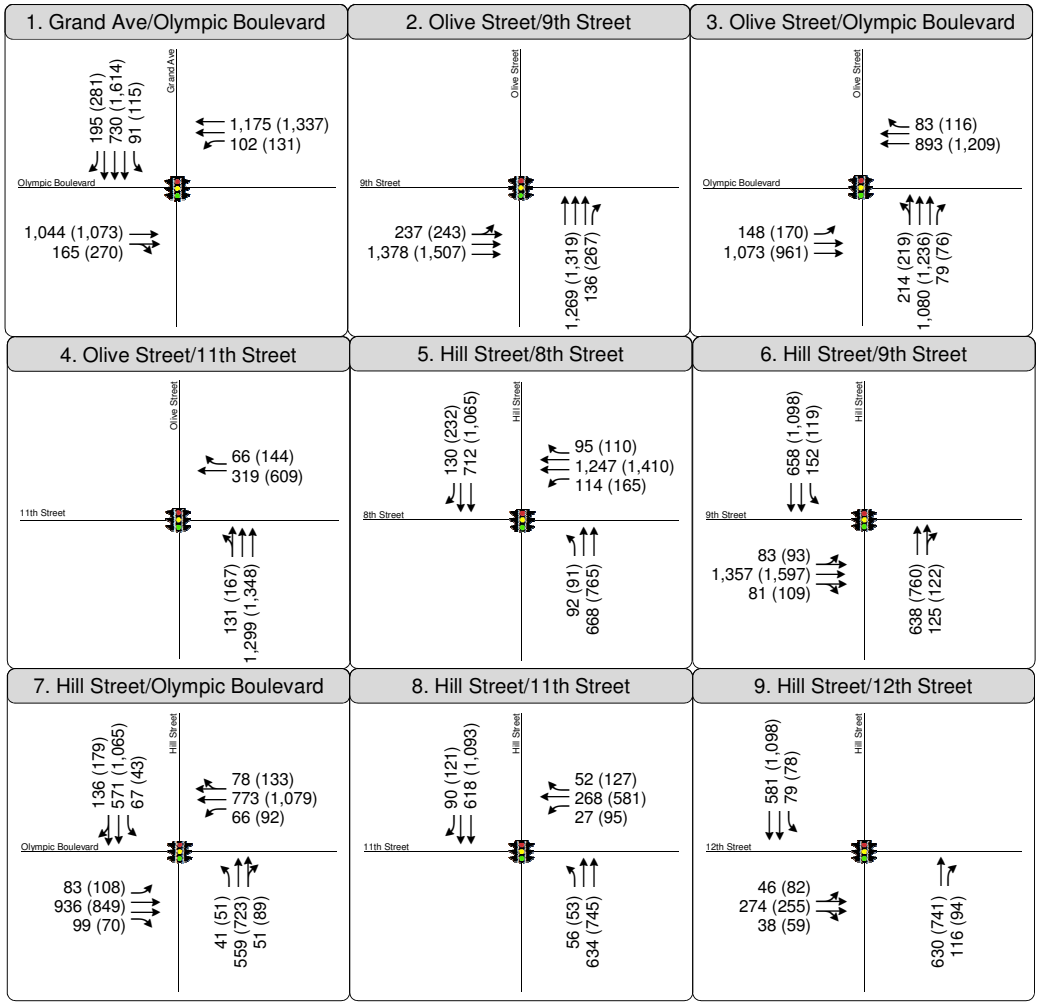


Appendix B

Peak Hour Traffic Volumes and Lane Configurations

Existing (2017) plus Project Volumes

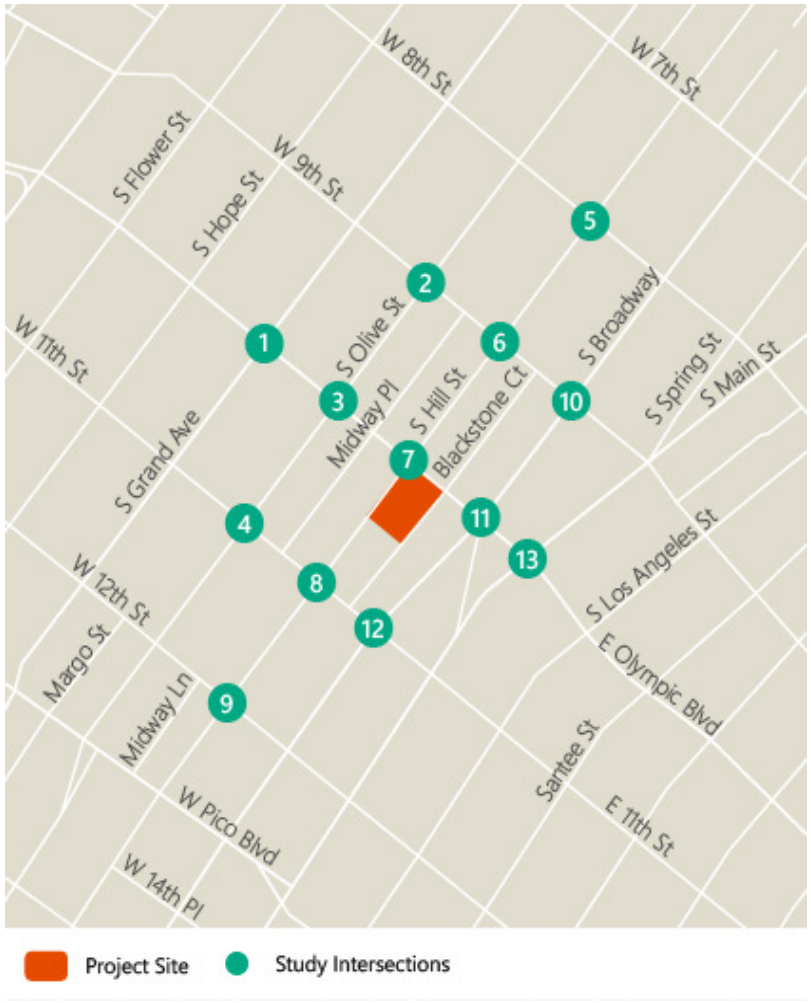


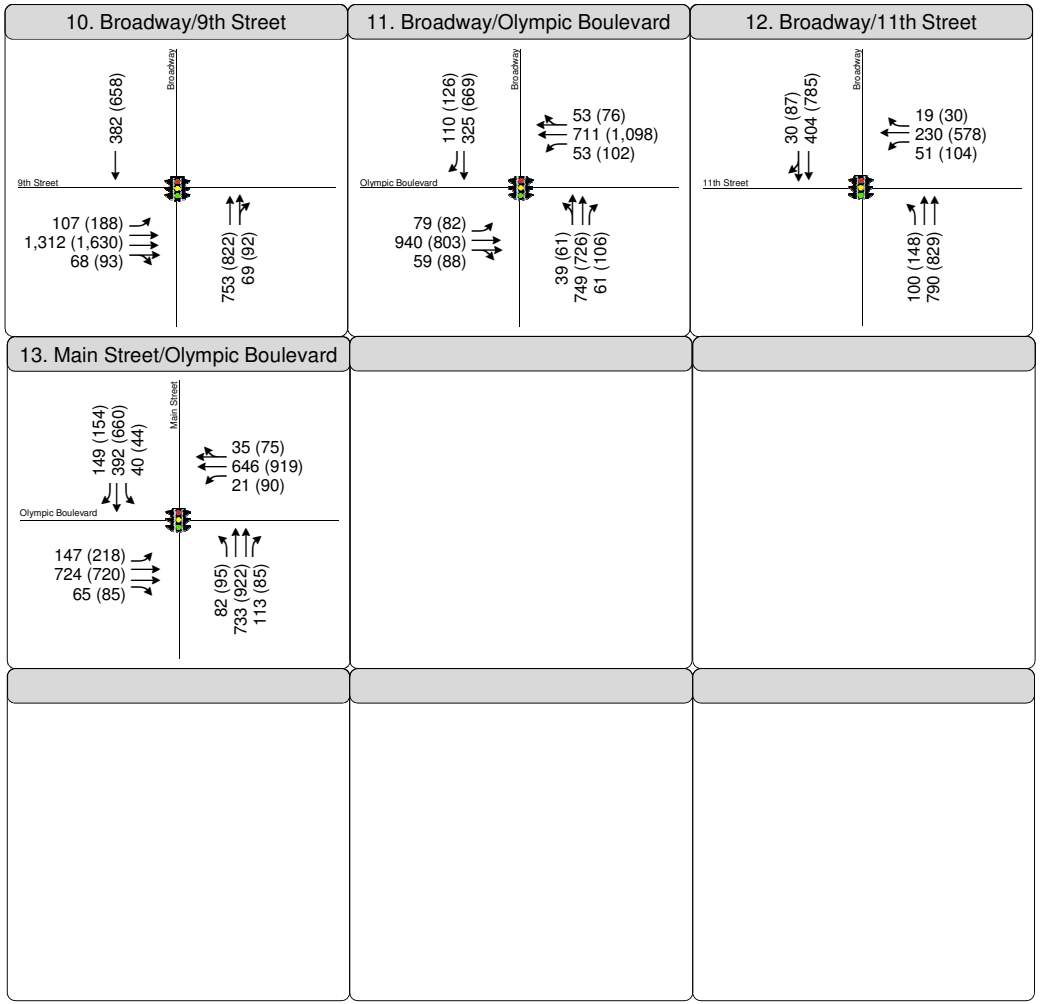


Appendix B

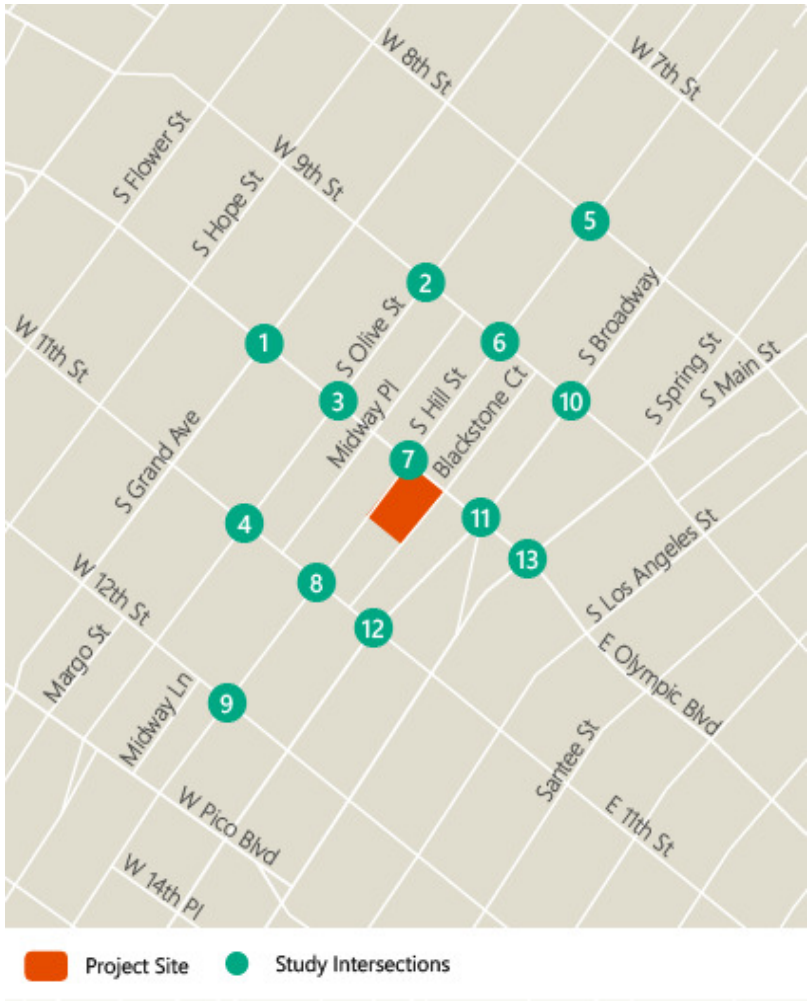
Peak Hour Traffic Volumes and Lane Configurations

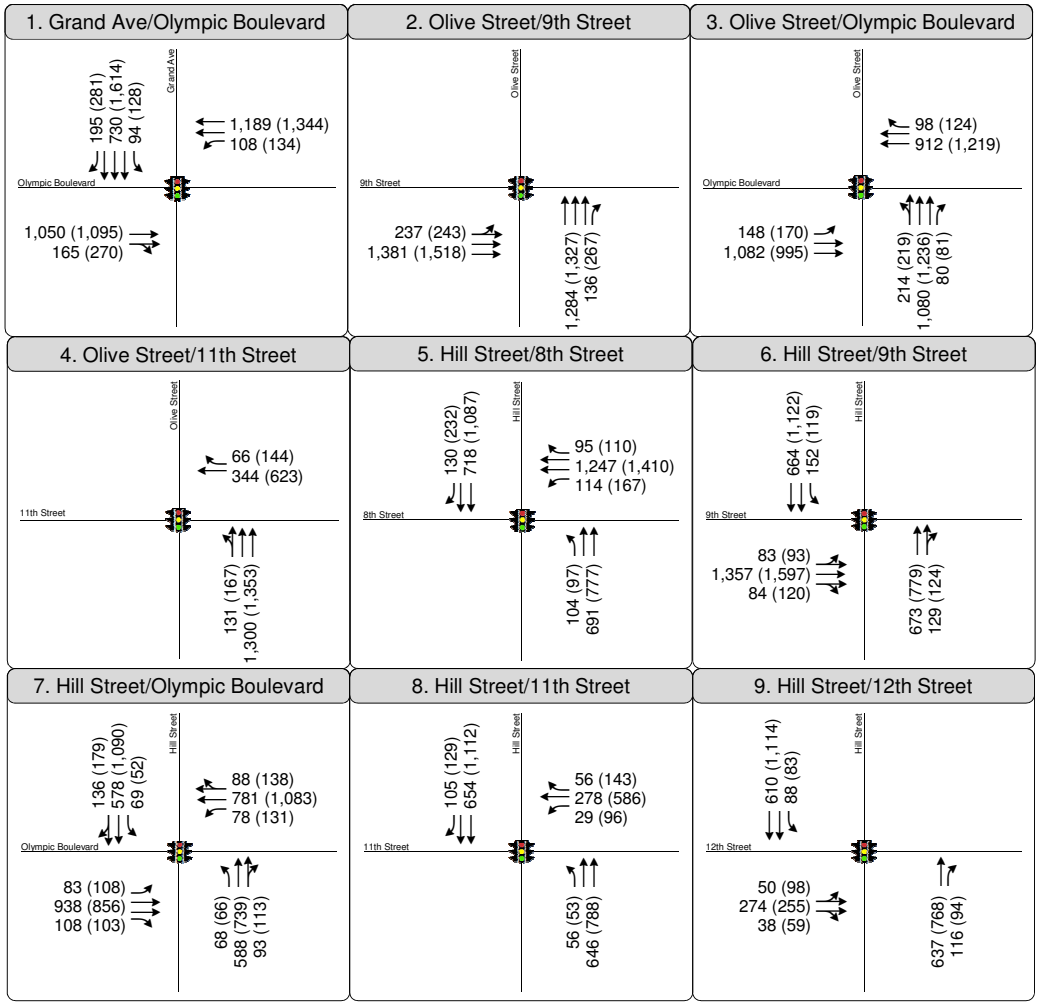
Future Base (2022) Volumes





Appendix B
Peak Hour Traffic Volumes and Lane Configurations
Future Base (2022) Volumes

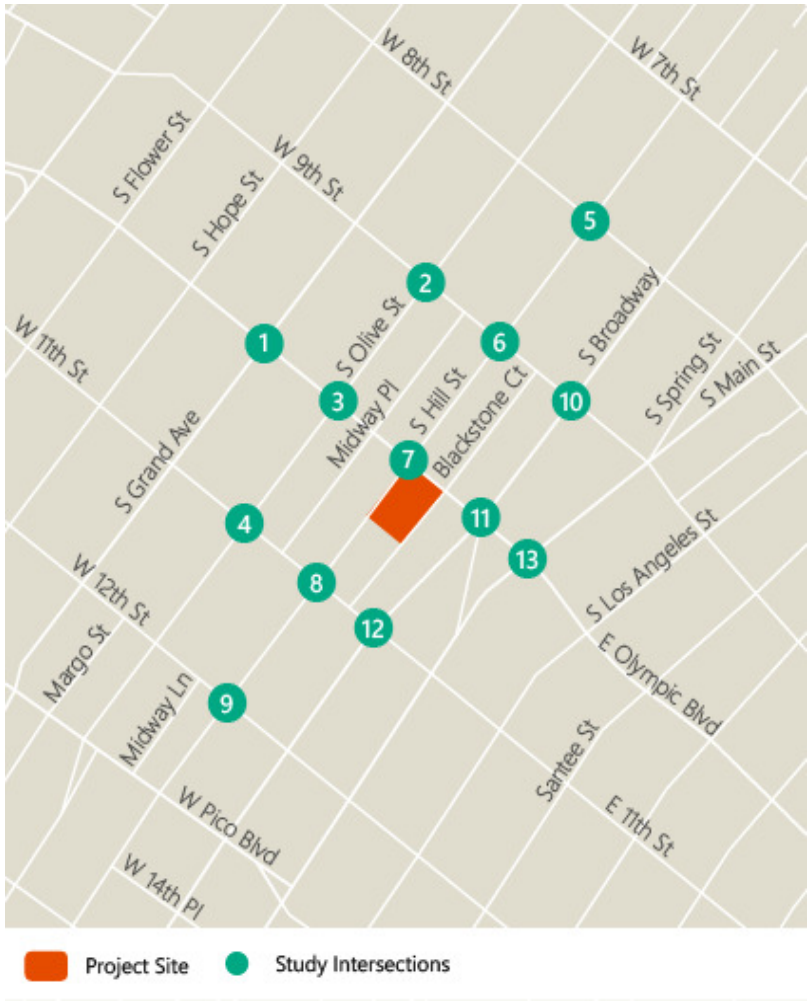


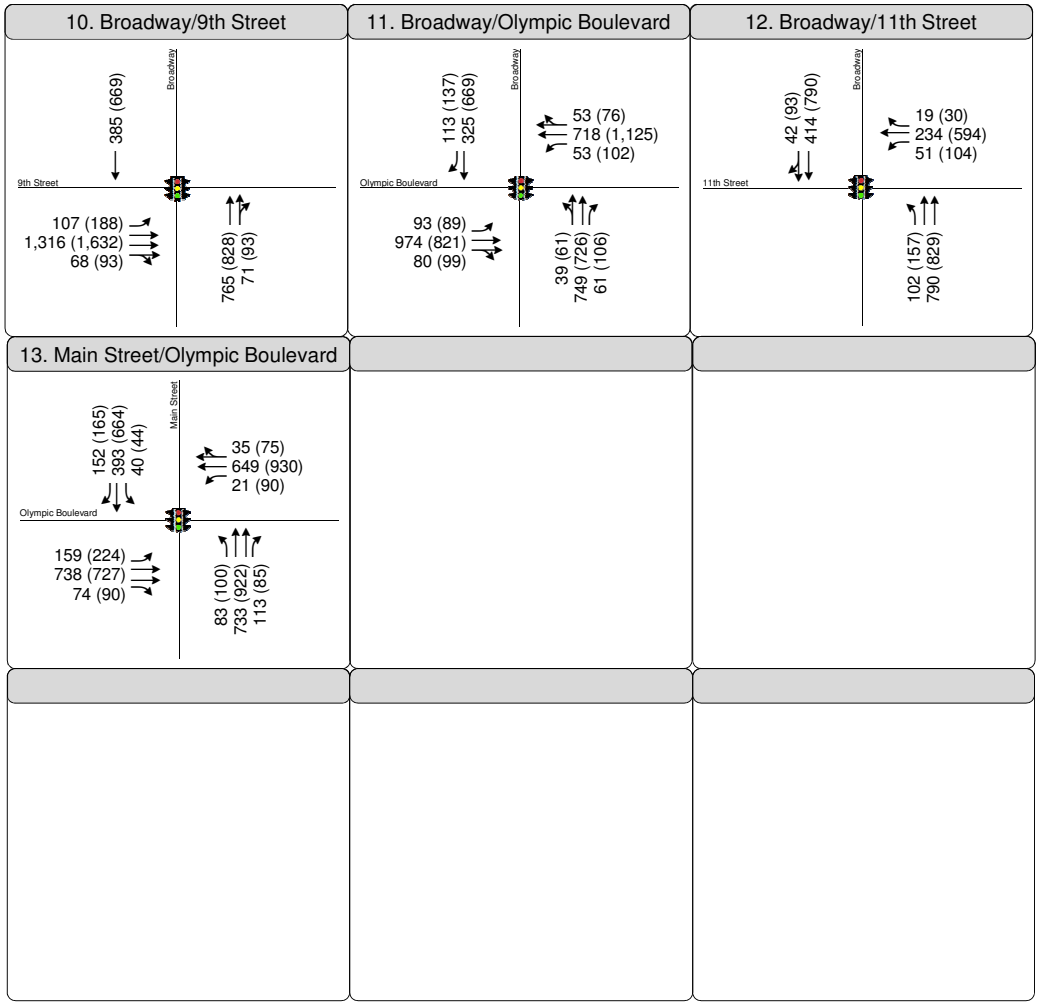


Appendix B

Peak Hour Traffic Volumes and Lane Configurations

Future (2022) plus Project Volumes

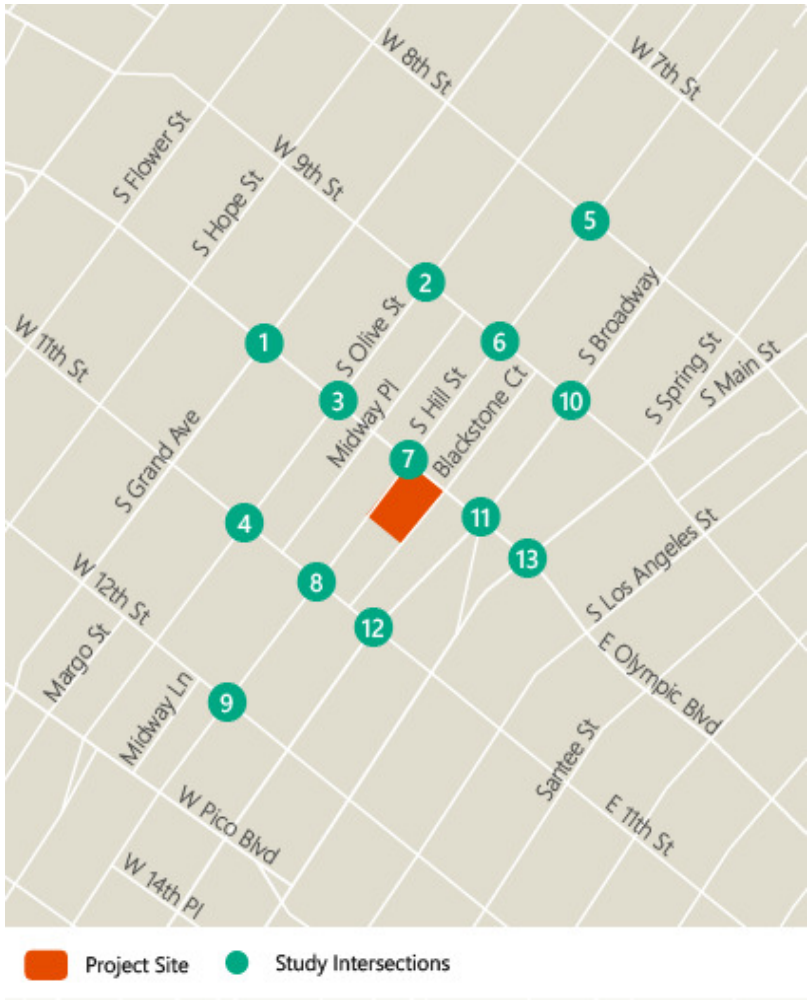


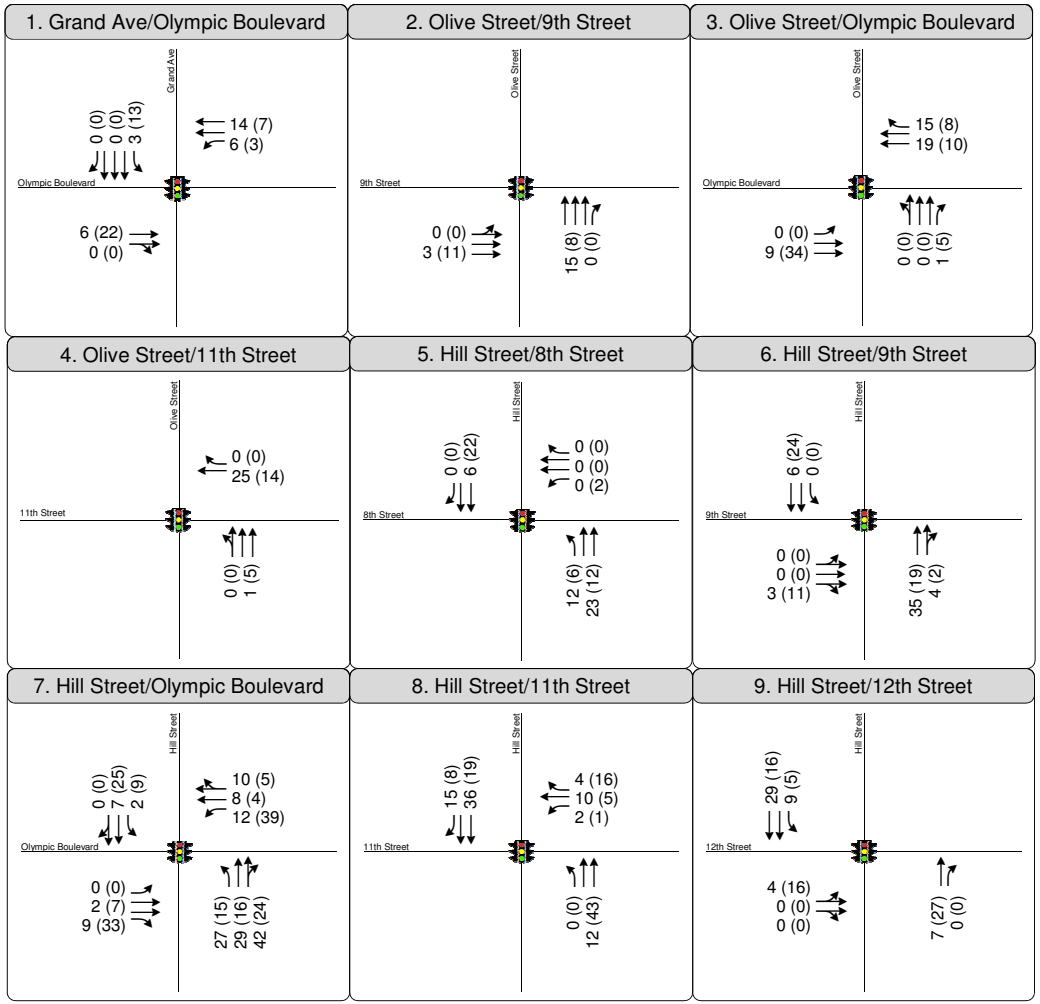


Appendix B

Peak Hour Traffic Volumes and Lane Configurations

Future (2022) plus Project Volumes

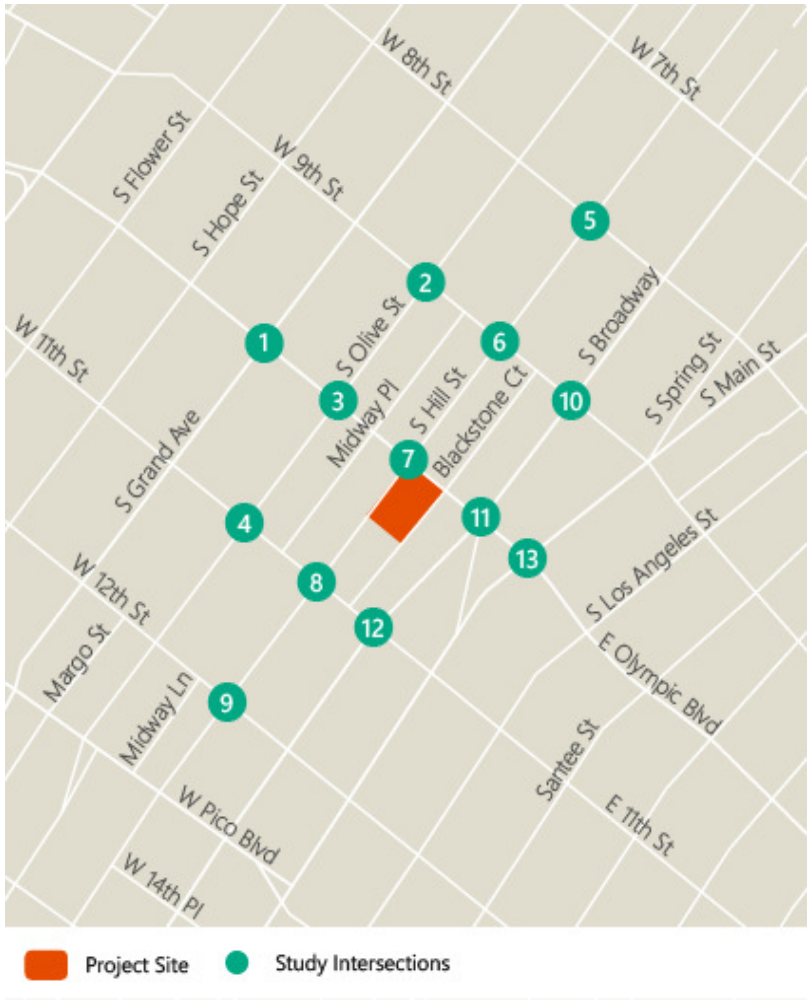


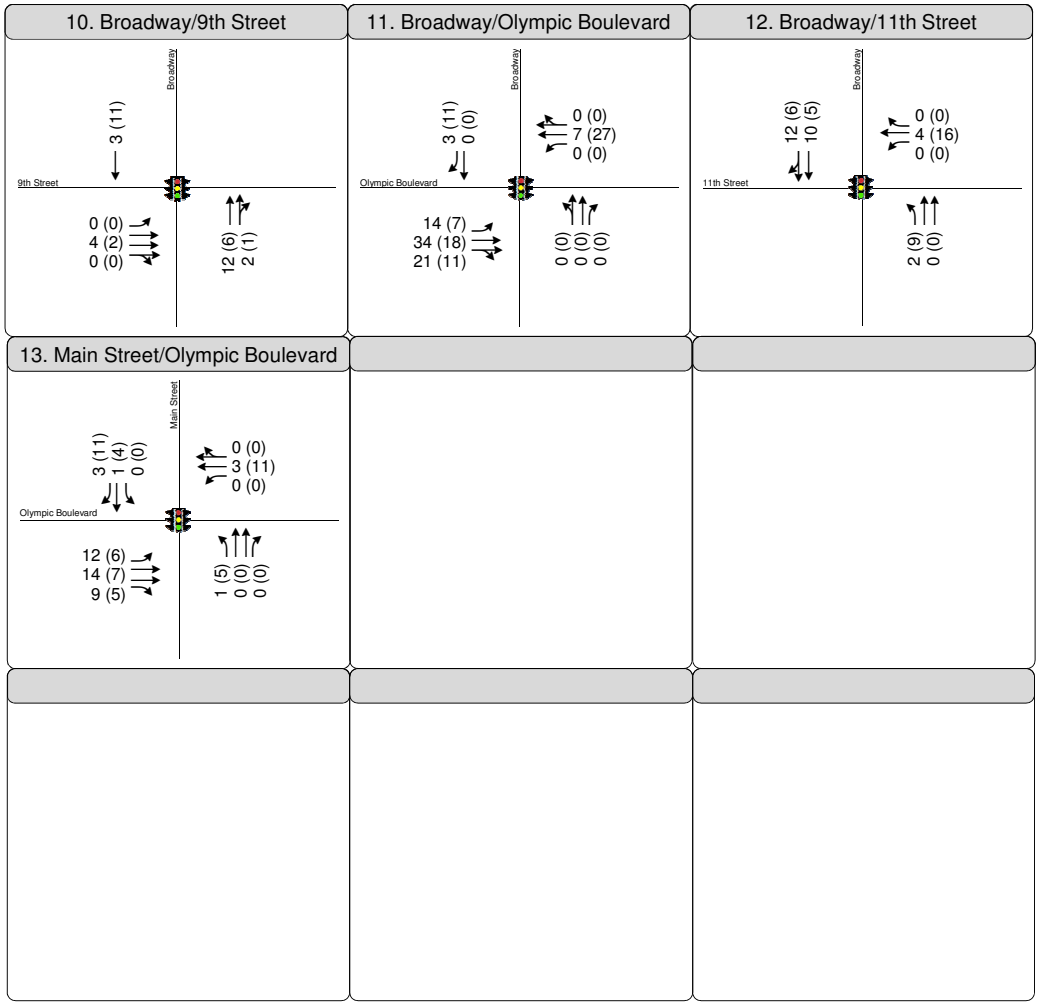


Appendix B

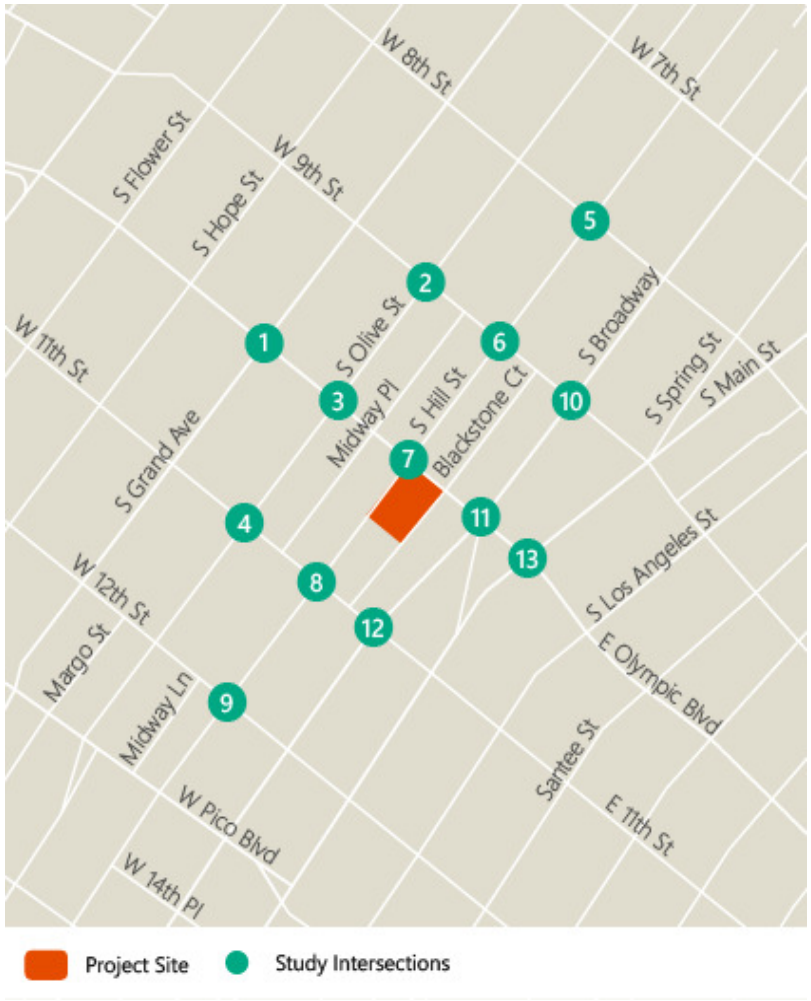
Peak Hour Traffic Volumes and Lane Configurations

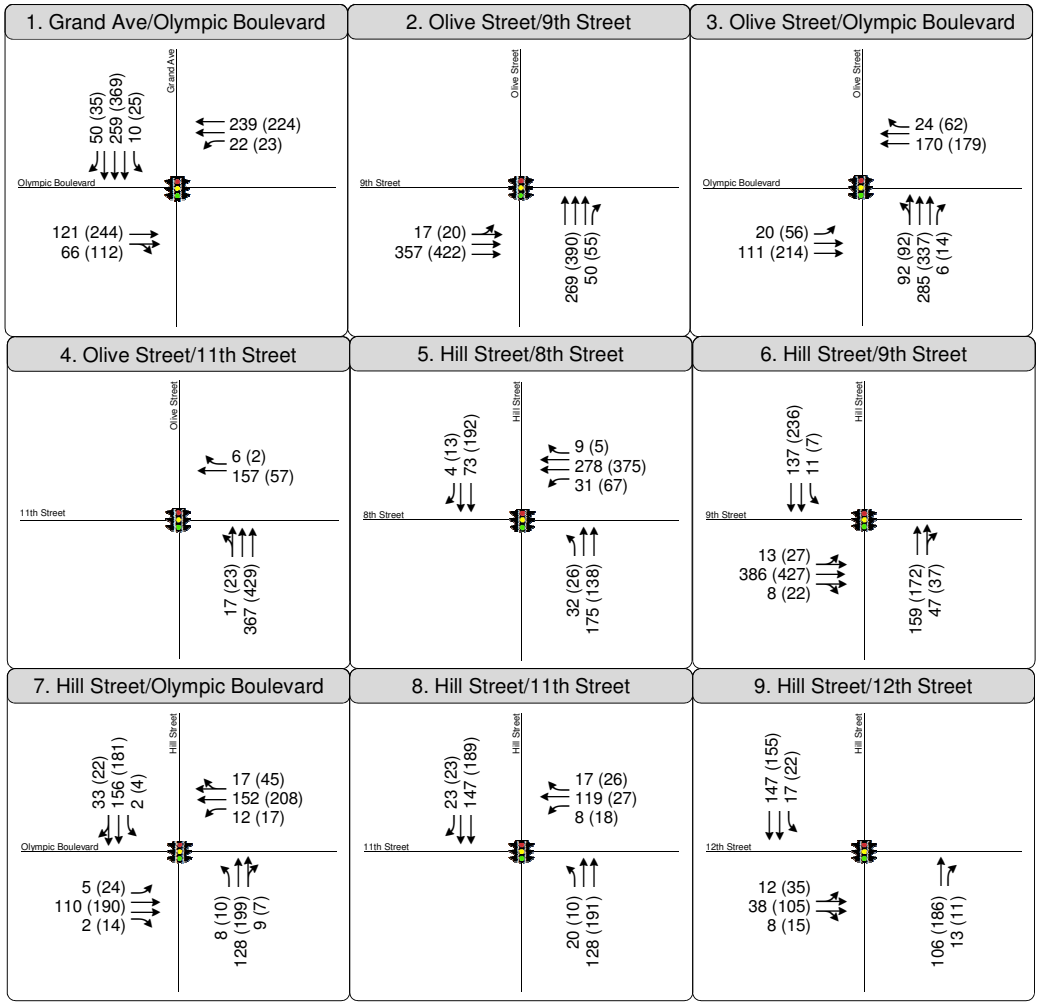
Project Only Volumes





Appendix B
Peak Hour Traffic Volumes and Lane Configurations
Project Only Volumes

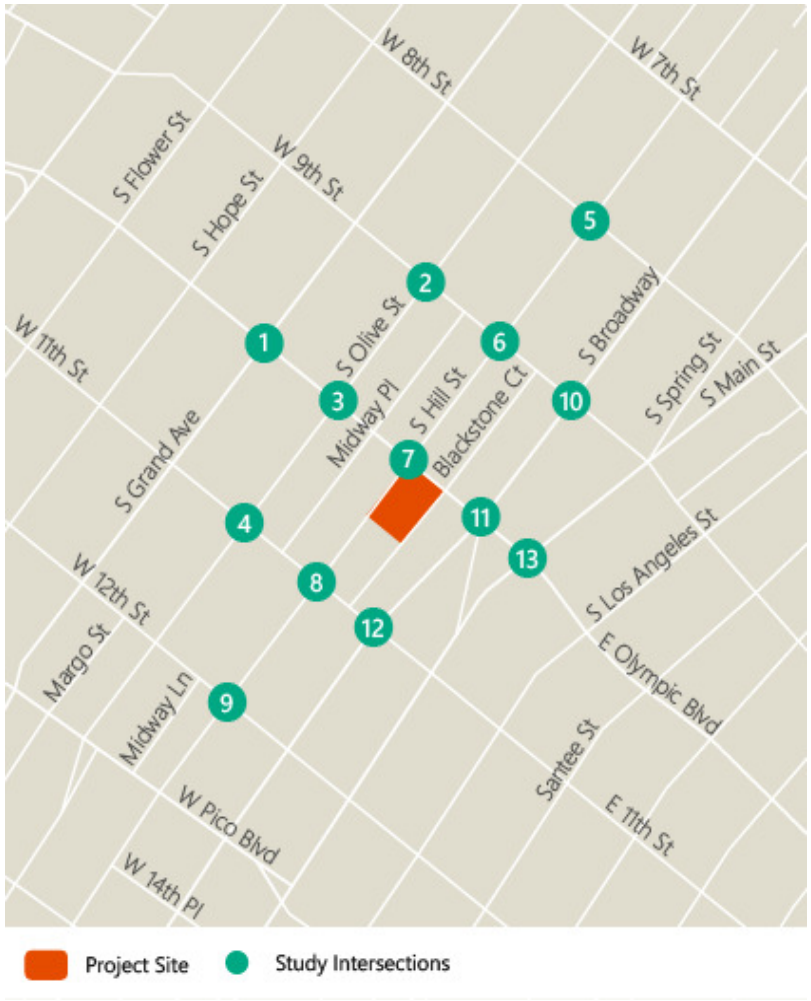


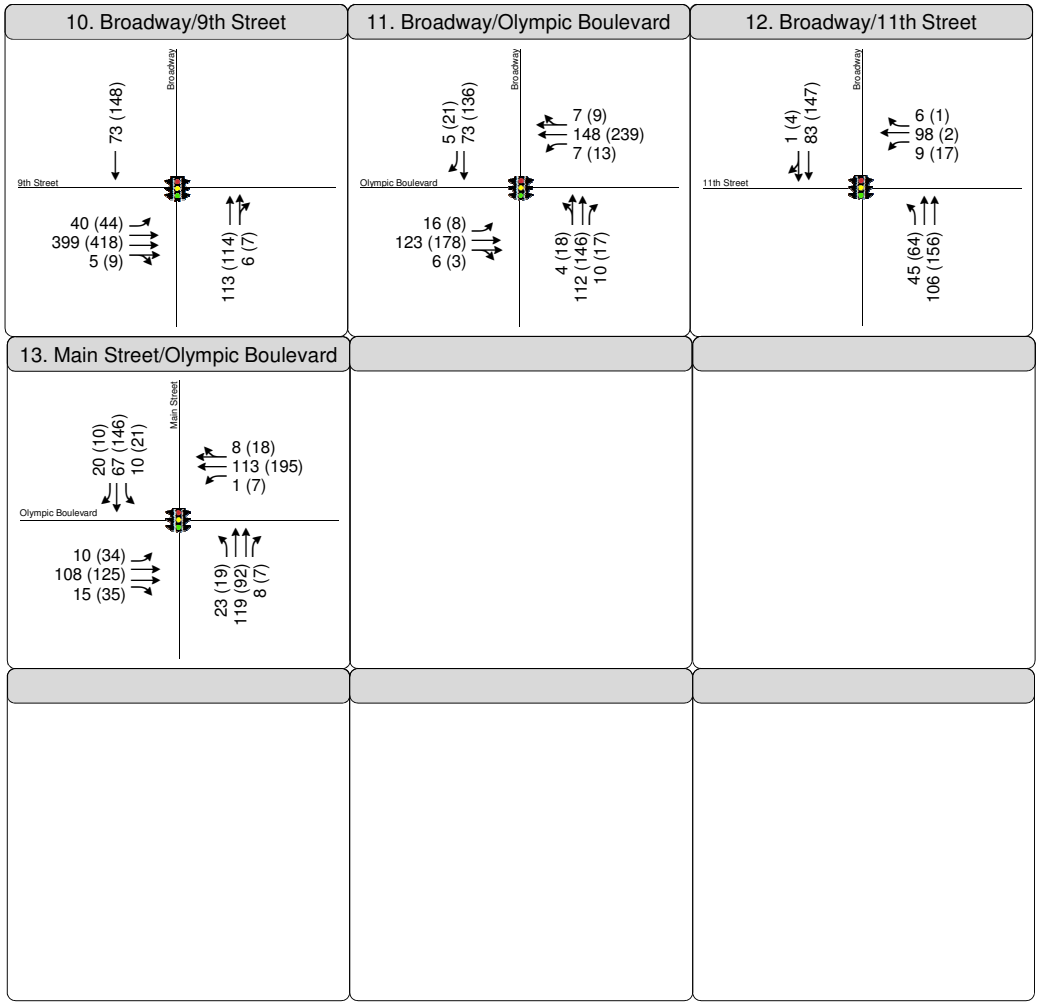


Appendix B

Peak Hour Traffic Volumes and Lane Configurations

Related Project Only Volumes





Appendix B
Peak Hour Traffic Volumes and Lane Configurations
Related Project Only Volumes

APPENDIX C:
COUNT SHEETS

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 17-5175-001

Day: Thursday

TOTALS

City: Los Angeles

Date: 3/23/2017

AM

NS/EW Streets:	Grand Ave			Grand Ave			Olympic Blvd			Olympic Blvd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	0	0	1	3	1	0	2	0	1	2	0	
7:00 AM	0	0	0	15	95	22	0	107	18	12	217	0	486
7:15 AM	0	0	0	14	101	29	0	124	11	10	221	0	510
7:30 AM	0	0	0	25	101	26	0	151	29	17	212	0	561
7:45 AM	0	0	0	17	112	28	0	227	27	22	208	0	641
8:00 AM	0	0	0	24	132	30	0	190	26	18	234	0	654
8:15 AM	0	0	0	14	87	38	0	238	16	9	219	0	621
8:30 AM	0	0	0	22	117	42	0	223	25	27	230	0	686
8:45 AM	0	0	0	15	103	43	0	201	24	21	232	0	639
9:00 AM	0	0	0	17	104	43	0	196	20	18	220	0	618
9:15 AM	0	0	0	18	107	58	0	188	20	21	209	0	621
9:30 AM	0	0	0	18	92	49	0	175	18	15	209	0	576
9:45 AM	0	0	0	18	113	46	0	171	25	22	193	0	588
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	0	0	217	1264	454	0	2191	259	212	2604	0	7201
APPROACH %'s :	#DIV/0!	#DIV/0!	#DIV/0!	11.21%	65.32%	23.46%	0.00%	89.43%	10.57%	7.53%	92.47%	0.00%	
PEAK HR START TIME :	745 AM												TOTAL
PEAK HR VOL :	0	0	0	77	448	138	0	878	94	76	891	0	2602
PEAK HR FACTOR :		0.000			0.891			0.957			0.941		0.948

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 17-5175-001

Day: Thursday

TOTALS

City: Los Angeles

Date: 3/23/2017

PM

NS/EW Streets:	Grand Ave			Grand Ave			Olympic Blvd			Olympic Blvd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	0	0	1	3	1	0	2	0	1	2	0	
3:00 PM	0	0	0	13	153	44	0	189	15	23	220	0	657
3:15 PM	0	0	0	19	174	60	1	206	26	27	247	0	760
3:30 PM	0	0	0	23	237	49	0	181	39	17	215	0	761
3:45 PM	0	0	0	20	186	75	0	177	26	27	236	0	747
4:00 PM	0	0	0	13	219	65	0	187	32	25	231	0	772
4:15 PM	0	0	0	23	267	47	0	212	29	27	219	0	824
4:30 PM	0	0	0	11	294	67	0	184	43	28	249	0	876
4:45 PM	0	0	0	20	255	59	0	217	33	26	287	0	897
5:00 PM	0	0	0	23	291	60	0	188	40	19	291	0	912
5:15 PM	0	0	0	32	345	48	0	200	34	30	232	0	921
5:30 PM	0	0	0	24	265	65	0	174	37	14	247	0	826
5:45 PM	0	0	0	12	324	51	0	163	40	18	205	0	813
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	0	0	233	3010	690	1	2278	394	281	2879	0	9766
APPROACH %'s :	#DIV/0!	#DIV/0!	#DIV/0!	5.92%	76.53%	17.54%	0.04%	85.22%	14.74%	8.89%	91.11%	0.00%	
PEAK HR START TIME :	430 PM												TOTAL
PEAK HR VOL :	0	0	0	86	1185	234	0	789	150	103	1059	0	3606
PEAK HR FACTOR :		0.000			0.885			0.939			0.928		0.979

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 17-5175-002

Day: Thursday

TOTALS

City: Los Angeles

Date: 3/23/2017

AM

NS/EW Streets:	Olive St			Olive St			9th St			9th St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	3	1	0	0	0	0	3	0	0	0	0	
7:00 AM	0	158	9	0	0	0	40	124	0	0	0	0	331
7:15 AM	0	205	9	0	0	0	26	154	0	0	0	0	394
7:30 AM	0	231	19	0	0	0	29	161	0	0	0	0	440
7:45 AM	0	256	16	0	0	0	50	233	0	0	0	0	555
8:00 AM	0	246	19	0	0	0	60	253	0	0	0	0	578
8:15 AM	0	225	20	0	0	0	53	250	0	0	0	0	548
8:30 AM	0	224	27	0	0	0	46	235	0	0	0	0	532
8:45 AM	0	234	23	0	0	0	50	220	0	0	0	0	527
9:00 AM	0	252	28	0	0	0	42	191	0	0	0	0	513
9:15 AM	0	177	23	0	0	0	41	183	0	0	0	0	424
9:30 AM	0	211	26	0	0	0	52	168	0	0	0	0	457
9:45 AM	0	149	34	0	0	0	39	175	0	0	0	0	397
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	2568	253	0	0	0	528	2347	0	0	0	0	5696
APPROACH %'s :	0.00%	91.03%	8.97%	#DIV/0!	#DIV/0!	#DIV/0!	18.37%	81.63%	0.00%	#DIV/0!	#DIV/0!	#DIV/0!	
PEAK HR START TIME :	745 AM												TOTAL
PEAK HR VOL :	0	951	82	0	0	0	209	971	0	0	0	0	2213
PEAK HR FACTOR :		0.949			0.000			0.942			0.000		0.957

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 17-5175-002 **Day:** Thursday

City: Los Angeles **Date:** 3/23/2017

TOTALS

PM

NS/EW Streets:	Olive St			Olive St			9th St			9th St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	3	1	0	0	0	0	3	0	0	0	0	
3:00 PM	0	168	39	0	0	0	49	185	0	0	0	0	441
3:15 PM	0	185	46	0	0	0	40	208	0	0	0	0	479
3:30 PM	0	204	39	0	0	0	43	187	0	0	0	0	473
3:45 PM	0	204	23	0	0	0	47	208	0	0	0	0	482
4:00 PM	0	225	48	0	0	0	45	239	0	0	0	0	557
4:15 PM	0	207	39	0	0	0	42	229	0	0	0	0	517
4:30 PM	0	187	39	0	0	0	57	246	0	0	0	0	529
4:45 PM	0	215	61	0	0	0	51	260	0	0	0	0	587
5:00 PM	0	210	51	0	0	0	56	261	0	0	0	0	578
5:15 PM	0	229	56	0	0	0	49	284	0	0	0	0	618
5:30 PM	0	230	34	0	0	0	56	227	0	0	0	0	547
5:45 PM	0	204	40	0	0	0	54	218	0	0	0	0	516
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	2468	515	0	0	0	589	2752	0	0	0	0	6324
APPROACH %'s :	0.00%	82.74%	17.26%	#DIV/0!	#DIV/0!	#DIV/0!	17.63%	82.37%	0.00%	#DIV/0!	#DIV/0!	#DIV/0!	
PEAK HR START TIME :	445 PM												TOTAL
PEAK HR VOL :	0	884	202	0	0	0	212	1032	0	0	0	0	2330
PEAK HR FACTOR :		0.953			0.000			0.934			0.000		0.943

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-5262-001 **Day:** Thursday

TOTALS

City: Los Angeles **Date:** 5/7/2015

AM

NS/EW Streets:	Olive St			Olive St			Olympic Blvd			Olympic Blvd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	2	1	0	0	0	1	1	0	0	2	0	
7:00 AM	25	145	7	0	0	0	16	80	0	0	156	10	439
7:15 AM	21	180	6	0	0	0	21	122	0	0	147	16	513
7:30 AM	26	184	10	0	0	0	27	164	0	0	176	15	602
7:45 AM	40	218	23	0	0	0	25	241	0	0	188	12	747
8:00 AM	26	181	10	0	0	0	37	204	0	0	155	9	622
8:15 AM	30	167	20	0	0	0	24	260	0	0	171	21	693
8:30 AM	18	175	15	0	0	0	34	192	0	0	160	13	607
8:45 AM	23	180	13	0	0	0	28	229	0	0	163	19	655
9:00 AM	17	163	13	0	0	0	29	208	0	0	134	8	572
9:15 AM	23	140	15	0	0	0	37	199	0	0	137	21	572
9:30 AM	20	164	10	0	0	0	37	197	0	0	159	10	597
9:45 AM	20	113	20	0	0	0	26	162	0	0	155	15	511
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	289	2010	162	0	0	0	341	2258	0	0	1901	169	7130
APPROACH %'s :	11.74%	81.67%	6.58%	#DIV/0!	#DIV/0!	#DIV/0!	13.12%	86.88%	0.00%	0.00%	91.84%	8.16%	
PEAK HR START TIME :	745 AM												TOTAL
PEAK HR VOL :	114	741	68	0	0	0	120	897	0	0	674	55	2669
PEAK HR FACTOR :		0.821			0.000			0.895			0.911		0.893

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-5262-001 **Day:** Thursday

TOTALS

City: Los Angeles **Date:** 5/7/2015

PM

NS/EW Streets:	Olive St			Olive St			Olympic Blvd			Olympic Blvd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	2	1	0	0	0	1	1	0	0	2	0	
3:00 PM	23	72	19	0	0	0	13	168	0	0	166	13	474
3:15 PM	15	95	18	0	0	0	20	132	0	0	175	16	471
3:30 PM	27	124	17	0	0	0	25	138	0	0	175	7	513
3:45 PM	26	124	27	0	0	0	27	170	0	0	182	16	572
4:00 PM	26	161	12	0	0	0	28	183	0	0	187	15	612
4:15 PM	20	177	17	0	0	0	18	183	0	0	212	14	641
4:30 PM	25	202	19	0	0	0	26	165	0	0	176	12	625
4:45 PM	27	177	21	0	0	0	27	194	0	0	214	7	667
5:00 PM	31	223	17	0	0	0	22	183	0	0	247	12	735
5:15 PM	28	208	15	0	0	0	36	172	0	0	230	11	700
5:30 PM	30	221	13	0	0	0	24	172	0	0	233	12	705
5:45 PM	30	186	13	0	0	0	24	170	0	0	251	15	689
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	308	1970	208	0	0	0	290	2030	0	0	2448	150	7404
APPROACH %'s :	12.39%	79.24%	8.37%	#DIV/0!	#DIV/0!	#DIV/0!	12.50%	87.50%	0.00%	0.00%	94.23%	5.77%	
PEAK HR START TIME :	500 PM												TOTAL
PEAK HR VOL :	119	838	58	0	0	0	106	697	0	0	961	50	2829
PEAK HR FACTOR :		0.936			0.000			0.965			0.950		0.962

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-5262-004 **Day:** Thursday

TOTALS

City: Los Angeles **Date:** 5/7/2015

AM

NS/EW Streets:	Olive St			Olive St			11th St			11th St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	2	0	0	0	0	0	0	0	0	1	1	
7:00 AM	12	162	0	0	0	0	0	0	0	0	24	9	207
7:15 AM	19	191	0	0	0	0	0	0	0	0	47	6	263
7:30 AM	27	217	0	0	0	0	0	0	0	0	35	13	292
7:45 AM	33	242	0	0	0	0	0	0	0	0	42	22	339
8:00 AM	22	197	0	0	0	0	0	0	0	0	36	8	263
8:15 AM	24	214	0	0	0	0	0	0	0	0	38	13	289
8:30 AM	18	192	0	0	0	0	0	0	0	0	30	9	249
8:45 AM	28	190	0	0	0	0	0	0	0	0	31	13	262
9:00 AM	26	180	0	0	0	0	0	0	0	0	32	11	249
9:15 AM	24	177	0	0	0	0	0	0	0	0	43	13	257
9:30 AM	11	196	0	0	0	0	0	0	0	0	53	14	274
9:45 AM	19	135	0	0	0	0	0	0	0	0	32	14	200
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	263	2293	0	0	0	0	0	0	0	0	443	145	3144
APPROACH %'s :	10.29%	89.71%	0.00%	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	0.00%	75.34%	24.66%	
PEAK HR START TIME :	730 AM												TOTAL
PEAK HR VOL :	106	870	0	0	0	0	0	0	0	0	151	56	1183
PEAK HR FACTOR :		0.887			0.000			0.000			0.809		0.872

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-5262-004 **Day:** Thursday

TOTALS

City: Los Angeles **Date:** 5/7/2015

PM

NS/EW Streets:	Olive St			Olive St			11th St			11th St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	2	0	0	0	0	0	0	0	0	1	1	
3:00 PM	12	85	0	0	0	0	0	0	0	0	57	21	175
3:15 PM	18	117	0	0	0	0	0	0	0	0	45	16	196
3:30 PM	27	134	0	0	0	0	0	0	0	0	40	26	227
3:45 PM	18	145	0	0	0	0	0	0	0	0	54	29	246
4:00 PM	30	170	0	0	0	0	0	0	0	0	59	28	287
4:15 PM	33	187	0	0	0	0	0	0	0	0	44	18	282
4:30 PM	27	220	0	0	0	0	0	0	0	0	56	23	326
4:45 PM	36	203	0	0	0	0	0	0	0	0	49	17	305
5:00 PM	43	228	0	0	0	0	0	0	0	0	110	30	411
5:15 PM	33	214	0	0	0	0	0	0	0	0	101	27	375
5:30 PM	31	210	0	0	0	0	0	0	0	0	145	36	422
5:45 PM	27	205	0	0	0	0	0	0	0	0	159	39	430
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	335	2118	0	0	0	0	0	0	0	0	919	310	3682
APPROACH %'s :	13.66%	86.34%	0.00%	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	0.00%	74.78%	25.22%	
PEAK HR START TIME :	500 PM												TOTAL
PEAK HR VOL :	134	857	0	0	0	0	0	0	0	0	515	132	1638
PEAK HR FACTOR :		0.914			0.000			0.000			0.817		0.952

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 17-5175-003 **Day:** Thursday

City: Los Angeles **Date:** 3/23/2017

TOTALS

AM

NS/EW Streets:	Hill St			Hill St			8th St			8th St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	0	0	2	1	1	2	1	0	0	0	
7:00 AM	18	97	0	0	159	30	0	0	0	20	199	14	537
7:15 AM	15	86	0	0	146	29	0	0	0	20	196	27	519
7:30 AM	13	131	0	0	169	20	0	0	0	22	192	17	564
7:45 AM	14	131	0	0	168	29	0	0	0	9	232	20	603
8:00 AM	12	102	0	0	162	25	0	0	0	19	238	15	573
8:15 AM	16	105	0	0	143	32	0	0	0	23	212	23	554
8:30 AM	15	131	0	0	135	34	0	0	0	28	240	24	607
8:45 AM	18	112	0	0	136	29	0	0	0	26	222	26	569
9:00 AM	22	129	0	0	155	34	0	0	0	22	201	22	585
9:15 AM	15	89	0	0	157	29	0	0	0	26	207	27	550
9:30 AM	17	88	0	0	171	37	0	0	0	25	162	17	517
9:45 AM	16	96	0	0	143	29	0	0	0	16	184	17	501
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	191	1297	0	0	1844	357	0	0	0	256	2485	249	6679
APPROACH %'s :	12.84%	87.16%	0.00%	0.00%	83.78%	16.22%	#DIV/0!	#DIV/0!	#DIV/0!	8.56%	83.11%	8.33%	
PEAK HR START TIME :	745 AM												TOTAL
PEAK HR VOL :	57	469	0	0	608	120	0	0	0	79	922	82	2337
PEAK HR FACTOR :		0.901			0.924			0.000			0.927		0.963

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 17-5175-003 **Day:** Thursday

City: Los Angeles **Date:** 3/23/2017

TOTALS

PM

NS/EW Streets:	Hill St			Hill St			8th St			8th St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	0	0	2	1	1	2	1	0	0	0	
3:00 PM	15	135	0	0	188	36	0	0	0	16	174	30	594
3:15 PM	20	118	0	0	175	46	0	0	0	16	173	37	585
3:30 PM	20	140	0	0	200	64	0	0	0	30	187	21	662
3:45 PM	18	145	0	0	202	51	0	0	0	17	184	20	637
4:00 PM	14	124	0	0	208	37	0	0	0	23	171	24	601
4:15 PM	11	139	0	0	223	42	0	0	0	31	171	26	643
4:30 PM	16	121	0	0	207	49	0	0	0	16	170	27	606
4:45 PM	6	146	0	0	182	50	0	0	0	19	204	29	636
5:00 PM	22	159	0	0	214	56	0	0	0	26	220	27	724
5:15 PM	13	142	0	0	212	53	0	0	0	20	245	22	707
5:30 PM	18	146	0	0	212	46	0	0	0	19	262	26	729
5:45 PM	9	150	0	0	193	53	0	0	0	28	258	25	716
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	182	1665	0	0	2416	583	0	0	0	261	2419	314	7840
APPROACH %'s :	9.85%	90.15%	0.00%	0.00%	80.56%	19.44%	#DIV/0!	#DIV/0!	#DIV/0!	8.72%	80.79%	10.49%	
PEAK HR START TIME :	500 PM												TOTAL
PEAK HR VOL :	62	597	0	0	831	208	0	0	0	93	985	100	2876
PEAK HR FACTOR :		0.910			0.962			0.000			0.947		0.986

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 17-5175-004 **Day:** Thursday

City: Los Angeles **Date:** 3/23/2017

TOTALS

AM

NS/EW Streets:	Hill St			Hill St			9th St			9th St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	2	0	1	2	0	0	2	0	0	0	0	
7:00 AM	0	104	13	34	129	0	10	117	15	0	0	0	422
7:15 AM	0	91	11	31	115	0	14	137	12	0	0	0	411
7:30 AM	0	131	10	36	147	0	18	151	18	0	0	0	511
7:45 AM	0	124	13	40	120	0	14	218	11	0	0	0	540
8:00 AM	0	100	21	35	133	0	24	231	26	0	0	0	570
8:15 AM	0	108	21	32	116	0	14	243	14	0	0	0	548
8:30 AM	0	124	19	27	127	0	15	232	18	0	0	0	562
8:45 AM	0	110	21	31	115	0	18	205	17	0	0	0	517
9:00 AM	0	107	27	36	113	0	17	193	19	0	0	0	512
9:15 AM	0	92	22	42	102	0	14	191	11	0	0	0	474
9:30 AM	0	77	24	29	93	0	13	142	20	0	0	0	398
9:45 AM	0	90	16	39	119	0	24	180	22	0	0	0	490
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	1258	218	412	1429	0	195	2240	203	0	0	0	5955
APPROACH %'s :	0.00%	85.23%	14.77%	22.38%	77.62%	0.00%	7.39%	84.91%	7.70%	#DIV/0!	#DIV/0!	#DIV/0!	
PEAK HR START TIME :	745 AM												TOTAL
PEAK HR VOL :	0	456	74	134	496	0	67	924	69	0	0	0	2220
PEAK HR FACTOR :		0.927			0.938			0.943			0.000		0.974

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 17-5175-004

Day: Thursday

City: Los Angeles

TOTALS

Date: 3/23/2017

PM

NS/EW Streets:	Hill St			Hill St			9th St			9th St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	2	0	1	2	0	0	2	0	0	0	0	
3:00 PM	0	102	15	40	183	0	29	195	16	0	0	0	580
3:15 PM	0	103	18	43	152	0	30	204	21	0	0	0	571
3:30 PM	0	135	12	35	199	0	14	195	21	0	0	0	611
3:45 PM	0	122	27	35	201	0	16	189	20	0	0	0	610
4:00 PM	0	124	13	40	187	0	18	258	21	0	0	0	661
4:15 PM	0	138	19	44	212	0	12	238	20	0	0	0	683
4:30 PM	0	114	26	26	196	0	14	259	24	0	0	0	659
4:45 PM	0	146	16	24	181	0	21	266	21	0	0	0	675
5:00 PM	0	149	15	25	224	0	13	286	22	0	0	0	734
5:15 PM	0	150	24	32	219	0	15	302	16	0	0	0	758
5:30 PM	0	125	12	40	202	0	14	222	21	0	0	0	636
5:45 PM	0	148	18	24	199	0	17	226	12	0	0	0	644
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	1556	215	408	2355	0	213	2840	235	0	0	0	7822
APPROACH %'s :	0.00%	87.86%	12.14%	14.77%	85.23%	0.00%	6.48%	86.37%	7.15%	#DIV/0!	#DIV/0!	#DIV/0!	
PEAK HR START TIME :	430 PM												TOTAL
PEAK HR VOL :	0	559	81	107	820	0	63	1113	83	0	0	0	2826
PEAK HR FACTOR :		0.920			0.923			0.945			0.000		0.932

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-5262-002

Day: Thursday

TOTALS

City: Los Angeles

Date: 5/7/2015

AM

NS/EW Streets:	Hill St			Hill St			Olympic Blvd			Olympic Blvd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	0	1	2	0	1	2	0	1	2	0	
7:00 AM	2	74	10	17	117	27	7	75	6	11	134	9	489
7:15 AM	6	75	6	7	103	11	7	107	14	9	151	12	508
7:30 AM	4	99	7	3	118	28	14	132	12	12	150	7	586
7:45 AM	7	108	9	16	107	20	15	213	24	10	160	9	698
8:00 AM	10	92	8	13	110	31	17	168	22	12	125	14	622
8:15 AM	7	107	8	18	92	22	23	220	21	11	148	21	698
8:30 AM	6	95	14	14	78	23	18	170	23	17	146	13	617
8:45 AM	9	113	16	17	104	26	17	215	14	13	132	13	689
9:00 AM	9	80	11	19	70	18	14	183	13	13	113	18	561
9:15 AM	4	88	21	14	82	25	9	157	23	15	129	23	590
9:30 AM	7	75	10	7	61	27	17	165	18	9	126	14	536
9:45 AM	11	67	17	11	64	28	9	148	22	8	136	31	552
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	82	1073	137	156	1106	286	167	1953	212	140	1650	184	7146
APPROACH %'s :	6.35%	83.05%	10.60%	10.08%	71.45%	18.48%	7.16%	83.75%	9.09%	7.09%	83.59%	9.32%	
PEAK HR START TIME :	745 AM												TOTAL
PEAK HR VOL :	30	402	39	61	387	96	73	771	90	50	579	57	2635
PEAK HR FACTOR :		0.950			0.883			0.884			0.953		0.944

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-5262-002

Day: Thursday

City: Los Angeles

TOTALS

Date: 5/7/2015

PM

NS/EW Streets:	Hill St			Hill St			Olympic Blvd			Olympic Blvd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	0	1	2	0	1	2	0	1	2	0	
3:00 PM	11	69	22	10	96	23	16	146	16	6	148	21	584
3:15 PM	4	63	16	15	113	36	16	117	20	10	142	29	581
3:30 PM	16	80	21	14	133	26	15	133	19	14	147	17	635
3:45 PM	7	68	16	9	143	27	13	154	35	12	156	20	660
4:00 PM	5	79	24	14	151	25	15	154	17	14	170	22	690
4:15 PM	12	107	19	17	173	31	19	160	21	12	169	12	752
4:30 PM	10	104	18	15	194	36	13	154	19	15	137	19	734
4:45 PM	11	115	21	8	169	38	30	163	19	15	170	23	782
5:00 PM	9	113	20	7	192	38	19	159	15	14	206	12	804
5:15 PM	10	116	23	13	222	32	14	160	16	20	194	21	841
5:30 PM	9	125	14	9	210	45	21	148	10	21	200	27	839
5:45 PM	10	135	19	7	200	31	24	148	11	15	213	22	835
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	114	1174	233	138	1996	388	215	1796	218	168	2052	245	8737
APPROACH %'s :	7.50%	77.19%	15.32%	5.47%	79.14%	15.38%	9.65%	80.57%	9.78%	6.82%	83.25%	9.94%	
PEAK HR START TIME :	500 PM												TOTAL
PEAK HR VOL :	38	489	76	36	824	146	78	615	52	70	813	82	3319
PEAK HR FACTOR :		0.919			0.942			0.965			0.965		0.987

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-5262-005 **Day:** Thursday

TOTALS

City: Los Angeles **Date:** 5/7/2015

AM

NS/EW Streets:	Hill St			Hill St			11th St			11th St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	0	0	2	0	0	0	0	1	2	0	
7:00 AM	2	74	0	0	119	12	0	0	0	6	26	4	243
7:15 AM	5	104	0	0	110	11	0	0	0	7	42	3	282
7:30 AM	7	102	0	0	108	14	0	0	0	4	31	8	274
7:45 AM	8	124	0	0	105	22	0	0	0	7	44	9	319
8:00 AM	9	116	0	0	122	14	0	0	0	3	35	8	307
8:15 AM	9	130	0	0	104	13	0	0	0	4	29	7	296
8:30 AM	4	106	0	0	96	15	0	0	0	3	28	12	264
8:45 AM	7	126	0	0	110	12	0	0	0	7	32	23	317
9:00 AM	3	97	0	0	90	10	0	0	0	4	33	12	249
9:15 AM	11	95	0	0	82	17	0	0	0	15	31	13	264
9:30 AM	8	92	0	0	64	12	0	0	0	4	54	16	250
9:45 AM	3	89	0	0	80	14	0	0	0	8	29	14	237
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	76	1255	0	0	1190	166	0	0	0	72	414	129	3302
APPROACH %'s :	5.71%	94.29%	0.00%	0.00%	87.76%	12.24%	#DIV/0!	#DIV/0!	#DIV/0!	11.71%	67.32%	20.98%	
PEAK HR START TIME :	730 AM												TOTAL
PEAK HR VOL :	33	472	0	0	439	63	0	0	0	18	139	32	1196
PEAK HR FACTOR :		0.908			0.923			0.000			0.788		0.937

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-5262-005 **Day:** Thursday

TOTALS

City: Los Angeles **Date:** 5/7/2015

PM

NS/EW Streets:	Hill St			Hill St			11th St			11th St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	0	0	2	0	0	0	0	1	2	0	
3:00 PM	9	75	0	0	110	14	0	0	0	10	60	19	297
3:15 PM	5	72	0	0	141	10	0	0	0	9	40	14	291
3:30 PM	8	85	0	0	168	20	0	0	0	9	40	17	347
3:45 PM	14	70	0	0	171	28	0	0	0	10	42	12	347
4:00 PM	8	94	0	0	180	20	0	0	0	12	55	25	394
4:15 PM	7	120	0	0	197	9	0	0	0	11	41	18	403
4:30 PM	3	118	0	0	224	13	0	0	0	14	58	24	454
4:45 PM	7	133	0	0	188	11	0	0	0	15	56	31	441
5:00 PM	8	125	0	0	200	20	0	0	0	16	115	21	505
5:15 PM	9	129	0	0	243	19	0	0	0	21	98	21	540
5:30 PM	16	130	0	0	212	21	0	0	0	17	151	24	571
5:45 PM	7	133	0	0	188	31	0	0	0	18	153	28	558
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	101	1284	0	0	2222	216	0	0	0	162	909	254	5148
APPROACH %'s :	7.29%	92.71%	0.00%	0.00%	91.14%	8.86%	#DIV/0!	#DIV/0!	#DIV/0!	12.23%	68.60%	19.17%	
PEAK HR START TIME :	500 PM												TOTAL
PEAK HR VOL :	40	517	0	0	843	91	0	0	0	72	517	94	2174
PEAK HR FACTOR :		0.954			0.891			0.000			0.858		0.952

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-5262-008 **Day:** Thursday

TOTALS

City: Los Angeles **Date:** 5/7/2015

AM

NS/EW Streets:	Hill St			Hill St			12th St			12th St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	1	1	2	0	0	2	0	0	0	0	
7:00 AM	0	72	16	15	103	0	5	23	4	0	0	0	238
7:15 AM	0	98	20	10	105	0	4	20	8	0	0	0	265
7:30 AM	0	105	28	14	104	0	6	37	9	0	0	0	303
7:45 AM	0	130	23	12	100	0	10	68	3	0	0	0	346
8:00 AM	0	123	26	11	122	0	4	55	5	0	0	0	346
8:15 AM	0	131	19	21	79	0	11	61	11	0	0	0	333
8:30 AM	0	105	13	11	92	0	10	36	7	0	0	0	274
8:45 AM	0	129	27	21	108	0	12	49	7	0	0	0	353
9:00 AM	0	94	14	12	80	0	5	40	5	0	0	0	250
9:15 AM	0	103	16	20	76	0	7	35	8	0	0	0	265
9:30 AM	0	93	6	14	68	0	7	34	8	0	0	0	230
9:45 AM	0	93	18	15	79	0	5	25	6	0	0	0	241
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	1276	226	176	1116	0	86	483	81	0	0	0	3444
APPROACH %'s :	0.00%	84.95%	15.05%	13.62%	86.38%	0.00%	13.23%	74.31%	12.46%	#DIV/0!	#DIV/0!	#DIV/0!	
PEAK HR START TIME :	730 AM												TOTAL
PEAK HR VOL :	0	489	96	58	405	0	31	221	28	0	0	0	1328
PEAK HR FACTOR :		0.956			0.870			0.843			0.000		0.960

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-5262-008 **Day:** Thursday

TOTALS

City: Los Angeles **Date:** 5/7/2015

PM

NS/EW Streets:	Hill St			Hill St			12th St			12th St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	1	1	2	0	0	2	0	0	0	0	
3:00 PM	0	78	8	9	114	0	7	40	33	0	0	0	289
3:15 PM	0	73	10	16	129	0	6	25	10	0	0	0	269
3:30 PM	0	89	14	25	161	0	9	41	5	0	0	0	344
3:45 PM	0	74	18	28	164	0	12	23	5	0	0	0	324
4:00 PM	0	96	14	18	165	0	6	23	9	0	0	0	331
4:15 PM	0	122	23	18	194	0	8	37	10	0	0	0	412
4:30 PM	0	111	17	21	203	0	12	34	10	0	0	0	408
4:45 PM	0	131	20	12	200	0	9	33	13	0	0	0	418
5:00 PM	0	128	29	10	210	0	12	44	10	0	0	0	443
5:15 PM	0	129	9	13	234	0	8	32	9	0	0	0	434
5:30 PM	0	130	19	17	235	0	15	31	9	0	0	0	456
5:45 PM	0	126	17	19	169	0	13	29	18	0	0	0	391
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	1287	198	206	2178	0	117	392	141	0	0	0	4519
APPROACH %'s :	0.00%	86.67%	13.33%	8.64%	91.36%	0.00%	18.00%	60.31%	21.69%	#DIV/0!	#DIV/0!	#DIV/0!	
PEAK HR START TIME :	445 PM												TOTAL
PEAK HR VOL :	0	518	77	52	879	0	44	140	41	0	0	0	1751
PEAK HR FACTOR :		0.947			0.924			0.852			0.000		0.960

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 17-5175-005

Day: Thursday

TOTALS

City: Los Angeles

Date: 3/23/2017

AM

NS/EW Streets:	Broadway			Broadway			9th St			9th St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	2	0	0	1	0	1	2	0	0	0	0	
7:00 AM	0	106	11	0	39	0	7	117	14	0	0	0	294
7:15 AM	0	138	17	0	67	0	9	149	11	0	0	0	391
7:30 AM	0	147	18	1	69	0	8	178	8	0	0	0	429
7:45 AM	0	152	10	0	45	0	7	255	6	0	0	0	475
8:00 AM	0	142	10	2	61	0	18	225	20	0	0	0	478
8:15 AM	0	130	20	2	79	0	22	249	13	0	0	0	515
8:30 AM	0	162	14	2	55	0	17	232	14	0	0	0	496
8:45 AM	0	144	9	2	77	0	11	208	20	0	0	0	471
9:00 AM	0	173	17	2	83	0	14	180	13	0	0	0	482
9:15 AM	0	149	30	0	60	0	19	171	22	0	0	0	451
9:30 AM	0	142	37	0	50	0	20	149	12	0	0	0	410
9:45 AM	0	123	23	2	51	0	18	159	12	0	0	0	388
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	1708	216	13	736	0	170	2272	165	0	0	0	5280
APPROACH %'s :	0.00%	88.77%	11.23%	1.74%	98.26%	0.00%	6.52%	87.15%	6.33%	#DIV/0!	#DIV/0!	#DIV/0!	
PEAK HR START TIME :	815 AM												TOTAL
PEAK HR VOL :	0	609	60	8	294	0	64	869	60	0	0	0	1964
PEAK HR FACTOR :		0.880			0.888			0.874			0.000		0.953

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 17-5175-005

Day: Thursday

TOTALS

City: Los Angeles

Date: 3/23/2017

PM

NS/EW Streets:	Broadway			Broadway			9th St			9th St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	2	0	0	1	0	1	2	0	0	0	0	
3:00 PM	0	138	24	2	84	0	22	224	26	0	0	0	520
3:15 PM	0	140	26	2	73	0	16	228	28	0	0	0	513
3:30 PM	0	116	15	2	73	0	16	210	22	0	0	0	454
3:45 PM	0	139	32	3	113	0	18	239	25	0	0	0	569
4:00 PM	0	156	29	0	107	0	27	271	29	0	0	0	619
4:15 PM	0	131	32	1	106	0	27	257	17	0	0	0	571
4:30 PM	0	168	25	1	130	0	30	281	17	0	0	0	652
4:45 PM	0	165	15	1	113	0	32	271	17	0	0	0	614
5:00 PM	0	176	22	1	108	0	36	292	20	0	0	0	655
5:15 PM	0	165	19	3	134	0	39	309	26	0	0	0	695
5:30 PM	0	151	14	0	123	0	35	250	35	0	0	0	608
5:45 PM	0	143	18	1	114	0	31	245	25	0	0	0	577
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	1788	271	17	1278	0	329	3077	287	0	0	0	7047
APPROACH %'s :	0.00%	86.84%	13.16%	1.31%	98.69%	0.00%	8.91%	83.32%	7.77%	#DIV/0!	#DIV/0!	#DIV/0!	
PEAK HR START TIME :	430 PM												TOTAL
PEAK HR VOL :	0	674	81	6	485	0	137	1153	80	0	0	0	2616
PEAK HR FACTOR :		0.953			0.896			0.916			0.000		0.941

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-5262-003

Day: Thursday

TOTALS

City: Los Angeles

Date: 5/7/2015

AM

NS/EW Streets:	Broadway			Broadway			Olympic Blvd			Olympic Blvd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	3	0	0	2	0	1	2	0	1	2	0	
7:00 AM	6	122	5	0	53	17	5	93	10	16	127	5	459
7:15 AM	7	132	6	0	61	14	7	99	9	13	154	7	509
7:30 AM	10	144	15	0	42	10	10	136	9	17	149	6	548
7:45 AM	10	143	11	0	52	12	13	213	8	14	157	1	634
8:00 AM	5	140	7	0	60	25	11	145	10	18	139	12	572
8:15 AM	5	152	10	0	68	24	18	201	9	13	134	6	640
8:30 AM	4	154	12	0	56	24	12	182	8	8	149	13	622
8:45 AM	11	143	13	0	54	23	15	221	11	9	121	15	636
9:00 AM	12	145	13	0	57	27	14	158	21	13	121	9	590
9:15 AM	8	118	18	0	56	25	11	171	12	19	113	12	563
9:30 AM	7	115	17	0	62	18	18	158	13	11	134	13	566
9:45 AM	11	101	19	0	55	20	10	142	12	16	139	14	539
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	96	1609	146	0	676	239	144	1919	132	167	1637	113	6878
APPROACH %'s :	5.19%	86.93%	7.89%	0.00%	73.88%	26.12%	6.56%	87.43%	6.01%	8.71%	85.39%	5.89%	
PEAK HR START TIME :	815 AM												TOTAL
PEAK HR VOL :	32	594	48	0	235	98	59	762	49	43	525	43	2488
PEAK HR FACTOR :		0.991			0.905			0.881			0.899		0.972

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-5262-003

Day: Thursday

City: Los Angeles

TOTALS

Date: 5/7/2015

PM

NS/EW Streets:	Broadway			Broadway			Olympic Blvd			Olympic Blvd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	3	0	0	2	0	1	2	0	1	2	0	
3:00 PM	7	64	12	0	38	26	10	142	18	25	128	19	489
3:15 PM	7	83	12	0	79	24	11	135	15	19	146	17	548
3:30 PM	12	97	17	0	101	16	15	142	15	10	156	18	599
3:45 PM	5	101	14	0	88	24	20	159	20	12	147	13	603
4:00 PM	12	115	14	0	97	26	12	142	22	17	175	25	657
4:15 PM	7	100	18	0	116	31	25	161	7	15	142	19	641
4:30 PM	7	132	18	0	116	21	8	146	13	12	154	12	639
4:45 PM	11	127	24	0	119	29	14	152	14	17	152	15	674
5:00 PM	13	136	14	0	125	28	16	154	19	15	178	14	712
5:15 PM	5	135	19	0	135	22	19	158	21	23	212	15	764
5:30 PM	10	142	26	0	126	26	14	144	25	19	207	15	754
5:45 PM	12	128	24	0	111	22	20	127	14	26	204	19	707
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	108	1360	212	0	1251	295	184	1762	203	210	2001	201	7787
APPROACH %'s :	6.43%	80.95%	12.62%	0.00%	80.92%	19.08%	8.56%	81.99%	9.45%	8.71%	82.96%	8.33%	
PEAK HR START TIME :	500 PM												TOTAL
PEAK HR VOL :	40	541	83	0	497	98	69	583	79	83	801	63	2937
PEAK HR FACTOR :		0.933			0.947			0.923			0.947		0.961

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-5262-006 **Day:** Thursday

TOTALS

City: Los Angeles **Date:** 5/7/2015

AM

NS/EW Streets:	Broadway			Broadway			11th St			11th St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	0	0	1	0	0	0	0	0	2	0	
7:00 AM	11	127	0	0	82	2	0	0	0	7	25	1	255
7:15 AM	13	146	0	0	71	7	0	0	0	8	30	3	278
7:30 AM	8	158	0	0	60	7	0	0	0	7	29	5	274
7:45 AM	6	159	0	0	69	9	0	0	0	6	45	7	301
8:00 AM	9	143	0	0	83	5	0	0	0	15	36	3	294
8:15 AM	14	166	0	0	86	4	0	0	0	12	31	4	317
8:30 AM	12	160	0	0	57	9	0	0	0	6	25	2	271
8:45 AM	13	158	0	0	74	8	0	0	0	9	42	4	308
9:00 AM	12	154	0	0	82	6	0	0	0	12	26	2	294
9:15 AM	14	147	0	0	78	13	0	0	0	7	35	3	297
9:30 AM	14	126	0	0	74	4	0	0	0	8	51	2	279
9:45 AM	19	128	0	0	60	9	0	0	0	6	29	9	260
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	145	1772	0	0	876	83	0	0	0	103	404	45	3428
APPROACH %'s :	7.56%	92.44%	0.00%	0.00%	91.35%	8.65%	#DIV/0!	#DIV/0!	#DIV/0!	18.66%	73.19%	8.15%	
PEAK HR START TIME :	815 AM												TOTAL
PEAK HR VOL :	51	638	0	0	299	27	0	0	0	39	124	12	1190
PEAK HR FACTOR :		0.957			0.906			0.000			0.795		0.938

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-5262-006 **Day:** Thursday

TOTALS

City: Los Angeles **Date:** 5/7/2015

PM

NS/EW Streets:	Broadway			Broadway			11th St			11th St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	0	0	1	0	0	0	0	0	2	0	
3:00 PM	11	75	0	0	81	16	0	0	0	11	65	5	264
3:15 PM	11	95	0	0	99	12	0	0	0	9	42	5	273
3:30 PM	13	124	0	0	125	20	0	0	0	13	35	7	337
3:45 PM	8	117	0	0	109	8	0	0	0	9	49	10	310
4:00 PM	14	124	0	0	106	23	0	0	0	11	60	9	347
4:15 PM	14	119	0	0	145	10	0	0	0	16	50	2	356
4:30 PM	17	156	0	0	124	22	0	0	0	19	59	7	404
4:45 PM	20	142	0	0	133	14	0	0	0	15	64	7	395
5:00 PM	19	157	0	0	152	20	0	0	0	17	116	9	490
5:15 PM	19	152	0	0	144	21	0	0	0	21	106	5	468
5:30 PM	20	164	0	0	145	21	0	0	0	18	149	5	522
5:45 PM	20	154	0	0	154	15	0	0	0	25	166	8	542
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	186	1579	0	0	1517	202	0	0	0	184	961	79	4708
APPROACH %'s :	10.54%	89.46%	0.00%	0.00%	88.25%	11.75%	#DIV/0!	#DIV/0!	#DIV/0!	15.03%	78.51%	6.45%	
PEAK HR START TIME :	500 PM												TOTAL
PEAK HR VOL :	78	627	0	0	595	77	0	0	0	81	537	27	2022
PEAK HR FACTOR :		0.958			0.977			0.000			0.810		0.933

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 17-5175-006 **Day:** Thursday

City: Los Angeles **Date:** 3/23/2017

TOTALS

AM

NS/EW Streets:	Main St			Main St			Olympic Blvd			Olympic Blvd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	0	0	2	1	1	3	0	1	2	0	
7:00 AM	17	115	5	0	62	37	21	60	8	7	116	3	451
7:15 AM	13	125	14	7	65	37	28	79	7	0	131	3	509
7:30 AM	12	140	9	3	78	39	22	106	10	6	94	9	528
7:45 AM	15	131	15	3	72	29	30	156	10	5	138	5	609
8:00 AM	14	149	18	9	84	27	38	113	16	3	118	7	596
8:15 AM	13	144	35	3	91	36	23	183	10	4	115	9	666
8:30 AM	14	160	32	14	62	31	39	134	12	7	136	5	646
8:45 AM	9	133	19	6	74	28	36	132	12	6	117	16	588
9:00 AM	4	119	26	4	68	45	25	149	20	3	116	8	587
9:15 AM	6	113	27	3	81	42	30	127	14	8	102	23	576
9:30 AM	10	99	17	0	81	34	26	130	13	15	98	15	538
9:45 AM	13	98	27	2	63	39	34	123	16	5	94	11	525
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	140	1526	244	54	881	424	352	1492	148	69	1375	114	6819
APPROACH %'s :	7.33%	79.90%	12.77%	3.97%	64.83%	31.20%	17.67%	74.90%	7.43%	4.43%	88.25%	7.32%	
PEAK HR START TIME :	745 AM												TOTAL
PEAK HR VOL :	56	584	100	29	309	123	130	586	48	19	507	26	2517
PEAK HR FACTOR :		0.898			0.887			0.884			0.932		0.945

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 17-5175-006 **Day:** Thursday

TOTALS

City: Los Angeles **Date:** 3/23/2017

PM

NS/EW Streets:	Main St			Main St			Olympic Blvd			Olympic Blvd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	0	0	2	1	1	3	0	1	2	0	
3:00 PM	13	108	19	6	81	50	25	151	13	8	141	14	629
3:15 PM	20	123	11	5	100	44	42	134	14	16	144	14	667
3:30 PM	20	176	22	7	105	38	45	139	12	13	121	20	718
3:45 PM	9	184	21	8	105	36	38	133	15	14	148	19	730
4:00 PM	14	194	28	2	97	46	36	128	23	11	120	15	714
4:15 PM	15	189	30	4	105	42	44	143	15	12	143	12	754
4:30 PM	18	197	20	9	127	35	41	131	11	13	167	15	784
4:45 PM	15	197	18	2	123	43	45	148	11	14	190	16	822
5:00 PM	21	205	23	6	107	34	50	138	13	24	185	13	819
5:15 PM	18	191	13	5	132	25	39	149	13	28	147	10	770
5:30 PM	20	216	22	2	126	31	39	121	18	18	137	12	762
5:45 PM	17	168	6	2	80	37	36	115	10	18	103	9	601
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	200	2148	233	58	1288	461	480	1630	168	189	1746	169	8770
APPROACH %'s :	7.75%	83.22%	9.03%	3.21%	71.28%	25.51%	21.07%	71.55%	7.37%	8.98%	82.98%	8.03%	
PEAK HR START TIME :	430 PM												TOTAL
PEAK HR VOL :	72	790	74	22	489	137	175	566	48	79	689	54	3195
PEAK HR FACTOR :		0.940			0.947			0.967			0.926		0.972

CONTROL : Signalized

APPENDIX D:
LOS ANALYSIS SHEETS

Level of Service Worksheet
(Circular 212 Method)

I/S #:	PROJECT TITLE:	Olympic & Hill		
1	North-South Street:	Grand Ave	East-West Street:	Olympic Boulevard
	Scenario:	Existing		
	Count Date:	3/23/2017	Analyst: Fehr & Peers	Date: 5/19/2017

		AM			PM		
No. of Phases				2			2
Opposed Ø'ing: N/S-1, E/W-2 or Both-3?				0			0
Right Turns: FREE-1, NRTOR-2 or OLA-3?	NB-- 0	SB--	0		NB-- 0	SB--	0
	EB-- 0	WB--	0		EB-- 0	WB--	0
ATSAC-1 or ATSAC+ATCS-2?			2				2
Override Capacity			0				0

	MOVEMENT	Volume	No. of Lanes	Lane Volume	Volume	No. of Lanes	Lane Volume
NORTHBOUND	Left	0	0	**0**	0	0	**0**
	Left-Through		0			0	
	Through	0	0	0	0	0	0
	Through-Right		0			0	
	Right	0	0	0	0	0	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
SOUTHBOUND	Left	77	1	77	86	1	86
	Left-Through		0			0	
	Through	448	3	**149**	1185	3	**395**
	Through-Right		0			0	
	Right	138	1	138	234	1	234
	Left-Through-Right		0			0	
	Left-Right		0			0	
EASTBOUND	Left	0	0	0	0	0	0
	Left-Through		0			0	
	Through	878	1	**486**	789	1	**470**
	Through-Right		1			1	
	Right	94	0	94	150	0	150
	Left-Through-Right		0			0	
	Left-Right		0			0	
WESTBOUND	Left	76	1	**76**	103	1	**103**
	Left-Through		0			0	
	Through	891	2	446	1059	2	530
	Through-Right		0			0	
	Right	0	0	0	0	0	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
CRITICAL VOLUMES			*North-South:*	149		*North-South:*	395
			East-West:	562		*East-West:*	573
			SUM:	711		*SUM:*	968
VOLUME/CAPACITY *(V/C)* RATIO:				0.474			0.645
V/C LESS ATSAC/ATCS ADJUSTMENT:				**0.374**			**0.545**
LEVEL OF SERVICE (LOS):				**A**			**A**

Level of Service Worksheet
(Circular 212 Method)

I/S #:	PROJECT TITLE:	Olympic & Hill		
2	North-South Street:	Olive Street	East-West Street:	9th Street
	Scenario:	Existing		
	Count Date:	3/23/2017	Analyst: Fehr & Peers	Date: 5/19/2017

		AM			PM		
	No. of Phases			2			2
	Opposed Ø'ing: N/S-1, E/W-2 or Both-3?			0			0
	Right Turns: FREE-1, NRTOR-2 or OLA-3?	NB-- 0	SB--	0	NB-- 0	SB--	0
		EB-- 0	WB--	0	EB-- 0	WB--	0
	ATSAC-1 or ATSAC+ATCS-2?			2			2
	Override Capacity			0			0
	MOVEMENT	Volume	No. of Lanes	Lane Volume	Volume	No. of Lanes	Lane Volume
NORTHBOUND	Left	0	0	0	0	0	0
	Left-Through		0			0	
	Through	951	2	**476**	884	2	**442**
	Through-Right		0			0	
	Right	82	1	82	202	1	202
	Left-Through-Right		0			0	
	Left-Right		0			0	
SOUTHBOUND	Left	0	0	**0**	0	0	**0**
	Left-Through		0			0	
	Through	0	0	0	0	0	0
	Through-Right		0			0	
	Right	0	0	0	0	0	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
EASTBOUND	Left	209	0	209	212	0	212
	Left-Through		1			1	
	Through	971	2	**393**	1032	2	**415**
	Through-Right		0			0	
	Right	0	0	0	0	0	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
WESTBOUND	Left	0	0	**0**	0	0	**0**
	Left-Through		0			0	
	Through	0	0	0	0	0	0
	Through-Right		0			0	
	Right	0	0	0	0	0	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
	CRITICAL VOLUMES		*North-South:*	476		*North-South:*	442
			East-West:	393		*East-West:*	415
			SUM:	869		*SUM:*	857
	VOLUME/CAPACITY *(V/C)* RATIO:			0.579			0.571
	V/C LESS ATSAC/ATCS ADJUSTMENT:			**0.479**			**0.471**
	LEVEL OF SERVICE (LOS):			**A**			**A**

Level of Service Worksheet
(Circular 212 Method)

I/S #:	PROJECT TITLE:	Olympic & Hill		
3	North-South Street:	Olive Street	East-West Street:	Olympic Boulevard
	Scenario:	Existing		
	Count Date:	5/7/2015	Analyst: Fehr & Peers	Date: 5/19/2017

		AM			PM		
No. of Phases				2			2
Opposed Ø'ing: N/S-1, E/W-2 or Both-3?				0			0
Right Turns: FREE-1, NRTOR-2 or OLA-3?	NB-- 0	SB--	0		NB-- 0	SB--	0
	EB-- 0	WB--	0		EB-- 0	WB--	0
ATSAC-1 or ATSAC+ATCS-2?			2				2
Override Capacity			0				0

	MOVEMENT	Volume	No. of Lanes	Lane Volume	Volume	No. of Lanes	Lane Volume
NORTHBOUND	Left	116	0	116	121	0	121
	Left-Through		1			1	
	Through	756	1	**436**	855	1	**488**
	Through-Right		0			0	
	Right	69	1	69	59	1	59
	Left-Through-Right		0			0	
	Left-Right		0			0	
SOUTHBOUND	Left	0	0	**0**	0	0	**0**
	Left-Through		0			0	
	Through	0	0	0	0	0	0
	Through-Right		0			0	
	Right	0	0	0	0	0	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
EASTBOUND	Left	122	1	**122**	108	1	**108**
	Left-Through		0			0	
	Through	915	2	458	711	2	356
	Through-Right		0			0	
	Right	0	0	0	0	0	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
WESTBOUND	Left	0	0	0	0	0	0
	Left-Through		0			0	
	Through	688	2	**344**	980	2	**490**
	Through-Right		0			0	
	Right	56	1	56	51	1	51
	Left-Through-Right		0			0	
	Left-Right		0			0	
CRITICAL VOLUMES			*North-South:*	436		*North-South:*	488
			East-West:	466		*East-West:*	598
			SUM:	902		*SUM:*	1086
VOLUME/CAPACITY *(V/C)* RATIO:				0.601			0.724
V/C LESS ATSAC/ATCS ADJUSTMENT:				**0.501**			**0.624**
LEVEL OF SERVICE (LOS):				**A**			**B**

Level of Service Worksheet
(Circular 212 Method)

I/S #:	PROJECT TITLE:	Olympic & Hill		
4	North-South Street:	Olive Street	East-West Street:	11th Street
	Scenario:	Existing		
	Count Date:	5/7/2015	Analyst: Fehr & Peers	Date: 5/19/2017

		AM			PM		
	No. of Phases			2			2
	Opposed Ø'ing: N/S-1, E/W-2 or Both-3?			0			0
	Right Turns: FREE-1, NRTOR-2 or OLA-3?	NB-- 0	SB--	0	NB-- 0	SB--	0
		EB-- 0	WB--	0	EB-- 0	WB--	0
	ATSAC-1 or ATSAC+ATCS-2?			2			2
	Override Capacity			0			0
	MOVEMENT	Volume	No. of Lanes	Lane Volume	Volume	No. of Lanes	Lane Volume
NORTHBOUND	Left	108	0	108	137	0	137
	Left-Through		1			1	
	Through	887	1	**498**	874	1	**506**
	Through-Right		0			0	
	Right	0	0	0	0	0	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
SOUTHBOUND	Left	0	0	**0**	0	0	**0**
	Left-Through		0			0	
	Through	0	0	0	0	0	0
	Through-Right		0			0	
	Right	0	0	0	0	0	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
EASTBOUND	Left	0	0	**0**	0	0	**0**
	Left-Through		0			0	
	Through	0	0	0	0	0	0
	Through-Right		0			0	
	Right	0	0	0	0	0	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
WESTBOUND	Left	0	0	0	0	0	0
	Left-Through		0			0	
	Through	154	2	**77**	525	2	**263**
	Through-Right		0			0	
	Right	57	1	57	135	1	135
	Left-Through-Right		0			0	
	Left-Right		0			0	
	CRITICAL VOLUMES		*North-South:*	498		*North-South:*	506
			East-West:	77		*East-West:*	263
			SUM:	575		*SUM:*	769
	VOLUME/CAPACITY *(V/C)* RATIO:			0.383			0.513
	V/C LESS ATSAC/ATCS ADJUSTMENT:			**0.283**			**0.413**
	LEVEL OF SERVICE (LOS):			**A**			**A**

Level of Service Worksheet
(Circular 212 Method)

I/S #:	PROJECT TITLE:	Olympic & Hill		
5	North-South Street:	Hill Street	East-West Street:	8th Street
	Scenario:	Existing		
	Count Date:	3/23/2017	Analyst: Fehr & Peers	Date: 5/19/2017

	AM			PM		
No. of Phases			2			2
Opposed Ø'ing: N/S-1, E/W-2 or Both-3?			0			0
Right Turns: FREE-1, NRTOR-2 or OLA-3?	NB-- 0	SB--	0	NB-- 0	SB--	0
	EB-- 0	WB--	0	EB-- 0	WB--	0
ATSAC-1 or ATSAC+ATCS-2?			2			2
Override Capacity			0			0

	MOVEMENT	Volume	No. of Lanes	Lane Volume	Volume	No. of Lanes	Lane Volume
NORTHBOUND	Left	57	1	**57**	62	1	**62**
	Left-Through		0			0	
	Through	469	2	235	597	2	299
	Through-Right		0			0	
	Right	0	0	0	0	0	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
SOUTHBOUND	Left	0	0	0	0	0	0
	Left-Through		0			0	
	Through	608	2	**304**	831	2	**416**
	Through-Right		0			0	
	Right	120	1	120	208	1	208
	Left-Through-Right		0			0	
	Left-Right		0			0	
EASTBOUND	Left	0	0	**0**	0	0	**0**
	Left-Through		0			0	
	Through	0	0	0	0	0	0
	Through-Right		0			0	
	Right	0	0	0	0	0	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
WESTBOUND	Left	79	1	79	93	1	93
	Left-Through		0			0	
	Through	922	2	**461**	985	2	**493**
	Through-Right		0			0	
	Right	82	1	82	100	1	100
	Left-Through-Right		0			0	
	Left-Right		0			0	
CRITICAL VOLUMES			*North-South:*	361		*North-South:*	478
			East-West:	461		*East-West:*	493
			SUM:	822		*SUM:*	971
VOLUME/CAPACITY *(V/C)* RATIO:				0.548			0.647
V/C LESS ATSAC/ATCS ADJUSTMENT:				**0.448**			**0.547**
LEVEL OF SERVICE (LOS):				**A**			**A**

Level of Service Worksheet
(Circular 212 Method)

I/S #:	PROJECT TITLE:	Olympic & Hill		
6	North-South Street:	Hill Street	East-West Street:	9th Street
	Scenario:	Existing		
	Count Date:	3/23/2017	Analyst: Fehr & Peers	Date: 5/19/2017

	AM			PM		
No. of Phases			2			2
Opposed Ø'ing: N/S-1, E/W-2 or Both-3?			0			0
Right Turns: FREE-1, NRTOR-2 or OLA-3?	NB-- 0	SB--	0	NB-- 0	SB--	0
	EB-- 0	WB--	0	EB-- 0	WB--	0
ATSAC-1 or ATSAC+ATCS-2?			2			2
Override Capacity			0			0

	MOVEMENT	Volume	No. of Lanes	Lane Volume	Volume	No. of Lanes	Lane Volume
NORTHBOUND	Left	0	0	0	0	0	0
	Left-Through		0			0	
	Through	456	1	**265**	559	1	**320**
	Through-Right		1			1	
	Right	74	0	74	81	0	81
	Left-Through-Right		0			0	
	Left-Right		0			0	
SOUTHBOUND	Left	134	1	**134**	107	1	**107**
	Left-Through		0			0	
	Through	496	2	248	820	2	410
	Through-Right		0			0	
	Right	0	0	0	0	0	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
EASTBOUND	Left	67	0	67	63	0	63
	Left-Through		1			1	
	Through	924	1	**353**	1113	1	**420**
	Through-Right		1			1	
	Right	69	0	353	83	0	420
	Left-Through-Right		0			0	
	Left-Right		0			0	
WESTBOUND	Left	0	0	**0**	0	0	**0**
	Left-Through		0			0	
	Through	0	0	0	0	0	0
	Through-Right		0			0	
	Right	0	0	0	0	0	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
CRITICAL VOLUMES			*North-South:*	399		*North-South:*	427
			East-West:	353		*East-West:*	420
			SUM:	752		*SUM:*	847
VOLUME/CAPACITY *(V/C)* RATIO:				0.501			0.565
V/C LESS ATSAC/ATCS ADJUSTMENT:				**0.401**			**0.465**
LEVEL OF SERVICE (LOS):				**A**			**A**

Level of Service Worksheet
(Circular 212 Method)

I/S #:	PROJECT TITLE:	Olympic & Hill		
7	North-South Street:	Hill Street	East-West Street:	Olympic Boulevard
	Scenario:	Existing		
	Count Date:	5/7/2015	Analyst: Fehr & Peers	Date: 5/19/2017

		AM			PM		
No. of Phases				2			2
Opposed Ø'ing: N/S-1, E/W-2 or Both-3?				0			0
Right Turns: FREE-1, NRTOR-2 or OLA-3?	NB-- 0	SB--	0	NB-- 0	SB--	0	
	EB-- 0	WB--	0	EB-- 0	WB--	0	
ATSAC-1 or ATSAC+ATCS-2?			2			2	
Override Capacity			0			0	

	MOVEMENT	Volume	No. of Lanes	Lane Volume	Volume	No. of Lanes	Lane Volume
NORTHBOUND	Left	31	1	31	39	1	**39**
	Left-Through		0			0	
	Through	410	1	**225**	499	1	289
	Through-Right		1			1	
	Right	40	0	40	78	0	78
	Left-Through-Right		0			0	
	Left-Right		0			0	
SOUTHBOUND	Left	62	1	**62**	37	1	37
	Left-Through		0			0	
	Through	395	1	247	841	1	**495**
	Through-Right		1			1	
	Right	98	0	98	149	0	149
	Left-Through-Right		0			0	
	Left-Right		0			0	
EASTBOUND	Left	74	1	74	80	1	**80**
	Left-Through		0			0	
	Through	786	2	**393**	627	2	314
	Through-Right		0			0	
	Right	92	1	77	53	1	34
	Left-Through-Right		0			0	
	Left-Right		0			0	
WESTBOUND	Left	51	1	**51**	71	1	71
	Left-Through		0			0	
	Through	591	1	325	829	1	**457**
	Through-Right		1			1	
	Right	58	0	58	84	0	84
	Left-Through-Right		0			0	
	Left-Right		0			0	
CRITICAL VOLUMES			*North-South:*	287		*North-South:*	534
			East-West:	444		*East-West:*	537
			SUM:	731		*SUM:*	1071
VOLUME/CAPACITY *(V/C)* RATIO:				0.487			0.714
V/C LESS ATSAC/ATCS ADJUSTMENT:				**0.387**			**0.614**
LEVEL OF SERVICE (LOS):				**A**			**B**

Level of Service Worksheet
(Circular 212 Method)

I/S #:	PROJECT TITLE:	Olympic & Hill		
8	North-South Street:	Hill Street	East-West Street:	11th Street
	Scenario:	Existing		
	Count Date:	5/7/2015	Analyst: Fehr & Peers	Date: 5/19/2017

	AM			PM		
No. of Phases			2			2
Opposed Ø'ing: N/S-1, E/W-2 or Both-3?			0			0
Right Turns: FREE-1, NRTOR-2 or OLA-3?	NB-- 0	SB--	0	NB-- 0	SB--	0
	EB-- 0	WB--	0	EB-- 0	WB--	0
ATSAC-1 or ATSAC+ATCS-2?			2			2
Override Capacity			0			0

	MOVEMENT	Volume	No. of Lanes	Lane Volume	Volume	No. of Lanes	Lane Volume
NORTHBOUND	Left	34	1	**34**	41	1	**41**
	Left-Through		0			0	
	Through	481	2	241	527	2	264
	Through-Right		0			0	
	Right	0	0	0	0	0	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
SOUTHBOUND	Left	0	0	0	0	0	0
	Left-Through		0			0	
	Through	448	2	**224**	860	2	**430**
	Through-Right		0			0	
	Right	64	1	64	93	1	93
	Left-Through-Right		0			0	
	Left-Right		0			0	
EASTBOUND	Left	0	0	**0**	0	0	**0**
	Left-Through		0			0	
	Through	0	0	0	0	0	0
	Through-Right		0			0	
	Right	0	0	0	0	0	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
WESTBOUND	Left	18	1	18	73	1	73
	Left-Through		0			0	
	Through	142	1	**88**	527	1	**312**
	Through-Right		1			1	
	Right	33	0	33	96	0	96
	Left-Through-Right		0			0	
	Left-Right		0			0	
CRITICAL VOLUMES			*North-South:*	258		*North-South:*	471
			East-West:	88		*East-West:*	312
			SUM:	346		*SUM:*	783
VOLUME/CAPACITY *(V/C)* RATIO:				0.231			0.522
V/C LESS ATSAC/ATCS ADJUSTMENT:				**0.131**			**0.422**
LEVEL OF SERVICE (LOS):				**A**			**A**

Level of Service Worksheet
(Circular 212 Method)

I/S #:	PROJECT TITLE:	Olympic & Hill		
9	North-South Street:	Hill Street	East-West Street:	12th Street
	Scenario:	Existing		
	Count Date:	5/7/2015	Analyst: Fehr & Peers	Date: 5/19/2017

		AM			PM		
No. of Phases				2			2
Opposed Ø'ing: N/S-1, E/W-2 or Both-3?				0			0
Right Turns: FREE-1, NRTOR-2 or OLA-3?	NB-- 0	SB--	0		NB-- 0	SB--	0
	EB-- 0	WB--	0		EB-- 0	WB--	0
ATSAC-1 or ATSAC+ATCS-2?			2				2
Override Capacity			0				0

	MOVEMENT	Volume	No. of Lanes	Lane Volume	Volume	No. of Lanes	Lane Volume
NORTHBOUND	Left	0	0	0	0	0	0
	Left-Through		0			0	
	Through	499	1	**499**	528	1	**528**
	Through-Right		0			0	
	Right	98	1	98	79	1	79
	Left-Through-Right		0			0	
	Left-Right		0			0	
SOUTHBOUND	Left	59	1	**59**	53	1	**53**
	Left-Through		0			0	
	Through	413	2	207	897	2	449
	Through-Right		0			0	
	Right	0	0	0	0	0	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
EASTBOUND	Left	32	0	32	45	0	45
	Left-Through		1			1	
	Through	225	0	**143**	143	0	**115**
	Through-Right		1			1	
	Right	29	0	143	42	0	115
	Left-Through-Right		0			0	
	Left-Right		0			0	
WESTBOUND	Left	0	0	**0**	0	0	**0**
	Left-Through		0			0	
	Through	0	0	0	0	0	0
	Through-Right		0			0	
	Right	0	0	0	0	0	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
CRITICAL VOLUMES			*North-South:*	558		*North-South:*	581
			East-West:	143		*East-West:*	115
			SUM:	701		*SUM:*	696
VOLUME/CAPACITY *(V/C)* RATIO:				0.467			0.464
V/C LESS ATSAC/ATCS ADJUSTMENT:				**0.367**			**0.364**
LEVEL OF SERVICE (LOS):				**A**			**A**

I/S #:	PROJECT TITLE:	Olympic & Hill		
10	North-South Street:	Broadway	East-West Street:	9th Street
	Scenario:	Existing		
	Count Date:	3/23/2017	Analyst: Fehr & Peers	Date: 5/19/2017

		AM			PM		
	No. of Phases			2			2
	Opposed Ø'ing: N/S-1, E/W-2 or Both-3?			0			0
	Right Turns: FREE-1, NRTOR-2 or OLA-3?	NB-- 0	SB--	0	NB-- 0	SB--	0
		EB-- 0	WB--	0	EB-- 0	WB--	0
	ATSAC-1 or ATSAC+ATCS-2?			2			2
	Override Capacity			0			0
	MOVEMENT	Volume	No. of Lanes	Lane Volume	Volume	No. of Lanes	Lane Volume
NORTHBOUND	Left	0	0	0	0	0	**0**
	Left-Through		0			0	
	Through	609	1	**335**	674	1	378
	Through-Right		1			1	
	Right	60	0	60	81	0	81
	Left-Through-Right		0			0	
	Left-Right		0			0	
SOUTHBOUND	Left	0	0	**0**	0	0	0
	Left-Through		0			0	
	Through	294	1	294	485	1	**485**
	Through-Right		0			0	
	Right	0	0	0	0	0	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
EASTBOUND	Left	64	1	64	137	1	137
	Left-Through		0			0	
	Through	869	2	**310**	1153	2	**411**
	Through-Right		1			1	
	Right	60	0	60	80	0	80
	Left-Through-Right		0			0	
	Left-Right		0			0	
WESTBOUND	Left	0	0	**0**	0	0	**0**
	Left-Through		0			0	
	Through	0	0	0	0	0	0
	Through-Right		0			0	
	Right	0	0	0	0	0	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
	CRITICAL VOLUMES		*North-South:*	335		*North-South:*	485
			East-West:	310		*East-West:*	411
			SUM:	645		*SUM:*	896
	VOLUME/CAPACITY *(V/C)* RATIO:			0.430			0.597
	V/C LESS ATSAC/ATCS ADJUSTMENT:			**0.330**			**0.497**
	LEVEL OF SERVICE (LOS):			**A**			**A**

Level of Service Worksheet
(Circular 212 Method)

I/S #:	PROJECT TITLE:	Olympic & Hill		
11	North-South Street:	Broadway	East-West Street:	Olympic Boulevard
	Scenario:	Existing		
	Count Date:	5/7/2015	Analyst: Fehr & Peers	Date: 5/19/2017

		AM			PM		
No. of Phases				2			2
Opposed Ø'ing: N/S-1, E/W-2 or Both-3?				0			0
Right Turns: FREE-1, NRTOR-2 or OLA-3?	NB-- 0	SB--	0		NB-- 0	SB--	0
	EB-- 0	WB--	0		EB-- 0	WB--	0
ATSAC-1 or ATSAC+ATCS-2?			2				2
Override Capacity			0				0

	MOVEMENT	Volume	No. of Lanes	Lane Volume	Volume	No. of Lanes	Lane Volume
NORTHBOUND	Left	33	0	33	41	0	**41**
	Left-Through		1			1	
	Through	606	1	**336**	552	1	358
	Through-Right		0			0	
	Right	49	1	27	85	1	43
	Left-Through-Right		0			0	
	Left-Right		0			0	
SOUTHBOUND	Left	0	0	**0**	0	0	0
	Left-Through		0			0	
	Through	240	1	240	507	1	**507**
	Through-Right		0			0	
	Right	100	1	70	100	1	65
	Left-Through-Right		0			0	
	Left-Right		0			0	
EASTBOUND	Left	60	1	60	70	1	**70**
	Left-Through		0			0	
	Through	777	1	**414**	595	1	338
	Through-Right		1			1	
	Right	50	0	50	81	0	81
	Left-Through-Right		0			0	
	Left-Right		0			0	
WESTBOUND	Left	44	1	**44**	85	1	85
	Left-Through		0			0	
	Through	536	1	290	817	1	**441**
	Through-Right		1			1	
	Right	44	0	44	64	0	64
	Left-Through-Right		0			0	
	Left-Right		0			0	
CRITICAL VOLUMES			*North-South:*	336		*North-South:*	548
			East-West:	458		*East-West:*	511
			SUM:	794		*SUM:*	1059
VOLUME/CAPACITY *(V/C)* RATIO:				0.529			0.706
V/C LESS ATSAC/ATCS ADJUSTMENT:				**0.429**			**0.606**
LEVEL OF SERVICE (LOS):				**A**			**B**

Level of Service Worksheet
(Circular 212 Method)

I/S #:	PROJECT TITLE:	Olympic & Hill		
12	North-South Street:	Broadway	East-West Street:	11th Street
	Scenario:	Existing		
	Count Date:	5/7/2015	Analyst: Fehr & Peers	Date: 5/19/2017

		AM			PM		
	No. of Phases			2			2
	Opposed Ø'ing: N/S-1, E/W-2 or Both-3?			0			0
	Right Turns: FREE-1, NRTOR-2 or OLA-3?	NB-- 0	SB--	0	NB-- 0	SB--	0
		EB-- 0	WB--	0	EB-- 0	WB--	0
	ATSAC-1 or ATSAC+ATCS-2?			2			2
	Override Capacity			0			0
	MOVEMENT	Volume	No. of Lanes	Lane Volume	Volume	No. of Lanes	Lane Volume
NORTHBOUND	Left	52	1	52	80	1	**80**
	Left-Through		0			0	
	Through	651	2	**326**	640	2	320
	Through-Right		0			0	
	Right	0	0	0	0	0	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
SOUTHBOUND	Left	0	0	**0**	0	0	0
	Left-Through		0			0	
	Through	305	1	167	607	1	**343**
	Through-Right		1			1	
	Right	28	0	28	79	0	79
	Left-Through-Right		0			0	
	Left-Right		0			0	
EASTBOUND	Left	0	0	**0**	0	0	**0**
	Left-Through		0			0	
	Through	0	0	0	0	0	0
	Through-Right		0			0	
	Right	0	0	0	0	0	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
WESTBOUND	Left	40	0	40	83	0	83
	Left-Through		1			1	
	Through	126	1	**83**	548	1	**316**
	Through-Right		0			0	
	Right	12	1	12	28	1	28
	Left-Through-Right		0			0	
	Left-Right		0			0	
	CRITICAL VOLUMES		*North-South:*	326		*North-South:*	423
			East-West:	83		*East-West:*	316
			SUM:	409		*SUM:*	739
	VOLUME/CAPACITY *(V/C)* RATIO:			0.273			0.493
	V/C LESS ATSAC/ATCS ADJUSTMENT:			**0.173**			**0.393**
	LEVEL OF SERVICE (LOS):			**A**			**A**

Level of Service Worksheet
(Circular 212 Method)

I/S #:	PROJECT TITLE:	Olympic & Hill		
13	North-South Street:	Main Street	East-West Street:	Olympic Boulevard
	Scenario:	Existing		
	Count Date:	3/23/2017	Analyst: Fehr & Peers	Date: 5/19/2017

		AM			PM		
	No. of Phases			2			2
	Opposed Ø'ing: N/S-1, E/W-2 or Both-3?			0			0
	Right Turns: FREE-1, NRTOR-2 or OLA-3?	NB-- 0	SB--	0	NB-- 0	SB--	0
		EB-- 0	WB--	0	EB-- 0	WB--	0
	ATSAC-1 or ATSAC+ATCS-2?			2			2
	Override Capacity			0			0
	MOVEMENT	Volume	No. of Lanes	Lane Volume	Volume	No. of Lanes	Lane Volume
NORTHBOUND	Left	56	1	**56**	72	1	**72**
	Left-Through		0			0	
	Through	584	2	292	790	2	395
	Through-Right		0			0	
	Right	100	1	91	74	1	35
	Left-Through-Right		0			0	
	Left-Right		0			0	
SOUTHBOUND	Left	29	1	29	22	1	22
	Left-Through		0			0	
	Through	309	1	**309**	489	1	**489**
	Through-Right		0			0	
	Right	123	1	58	137	1	50
	Left-Through-Right		0			0	
	Left-Right		0			0	
EASTBOUND	Left	130	1	**130**	175	1	**175**
	Left-Through		0			0	
	Through	586	2	293	566	2	283
	Through-Right		0			0	
	Right	48	1	20	48	1	12
	Left-Through-Right		0			0	
	Left-Right		0			0	
WESTBOUND	Left	19	1	19	79	1	79
	Left-Through		0			0	
	Through	507	1	**267**	689	1	**372**
	Through-Right		1			1	
	Right	26	0	26	54	0	54
	Left-Through-Right		0			0	
	Left-Right		0			0	
	CRITICAL VOLUMES		*North-South:*	365		*North-South:*	561
			East-West:	397		*East-West:*	547
			SUM:	762		*SUM:*	1108
	VOLUME/CAPACITY *(V/C)* RATIO:			0.508			0.739
	V/C LESS ATSAC/ATCS ADJUSTMENT:			**0.408**			**0.639**
	LEVEL OF SERVICE (LOS):			**A**			**B**

Level of Service Worksheet
(Circular 212 Method)

I/S #:	PROJECT TITLE:	Olympic and Hill		
1	North-South Street:	Grand Ave	East-West Street:	Olympic Boulevard
	Scenario:	Existing + Project		
	Count Date:	3/23/2017	Analyst: Fehr & Peers	Date: 5/19/2017

		AM			PM		
No. of Phases				2			2
Opposed Ø'ing: N/S-1, E/W-2 or Both-3?				0			0
Right Turns: FREE-1, NRTOR-2 or OLA-3?	NB-- 0	SB--		0	NB-- 0	SB--	0
	EB-- 0	WB--		0	EB-- 0	WB--	0
ATSAC-1 or ATSAC+ATCS-2?				2			2
Override Capacity				0			0

	MOVEMENT	Volume	No. of Lanes	Lane Volume	Volume	No. of Lanes	Lane Volume
NORTHBOUND	Left	0	0	**0**	0	0	**0**
	Left-Through		0			0	
	Through	0	0	0	0	0	0
	Through-Right		0			0	
	Right	0	0	0	0	0	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
SOUTHBOUND	Left	80	1	80	99	1	99
	Left-Through		0			0	
	Through	448	3	**149**	1185	3	**395**
	Through-Right		0			0	
	Right	138	1	138	234	1	234
	Left-Through-Right		0			0	
	Left-Right		0			0	
EASTBOUND	Left	0	0	0	0	0	0
	Left-Through		0			0	
	Through	884	1	**489**	811	1	**481**
	Through-Right		1			1	
	Right	94	0	94	150	0	150
	Left-Through-Right		0			0	
	Left-Right		0			0	
WESTBOUND	Left	82	1	**82**	106	1	**106**
	Left-Through		0			0	
	Through	905	2	453	1066	2	533
	Through-Right		0			0	
	Right	0	0	0	0	0	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
CRITICAL VOLUMES			*North-South:*	149		*North-South:*	395
			East-West:	571		*East-West:*	587
			SUM:	720		*SUM:*	982
VOLUME/CAPACITY *(V/C)* RATIO:				0.480			0.655
V/C LESS ATSAC/ATCS ADJUSTMENT:				**0.380**			**0.555**
LEVEL OF SERVICE (LOS):				**A**			**A**

Level of Service Worksheet
(Circular 212 Method)

I/S #:	PROJECT TITLE:	Olympic and Hill			
2	North-South Street:	Olive Street	East-West Street:	9th Street	
	Scenario:	Existing + Project			
	Count Date:	3/23/2017	Analyst:	Fehr & Peers	Date: 5/19/2017

		AM			PM		
	No. of Phases			2			2
	Opposed Ø'ing: N/S-1, E/W-2 or Both-3?			0			0
	Right Turns: FREE-1, NRTOR-2 or OLA-3?	NB-- 0	SB--	0	NB-- 0	SB--	0
		EB-- 0	WB--	0	EB-- 0	WB--	0
	ATSAC-1 or ATSAC+ATCS-2?			2			2
	Override Capacity			0			0
	MOVEMENT	Volume	No. of Lanes	Lane Volume	Volume	No. of Lanes	Lane Volume
NORTHBOUND	Left	0	0	0	0	0	0
	Left-Through		0			0	
	Through	966	2	**483**	892	2	**446**
	Through-Right		0			0	
	Right	82	1	82	202	1	202
	Left-Through-Right		0			0	
	Left-Right		0			0	
SOUTHBOUND	Left	0	0	**0**	0	0	**0**
	Left-Through		0			0	
	Through	0	0	0	0	0	0
	Through-Right		0			0	
	Right	0	0	0	0	0	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
EASTBOUND	Left	209	0	209	212	0	212
	Left-Through		1			1	
	Through	974	2	**394**	1043	2	**418**
	Through-Right		0			0	
	Right	0	0	0	0	0	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
WESTBOUND	Left	0	0	**0**	0	0	**0**
	Left-Through		0			0	
	Through	0	0	0	0	0	0
	Through-Right		0			0	
	Right	0	0	0	0	0	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
	CRITICAL VOLUMES		*North-South:*	483		*North-South:*	446
			East-West:	394		*East-West:*	418
			SUM:	877		*SUM:*	864
	VOLUME/CAPACITY *(V/C)* RATIO:			0.585			0.576
	V/C LESS ATSAC/ATCS ADJUSTMENT:			**0.485**			**0.476**
	LEVEL OF SERVICE (LOS):			**A**			**A**

Level of Service Worksheet
(Circular 212 Method)

I/S #:	
3	

PROJECT TITLE: Olympic and Hill
North-South Street: Olive Street **East-West Street:** Olympic Boulevard
Scenario: Existing + Project
Count Date: 5/7/2015 **Analyst:** Fehr & Peers **Date:** 5/19/2017

	AM			PM		
No. of Phases			2			2
Opposed Ø'ing: N/S-1, E/W-2 or Both-3?			0			0
Right Turns: FREE-1, NRTOR-2 or OLA-3?	NB-- 0	SB-- 0		NB-- 0	SB-- 0	
	EB-- 0	WB-- 0		EB-- 0	WB-- 0	
ATSAC-1 or ATSAC+ATCS-2?			2			2
Override Capacity			0			0

	MOVEMENT	Volume	No. of Lanes	Lane Volume	Volume	No. of Lanes	Lane Volume
NORTHBOUND	Left	116	0	116	121	0	121
	Left-Through		1			1	
	Through	756	1	**436**	855	1	**488**
	Through-Right		0			0	
	Right	70	1	70	64	1	64
	Left-Through-Right		0			0	
	Left-Right		0			0	
SOUTHBOUND	Left	0	0	**0**	0	0	**0**
	Left-Through		0			0	
	Through	0	0	0	0	0	0
	Through-Right		0			0	
	Right	0	0	0	0	0	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
EASTBOUND	Left	122	1	**122**	108	1	**108**
	Left-Through		0			0	
	Through	924	2	462	745	2	373
	Through-Right		0			0	
	Right	0	0	0	0	0	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
WESTBOUND	Left	0	0	0	0	0	0
	Left-Through		0			0	
	Through	707	2	**354**	990	2	**495**
	Through-Right		0			0	
	Right	71	1	71	59	1	59
	Left-Through-Right		0			0	
	Left-Right		0			0	
CRITICAL VOLUMES			*North-South:*	436		*North-South:*	488
			East-West:	476		*East-West:*	603
			SUM:	912		*SUM:*	1091
VOLUME/CAPACITY *(V/C)* RATIO:				0.608			0.727
V/C LESS ATSAC/ATCS ADJUSTMENT:				**0.508**			**0.627**
LEVEL OF SERVICE (LOS):				**A**			**B**

Level of Service Worksheet
(Circular 212 Method)

I/S #:	
4	

PROJECT TITLE: Olympic and Hill
North-South Street: Olive Street **East-West Street:** 11th Street
Scenario: Existing + Project
Count Date: 5/7/2015 **Analyst:** Fehr & Peers **Date:** 5/19/2017

		AM			PM		
No. of Phases				2			2
Opposed Ø'ing: N/S-1, E/W-2 or Both-3?				0			0
Right Turns: FREE-1, NRTOR-2 or OLA-3?	NB-- 0	SB--		0	NB-- 0	SB--	0
	EB-- 0	WB--		0	EB-- 0	WB--	0
ATSAC-1 or ATSAC+ATCS-2?				2			2
Override Capacity				0			0

	MOVEMENT	Volume	No. of Lanes	Lane Volume	Volume	No. of Lanes	Lane Volume
NORTHBOUND	Left	108	0	108	137	0	137
	Left-Through		1			1	
	Through	888	1	**498**	879	1	**508**
	Through-Right		0			0	
	Right	0	0	0	0	0	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
SOUTHBOUND	Left	0	0	**0**	0	0	**0**
	Left-Through		0			0	
	Through	0	0	0	0	0	0
	Through-Right		0			0	
	Right	0	0	0	0	0	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
EASTBOUND	Left	0	0	**0**	0	0	**0**
	Left-Through		0			0	
	Through	0	0	0	0	0	0
	Through-Right		0			0	
	Right	0	0	0	0	0	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
WESTBOUND	Left	0	0	0	0	0	0
	Left-Through		0			0	
	Through	179	2	**90**	539	2	**270**
	Through-Right		0			0	
	Right	57	1	57	135	1	135
	Left-Through-Right		0			0	
	Left-Right		0			0	
CRITICAL VOLUMES			*North-South:*	498		*North-South:*	508
			East-West:	90		*East-West:*	270
			SUM:	588		*SUM:*	778
VOLUME/CAPACITY *(V/C)* RATIO:				0.392			0.519
V/C LESS ATSAC/ATCS ADJUSTMENT:				**0.292**			**0.419**
LEVEL OF SERVICE (LOS):				**A**			**A**

Level of Service Worksheet
(Circular 212 Method)

I/S #:	
5	

PROJECT TITLE: Olympic and Hill
North-South Street: Hill Street **East-West Street:** 8th Street
Scenario: Existing + Project
Count Date: 3/23/2017 **Analyst:** Fehr & Peers **Date:** 5/19/2017

		AM			PM		
No. of Phases				2			2
Opposed Ø'ing: N/S-1, E/W-2 or Both-3?				0			0
Right Turns: FREE-1, NRTOR-2 or OLA-3?	NB-- 0	SB--		0	NB-- 0	SB--	0
	EB-- 0	WB--		0	EB-- 0	WB--	0
ATSAC-1 or ATSAC+ATCS-2?				2			2
Override Capacity				0			0

	MOVEMENT	Volume	No. of Lanes	Lane Volume	Volume	No. of Lanes	Lane Volume
NORTHBOUND	Left	69	1	**69**	68	1	**68**
	Left-Through		0			0	
	Through	492	2	246	609	2	305
	Through-Right		0			0	
	Right	0	0	0	0	0	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
SOUTHBOUND	Left	0	0	0	0	0	0
	Left-Through		0			0	
	Through	614	2	**307**	853	2	**427**
	Through-Right		0			0	
	Right	120	1	120	208	1	208
	Left-Through-Right		0			0	
	Left-Right		0			0	
EASTBOUND	Left	0	0	**0**	0	0	**0**
	Left-Through		0			0	
	Through	0	0	0	0	0	0
	Through-Right		0			0	
	Right	0	0	0	0	0	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
WESTBOUND	Left	79	1	79	95	1	95
	Left-Through		0			0	
	Through	922	2	**461**	985	2	**493**
	Through-Right		0			0	
	Right	82	1	82	100	1	100
	Left-Through-Right		0			0	
	Left-Right		0			0	
CRITICAL VOLUMES			*North-South:*	376		*North-South:*	495
			East-West:	461		*East-West:*	493
			SUM:	837		*SUM:*	988
VOLUME/CAPACITY *(V/C)* RATIO:				0.558			0.659
V/C LESS ATSAC/ATCS ADJUSTMENT:				**0.458**			**0.559**
LEVEL OF SERVICE (LOS):				**A**			**A**

Level of Service Worksheet
(Circular 212 Method)

I/S #:	PROJECT TITLE:	Olympic and Hill			
6	North-South Street:	Hill Street	East-West Street:	9th Street	
	Scenario:	Existing + Project			
	Count Date:	3/23/2017	Analyst:	Fehr & Peers	Date: 5/19/2017

		AM			PM		
	No. of Phases			2			2
	Opposed Ø'ing: N/S-1, E/W-2 or Both-3?			0			0
	Right Turns: FREE-1, NRTOR-2 or OLA-3?	NB-- 0	SB--	0	NB-- 0	SB--	0
		EB-- 0	WB--	0	EB-- 0	WB--	0
	ATSAC-1 or ATSAC+ATCS-2?			2			2
	Override Capacity			0			0
	MOVEMENT	Volume	No. of Lanes	Lane Volume	Volume	No. of Lanes	Lane Volume
NORTHBOUND	Left	0	0	0	0	0	0
	Left-Through		0			0	
	Through	491	1	**285**	578	1	**331**
	Through-Right		1			1	
	Right	78	0	78	83	0	83
	Left-Through-Right		0			0	
	Left-Right		0			0	
SOUTHBOUND	Left	134	1	**134**	107	1	**107**
	Left-Through		0			0	
	Through	502	2	251	844	2	422
	Through-Right		0			0	
	Right	0	0	0	0	0	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
EASTBOUND	Left	67	0	67	63	0	63
	Left-Through		1			1	
	Through	924	1	**354**	1113	1	**423**
	Through-Right		1			1	
	Right	72	0	354	94	0	423
	Left-Through-Right		0			0	
	Left-Right		0			0	
WESTBOUND	Left	0	0	**0**	0	0	**0**
	Left-Through		0			0	
	Through	0	0	0	0	0	0
	Through-Right		0			0	
	Right	0	0	0	0	0	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
	CRITICAL VOLUMES		*North-South:*	419		*North-South:*	438
			East-West:	354		*East-West:*	423
			SUM:	773		*SUM:*	861
	VOLUME/CAPACITY *(V/C)* RATIO:			0.515			0.574
	V/C LESS ATSAC/ATCS ADJUSTMENT:			**0.415**			**0.474**
	LEVEL OF SERVICE (LOS):			**A**			**A**

Level of Service Worksheet
(Circular 212 Method)

I/S #:	PROJECT TITLE:	Olympic and Hill		
7	North-South Street:	Hill Street	East-West Street:	Olympic Boulevard
	Scenario:	Existing + Project		
	Count Date:	5/7/2015	Analyst: Fehr & Peers	Date: 5/19/2017

		AM			PM		
No. of Phases				2			2
Opposed Ø'ing: N/S-1, E/W-2 or Both-3?				0			0
Right Turns: FREE-1, NRTOR-2 or OLA-3?	NB-- 0	SB--	0		NB-- 0	SB--	0
	EB-- 0	WB--	0		EB-- 0	WB--	0
ATSAC-1 or ATSAC+ATCS-2?			2				2
Override Capacity			0				0

	MOVEMENT	Volume	No. of Lanes	Lane Volume	Volume	No. of Lanes	Lane Volume
NORTHBOUND	Left	58	1	58	54	1	**54**
	Left-Through		0			0	
	Through	439	1	**261**	515	1	309
	Through-Right		1			1	
	Right	82	0	82	102	0	102
	Left-Through-Right		0			0	
	Left-Right		0			0	
SOUTHBOUND	Left	64	1	**64**	46	1	46
	Left-Through		0			0	
	Through	402	1	250	866	1	**508**
	Through-Right		1			1	
	Right	98	0	98	149	0	149
	Left-Through-Right		0			0	
	Left-Right		0			0	
EASTBOUND	Left	74	1	74	80	1	**80**
	Left-Through		0			0	
	Through	788	2	**394**	634	2	317
	Through-Right		0			0	
	Right	101	1	72	86	1	59
	Left-Through-Right		0			0	
	Left-Right		0			0	
WESTBOUND	Left	63	1	**63**	110	1	110
	Left-Through		0			0	
	Through	599	1	334	833	1	**461**
	Through-Right		1			1	
	Right	68	0	68	89	0	89
	Left-Through-Right		0			0	
	Left-Right		0			0	
CRITICAL VOLUMES			*North-South:*	325		*North-South:*	562
			East-West:	457		*East-West:*	541
			SUM:	782		*SUM:*	1103
VOLUME/CAPACITY *(V/C)* RATIO:				0.521			0.735
V/C LESS ATSAC/ATCS ADJUSTMENT:				**0.421**			**0.635**
LEVEL OF SERVICE (LOS):				**A**			**B**

Level of Service Worksheet
(Circular 212 Method)

I/S #:	PROJECT TITLE:	Olympic and Hill		
8	North-South Street:	Hill Street	East-West Street:	11th Street
	Scenario:	Existing + Project		
	Count Date:	5/7/2015	Analyst: Fehr & Peers	Date: 5/19/2017

		AM			PM		
	No. of Phases			2			2
	Opposed Ø'ing: N/S-1, E/W-2 or Both-3?			0			0
	Right Turns: FREE-1, NRTOR-2 or OLA-3?	NB-- 0	SB--	0	NB-- 0	SB--	0
		EB-- 0	WB--	0	EB-- 0	WB--	0
	ATSAC-1 or ATSAC+ATCS-2?			2			2
	Override Capacity			0			0
	MOVEMENT	Volume	No. of Lanes	Lane Volume	Volume	No. of Lanes	Lane Volume
NORTHBOUND	Left	34	1	**34**	41	1	**41**
	Left-Through		0			0	
	Through	493	2	247	570	2	285
	Through-Right		0			0	
	Right	0	0	0	0	0	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
SOUTHBOUND	Left	0	0	0	0	0	0
	Left-Through		0			0	
	Through	484	2	**242**	879	2	**440**
	Through-Right		0			0	
	Right	79	1	79	101	1	101
	Left-Through-Right		0			0	
	Left-Right		0			0	
EASTBOUND	Left	0	0	**0**	0	0	**0**
	Left-Through		0			0	
	Through	0	0	0	0	0	0
	Through-Right		0			0	
	Right	0	0	0	0	0	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
WESTBOUND	Left	20	1	20	74	1	74
	Left-Through		0			0	
	Through	152	1	**95**	532	1	**322**
	Through-Right		1			1	
	Right	37	0	37	112	0	112
	Left-Through-Right		0			0	
	Left-Right		0			0	
	CRITICAL VOLUMES		*North-South:*	276		*North-South:*	481
			East-West:	95		*East-West:*	322
			SUM:	371		*SUM:*	803
	VOLUME/CAPACITY *(V/C)* RATIO:			0.247			0.535
	V/C LESS ATSAC/ATCS ADJUSTMENT:			**0.147**			**0.435**
	LEVEL OF SERVICE (LOS):			**A**			**A**

Level of Service Worksheet
(Circular 212 Method)

I/S #:	PROJECT TITLE:	Olympic and Hill		
9	North-South Street:	Hill Street	East-West Street:	12th Street
	Scenario:	Existing + Project		
	Count Date:	5/7/2015	Analyst: Fehr & Peers	Date: 5/19/2017

		AM			PM		
	No. of Phases			2			2
	Opposed Ø'ing: N/S-1, E/W-2 or Both-3?			0			0
	Right Turns: FREE-1, NRTOR-2 or OLA-3?	NB-- 0	SB--	0	NB-- 0	SB--	0
		EB-- 0	WB--	0	EB-- 0	WB--	0
	ATSAC-1 or ATSAC+ATCS-2?			2			2
	Override Capacity			0			0
	MOVEMENT	Volume	No. of Lanes	Lane Volume	Volume	No. of Lanes	Lane Volume
NORTHBOUND	Left	0	0	0	0	0	0
	Left-Through		0			0	
	Through	506	1	**506**	555	1	**555**
	Through-Right		0			0	
	Right	98	1	98	79	1	79
	Left-Through-Right		0			0	
	Left-Right		0			0	
SOUTHBOUND	Left	68	1	**68**	58	1	**58**
	Left-Through		0			0	
	Through	442	2	221	913	2	457
	Through-Right		0			0	
	Right	0	0	0	0	0	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
EASTBOUND	Left	36	0	36	61	0	61
	Left-Through		1			1	
	Through	225	0	**145**	143	0	**123**
	Through-Right		1			1	
	Right	29	0	145	42	0	123
	Left-Through-Right		0			0	
	Left-Right		0			0	
WESTBOUND	Left	0	0	**0**	0	0	**0**
	Left-Through		0			0	
	Through	0	0	0	0	0	0
	Through-Right		0			0	
	Right	0	0	0	0	0	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
	CRITICAL VOLUMES		North-South:	574		North-South:	613
			East-West:	145		East-West:	123
			SUM:	719		SUM:	736
	VOLUME/CAPACITY (V/C) RATIO:			0.479			0.491
	V/C LESS ATSAC/ATCS ADJUSTMENT:			**0.379**			**0.391**
	LEVEL OF SERVICE (LOS):			**A**			**A**

I/S #:	
10	

PROJECT TITLE: Olympic and Hill
North-South Street: Broadway **East-West Street:** 9th Street
Scenario: Existing + Project
Count Date: 3/23/2017 **Analyst:** Fehr & Peers **Date:** 5/19/2017

		AM			PM		
	No. of Phases			2			2
	Opposed Ø'ing: N/S-1, E/W-2 or Both-3?			0			0
	Right Turns: FREE-1, NRTOR-2 or OLA-3?	NB-- 0	SB--	0	NB-- 0	SB--	0
		EB-- 0	WB--	0	EB-- 0	WB--	0
	ATSAC-1 or ATSAC+ATCS-2?			2			2
	Override Capacity			0			0
	MOVEMENT	Volume	No. of Lanes	Lane Volume	Volume	No. of Lanes	Lane Volume
NORTHBOUND	Left	0	0	0	0	0	**0**
	Left-Through		0			0	
	Through	621	1	**342**	680	1	381
	Through-Right		1			1	
	Right	62	0	62	82	0	82
	Left-Through-Right		0			0	
	Left-Right		0			0	
SOUTHBOUND	Left	0	0	**0**	0	0	0
	Left-Through		0			0	
	Through	297	1	297	496	1	**496**
	Through-Right		0			0	
	Right	0	0	0	0	0	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
EASTBOUND	Left	64	1	64	137	1	137
	Left-Through		0			0	
	Through	873	2	**311**	1155	2	**412**
	Through-Right		1			1	
	Right	60	0	60	80	0	80
	Left-Through-Right		0			0	
	Left-Right		0			0	
WESTBOUND	Left	0	0	**0**	0	0	**0**
	Left-Through		0			0	
	Through	0	0	0	0	0	0
	Through-Right		0			0	
	Right	0	0	0	0	0	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
	CRITICAL VOLUMES		*North-South:*	342		*North-South:*	496
			East-West:	311		*East-West:*	412
			SUM:	653		*SUM:*	908
	VOLUME/CAPACITY *(V/C)* RATIO:			0.435			0.605
	V/C LESS ATSAC/ATCS ADJUSTMENT:			**0.335**			**0.505**
	LEVEL OF SERVICE (LOS):			**A**			**A**

Level of Service Worksheet
(Circular 212 Method)

I/S #:	
11	

PROJECT TITLE: Olympic and Hill
North-South Street: Broadway **East-West Street:** Olympic Boulevard
Scenario: Existing + Project
Count Date: 5/7/2015 **Analyst:** Fehr & Peers **Date:** 5/19/2017

		AM			PM		
No. of Phases				2			2
Opposed Ø'ing: N/S-1, E/W-2 or Both-3?				0			0
Right Turns: FREE-1, NRTOR-2 or OLA-3?	NB-- 0	SB--	0		NB-- 0	SB--	0
	EB-- 0	WB--	0		EB-- 0	WB--	0
ATSAC-1 or ATSAC+ATCS-2?			2				2
Override Capacity			0				0

	MOVEMENT	Volume	No. of Lanes	Lane Volume	Volume	No. of Lanes	Lane Volume
NORTHBOUND	Left	33	0	33	41	0	**41**
	Left-Through		1			1	
	Through	606	1	**336**	552	1	358
	Through-Right		0			0	
	Right	49	1	27	85	1	43
	Left-Through-Right		0			0	
	Left-Right		0			0	
SOUTHBOUND	Left	0	0	**0**	0	0	0
	Left-Through		0			0	
	Through	240	1	240	507	1	**507**
	Through-Right		0			0	
	Right	103	1	66	111	1	73
	Left-Through-Right		0			0	
	Left-Right		0			0	
EASTBOUND	Left	74	1	74	77	1	**77**
	Left-Through		0			0	
	Through	811	1	**441**	613	1	353
	Through-Right		1			1	
	Right	71	0	71	92	0	92
	Left-Through-Right		0			0	
	Left-Right		0			0	
WESTBOUND	Left	44	1	**44**	85	1	85
	Left-Through		0			0	
	Through	543	1	294	844	1	**454**
	Through-Right		1			1	
	Right	44	0	44	64	0	64
	Left-Through-Right		0			0	
	Left-Right		0			0	
CRITICAL VOLUMES			*North-South:*	336		*North-South:*	548
			East-West:	485		*East-West:*	531
			SUM:	821		*SUM:*	1079
VOLUME/CAPACITY *(V/C)* RATIO:				0.547			0.719
V/C LESS ATSAC/ATCS ADJUSTMENT:				**0.447**			**0.619**
LEVEL OF SERVICE (LOS):				**A**			**B**

Level of Service Worksheet
(Circular 212 Method)

I/S #:	PROJECT TITLE:	Olympic and Hill		
12	North-South Street:	Broadway	East-West Street:	11th Street
	Scenario:	Existing + Project		
	Count Date:	5/7/2015	Analyst: Fehr & Peers	Date: 5/19/2017

		AM			PM		
	No. of Phases			2			2
	Opposed Ø'ing: N/S-1, E/W-2 or Both-3?			0			0
	Right Turns: FREE-1, NRTOR-2 or OLA-3?	NB-- 0	SB--	0	NB-- 0	SB--	0
		EB-- 0	WB--	0	EB-- 0	WB--	0
	ATSAC-1 or ATSAC+ATCS-2?			2			2
	Override Capacity			0			0
	MOVEMENT	Volume	No. of Lanes	Lane Volume	Volume	No. of Lanes	Lane Volume
NORTHBOUND	Left	54	1	54	89	1	**89**
	Left-Through		0			0	
	Through	651	2	**326**	640	2	320
	Through-Right		0			0	
	Right	0	0	0	0	0	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
SOUTHBOUND	Left	0	0	**0**	0	0	0
	Left-Through		0			0	
	Through	315	1	178	612	1	**349**
	Through-Right		1			1	
	Right	40	0	40	85	0	85
	Left-Through-Right		0			0	
	Left-Right		0			0	
EASTBOUND	Left	0	0	**0**	0	0	**0**
	Left-Through		0			0	
	Through	0	0	0	0	0	0
	Through-Right		0			0	
	Right	0	0	0	0	0	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
WESTBOUND	Left	40	0	40	83	0	83
	Left-Through		1			1	
	Through	130	1	**85**	564	1	**324**
	Through-Right		0			0	
	Right	12	1	12	28	1	28
	Left-Through-Right		0			0	
	Left-Right		0			0	
	CRITICAL VOLUMES		*North-South:*	326		*North-South:*	438
			East-West:	85		*East-West:*	324
			SUM:	411		*SUM:*	762
	VOLUME/CAPACITY *(V/C)* RATIO:			0.274			0.508
	V/C LESS ATSAC/ATCS ADJUSTMENT:			**0.174**			**0.408**
	LEVEL OF SERVICE (LOS):			**A**			**A**

Level of Service Worksheet
(Circular 212 Method)

I/S #:	
13	

PROJECT TITLE: Olympic and Hill
North-South Street: Main Street **East-West Street:** Olympic Boulevard
Scenario: Existing + Project
Count Date: 3/23/2017 **Analyst:** Fehr & Peers **Date:** 5/19/2017

		AM				PM			
No. of Phases					2				2
Opposed Ø'ing: N/S-1, E/W-2 or Both-3?					0				0
Right Turns: FREE-1, NRTOR-2 or OLA-3?	NB--	0	SB--	0		NB--	0	SB--	0
	EB--	0	WB--	0		EB--	0	WB--	0
ATSAC-1 or ATSAC+ATCS-2?					2				2
Override Capacity					0				0

	MOVEMENT	Volume	No. of Lanes	Lane Volume	Volume	No. of Lanes	Lane Volume
NORTHBOUND	Left	57	1	**57**	77	1	**77**
	Left-Through		0			0	
	Through	584	2	292	790	2	395
	Through-Right		0			0	
	Right	100	1	91	74	1	35
	Left-Through-Right		0			0	
	Left-Right		0			0	
SOUTHBOUND	Left	29	1	29	22	1	22
	Left-Through		0			0	
	Through	310	1	**310**	493	1	**493**
	Through-Right		0			0	
	Right	126	1	55	148	1	58
	Left-Through-Right		0			0	
	Left-Right		0			0	
EASTBOUND	Left	142	1	**142**	181	1	**181**
	Left-Through		0			0	
	Through	600	2	300	573	2	287
	Through-Right		0			0	
	Right	57	1	29	53	1	15
	Left-Through-Right		0			0	
	Left-Right		0			0	
WESTBOUND	Left	19	1	19	79	1	79
	Left-Through		0			0	
	Through	510	1	**268**	700	1	**377**
	Through-Right		1			1	
	Right	26	0	26	54	0	54
	Left-Through-Right		0			0	
	Left-Right		0			0	
CRITICAL VOLUMES			*North-South:*	367		*North-South:*	570
			East-West:	410		*East-West:*	558
			SUM:	777		*SUM:*	1128
VOLUME/CAPACITY *(V/C)* RATIO:				0.518			0.752
V/C LESS ATSAC/ATCS ADJUSTMENT:				**0.418**			**0.652**
LEVEL OF SERVICE (LOS):				**A**			**B**

Level of Service Worksheet
(Circular 212 Method)

I/S #:	
1	

PROJECT TITLE: Olympic & Hill
North-South Street: Grand Ave **East-West Street:** Olympic Boulevard
Scenario: Future Base
Count Date: See Existing Sheets **Analyst:** Fehr & Peers **Date:** 5/19/2017

		AM			PM		
No. of Phases				2			2
Opposed Ø'ing: N/S-1, E/W-2 or Both-3?				0			0
Right Turns: FREE-1, NRTOR-2 or OLA-3?	NB-- 0	SB--		0	NB-- 0	SB--	0
	EB-- 0	WB--		0	EB-- 0	WB--	0
ATSAC-1 or ATSAC+ATCS-2?				2			2
Override Capacity				0			0

	MOVEMENT	Volume	No. of Lanes	Lane Volume	Volume	No. of Lanes	Lane Volume
NORTHBOUND	Left	0	0	**0**	0	0	**0**
	Left-Through		0			0	
	Through	0	0	0	0	0	0
	Through-Right		0			0	
	Right	0	0	0	0	0	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
SOUTHBOUND	Left	91	1	91	115	1	115
	Left-Through		0			0	
	Through	730	3	**243**	1614	3	**538**
	Through-Right		0			0	
	Right	195	1	195	281	1	281
	Left-Through-Right		0			0	
	Left-Right		0			0	
EASTBOUND	Left	0	0	0	0	0	0
	Left-Through		0			0	
	Through	1044	1	**605**	1073	1	**672**
	Through-Right		1			1	
	Right	165	0	165	270	0	270
	Left-Through-Right		0			0	
	Left-Right		0			0	
WESTBOUND	Left	102	1	**102**	131	1	**131**
	Left-Through		0			0	
	Through	1175	2	588	1337	2	669
	Through-Right		0			0	
	Right	0	0	0	0	0	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
CRITICAL VOLUMES			*North-South:*	243		*North-South:*	538
			East-West:	707		*East-West:*	803
			SUM:	950		*SUM:*	1341
VOLUME/CAPACITY *(V/C)* RATIO:				0.633			0.894
V/C LESS ATSAC/ATCS ADJUSTMENT:				**0.533**			**0.794**
LEVEL OF SERVICE (LOS):				**A**			**C**

Level of Service Worksheet
(Circular 212 Method)

I/S #:	PROJECT TITLE:	Olympic & Hill			
2	North-South Street:	Olive Street	East-West Street:	9th Street	
	Scenario:	Future Base			
	Count Date:	See Existing Sheets	Analyst:	Fehr & Peers	Date: 5/19/2017

		AM			PM		
No. of Phases				2			2
Opposed Ø'ing: N/S-1, E/W-2 or Both-3?				0			0
Right Turns: FREE-1, NRTOR-2 or OLA-3?	NB-- 0	SB--	0	NB-- 0	SB--	0	
	EB-- 0	WB--	0	EB-- 0	WB--	0	
ATSAC-1 or ATSAC+ATCS-2?			2			2	
Override Capacity			0			0	

	MOVEMENT	Volume	No. of Lanes	Lane Volume	Volume	No. of Lanes	Lane Volume
NORTHBOUND	Left	0	0	0	0	0	0
	Left-Through		0			0	
	Through	1269	3	**423**	1319	3	**440**
	Through-Right		0			0	
	Right	136	1	136	267	1	267
	Left-Through-Right		0			0	
	Left-Right		0			0	
SOUTHBOUND	Left	0	0	**0**	0	0	**0**
	Left-Through		0			0	
	Through	0	0	0	0	0	0
	Through-Right		0			0	
	Right	0	0	0	0	0	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
EASTBOUND	Left	237	0	237	243	0	243
	Left-Through		1			1	
	Through	1378	2	**538**	1507	2	**583**
	Through-Right		0			0	
	Right	0	0	0	0	0	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
WESTBOUND	Left	0	0	**0**	0	0	**0**
	Left-Through		0			0	
	Through	0	0	0	0	0	0
	Through-Right		0			0	
	Right	0	0	0	0	0	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
CRITICAL VOLUMES			*North-South:*	423		*North-South:*	440
			East-West:	538		*East-West:*	583
			SUM:	961		*SUM:*	1023
VOLUME/CAPACITY *(V/C)* RATIO:				0.641			0.682
V/C LESS ATSAC/ATCS ADJUSTMENT:				**0.541**			**0.582**
LEVEL OF SERVICE (LOS):				**A**			**A**

Level of Service Worksheet
(Circular 212 Method)

I/S #:	PROJECT TITLE:	Olympic & Hill		
3	North-South Street:	Olive Street	East-West Street:	Olympic Boulevard
	Scenario:	Future Base		
	Count Date:	See Existing Sheets	Analyst: Fehr & Peers	Date: 5/19/2017

		AM			PM		
No. of Phases				2			2
Opposed Ø'ing: N/S-1, E/W-2 or Both-3?				0			0
Right Turns: FREE-1, NRTOR-2 or OLA-3?	NB-- 0	SB--	0		NB-- 0	SB--	0
	EB-- 0	WB--	0		EB-- 0	WB--	0
ATSAC-1 or ATSAC+ATCS-2?			2				2
Override Capacity			0				0

	MOVEMENT	Volume	No. of Lanes	Lane Volume	Volume	No. of Lanes	Lane Volume
NORTHBOUND	Left	214	0	214	219	0	219
	Left-Through		1			1	
	Through	1080	2	**431**	1236	2	**485**
	Through-Right		0			0	
	Right	79	1	79	76	1	76
	Left-Through-Right		0			0	
	Left-Right		0			0	
SOUTHBOUND	Left	0	0	**0**	0	0	**0**
	Left-Through		0			0	
	Through	0	0	0	0	0	0
	Through-Right		0			0	
	Right	0	0	0	0	0	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
EASTBOUND	Left	148	1	**148**	170	1	**170**
	Left-Through		0			0	
	Through	1073	2	537	961	2	481
	Through-Right		0			0	
	Right	0	0	0	0	0	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
WESTBOUND	Left	0	0	0	0	0	0
	Left-Through		0			0	
	Through	893	2	**447**	1209	2	**605**
	Through-Right		0			0	
	Right	83	1	83	116	1	116
	Left-Through-Right		0			0	
	Left-Right		0			0	
CRITICAL VOLUMES			*North-South:*	431		*North-South:*	485
			East-West:	595		*East-West:*	775
			SUM:	1026		*SUM:*	1260
VOLUME/CAPACITY *(V/C)* RATIO:				0.684			0.840
V/C LESS ATSAC/ATCS ADJUSTMENT:				**0.584**			**0.740**
LEVEL OF SERVICE (LOS):				**A**			**C**

Level of Service Worksheet
(Circular 212 Method)

I/S #:	PROJECT TITLE:	Olympic & Hill			
4	North-South Street:	Olive Street	East-West Street:	11th Street	
	Scenario:	Future Base			
	Count Date:	See Existing Sheets	Analyst:	Fehr & Peers	Date: 5/19/2017

		AM			PM		
	No. of Phases			2			2
	Opposed Ø'ing: N/S-1, E/W-2 or Both-3?			0			0
	Right Turns: FREE-1, NRTOR-2 or OLA-3?	NB-- 0	SB--	0	NB-- 0	SB--	0
		EB-- 0	WB--	0	EB-- 0	WB--	0
	ATSAC-1 or ATSAC+ATCS-2?			2			2
	Override Capacity			0			0
	MOVEMENT	Volume	No. of Lanes	Lane Volume	Volume	No. of Lanes	Lane Volume
NORTHBOUND	Left	131	0	131	167	0	167
	Left-Through		1			1	
	Through	1299	2	**477**	1348	2	**505**
	Through-Right		0			0	
	Right	0	0	0	0	0	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
SOUTHBOUND	Left	0	0	**0**	0	0	**0**
	Left-Through		0			0	
	Through	0	0	0	0	0	0
	Through-Right		0			0	
	Right	0	0	0	0	0	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
EASTBOUND	Left	0	0	**0**	0	0	**0**
	Left-Through		0			0	
	Through	0	0	0	0	0	0
	Through-Right		0			0	
	Right	0	0	0	0	0	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
WESTBOUND	Left	0	0	0	0	0	0
	Left-Through		0			0	
	Through	319	1	**319**	609	1	**609**
	Through-Right		0			0	
	Right	66	1	66	144	1	144
	Left-Through-Right		0			0	
	Left-Right		0			0	
	CRITICAL VOLUMES		*North-South:*	477		*North-South:*	505
			East-West:	319		*East-West:*	609
			SUM:	796		*SUM:*	1114
	VOLUME/CAPACITY *(V/C)* RATIO:			0.531			0.743
	V/C LESS ATSAC/ATCS ADJUSTMENT:			**0.431**			**0.643**
	LEVEL OF SERVICE (LOS):			**A**			**B**

Level of Service Worksheet
(Circular 212 Method)

I/S #:	PROJECT TITLE:	Olympic & Hill		
5	North-South Street:	Hill Street	East-West Street:	8th Street
	Scenario:	Future Base		
	Count Date:	See Existing Sheets	Analyst: Fehr & Peers	Date: 5/19/2017

		AM			PM		
	No. of Phases			2			2
	Opposed Ø'ing: N/S-1, E/W-2 or Both-3?			0			0
	Right Turns: FREE-1, NRTOR-2 or OLA-3?	NB-- 0	SB--	0	NB-- 0	SB--	0
		EB-- 0	WB--	0	EB-- 0	WB--	0
	ATSAC-1 or ATSAC+ATCS-2?			2			2
	Override Capacity			0			0
	MOVEMENT	Volume	No. of Lanes	Lane Volume	Volume	No. of Lanes	Lane Volume
NORTHBOUND	Left	92	1	**92**	91	1	**91**
	Left-Through		0			0	
	Through	668	2	334	765	2	383
	Through-Right		0			0	
	Right	0	0	0	0	0	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
SOUTHBOUND	Left	0	0	0	0	0	0
	Left-Through		0			0	
	Through	712	2	**356**	1065	2	**533**
	Through-Right		0			0	
	Right	130	1	130	232	1	232
	Left-Through-Right		0			0	
	Left-Right		0			0	
EASTBOUND	Left	0	0	**0**	0	0	**0**
	Left-Through		0			0	
	Through	0	0	0	0	0	0
	Through-Right		0			0	
	Right	0	0	0	0	0	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
WESTBOUND	Left	114	1	114	165	1	165
	Left-Through		0			0	
	Through	1247	2	**624**	1410	2	**705**
	Through-Right		0			0	
	Right	95	1	95	110	1	110
	Left-Through-Right		0			0	
	Left-Right		0			0	
	CRITICAL VOLUMES		*North-South:*	448		*North-South:*	624
			East-West:	624		*East-West:*	705
			SUM:	1072		*SUM:*	1329
	VOLUME/CAPACITY *(V/C)* RATIO:			0.715			0.886
	V/C LESS ATSAC/ATCS ADJUSTMENT:			**0.615**			**0.786**
	LEVEL OF SERVICE (LOS):			**B**			**C**

Level of Service Worksheet
(Circular 212 Method)

I/S #:	PROJECT TITLE:	Olympic & Hill			
6	North-South Street:	Hill Street	East-West Street:	9th Street	
	Scenario:	Future Base			
	Count Date:	See Existing Sheets	Analyst:	Fehr & Peers	Date: 5/19/2017

		AM			PM		
	No. of Phases			2			2
	Opposed Ø'ing: N/S-1, E/W-2 or Both-3?			0			0
	Right Turns: FREE-1, NRTOR-2 or OLA-3?	NB-- 0	SB--	0	NB-- 0	SB--	0
		EB-- 0	WB--	0	EB-- 0	WB--	0
	ATSAC-1 or ATSAC+ATCS-2?			2			2
	Override Capacity			0			0
	MOVEMENT	Volume	No. of Lanes	Lane Volume	Volume	No. of Lanes	Lane Volume
NORTHBOUND	Left	0	0	0	0	0	0
	Left-Through		0			0	
	Through	638	1	**382**	760	1	**441**
	Through-Right		1			1	
	Right	125	0	125	122	0	122
	Left-Through-Right		0			0	
	Left-Right		0			0	
SOUTHBOUND	Left	152	1	**152**	119	1	**119**
	Left-Through		0			0	
	Through	658	2	329	1098	2	549
	Through-Right		0			0	
	Right	0	0	0	0	0	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
EASTBOUND	Left	83	0	83	93	0	93
	Left-Through		1			1	
	Through	1357	1	**507**	1597	1	**600**
	Through-Right		1			1	
	Right	81	0	507	109	0	600
	Left-Through-Right		0			0	
	Left-Right		0			0	
WESTBOUND	Left	0	0	**0**	0	0	**0**
	Left-Through		0			0	
	Through	0	0	0	0	0	0
	Through-Right		0			0	
	Right	0	0	0	0	0	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
	CRITICAL VOLUMES		*North-South:*	534		*North-South:*	560
			East-West:	507		*East-West:*	600
			SUM:	1041		*SUM:*	1160
	VOLUME/CAPACITY *(V/C)* RATIO:			0.694			0.773
	V/C LESS ATSAC/ATCS ADJUSTMENT:			**0.594**			**0.673**
	LEVEL OF SERVICE (LOS):			**A**			**B**

Level of Service Worksheet
(Circular 212 Method)

I/S #:	
7	

PROJECT TITLE: Olympic & Hill
North-South Street: Hill Street **East-West Street:** Olympic Boulevard
Scenario: Future Base
Count Date: See Existing Sheets **Analyst:** Fehr & Peers **Date:** 5/19/2017

		AM			PM		
No. of Phases				2			2
Opposed Ø'ing: N/S-1, E/W-2 or Both-3?				0			0
Right Turns: FREE-1, NRTOR-2 or OLA-3?	NB-- 0	SB--		0	NB-- 0	SB--	0
	EB-- 0	WB--		0	EB-- 0	WB--	0
ATSAC-1 or ATSAC+ATCS-2?				2			2
Override Capacity				0			0

	MOVEMENT	Volume	No. of Lanes	Lane Volume	Volume	No. of Lanes	Lane Volume
NORTHBOUND	Left	41	1	**41**	51	1	**51**
	Left-Through		0			0	
	Through	559	1	305	723	1	406
	Through-Right		1			1	
	Right	51	0	51	89	0	89
	Left-Through-Right		0			0	
	Left-Right		0			0	
SOUTHBOUND	Left	67	1	67	43	1	43
	Left-Through		0			0	
	Through	571	1	**354**	1065	1	**622**
	Through-Right		1			1	
	Right	136	0	136	179	0	179
	Left-Through-Right		0			0	
	Left-Right		0			0	
EASTBOUND	Left	83	1	83	108	1	**108**
	Left-Through		0			0	
	Through	936	2	**468**	849	2	425
	Through-Right		0			0	
	Right	99	1	79	70	1	45
	Left-Through-Right		0			0	
	Left-Right		0			0	
WESTBOUND	Left	66	1	**66**	92	1	92
	Left-Through		0			0	
	Through	773	1	426	1079	1	**606**
	Through-Right		1			1	
	Right	78	0	78	133	0	133
	Left-Through-Right		0			0	
	Left-Right		0			0	
CRITICAL VOLUMES			*North-South:*	395		*North-South:*	673
			East-West:	534		*East-West:*	714
			SUM:	929		*SUM:*	1387
VOLUME/CAPACITY *(V/C)* RATIO:				0.619			0.925
V/C LESS ATSAC/ATCS ADJUSTMENT:				**0.519**			**0.825**
LEVEL OF SERVICE (LOS):				**A**			**D**

Level of Service Worksheet
(Circular 212 Method)

I/S #:	
8	

PROJECT TITLE: Olympic & Hill
North-South Street: Hill Street **East-West Street:** 11th Street
Scenario: Future Base
Count Date: See Existing Sheets **Analyst:** Fehr & Peers **Date:** 5/19/2017

		AM				PM			
No. of Phases					2				2
Opposed Ø'ing: N/S-1, E/W-2 or Both-3?					0				0
Right Turns: FREE-1, NRTOR-2 or OLA-3?	NB--	0	SB--	0		NB--	0	SB--	0
	EB--	0	WB--	0		EB--	0	WB--	0
ATSAC-1 or ATSAC+ATCS-2?					2				2
Override Capacity					0				0

	MOVEMENT	Volume	No. of Lanes	Lane Volume	Volume	No. of Lanes	Lane Volume
NORTHBOUND	Left	56	1	**56**	53	1	**53**
	Left-Through		0			0	
	Through	634	2	317	745	2	373
	Through-Right		0			0	
	Right	0	0	0	0	0	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
SOUTHBOUND	Left	0	0	0	0	0	0
	Left-Through		0			0	
	Through	618	2	**309**	1093	2	**547**
	Through-Right		0			0	
	Right	90	1	90	121	1	121
	Left-Through-Right		0			0	
	Left-Right		0			0	
EASTBOUND	Left	0	0	**0**	0	0	**0**
	Left-Through		0			0	
	Through	0	0	0	0	0	0
	Through-Right		0			0	
	Right	0	0	0	0	0	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
WESTBOUND	Left	27	1	27	95	1	95
	Left-Through		0			0	
	Through	268	1	**268**	581	1	**581**
	Through-Right		0			0	
	Right	52	1	52	127	1	127
	Left-Through-Right		0			0	
	Left-Right		0			0	
CRITICAL VOLUMES			*North-South:*	365		*North-South:*	600
			East-West:	268		*East-West:*	581
			SUM:	633		*SUM:*	1181
VOLUME/CAPACITY *(V/C)* RATIO:				0.422			0.787
V/C LESS ATSAC/ATCS ADJUSTMENT:				**0.322**			**0.687**
LEVEL OF SERVICE (LOS):				**A**			**B**

Level of Service Worksheet
(Circular 212 Method)

I/S #:	PROJECT TITLE:	Olympic & Hill			
9	North-South Street:	Hill Street	East-West Street:	12th Street	
	Scenario:	Future Base			
	Count Date:	See Existing Sheets	Analyst:	Fehr & Peers	Date: 5/19/2017

		AM			PM		
	No. of Phases			2			2
	Opposed Ø'ing: N/S-1, E/W-2 or Both-3?			0			0
	Right Turns: FREE-1, NRTOR-2 or OLA-3?	NB-- 0	SB--	0	NB-- 0	SB--	0
		EB-- 0	WB--	0	EB-- 0	WB--	0
	ATSAC-1 or ATSAC+ATCS-2?			2			2
	Override Capacity			0			0
	MOVEMENT	Volume	No. of Lanes	Lane Volume	Volume	No. of Lanes	Lane Volume
NORTHBOUND	Left	0	0	0	0	0	0
	Left-Through		0			0	
	Through	630	1	**630**	741	1	**741**
	Through-Right		0			0	
	Right	116	1	116	94	1	94
	Left-Through-Right		0			0	
	Left-Right		0			0	
SOUTHBOUND	Left	79	1	**79**	78	1	**78**
	Left-Through		0			0	
	Through	581	2	291	1098	2	549
	Through-Right		0			0	
	Right	0	0	0	0	0	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
EASTBOUND	Left	46	0	46	82	0	82
	Left-Through		1			1	
	Through	274	0	**179**	255	0	**198**
	Through-Right		1			1	
	Right	38	0	179	59	0	198
	Left-Through-Right		0			0	
	Left-Right		0			0	
WESTBOUND	Left	0	0	**0**	0	0	**0**
	Left-Through		0			0	
	Through	0	0	0	0	0	0
	Through-Right		0			0	
	Right	0	0	0	0	0	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
	CRITICAL VOLUMES		*North-South:*	709		*North-South:*	819
			East-West:	179		*East-West:*	198
			SUM:	888		*SUM:*	1017
	VOLUME/CAPACITY *(V/C)* RATIO:			0.592			0.678
	V/C LESS ATSAC/ATCS ADJUSTMENT:			**0.492**			**0.578**
	LEVEL OF SERVICE (LOS):			**A**			**A**

I/S #:	
10	

PROJECT TITLE: Olympic & Hill
North-South Street: Broadway **East-West Street:** 9th Street
Scenario: Future Base
Count Date: See Existing Sheets **Analyst:** Fehr & Peers **Date:** 5/19/2017

		AM			PM		
No. of Phases				2			2
Opposed Ø'ing: N/S-1, E/W-2 or Both-3?				0			0
Right Turns: FREE-1, NRTOR-2 or OLA-3?		NB-- 0	SB--	0	NB-- 0	SB--	0
		EB-- 0	WB--	0	EB-- 0	WB--	0
ATSAC-1 or ATSAC+ATCS-2?				2			2
Override Capacity				0			0
MOVEMENT		**Volume**	**No. of Lanes**	**Lane Volume**	**Volume**	**No. of Lanes**	**Lane Volume**
NORTHBOUND	Left	0	0	0	0	0	**0**
	Left-Through		0			0	
	Through	753	1	**411**	822	1	457
	Through-Right		1			1	
	Right	69	0	69	92	0	92
	Left-Through-Right		0			0	
	Left-Right		0			0	
SOUTHBOUND	Left	0	0	**0**	0	0	0
	Left-Through		0			0	
	Through	382	1	382	658	1	**658**
	Through-Right		0			0	
	Right	0	0	0	0	0	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
EASTBOUND	Left	107	1	107	188	1	188
	Left-Through		0			0	
	Through	1312	2	**460**	1630	2	**574**
	Through-Right		1			1	
	Right	68	0	68	93	0	93
	Left-Through-Right		0			0	
	Left-Right		0			0	
WESTBOUND	Left	0	0	**0**	0	0	**0**
	Left-Through		0			0	
	Through	0	0	0	0	0	0
	Through-Right		0			0	
	Right	0	0	0	0	0	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
CRITICAL VOLUMES			*North-South:*	411		*North-South:*	658
			East-West:	460		*East-West:*	574
			SUM:	871		*SUM:*	1232
VOLUME/CAPACITY *(V/C)* RATIO:				0.581			0.821
V/C LESS ATSAC/ATCS ADJUSTMENT:				**0.481**			**0.721**
LEVEL OF SERVICE (LOS):				**A**			**C**

Level of Service Worksheet
(Circular 212 Method)

I/S #:	PROJECT TITLE:	Olympic & Hill		
11	North-South Street:	Broadway	East-West Street:	Olympic Boulevard
	Scenario:	Future Base		
	Count Date:	See Existing Sheets	Analyst: Fehr & Peers	Date: 5/19/2017

		AM			PM		
No. of Phases				2			2
Opposed Ø'ing: N/S-1, E/W-2 or Both-3?				0			0
Right Turns: FREE-1, NRTOR-2 or OLA-3?	NB-- 0	SB--	0		NB-- 0	SB--	0
	EB-- 0	WB--	0		EB-- 0	WB--	0
ATSAC-1 or ATSAC+ATCS-2?			2				2
Override Capacity			0				0

	MOVEMENT	Volume	No. of Lanes	Lane Volume	Volume	No. of Lanes	Lane Volume
NORTHBOUND	Left	39	0	39	61	0	**61**
	Left-Through		1			1	
	Through	749	1	**414**	726	1	485
	Through-Right		0			0	
	Right	61	1	35	106	1	55
	Left-Through-Right		0			0	
	Left-Right		0			0	
SOUTHBOUND	Left	0	0	**0**	0	0	0
	Left-Through		0			0	
	Through	325	1	325	669	1	**669**
	Through-Right		0			0	
	Right	110	1	71	126	1	85
	Left-Through-Right		0			0	
	Left-Right		0			0	
EASTBOUND	Left	79	1	79	82	1	**82**
	Left-Through		0			0	
	Through	940	1	**500**	803	1	446
	Through-Right		1			1	
	Right	59	0	59	88	0	88
	Left-Through-Right		0			0	
	Left-Right		0			0	
WESTBOUND	Left	53	1	**53**	102	1	102
	Left-Through		0			0	
	Through	711	1	382	1098	1	**587**
	Through-Right		1			1	
	Right	53	0	53	76	0	76
	Left-Through-Right		0			0	
	Left-Right		0			0	
CRITICAL VOLUMES			*North-South:*	414		*North-South:*	730
			East-West:	553		*East-West:*	669
			SUM:	967		*SUM:*	1399
VOLUME/CAPACITY *(V/C)* RATIO:				0.645			0.933
V/C LESS ATSAC/ATCS ADJUSTMENT:				**0.545**			**0.833**
LEVEL OF SERVICE (LOS):				**A**			**D**

Level of Service Worksheet
(Circular 212 Method)

I/S #:	PROJECT TITLE:	Olympic & Hill		
12	North-South Street:	Broadway	East-West Street:	11th Street
	Scenario:	Future Base		
	Count Date:	See Existing Sheets	Analyst: Fehr & Peers	Date: 5/19/2017

		AM			PM		
No. of Phases				2			2
Opposed Ø'ing: N/S-1, E/W-2 or Both-3?				0			0
Right Turns: FREE-1, NRTOR-2 or OLA-3?	NB-- 0	SB--	0		NB-- 0	SB--	0
	EB-- 0	WB--	0		EB-- 0	WB--	0
ATSAC-1 or ATSAC+ATCS-2?			2				2
Override Capacity			0				0

	MOVEMENT	Volume	No. of Lanes	Lane Volume	Volume	No. of Lanes	Lane Volume
NORTHBOUND	Left	100	1	100	148	1	**148**
	Left-Through		0			0	
	Through	790	2	**395**	829	2	415
	Through-Right		0			0	
	Right	0	0	0	0	0	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
SOUTHBOUND	Left	0	0	**0**	0	0	0
	Left-Through		0			0	
	Through	404	1	217	785	1	**436**
	Through-Right		1			1	
	Right	30	0	30	87	0	87
	Left-Through-Right		0			0	
	Left-Right		0			0	
EASTBOUND	Left	0	0	**0**	0	0	**0**
	Left-Through		0			0	
	Through	0	0	0	0	0	0
	Through-Right		0			0	
	Right	0	0	0	0	0	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
WESTBOUND	Left	51	1	51	104	1	104
	Left-Through		0			0	
	Through	230	1	**230**	578	1	**578**
	Through-Right		0			0	
	Right	19	1	19	30	1	30
	Left-Through-Right		0			0	
	Left-Right		0			0	
CRITICAL VOLUMES			*North-South:*	395		*North-South:*	584
			East-West:	230		*East-West:*	578
			SUM:	625		*SUM:*	1162
VOLUME/CAPACITY *(V/C)* RATIO:				0.417			0.775
V/C LESS ATSAC/ATCS ADJUSTMENT:				**0.317**			**0.675**
LEVEL OF SERVICE (LOS):				**A**			**B**

Level of Service Worksheet
(Circular 212 Method)

I/S #:	
13	

PROJECT TITLE: Olympic & Hill
North-South Street: Main Street **East-West Street:** Olympic Boulevard
Scenario: Future Base
Count Date: See Existing Sheets **Analyst:** Fehr & Peers **Date:** 5/19/2017

		AM			PM		
No. of Phases				2			2
Opposed Ø'ing: N/S-1, E/W-2 or Both-3?				0			0
Right Turns: FREE-1, NRTOR-2 or OLA-3?	NB-- 0	SB--		0	NB-- 0	SB--	0
	EB-- 0	WB--		0	EB-- 0	WB--	0
ATSAC-1 or ATSAC+ATCS-2?				2			2
Override Capacity				0			0

	MOVEMENT	Volume	No. of Lanes	Lane Volume	Volume	No. of Lanes	Lane Volume
NORTHBOUND	Left	82	1	**82**	95	1	**95**
	Left-Through		0			0	
	Through	733	2	367	922	2	461
	Through-Right		0			0	
	Right	113	1	103	85	1	40
	Left-Through-Right		0			0	
	Left-Right		0			0	
SOUTHBOUND	Left	40	1	40	44	1	44
	Left-Through		0			0	
	Through	392	1	**392**	660	1	**660**
	Through-Right		0			0	
	Right	149	1	76	154	1	45
	Left-Through-Right		0			0	
	Left-Right		0			0	
EASTBOUND	Left	147	1	**147**	218	1	**218**
	Left-Through		0			0	
	Through	724	2	362	720	2	360
	Through-Right		0			0	
	Right	65	1	24	85	1	38
	Left-Through-Right		0			0	
	Left-Right		0			0	
WESTBOUND	Left	21	1	21	90	1	90
	Left-Through		0			0	
	Through	646	1	**341**	919	1	**497**
	Through-Right		1			1	
	Right	35	0	35	75	0	75
	Left-Through-Right		0			0	
	Left-Right		0			0	
CRITICAL VOLUMES			*North-South:*	474		*North-South:*	755
			East-West:	488		*East-West:*	715
			SUM:	962		*SUM:*	1470
VOLUME/CAPACITY *(V/C)* RATIO:				0.641			0.980
V/C LESS ATSAC/ATCS ADJUSTMENT:				**0.541**			**0.880**
LEVEL OF SERVICE (LOS):				**A**			**D**

Level of Service Worksheet
(Circular 212 Method)

I/S #:	PROJECT TITLE:	Olympic & Hill		
1	North-South Street:	Grand Ave	East-West Street:	Olympic Boulevard
	Scenario:	Future plus Project		
	Count Date:	See Existing Sheets	Analyst: Fehr & Peers	Date: 5/19/2017

		AM			PM		
	No. of Phases			2			2
	Opposed Ø'ing: N/S-1, E/W-2 or Both-3?			0			0
	Right Turns: FREE-1, NRTOR-2 or OLA-3?	NB-- 0	SB--	0	NB-- 0	SB--	0
		EB-- 0	WB--	0	EB-- 0	WB--	0
	ATSAC-1 or ATSAC+ATCS-2?			2			2
	Override Capacity			0			0
	MOVEMENT	Volume	No. of Lanes	Lane Volume	Volume	No. of Lanes	Lane Volume
NORTHBOUND	Left	0	0	**0**	0	0	**0**
	Left-Through		0			0	
	Through	0	0	0	0	0	0
	Through-Right		0			0	
	Right	0	0	0	0	0	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
SOUTHBOUND	Left	94	1	94	128	1	128
	Left-Through		0			0	
	Through	730	3	**243**	1614	3	**538**
	Through-Right		0			0	
	Right	195	1	195	281	1	281
	Left-Through-Right		0			0	
	Left-Right		0			0	
EASTBOUND	Left	0	0	0	0	0	0
	Left-Through		0			0	
	Through	1050	1	**608**	1095	1	**683**
	Through-Right		1			1	
	Right	165	0	165	270	0	270
	Left-Through-Right		0			0	
	Left-Right		0			0	
WESTBOUND	Left	108	1	**108**	134	1	**134**
	Left-Through		0			0	
	Through	1189	2	595	1344	2	672
	Through-Right		0			0	
	Right	0	0	0	0	0	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
	CRITICAL VOLUMES		*North-South:*	243		*North-South:*	538
			East-West:	716		*East-West:*	817
			SUM:	959		*SUM:*	1355
	VOLUME/CAPACITY *(V/C)* RATIO:			0.639			0.903
	V/C LESS ATSAC/ATCS ADJUSTMENT:			**0.539**			**0.803**
	LEVEL OF SERVICE (LOS):			**A**			**D**

Level of Service Worksheet
(Circular 212 Method)

I/S #:	
2	

PROJECT TITLE: Olympic & Hill
North-South Street: Olive Street **East-West Street:** 9th Street
Scenario: Future plus Project
Count Date: See Existing Sheets **Analyst:** Fehr & Peers **Date:** 5/19/2017

		AM			PM		
No. of Phases				2			2
Opposed Ø'ing: N/S-1, E/W-2 or Both-3?				0			0
Right Turns: FREE-1, NRTOR-2 or OLA-3?	NB-- 0	SB--	0		NB-- 0	SB--	0
	EB-- 0	WB--	0		EB-- 0	WB--	0
ATSAC-1 or ATSAC+ATCS-2?			2				2
Override Capacity			0				0

	MOVEMENT	Volume	No. of Lanes	Lane Volume	Volume	No. of Lanes	Lane Volume
NORTHBOUND	Left	0	0	0	0	0	0
	Left-Through		0			0	
	Through	1284	3	**428**	1327	3	**442**
	Through-Right		0			0	
	Right	136	1	136	267	1	267
	Left-Through-Right		0			0	
	Left-Right		0			0	
SOUTHBOUND	Left	0	0	**0**	0	0	**0**
	Left-Through		0			0	
	Through	0	0	0	0	0	0
	Through-Right		0			0	
	Right	0	0	0	0	0	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
EASTBOUND	Left	237	0	237	243	0	243
	Left-Through		1			1	
	Through	1381	2	**539**	1518	2	**587**
	Through-Right		0			0	
	Right	0	0	0	0	0	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
WESTBOUND	Left	0	0	**0**	0	0	**0**
	Left-Through		0			0	
	Through	0	0	0	0	0	0
	Through-Right		0			0	
	Right	0	0	0	0	0	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
CRITICAL VOLUMES			*North-South:*	428		*North-South:*	442
			East-West:	539		*East-West:*	587
			SUM:	967		*SUM:*	1029
VOLUME/CAPACITY *(V/C)* RATIO:				0.645			0.686
V/C LESS ATSAC/ATCS ADJUSTMENT:				**0.545**			**0.586**
LEVEL OF SERVICE (LOS):				**A**			**A**

Level of Service Worksheet
(Circular 212 Method)

I/S #:	
3	

PROJECT TITLE: Olympic & Hill
North-South Street: Olive Street **East-West Street:** Olympic Boulevard
Scenario: Future plus Project
Count Date: See Existing Sheets **Analyst:** Fehr & Peers **Date:** 5/19/2017

		AM				PM			
No. of Phases					2				2
Opposed Ø'ing: N/S-1, E/W-2 or Both-3?					0				0
Right Turns: FREE-1, NRTOR-2 or OLA-3?		NB-- 0	SB--		0	NB-- 0	SB--		0
		EB-- 0	WB--		0	EB-- 0	WB--		0
ATSAC-1 or ATSAC+ATCS-2?					2				2
Override Capacity					0				0
	MOVEMENT	Volume	No. of Lanes		Lane Volume	Volume	No. of Lanes		Lane Volume
NORTHBOUND	Left	214	0		214	219	0		219
	Left-Through		1				1		
	Through	1080	2		**431**	1236	2		**485**
	Through-Right		0				0		
	Right	80	1		80	81	1		81
	Left-Through-Right		0				0		
	Left-Right		0				0		
SOUTHBOUND	Left	0	0		**0**	0	0		**0**
	Left-Through		0				0		
	Through	0	0		0	0	0		0
	Through-Right		0				0		
	Right	0	0		0	0	0		0
	Left-Through-Right		0				0		
	Left-Right		0				0		
EASTBOUND	Left	148	1		**148**	170	1		**170**
	Left-Through		0				0		
	Through	1082	2		541	995	2		498
	Through-Right		0				0		
	Right	0	0		0	0	0		0
	Left-Through-Right		0				0		
	Left-Right		0				0		
WESTBOUND	Left	0	0		0	0	0		0
	Left-Through		0				0		
	Through	912	2		**456**	1219	2		**610**
	Through-Right		0				0		
	Right	98	1		98	124	1		124
	Left-Through-Right		0				0		
	Left-Right		0				0		
CRITICAL VOLUMES				*North-South:*	431			*North-South:*	485
				East-West:	604			*East-West:*	780
				SUM:	1035			*SUM:*	1265
VOLUME/CAPACITY *(V/C)* RATIO:					0.690				0.843
V/C LESS ATSAC/ATCS ADJUSTMENT:					**0.590**				**0.743**
LEVEL OF SERVICE (LOS):					**A**				**C**

Level of Service Worksheet
(Circular 212 Method)

I/S #:	
4	

PROJECT TITLE: Olympic & Hill
North-South Street: Olive Street **East-West Street:** 11th Street
Scenario: Future plus Project
Count Date: See Existing Sheets **Analyst:** Fehr & Peers **Date:** 5/19/2017

		AM			PM		
	No. of Phases			2			2
	Opposed Ø'ing: N/S-1, E/W-2 or Both-3?			0			0
	Right Turns: FREE-1, NRTOR-2 or OLA-3?	NB-- 0	SB--	0	NB-- 0	SB--	0
		EB-- 0	WB--	0	EB-- 0	WB--	0
	ATSAC-1 or ATSAC+ATCS-2?			2			2
	Override Capacity			0			0
	MOVEMENT	Volume	No. of Lanes	Lane Volume	Volume	No. of Lanes	Lane Volume
NORTHBOUND	Left	131	0	131	167	0	167
	Left-Through		1			1	
	Through	1300	2	**477**	1353	2	**507**
	Through-Right		0			0	
	Right	0	0	0	0	0	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
SOUTHBOUND	Left	0	0	**0**	0	0	**0**
	Left-Through		0			0	
	Through	0	0	0	0	0	0
	Through-Right		0			0	
	Right	0	0	0	0	0	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
EASTBOUND	Left	0	0	**0**	0	0	**0**
	Left-Through		0			0	
	Through	0	0	0	0	0	0
	Through-Right		0			0	
	Right	0	0	0	0	0	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
WESTBOUND	Left	0	0	0	0	0	0
	Left-Through		0			0	
	Through	344	1	**344**	623	1	**623**
	Through-Right		0			0	
	Right	66	1	66	144	1	144
	Left-Through-Right		0			0	
	Left-Right		0			0	
	CRITICAL VOLUMES		*North-South:*	477		*North-South:*	507
			East-West:	344		*East-West:*	623
			SUM:	821		*SUM:*	1130
	VOLUME/CAPACITY *(V/C)* RATIO:			0.547			0.753
	V/C LESS ATSAC/ATCS ADJUSTMENT:			**0.447**			**0.653**
	LEVEL OF SERVICE (LOS):			**A**			**B**

Level of Service Worksheet
(Circular 212 Method)

I/S #:	
5	

PROJECT TITLE: Olympic & Hill
North-South Street: Hill Street **East-West Street:** 8th Street
Scenario: Future plus Project
Count Date: See Existing Sheets **Analyst:** Fehr & Peers **Date:** 5/19/2017

		AM			PM		
No. of Phases				2			2
Opposed Ø'ing: N/S-1, E/W-2 or Both-3?				0			0
Right Turns: FREE-1, NRTOR-2 or OLA-3?	NB-- 0	SB--		0	NB-- 0	SB--	0
	EB-- 0	WB--		0	EB-- 0	WB--	0
ATSAC-1 or ATSAC+ATCS-2?				2			2
Override Capacity				0			0

	MOVEMENT	Volume	No. of Lanes	Lane Volume	Volume	No. of Lanes	Lane Volume
NORTHBOUND	Left	104	1	**104**	97	1	**97**
	Left-Through		0			0	
	Through	691	2	346	777	2	389
	Through-Right		0			0	
	Right	0	0	0	0	0	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
SOUTHBOUND	Left	0	0	0	0	0	0
	Left-Through		0			0	
	Through	718	2	**359**	1087	2	**544**
	Through-Right		0			0	
	Right	130	1	130	232	1	232
	Left-Through-Right		0			0	
	Left-Right		0			0	
EASTBOUND	Left	0	0	**0**	0	0	**0**
	Left-Through		0			0	
	Through	0	0	0	0	0	0
	Through-Right		0			0	
	Right	0	0	0	0	0	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
WESTBOUND	Left	114	1	114	167	1	167
	Left-Through		0			0	
	Through	1247	2	**624**	1410	2	**705**
	Through-Right		0			0	
	Right	95	1	95	110	1	110
	Left-Through-Right		0			0	
	Left-Right		0			0	
CRITICAL VOLUMES			*North-South:*	463		*North-South:*	641
			East-West:	624		*East-West:*	705
			SUM:	1087		*SUM:*	1346
VOLUME/CAPACITY *(V/C)* RATIO:				0.725			0.897
V/C LESS ATSAC/ATCS ADJUSTMENT:				**0.625**			**0.797**
LEVEL OF SERVICE (LOS):				**B**			**C**

Level of Service Worksheet
(Circular 212 Method)

I/S #:	PROJECT TITLE:	Olympic & Hill			
6	North-South Street:	Hill Street	East-West Street:	9th Street	
	Scenario:	Future plus Project			
	Count Date:	See Existing Sheets	Analyst:	Fehr & Peers	Date: 5/19/2017

		AM			PM		
	No. of Phases			2			2
	Opposed Ø'ing: N/S-1, E/W-2 or Both-3?			0			0
	Right Turns: FREE-1, NRTOR-2 or OLA-3?	NB-- 0	SB--	0	NB-- 0	SB--	0
		EB-- 0	WB--	0	EB-- 0	WB--	0
	ATSAC-1 or ATSAC+ATCS-2?			2			2
	Override Capacity			0			0
	MOVEMENT	Volume	No. of Lanes	Lane Volume	Volume	No. of Lanes	Lane Volume
NORTHBOUND	Left	0	0	0	0	0	0
	Left-Through		0			0	
	Through	673	1	**401**	779	1	**452**
	Through-Right		1			1	
	Right	129	0	129	124	0	124
	Left-Through-Right		0			0	
	Left-Right		0			0	
SOUTHBOUND	Left	152	1	**152**	119	1	**119**
	Left-Through		0			0	
	Through	664	2	332	1122	2	561
	Through-Right		0			0	
	Right	0	0	0	0	0	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
EASTBOUND	Left	83	0	83	93	0	93
	Left-Through		1			1	
	Through	1357	1	**508**	1597	1	**603**
	Through-Right		1			1	
	Right	84	0	508	120	0	603
	Left-Through-Right		0			0	
	Left-Right		0			0	
WESTBOUND	Left	0	0	**0**	0	0	**0**
	Left-Through		0			0	
	Through	0	0	0	0	0	0
	Through-Right		0			0	
	Right	0	0	0	0	0	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
	CRITICAL VOLUMES		*North-South:*	553		*North-South:*	571
			East-West:	508		*East-West:*	603
			SUM:	1061		*SUM:*	1174
	VOLUME/CAPACITY *(V/C)* RATIO:			0.707			0.783
	V/C LESS ATSAC/ATCS ADJUSTMENT:			**0.607**			**0.683**
	LEVEL OF SERVICE (LOS):			**B**			**B**

Level of Service Worksheet
(Circular 212 Method)

I/S #:	
7	

PROJECT TITLE: Olympic & Hill
North-South Street: Hill Street **East-West Street:** Olympic Boulevard
Scenario: Future plus Project
Count Date: See Existing Sheets **Analyst:** Fehr & Peers **Date:** 5/19/2017

		AM			PM		
No. of Phases				2			2
Opposed Ø'ing: N/S-1, E/W-2 or Both-3?				0			0
Right Turns: FREE-1, NRTOR-2 or OLA-3?	NB-- 0	SB--		0	NB-- 0	SB--	0
	EB-- 0	WB--		0	EB-- 0	WB--	0
ATSAC-1 or ATSAC+ATCS-2?				2			2
Override Capacity				0			0

	MOVEMENT	Volume	No. of Lanes	Lane Volume	Volume	No. of Lanes	Lane Volume
NORTHBOUND	Left	68	1	**68**	66	1	**66**
	Left-Through		0			0	
	Through	588	1	341	739	1	426
	Through-Right		1			1	
	Right	93	0	93	113	0	113
	Left-Through-Right		0			0	
	Left-Right		0			0	
SOUTHBOUND	Left	69	1	69	52	1	52
	Left-Through		0			0	
	Through	578	1	**357**	1090	1	**635**
	Through-Right		1			1	
	Right	136	0	136	179	0	179
	Left-Through-Right		0			0	
	Left-Right		0			0	
EASTBOUND	Left	83	1	83	108	1	**108**
	Left-Through		0			0	
	Through	938	2	**469**	856	2	428
	Through-Right		0			0	
	Right	108	1	74	103	1	70
	Left-Through-Right		0			0	
	Left-Right		0			0	
WESTBOUND	Left	78	1	**78**	131	1	131
	Left-Through		0			0	
	Through	781	1	435	1083	1	**611**
	Through-Right		1			1	
	Right	88	0	88	138	0	138
	Left-Through-Right		0			0	
	Left-Right		0			0	
CRITICAL VOLUMES			*North-South:*	425		*North-South:*	701
			East-West:	547		*East-West:*	719
			SUM:	972		*SUM:*	1420
VOLUME/CAPACITY *(V/C)* RATIO:				0.648			0.947
V/C LESS ATSAC/ATCS ADJUSTMENT:				**0.548**			**0.847**
LEVEL OF SERVICE (LOS):				**A**			**D**

Level of Service Worksheet
(Circular 212 Method)

I/S #:	
8	

PROJECT TITLE: Olympic & Hill
North-South Street: Hill Street **East-West Street:** 11th Street
Scenario: Future plus Project
Count Date: See Existing Sheets **Analyst:** Fehr & Peers **Date:** 5/19/2017

		AM			PM		
	No. of Phases			2			2
	Opposed Ø'ing: N/S-1, E/W-2 or Both-3?			0			0
	Right Turns: FREE-1, NRTOR-2 or OLA-3?	NB-- 0	SB--	0	NB-- 0	SB--	0
		EB-- 0	WB--	0	EB-- 0	WB--	0
	ATSAC-1 or ATSAC+ATCS-2?			2			2
	Override Capacity			0			0
	MOVEMENT	Volume	No. of Lanes	Lane Volume	Volume	No. of Lanes	Lane Volume
NORTHBOUND	Left	56	1	**56**	53	1	**53**
	Left-Through		0			0	
	Through	646	2	323	788	2	394
	Through-Right		0			0	
	Right	0	0	0	0	0	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
SOUTHBOUND	Left	0	0	0	0	0	0
	Left-Through		0			0	
	Through	654	2	**327**	1112	2	**556**
	Through-Right		0			0	
	Right	105	1	105	129	1	129
	Left-Through-Right		0			0	
	Left-Right		0			0	
EASTBOUND	Left	0	0	**0**	0	0	**0**
	Left-Through		0			0	
	Through	0	0	0	0	0	0
	Through-Right		0			0	
	Right	0	0	0	0	0	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
WESTBOUND	Left	29	1	29	96	1	96
	Left-Through		0			0	
	Through	278	1	**278**	586	1	**586**
	Through-Right		0			0	
	Right	56	1	56	143	1	143
	Left-Through-Right		0			0	
	Left-Right		0			0	
	CRITICAL VOLUMES		*North-South:*	383		*North-South:*	609
			East-West:	278		*East-West:*	586
			SUM:	661		*SUM:*	1195
	VOLUME/CAPACITY *(V/C)* RATIO:			0.441			0.797
	V/C LESS ATSAC/ATCS ADJUSTMENT:			**0.341**			**0.697**
	LEVEL OF SERVICE (LOS):			**A**			**B**

Level of Service Worksheet
(Circular 212 Method)

I/S #:	PROJECT TITLE:	Olympic & Hill		
9	North-South Street:	Hill Street	East-West Street:	12th Street
	Scenario:	Future plus Project		
	Count Date:	See Existing Sheets	Analyst: Fehr & Peers	Date: 5/19/2017

		AM			PM		
	No. of Phases			2			2
	Opposed Ø'ing: N/S-1, E/W-2 or Both-3?			0			0
	Right Turns: FREE-1, NRTOR-2 or OLA-3?	NB-- 0	SB--	0	NB-- 0	SB--	0
		EB-- 0	WB--	0	EB-- 0	WB--	0
	ATSAC-1 or ATSAC+ATCS-2?			2			2
	Override Capacity			0			0
	MOVEMENT	Volume	No. of Lanes	Lane Volume	Volume	No. of Lanes	Lane Volume
NORTHBOUND	Left	0	0	0	0	0	0
	Left-Through		0			0	
	Through	637	1	**637**	768	1	**768**
	Through-Right		0			0	
	Right	116	1	116	94	1	94
	Left-Through-Right		0			0	
	Left-Right		0			0	
SOUTHBOUND	Left	88	1	**88**	83	1	**83**
	Left-Through		0			0	
	Through	610	2	305	1114	2	557
	Through-Right		0			0	
	Right	0	0	0	0	0	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
EASTBOUND	Left	50	0	50	98	0	98
	Left-Through		1			1	
	Through	274	0	**181**	255	0	**206**
	Through-Right		1			1	
	Right	38	0	181	59	0	206
	Left-Through-Right		0			0	
	Left-Right		0			0	
WESTBOUND	Left	0	0	**0**	0	0	**0**
	Left-Through		0			0	
	Through	0	0	0	0	0	0
	Through-Right		0			0	
	Right	0	0	0	0	0	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
	CRITICAL VOLUMES		North-South:	725		North-South:	851
			East-West:	181		East-West:	206
			SUM:	906		SUM:	1057
	VOLUME/CAPACITY (V/C) RATIO:			0.604			0.705
	V/C LESS ATSAC/ATCS ADJUSTMENT:			**0.504**			**0.605**
	LEVEL OF SERVICE (LOS):			**A**			**B**

I/S #:	
10	

PROJECT TITLE: Olympic & Hill
North-South Street: Broadway **East-West Street:** 9th Street
Scenario: Future plus Project
Count Date: See Existing Sheets **Analyst:** Fehr & Peers **Date:** 5/19/2017

		AM				PM			
No. of Phases					2				2
Opposed Ø'ing: N/S-1, E/W-2 or Both-3?					0				0
Right Turns: FREE-1, NRTOR-2 or OLA-3?		NB-- 0	SB--		0	NB-- 0	SB--		0
		EB-- 0	WB--		0	EB-- 0	WB--		0
ATSAC-1 or ATSAC+ATCS-2?					2				2
Override Capacity					0				0
	MOVEMENT	Volume	No. of Lanes		Lane Volume	Volume	No. of Lanes		Lane Volume
NORTHBOUND	Left	0	0		0	0	0		**0**
	Left-Through		0				0		
	Through	765	1		**418**	828	1		461
	Through-Right		1				1		
	Right	71	0		71	93	0		93
	Left-Through-Right		0				0		
	Left-Right		0				0		
SOUTHBOUND	Left	0	0		**0**	0	0		0
	Left-Through		0				0		
	Through	385	1		385	669	1		**669**
	Through-Right		0				0		
	Right	0	0		0	0	0		0
	Left-Through-Right		0				0		
	Left-Right		0				0		
EASTBOUND	Left	107	1		107	188	1		188
	Left-Through		0				0		
	Through	1316	2		**461**	1632	2		**575**
	Through-Right		1				1		
	Right	68	0		68	93	0		93
	Left-Through-Right		0				0		
	Left-Right		0				0		
WESTBOUND	Left	0	0		**0**	0	0		**0**
	Left-Through		0				0		
	Through	0	0		0	0	0		0
	Through-Right		0				0		
	Right	0	0		0	0	0		0
	Left-Through-Right		0				0		
	Left-Right		0				0		
CRITICAL VOLUMES				*North-South:*	418			*North-South:*	669
				East-West:	461			*East-West:*	575
				SUM:	879			*SUM:*	1244
VOLUME/CAPACITY *(V/C)* RATIO:					0.586				0.829
V/C LESS ATSAC/ATCS ADJUSTMENT:					**0.486**				**0.729**
LEVEL OF SERVICE (LOS):					**A**				**C**

Level of Service Worksheet
(Circular 212 Method)

I/S #:	PROJECT TITLE:	Olympic & Hill		
11	North-South Street:	Broadway	East-West Street:	Olympic Boulevard
	Scenario:	Future plus Project		
	Count Date:	See Existing Sheets	Analyst: Fehr & Peers	Date: 5/19/2017

		AM			PM		
No. of Phases				2			2
Opposed Ø'ing: N/S-1, E/W-2 or Both-3?				0			0
Right Turns: FREE-1, NRTOR-2 or OLA-3?	NB-- 0	SB--	0		NB-- 0	SB--	0
	EB-- 0	WB--	0		EB-- 0	WB--	0
ATSAC-1 or ATSAC+ATCS-2?			2				2
Override Capacity			0				0

	MOVEMENT	Volume	No. of Lanes	Lane Volume	Volume	No. of Lanes	Lane Volume
NORTHBOUND	Left	39	0	39	61	0	**61**
	Left-Through		1			1	
	Through	749	1	**414**	726	1	485
	Through-Right		0			0	
	Right	61	1	35	106	1	55
	Left-Through-Right		0			0	
	Left-Right		0			0	
SOUTHBOUND	Left	0	0	**0**	0	0	0
	Left-Through		0			0	
	Through	325	1	325	669	1	**669**
	Through-Right		0			0	
	Right	113	1	67	137	1	93
	Left-Through-Right		0			0	
	Left-Right		0			0	
EASTBOUND	Left	93	1	93	89	1	**89**
	Left-Through		0			0	
	Through	974	1	**527**	821	1	460
	Through-Right		1			1	
	Right	80	0	80	99	0	99
	Left-Through-Right		0			0	
	Left-Right		0			0	
WESTBOUND	Left	53	1	**53**	102	1	102
	Left-Through		0			0	
	Through	718	1	386	1125	1	**601**
	Through-Right		1			1	
	Right	53	0	53	76	0	76
	Left-Through-Right		0			0	
	Left-Right		0			0	
CRITICAL VOLUMES			*North-South:*	414		*North-South:*	730
			East-West:	580		*East-West:*	690
			SUM:	994		*SUM:*	1420
VOLUME/CAPACITY *(V/C)* RATIO:				0.663			0.947
V/C LESS ATSAC/ATCS ADJUSTMENT:				**0.563**			**0.847**
LEVEL OF SERVICE (LOS):				**A**			**D**

Level of Service Worksheet
(Circular 212 Method)

I/S #:	PROJECT TITLE:	Olympic & Hill			
12	North-South Street:	Broadway	East-West Street:	11th Street	
	Scenario:	Future plus Project			
	Count Date:	See Existing Sheets	Analyst:	Fehr & Peers	Date: 5/19/2017

		AM			PM		
	No. of Phases			2			2
	Opposed Ø'ing: N/S-1, E/W-2 or Both-3?			0			0
	Right Turns: FREE-1, NRTOR-2 or OLA-3?	NB-- 0	SB--	0	NB-- 0	SB--	0
		EB-- 0	WB--	0	EB-- 0	WB--	0
	ATSAC-1 or ATSAC+ATCS-2?			2			2
	Override Capacity			0			0
	MOVEMENT	Volume	No. of Lanes	Lane Volume	Volume	No. of Lanes	Lane Volume
NORTHBOUND	Left	102	1	102	157	1	**157**
	Left-Through		0			0	
	Through	790	2	**395**	829	2	415
	Through-Right		0			0	
	Right	0	0	0	0	0	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
SOUTHBOUND	Left	0	0	**0**	0	0	0
	Left-Through		0			0	
	Through	414	1	228	790	1	**442**
	Through-Right		1			1	
	Right	42	0	42	93	0	93
	Left-Through-Right		0			0	
	Left-Right		0			0	
EASTBOUND	Left	0	0	**0**	0	0	**0**
	Left-Through		0			0	
	Through	0	0	0	0	0	0
	Through-Right		0			0	
	Right	0	0	0	0	0	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
WESTBOUND	Left	51	1	51	104	1	104
	Left-Through		0			0	
	Through	234	1	**234**	594	1	**594**
	Through-Right		0			0	
	Right	19	1	19	30	1	30
	Left-Through-Right		0			0	
	Left-Right		0			0	
	CRITICAL VOLUMES		*North-South:*	395		*North-South:*	599
			East-West:	234		*East-West:*	594
			SUM:	629		*SUM:*	1193
	VOLUME/CAPACITY *(V/C)* RATIO:			0.419			0.795
	V/C LESS ATSAC/ATCS ADJUSTMENT:			**0.319**			**0.695**
	LEVEL OF SERVICE (LOS):			**A**			**B**

Level of Service Worksheet
(Circular 212 Method)

I/S #:	
13	

PROJECT TITLE: Olympic & Hill
North-South Street: Main Street **East-West Street:** Olympic Boulevard
Scenario: Future plus Project
Count Date: See Existing Sheets **Analyst:** Fehr & Peers **Date:** 5/19/2017

		AM			PM		
No. of Phases				2			2
Opposed Ø'ing: N/S-1, E/W-2 or Both-3?				0			0
Right Turns: FREE-1, NRTOR-2 or OLA-3?	NB-- 0	SB--		0	NB-- 0	SB--	0
	EB-- 0	WB--		0	EB-- 0	WB--	0
ATSAC-1 or ATSAC+ATCS-2?				2			2
Override Capacity				0			0

	MOVEMENT	Volume	No. of Lanes	Lane Volume	Volume	No. of Lanes	Lane Volume
NORTHBOUND	Left	83	1	**83**	100	1	**100**
	Left-Through		0			0	
	Through	733	2	367	922	2	461
	Through-Right		0			0	
	Right	113	1	103	85	1	40
	Left-Through-Right		0			0	
	Left-Right		0			0	
SOUTHBOUND	Left	40	1	40	44	1	44
	Left-Through		0			0	
	Through	393	1	**393**	664	1	**664**
	Through-Right		0			0	
	Right	152	1	73	165	1	53
	Left-Through-Right		0			0	
	Left-Right		0			0	
EASTBOUND	Left	159	1	**159**	224	1	**224**
	Left-Through		0			0	
	Through	738	2	369	727	2	364
	Through-Right		0			0	
	Right	74	1	33	90	1	40
	Left-Through-Right		0			0	
	Left-Right		0			0	
WESTBOUND	Left	21	1	21	90	1	90
	Left-Through		0			0	
	Through	649	1	**342**	930	1	**503**
	Through-Right		1			1	
	Right	35	0	35	75	0	75
	Left-Through-Right		0			0	
	Left-Right		0			0	
CRITICAL VOLUMES			*North-South:*	476		*North-South:*	764
			East-West:	501		*East-West:*	727
			SUM:	977		*SUM:*	1491
VOLUME/CAPACITY *(V/C)* RATIO:				0.651			0.994
V/C LESS ATSAC/ATCS ADJUSTMENT:				**0.551**			**0.894**
LEVEL OF SERVICE (LOS):				**A**			**D**

Level of Service Worksheet
(Circular 212 Method)

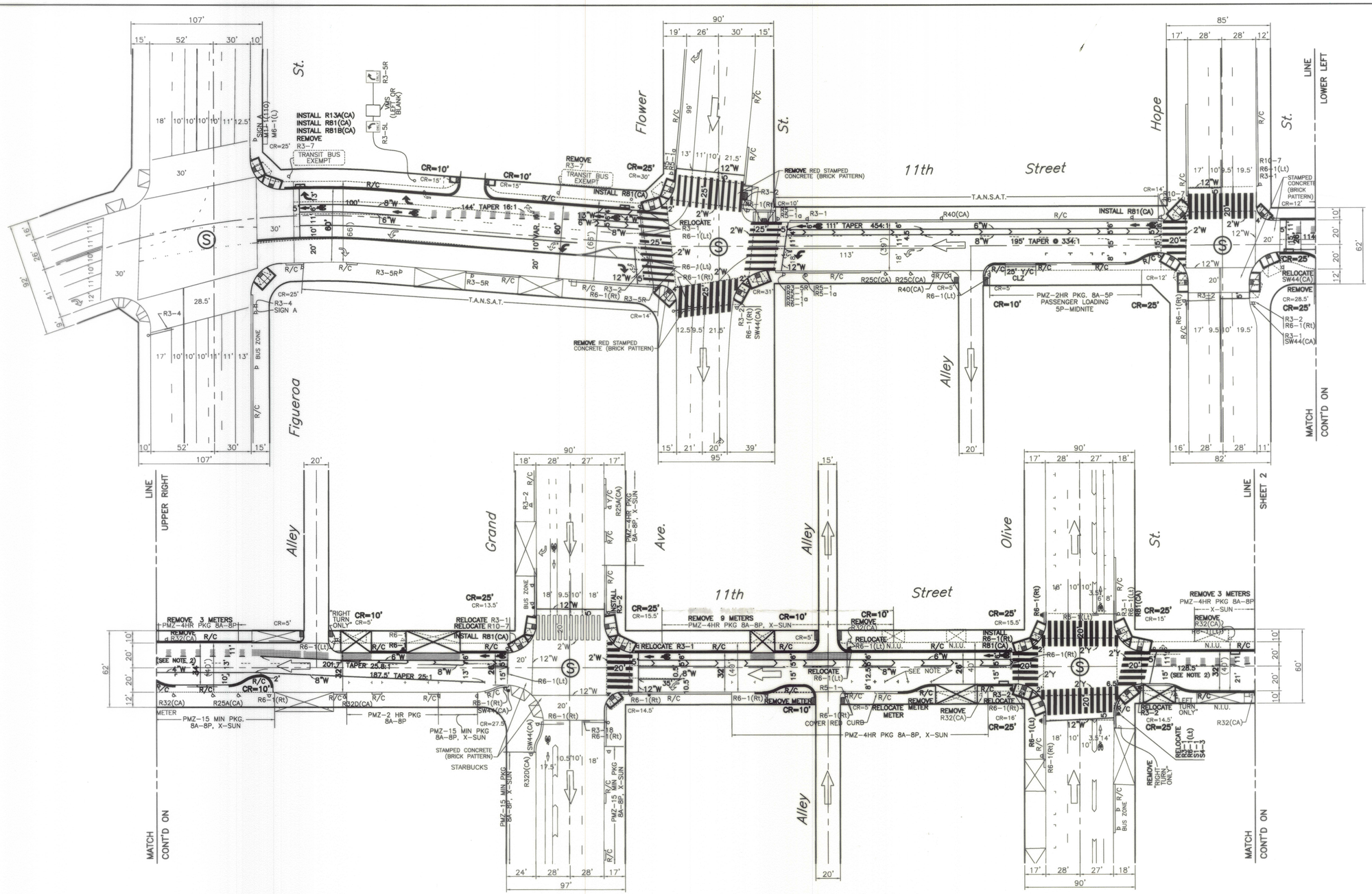
I/S #:	
7	

PROJECT TITLE: Olympic & Hill
North-South Street: Hill Street **East-West Street:** Olympic Boulevard
Scenario: Future plus Project with Mitigation
Count Date: See Existing Sheets **Analyst:** Fehr & Peers **Date:** 5/19/2017

		AM			PM		
No. of Phases				2			2
Opposed Ø'ing: N/S-1, E/W-2 or Both-3?				0			0
Right Turns: FREE-1, NRTOR-2 or OLA-3?	NB-- 0	SB--		0	NB-- 0	SB--	0
	EB-- 0	WB--		0	EB-- 0	WB--	0
ATSAC-1 or ATSAC+ATCS-2?				2			2
Override Capacity				0			0

	MOVEMENT	Volume	No. of Lanes	Lane Volume	Volume	No. of Lanes	Lane Volume
NORTHBOUND	Left	64	1	**64**	64	1	**64**
	Left-Through		0			0	
	Through	584	1	336	737	1	424
	Through-Right		1			1	
	Right	87	0	87	110	0	110
	Left-Through-Right		0			0	
	Left-Right		0			0	
SOUTHBOUND	Left	69	1	69	51	1	51
	Left-Through		0			0	
	Through	577	1	**357**	1087	1	**633**
	Through-Right		1			1	
	Right	136	0	136	179	0	179
	Left-Through-Right		0			0	
	Left-Right		0			0	
EASTBOUND	Left	83	1	83	108	1	**108**
	Left-Through		0			0	
	Through	938	2	**469**	855	2	428
	Through-Right		0			0	
	Right	107	1	75	98	1	66
	Left-Through-Right		0			0	
	Left-Right		0			0	
WESTBOUND	Left	77	1	**77**	126	1	126
	Left-Through		0			0	
	Through	780	1	433	1083	1	**611**
	Through-Right		1			1	
	Right	86	0	86	138	0	138
	Left-Through-Right		0			0	
	Left-Right		0			0	
CRITICAL VOLUMES			*North-South:*	421		*North-South:*	697
			East-West:	546		*East-West:*	719
			SUM:	967		*SUM:*	1416
VOLUME/CAPACITY *(V/C)* RATIO:				0.645			0.944
V/C LESS ATSAC/ATCS ADJUSTMENT:				**0.545**			**0.844**
LEVEL OF SERVICE (LOS):				**A**			**D**

APPENDIX E:
FIGUEROA STREETSCAPE PROJECT STRIPING PLANS



RIGHT LANE
BUSES AND RIGHT TURNS ONLY
7–9 AM
4–6 PM
MON–FRI
BIKES OK

SIGN A
NOTE: "BIKES OK" TO BE COVERED OR REMOVED

R3-1 R3-2
R3-4 R3-5R
R3-5(TEXT) R3-7R
R3-16 R5-1
R5-1a R6-1
R10-7 R13A(CA)
R25A(CA) R25C(CA)
R26L(CA) R32(CA)
R32D(CA) R32E(CA)
R40(CA) R81(CA)
R81B(CA) S1-1
S4-3 SW44(CA)
W4-7L W11-2
W20-1 G20-2

LEGEND

1. EXISTING STRIPING & MARKINGS TO REMAIN
   EXISTING STRIPING & MARKINGS TO BE REMOVED
   PROPOSED STRIPING & MARKINGS
2. EXISTING SIGNS ▸ PROPOSED SIGNS
3. SIGNALIZED INTERSECTION
4. EXISTING RED CURB
   PROPOSED RED CURB
5. GREEN INFILL

NOTES

1. LENGTH OF DESIGN : _____ ±
2. 6" X 4' STRIPE WITH 8' GAP (TYP)
3. PAINT REMOVAL REQUIRED
4. 6"/4" W x 4' (AS NOTED), 8' GAP (TYP)
5. 8" x 3' W STRIPE WITH 12' GAP (TYP)
6. CONFLICTING STRIPING AND PAVEMENT MARKINGS SHALL BE REMOVED.
7. REFER TO PREFORMED THERMOPLASTIC PAVEMENT MARKINGS SPECIFICATION FOR PAVEMENT MARKING INSTALLATION.

SCALE: 1"=40'

Plans Prepared Under Supervision Of
Civil Transportation Engineer

Lydia La Point Date 5/23/14
SIGNATURE R.C.E. No. 70858

REGISTERED PROFESSIONAL ENGINEER — LYDIA LA POINT — No. 70858 — Exp. 06/30/2015 — CIVIL — STATE OF CALIFORNIA

REGISTERED PROFESSIONAL ENGINEER — JONATHAN L. LEVY — No. TR 1222 — Exp. 9-30-15 — TRAFFIC — STATE OF OKLAHOMA

MELÉNDREZ
Troller Mayer Associates, Inc.
Landscape Architecture Planning Urban Design

IBI GROUP
IBI GROUP
18401 VON KARMAN AVE
SUITE 110
IRVINE, CA 92612
TEL: (949) 833-5588
FAX: (949) 833-5511

1"=20' ORIGINAL MAP SCALE
1"=40'
20 10 0 20 40 60 80 100 FEET
40 20 0 40 80 120 160 200 FEET

SCALES HORIZ. 1"=40'
VERT.

FIGUEROA CORRIDOR PROJECT

REVIEWED May 15 20 14
TRANSPORTATION ENGINEER

ACCEPTED June 11 20 14
SENIOR TRANSPORTATION ENGINEER

INSTALLATION DATES
MARKOUT BEGAN:
MARKOUT COMPLETED:
STRIPING COMPLETED:
References:

CITY OF LOS ANGELES
DEPARTMENT OF TRANSPORTATION
JON KIRK MUKRI, GENERAL MANAGER

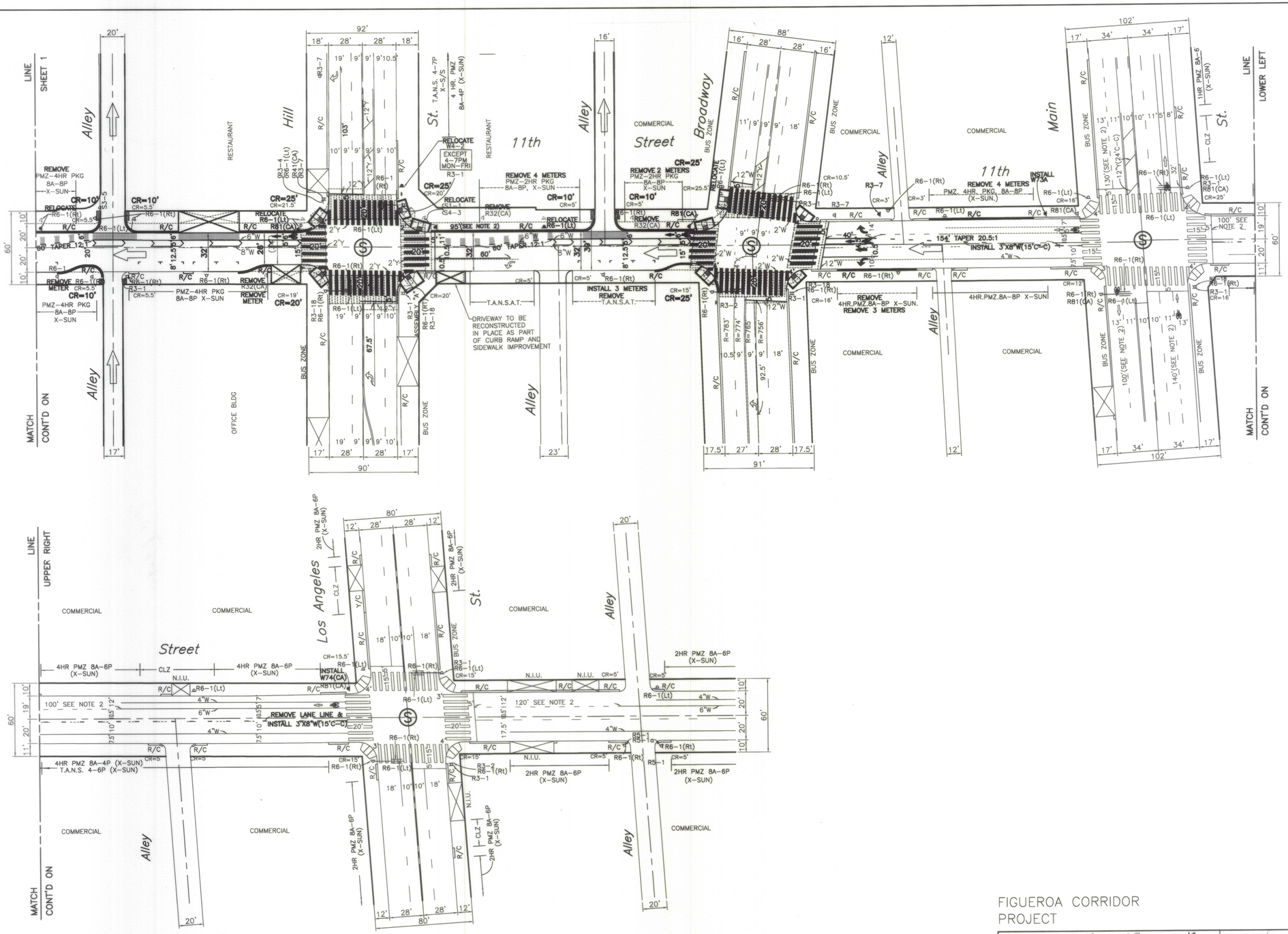
11TH STREET
FIGUEROA ST. TO LOS ANGELES ST.

Thomas Guide | District C
PROJECT NO. TGF13009
DRAWING NO. A-6339 1/2

SHEET 50 OF 80
INDEX NUMBER

NO.	REVISION DESCRIPTION	DATE	BY
	T.E. PRINCIPAL		
	T.E./SR. T.E.		
	DISTRICT SIGNALS		
	SUPERVISOR		
	BASE CHECK DESIGN		

DWG: J:\08334.Figueroa Study\6.9 Drawings\69civil\layouts\Road Sheets\08334_11thSt_Striping49.dwg USER: carlos.serrano
DATE: May 08, 2014 10:41am



R3-1 R3-2 R3-4 R3-5R R3-5(TEXT) R3-7R R3-18 R6-1 R32(CA) R81(CA) R81A(CA) S1-1 S3-5 S4-3 W4-2 W73A W74(CA)

Plans Prepared Under Supervision Of
Civil Transportation Engineer

Lydia La Point Date 5/23/14

SIGNATURE R.C.E. No. 70858

REGISTERED PROFESSIONAL ENGINEER — LYDIA LA POINT — No. 70858 — Exp. 06/30/2015 — CIVIL — STATE OF CALIFORNIA

REGISTERED PROFESSIONAL ENGINEER — JONATHAN L. LEVY — No. TR 1222 — Exp. 9-30-15 — TRAFFIC — STATE OF CALIFORNIA

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IRVINE, CA 92612
TEL: (949) 833-5588
FAX: (949) 833-5511

1"=20' ORIGINAL MAP SCALE
1"=40'
20 10 0 20 40 60 80 100 FEET
40 20 0 40 80 120 160 200 FEET

SCALE: 1"=40'

FIGUEROA CORRIDOR PROJECT

REVIEWED May 15 20 14
TRANSPORTATION ENGINEER

ACCEPTED June 11 20 14
SENIOR TRANSPORTATION ENGINEER

INSTALLATION DATES
MARKOUT BEGAN:
MARKOUT COMPLETED:
STRIPING COMPLETED:
References:

CITY OF LOS ANGELES
DEPARTMENT OF TRANSPORTATION
JON KIRK MUKRI, GENERAL MANAGER

11Th ST.
FIGUEROA ST. TO LOS ANGELES ST.

Thomas Guide | District C | PROJECT NO. TGF13009 | DRAWING NO. A-6339 | 2/2

SCALES | HORIZ. 1"=40' | VERT.

SHEET 51 OF 80 | INDEX NUMBER

NO.	REVISION DESCRIPTION	DATE	BY
	T.E. PRINCIPAL		
	T.E./SR. T.E.		
	SUPERVISOR		
	DISTRICT		
	SIGNALS		
	BASE		
	CHECK		
	DESIGN		

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DATE: May 08, 2014 10:41:11 AM
USER: carlos.serrano

APPENDIX F:
TDM+ ANALYSIS

APPENDIX F
TDM EFFECTIVENESS ANALYSIS

1. INTRODUCTION

The recommended mitigation program for the Project includes selected transportation demand management (TDM) strategies to reduce Project vehicle trips. The potential effectiveness of these measures was estimated as described herein.

The estimated reductions for each strategy in the recommended TDM program are based on research presented in the California Air Pollution Control Officers Association's (CAPCOA) 2010 report.[1]

2. OVERVIEW OF THE RECOMMENDED TDM PROGRAM

The following strategies are included in the recommended TDM program:

1. Site Design
2. Unbundled Parking

3. METHODOLOGY

The 2010 CAPCOA report, titled *Quantifying Greenhouse Gas Mitigation Measures*, is a primary resource to the assessment of quantifiable greenhouse gas emission reduction benefits. CAPCOA's research focuses on strategies to reduce greenhouse gas emissions at the project level, primarily in terms of land use, transportation, and energy use. The transportation component bases the emission reduction benefits on estimated reductions in vehicle trips and vehicle miles traveled (VMT). These strategy-specific VMT reduction estimates were applied to the TDM strategies included in Section 4 below.

For each strategy, the CAPCOA report provides a discussion of the relevant literature, as well as a guideline for estimating the VMT reduction resulting from each individual strategy. The recommended guidelines for estimating VMT reduction were developed from relevant research and case studies. Section 4 below summarizes the particular methodology used to estimate the specific VMT reduction for each of the strategies included in the recommended TDM Plan.

In addition, each strategy is considered by CAPCOA as part of a larger category group: Land Use/Location, Neighborhood/Site Enhancement, Parking Policy/Pricing, Transit System Improvements, Commute Trip Reduction, and Road Pricing Management. The CAPCOA report provides certain maximum reductions in VMT for each individual strategy, as well as for each category of strategies. The maximum reductions serve as caps for each category to prevent the double counting of reductions resulting from a combination of related strategies, similar in concept to the dampening adjustment discussed above.

Similarly, the CAPCOA report sets overall maximum caps based on context, with a 75% maximum reduction cap set for "Urban," the context most appropriate to the built environment surrounding the Project. This maximum cap recognizes that each set of strategies is somewhat bounded by the overall

[1]California Air Pollution Control Officers Association. *Quantifying Greenhouse Gas Mitigation Measures-A Resource for Local Government to Assess Emission Reductions from Greenhouse Gas Mitigation Measures*, 2010.

land use beyond a project site, opportunities to connect to other suburban and urban environments, and the set of already existing mobility and access tools. Exhibit 1 duplicates Chart 6-2 from the CAPCOA report, identifying the category and overall maximum VMT reduction caps, as well as the individual strategies included in each category.

4. EVALUATION OF RECOMMENDED TDM STRATEGIES

This section provides a detailed evaluation of each TDM strategy listed in Section 2: Overview of the Recommended TDM Program, above. For each strategy that is based on the CAPCOA report, the related CAPCOA strategy code (for example, CAPCOA TRT-6 or SDT-3) is provided.

1. Site Design

The Project site will be designed to encourage walking, biking, and transit. Amenities would include new sidewalks and street trees along the site perimeter and improved street and pedestrian lighting. Short and long-term bicycle parking will be provided in accordance with City of Los Angeles Municipal Code requirements. To be conservative, no additional trip reduction was assumed resulting from these measures since they are part of the project as designed and the trip generation analysis in the traffic study already assumes trip reductions due to transit and the Project's urban location.

2. Unbundle Parking Costs from Property Cost

According to CAPCOA, unbundling parking from property costs requires those who wish to purchase parking spaces to do so at an additional cost separate from the property cost (CAPCOA PDT-2). This removes the burden from those who do not wish to utilize a parking space and provides a financial disincentive to owning vehicles. Parking is priced separately from residential rents or commercial leases.

The CAPCOA report provides the following formula for calculating the percent VMT reduction associated with unbundled parking:

% VMT Reduction = Change in vehicle cost * Elasticity * Adjustment factor

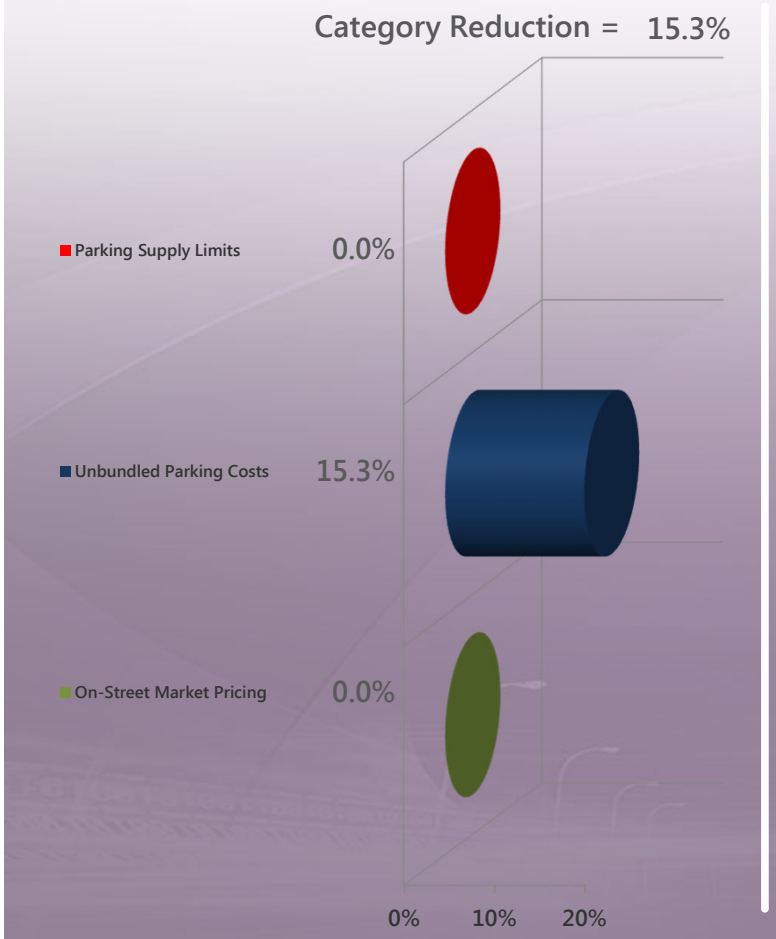
Where:

- Change in vehicle cost = monthly parking cost * (12/$4,000), with $4,000 representing the annual vehicle cost
- Elasticity of vehicle ownership with respect to total vehicle costs = -0.4
- Adjustment from vehicle ownership to VMT = 85%

According to the CAPCOA report, unbundled parking results in VMT reductions ranging from 2.6% to 12.8%, based on monthly parking fees ranging from $25 to $125. In the case of the proposed Project, monthly parking fees will likely be in excess of $150. Assuming a monthly fee of $150 results in an overall VMT reduction of 15.3% ($150*12/$4,000 * 0.4 * 85% = 15.3%).

TDM+ Parking Policy/Pricing

FEHR PEERS



Project Location: urban

Parking Supply Limits *

100 ITE parking provision for the project site improvements

90 Actual parking provision for the project site

Unbundle Parking Costs *

150.00 monthly parking cost for the project site

On-Street Market Pricing *

25 percent increase in on-street parking prices (min 25%, max 50%)

TDM+ Global Reduction Summary

FEHR & PEERS

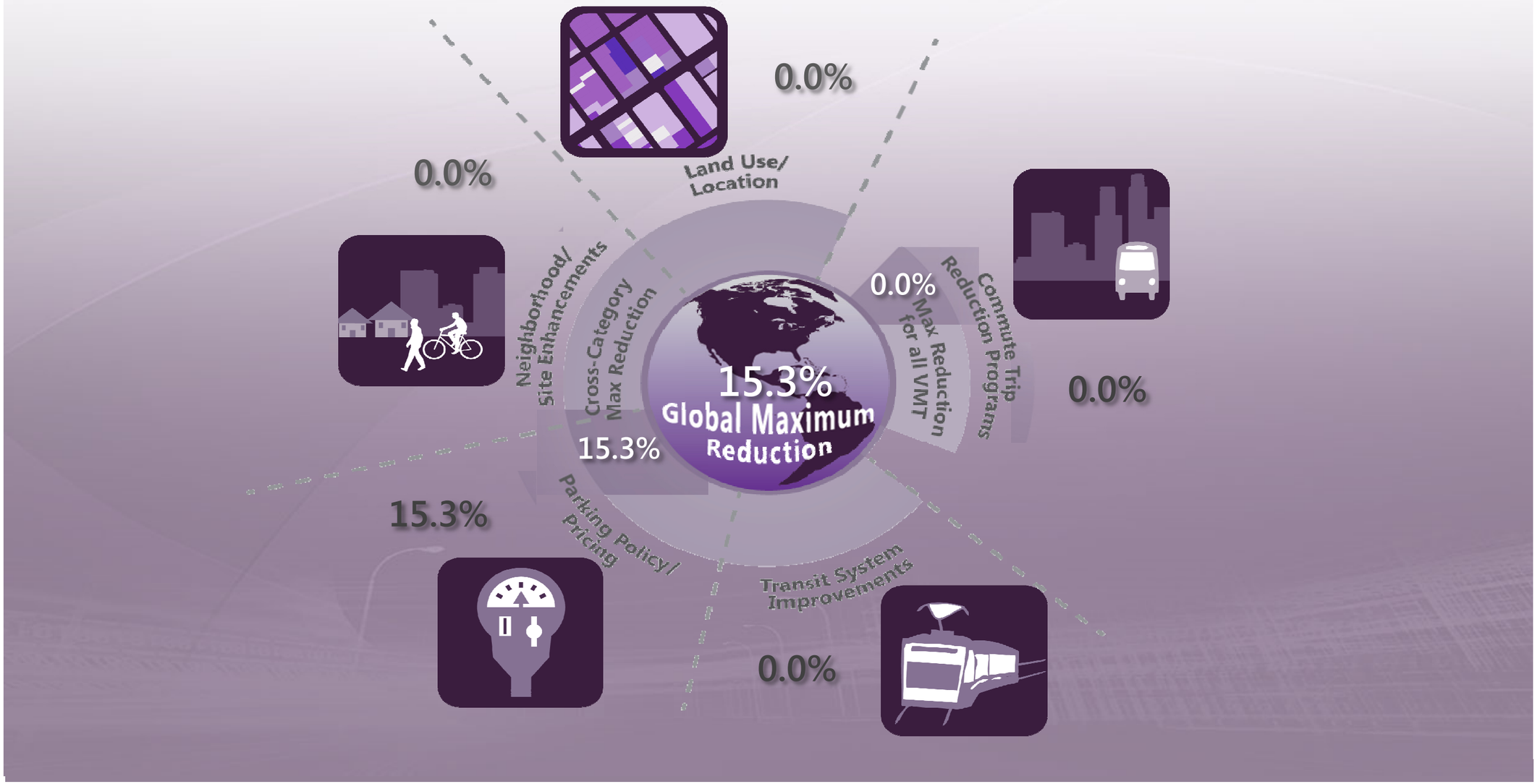


Chart 6-2: Transportation Strategies Organization

Transportation Measures (Five Subcategories) Global Maximum Reduction (all VMT): urban = 75%; compact infill = 40%; suburban center or suburban with NEV = 20%; suburban = 15%					Global Cap for Road Pricing needs further study	
Transportation Measures (Four Categories) Cross-Category Max Reduction (all VMT): urban = 70%; compact infill = 35%; suburban center or suburban with NEV = 15%; suburban = 10%				Max Reduction = 15% overall; work VMT = 25%; school VMT = 65%;	Max Reduction = 25% (all VMT)	
Land Use / Location Max Reduction: urban = 65%; compact infill = 30%; suburban center = 10%; suburban = 5%	**Neighborhood / Site Enhancement** Max Reduction: without NEV = 5%; with NEV = 15%	**Parking Policy / Pricing** Max Reduction = 20%	**Transit System Improvements** Max Reduction = 10%	**Commute Trip Reduction** (assumes mixed use) Max Reduction = 25% (work VMT)	**Road Pricing Management** Max Reduction = 25%	**Vehicles**
Density (30%)	Pedestrian Network (2%)	Parking Supply Limits (12.5%)	Network Expansion (8.2%)	CTR Program Required = 21% work VMT Voluntary = 6.2% work VMT	Cordon Pricing (22%)	Electrify Loading Docks
Design (21.3%)	Traffic Calming (1%)	Unbundled Parking Costs (13%)	Service Frequency / Speed (2.5%)	Transit Fare Subsidy (20% work VMT)	Traffic Flow Improvements (45% CO_2)	Utilize Alternative Fueled Vehicles
Location Efficiency (65%)	NEV Network (14.4) <NEV Parking>	On-Street Market Pricing (5.5%)	Bus Rapid Transit (3.2%)	Employee Parking Cash-out (7.7% work VMT)	Required Contributions by Project	Utilize Electric or Hybrid Vehicles
Diversity (30%)	Car Share Program (0.7%)	Residential Area Parking Permits	Access Improvements	Workplace Parking Pricing (19.7% work VMT)		
Destination Accessibility (20%)	Bicycle Network <Lanes> <Parking> <Land Dedication for Trails>		Station Bike Parking	Alternative Work Schedules & Telecommute (5.5% work VMT)		
Transit Accessibility (25%)	Urban Non-Motorized Zones		Local Shuttles	CTR Marketing (5.5% work VMT)		
BMR Housing (1.2%)			Park & Ride Lots*	Employer-Sponsored Vanpool/Shuttle (13.4% work VMT)		
Orientation Toward Non-Auto Corridor				Ride Share Program (15% work VMT)		
Proximity to Bike Path				Bike Share Program		
				End of Trip Facilities		
				Preferential Parking Permit		
				School Pool (15.8% school VMT)		
				School Bus (6.3% school VMT)		

Note: Strategies in bold text are primary strategies with reported VMT reductions; non-bolded strategies are support or grouped strategies.

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Exhibit 1

CAPCOA Chart 6-2
Transportation Strategies Organization