# Sherman Way Mixed Use Project
# Air Quality, Global Climate Change and Energy Impact Analysis

**Prepared for:**

**Lion Signature**
**Attn: Eric Lieberman**
**6362 Van Nuys Boulevard**
**Van Nuys, CA 91401**

**Prepared By:**

**Katie Wilson, M.S.**
**EcoTierra Consulting, Inc.**

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EcoTierra
consulting

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# I. INTRODUCTION AND SUMMARY

## 1. PURPOSE OF ANALYSIS AND STUDY OBJECTIVES

The purpose of this air quality, global climate change, and energy impact analysis is to provide an assessment of the impacts resulting from development of the Sherman Way Mixed-Use Project and to identify measures that may be necessary to reduce potentially significant impacts. This study was performed to address the possibility of regional/local air quality impacts and global climate change impacts, from project-related air emissions. The objectives of the study include:

- documentation of the atmospheric setting
- discussion of criteria pollutants and greenhouse gases
- discussion of the air quality and global climate change regulatory framework
- discussion of the air quality and greenhouse gases thresholds of significance
- analysis of the construction related air quality and greenhouse gas emissions
- analysis of the operations related air quality and greenhouse gas emissions
- analysis of the conformity of the proposed project with the SCAQMD AQMP
- analysis of the project's energy use during construction and operation.
- recommendations for emissions reduction measures

The City of Los Angeles is the lead agency for this air quality, greenhouse gas, and energy analysis, in accordance with the California Environmental Quality Act authorizing legislation. Although this is a technical report, every effort has been made to write the report clearly and concisely. To assist the reader with terms unique to air quality and global climate change, a definition of terms has been provided in Appendix A.

## 2. PROJECT LOCATION

The project site is located at 16949-16955 W. Sherman Way (APN 2227-003-017) in the City of Los Angeles. A vicinity map showing the project location is provided on **Figure 1, Project Location Map**.


Project Site

Source: Google Earth and Open Street Maps, December 2022.

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Figure 1
Project Location Map

## 3. PROJECT DESCRIPTION

The project includes demolition of an existing 4,212 square foot (SF) building, together with approximately 45,000 SF of surface parking lot and construction of a new, 4-story, 110,891 SF mixed-use building which includes 111 apartments and 5,300 SF of retail uses, on top of a 182-space, approximately 72,800 SF subterranean parking structure, on 1.13 acres. **Figure 2, Site Plan**, illustrates the proposed site plan.

The project is anticipated to be built in one phase with demolition/construction to start no sooner than September 2023 and take approximately 2 years to complete. Even if construction was to occur any time after the respective dates, the analysis represents "worst-case" since emission factors for construction decrease as time passes and the analysis year increases due to emission regulations becoming more stringent.[1] The project is anticipated to be operational in 2025. The project would include approximately 23,000 cubic yards (CY) of export.

## 4. SENSITIVE RECEPTORS IN PROJECT VICINITY

Those who are sensitive to air pollution include children, the elderly, and persons with preexisting respiratory or cardiovascular illness. For purposes of CEQA, the SCAQMD considers a sensitive receptor to be a location where a sensitive individual could remain for 24 hours, such as residences, hospitals, or convalescent facilities (South Coast Air Quality Management District 2008). Commercial and industrial facilities are not included in the definition because employees do not typically remain on-site for 24 hours.

The nearest sensitive receptors to the project site are: the multi-family residential uses located adjacent to the northeastern corner of the site, the single-family residential uses located approximately 40 feet north of the site, north of Cantlay Street; the single-family residential uses located approximately 50 feet west of the site, west of Genesta Avenue; and the single-family residential uses located approximately 134 feet southwest of the site, south of Sherman Way. Other air quality sensitive land uses are located further from the project site and would experience lower impacts.

## 5. SUMMARY OF IMPACTS

### A. Construction-Source Emissions

Project construction-source emissions would not exceed applicable regional or local thresholds of significance established by the South Coast Air Quality Management District (SCAQMD).

As discussed herein, the project will comply with all applicable SCAQMD construction-source emission reduction rules and guidelines. Project construction source emissions would not cause or substantively

[1] *As shown in the California Emissions Estimator Model (CalEEMod) User's Guide Version 2020.4.0, Section 4.3.2 "OFFROAD Equipment" as the analysis year increases, emi ssion factors for the same equipment pieces decrease due to the natural turnover of older equipment being replaced by newer less polluting equipment and new regulatory requirements.*

contribute to violation of the California Ambient Air Quality Standards (CAAQS) or National Ambient Air Quality Standards (NAAQS) or result in toxic air contaminant (TAC)-related impacts.

Established requirements addressing construction equipment operations, and construction material use, storage, and disposal requirements act to minimize odor impacts that may result from construction activities. Moreover, construction-source odor emissions would be temporary, short-term, and intermittent in nature and would not result in persistent impacts that would affect substantial numbers of people. Potential construction-source odor impacts are therefore considered less than significant.

### B. Operational-Source Emissions

The project operational-sourced emissions would not exceed applicable regional or local thresholds of significance established by the SCAQMD. Additionally, project-related trips will not cause or result in CO concentrations exceeding applicable state and/or federal standards (CO "hotspots). Project operational-source emissions would therefore not adversely affect sensitive receptors within the vicinity of the project.

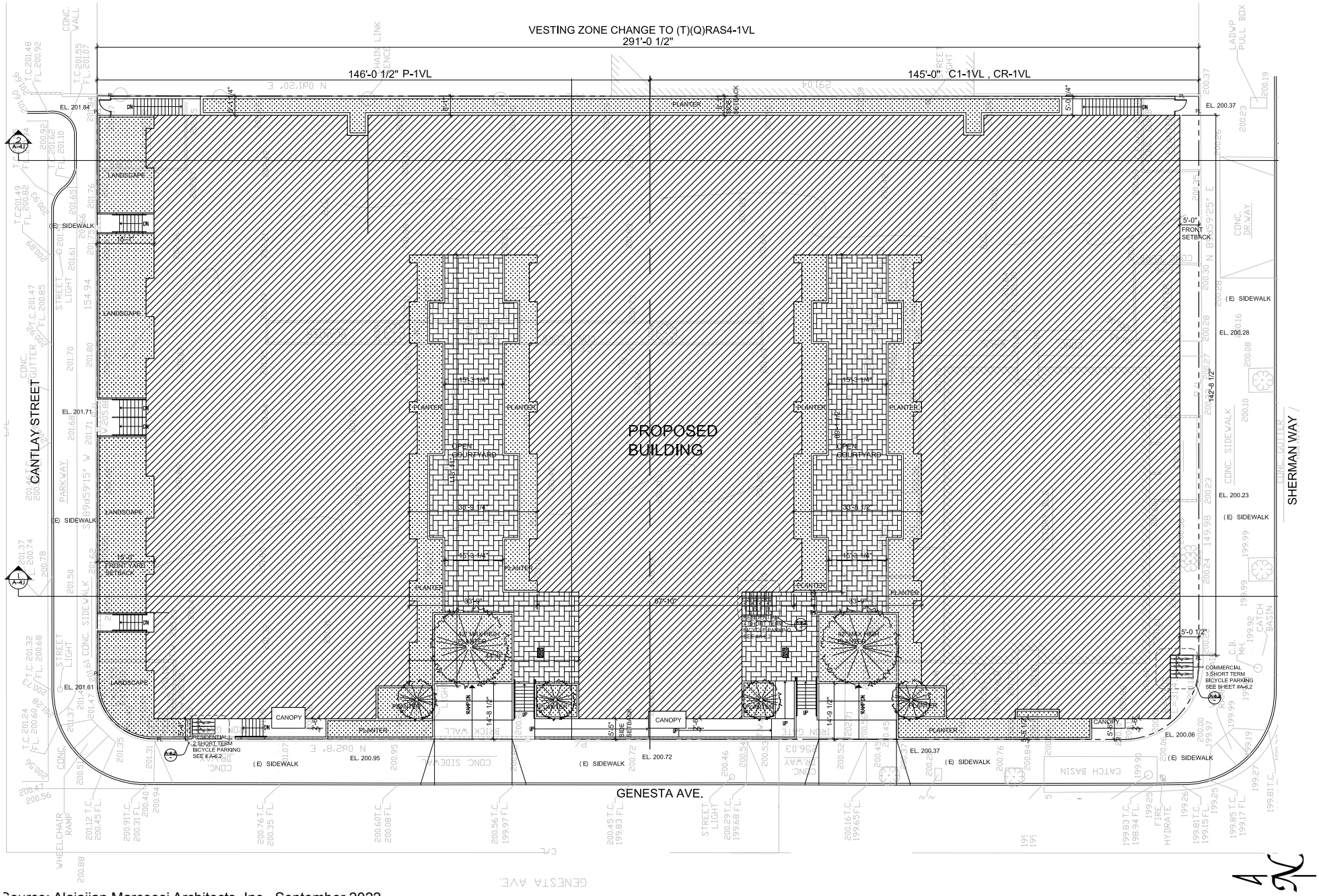
The project's emissions meet SCAQMD regional thresholds and will not result in a significant cumulative impact. The project does not propose any such uses or activities that would result in potentially significant operational-source toxic air contaminants or odor impacts. Potential operational-source odor impacts are therefore considered less than significant.

### C. Greenhouse Gases

The project is consistent with the CARB Scoping Plan, SCAG's 2020 RTP/SCS, and the LA Sustainable City pLAn/ Green New Deal. Therefore, the project would not conflict with an applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases and impacts are considered to be less than significant.

### D. Energy

For new development such as that proposed by the project, compliance with California Building Standards Code Title 24 energy efficiency requirements (CALGreen), are considered demonstrable evidence of efficient use of energy. As discussed below, the project would promote energy efficiencies required under other applicable federal and State of California standards and regulations, and in so doing would meet or exceed all California Building Standards Code Title 24 standards. Moreover, energy consumed by the project's operation is calculated to be comparable to, or less than, energy consumed by other uses of similar scale and intensity that are constructed and operating in California. On this basis, the project would not result in the inefficient, wasteful, or unnecessary consumption of energy. Further, the project would not cause or result in the need for additional energy producing facilities or energy delivery system.




Source: Alajajian Marcoosi Architects, Inc., September 2022.

Figure 2
Site Plan

# II. AIR QUALITY ANALYSIS

## 1. EXISTING AIR QUALITY CONDITIONS

### A. Local Air Quality

The project site is located within the city of Los Angeles, within Los Angeles County; which is part of the South Coast Air Basin (Basin). The Basin includes all of Orange County and the non-desert portions of Los Angeles, San Bernardino, and Riverside Counties. Bounded by the Pacific Ocean to the west and the San Gabriel, San Bernardino, and San Jacinto Mountains to the north and east, the Basin is an area of high air pollution potential. The regional climate within the Basin is considered semi-arid and is characterized by warm summers, mild winters, infrequent seasonal rainfall, moderate daytime onshore breezes, and moderate humidity. Air quality within the Basin is influenced by a wide range of emissions sources—such as dense population centers, heavy vehicular traffic, and industry. Climate change within the Basin is influenced by a wide range of emission sources, such as utility usage, heavy vehicular traffic, industry, and meteorology.

The annual average temperature varies throughout the Basin, ranging from the low to mid 60s to over 100 degrees during the summer, measured in Fahrenheit (°F). With a more pronounced oceanic influence, coastal areas show less variability in annual minimum and maximum temperatures than inland areas.

The Basin experiences a persistent temperature inversion, which is characterized by increasing temperature with increasing altitude. This inversion limits the vertical dispersion of air contaminants, holding them relatively near the ground. As the sun warms the ground and the lower air layer, the temperature of the lower air layer approaches the temperature of the base of the inversion (upper) layer until the inversion layer finally breaks, allowing vertical mixing with the lower layer.

Aside from a persistent temperature inversion, the vertical dispersion of air contaminants in the Basin is also affected by wind conditions. The combination of stagnant wind conditions and low inversions produces the greatest pollutant concentrations. Conversely, on days of no inversion or high wind speeds, ambient air pollutant concentrations are the lowest. During periods of low inversions and low wind speeds, air pollutants generated in urbanized areas in the Basin are transported eastward, predominantly into Riverside and San Bernardino Counties. Santa Ana winds, which are strong and dry north or northeasterly winds that occur during the fall and winter months, disperse air contaminants differently through the Basin, generally resulting in worse air conditions in the inner basin areas. Santa

Ana conditions tend to last for several days at a time. Wind speeds in the Los Angeles area average more than 6.9 miles per hour (mph) from November to April and can average 8.4 mph in December[1].

The majority of annual rainfall in the Basin occurs between December and March. Summer rainfall is minimal and generally limited to scattered thundershowers in coastal regions. The annual average total of rainfall in the Los Angeles area is approximately 16 inches[2].

In the winter, light nocturnal winds result mainly from the drainage of cool air off of the mountains toward the valley floor while the air aloft over the valley remains warm. This forms a type of inversion known as a radiation inversion. Such winds are characterized by stagnation and poor local mixing and trap pollutants such as automobile exhaust near their source. While these inversions may lead to air pollution "hot spots" in heavily developed coastal areas of the basin, there is not enough traffic in inland valleys to cause any winter air pollution problems. Despite light wind conditions, especially at night and in the early morning, winter is generally a period of good air quality in the project vicinity.

The temperature and precipitation levels for the Los Angeles area (Los Angeles Downtown USC Campus, CA Station), the closest monitoring station to the project site, are shown below in **Table 1, Local Monthly Climate Data**. **Table 1** shows that August is typically the warmest month and December is typically the coolest month. Rainfall in the project area varies considerably in both time and space. Almost all the annual rainfall comes from the fringes of mid-latitude storms from late November to early April, with summers being almost completely dry.

**Table 1**
**Local Monthly Climate Data**

| Descriptor | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Avg. Max. Temperature | 68.5 | 68.9 | 70.5 | 73.1 | 75.1 | 78.7 | 83.4 | 84.7 | 83.2 | 78.9 | 70.8 | 68.3 |
| Avg. Min. Temperature | 49.5 | 51.1 | 53.0 | 55.5 | 59.0 | 62.0 | 65.1 | 65.8 | 64.5 | 60.4 | 52.1 | 49.4 |
| Avg. Total Precipitation (in.) | 3.07 | 3.73 | 2.42 | 0.97 | 0.31 | 0.08 | 0.01 | 0.05 | 0.21 | 0.66 | 1.04 | 2.44 |

*Source: Los Angeles DWTN USC Campus, California. https://wrcc.dri.edu/cgi-bin/cliMAIN.pl?ca5115*
*Data from the Los Angeles Downtown USC Campus, CA station (045115) for period 1981 to 2010.*

### B. Pollutants

Pollutants are generally classified as either criteria pollutants or non-criteria pollutants. Federal ambient air quality standards have been established for criteria pollutants, whereas no ambient standards have

[1] *Weather Spark, Average Weather in Los Angeles, website: https://weatherspark.com/y/1705/Average-Weather-in-Los-Angeles-California-United-States-Year-Round.*
[2] *Best Places, Climate in Los Angeles, California, website: https://www.bestplaces.net/climate/city/california/los_angeles.*

been established for non-criteria pollutants. For some criteria pollutants, separate standards have been set for different periods. Most standards have been set to protect public health. For some pollutants, standards have been based on other values (such as protection of crops, protection of materials, or avoidance of nuisance conditions). A summary of federal and state ambient air quality standards is provided in the Regulatory Framework section.

#### *i) Criteria Pollutants*

The criteria pollutants consist of: ozone, nitrogen dioxide, carbon monoxide, sulfur dioxide, lead, and particulate matter. These pollutants can harm your health and the environment, and cause property damage. The Environmental Protection Agency (EPA) calls these pollutants "criteria" air pollutants because it regulates them by developing human health-based and/or environmentally-based criteria for setting permissible levels. The following provides descriptions of each of the criteria pollutants.

#### *ii) Nitrogen Dioxides*

Nitrogen Oxides (NOx) is the generic term for a group of highly reactive gases which contain nitrogen and oxygen. While most NOx are colorless and odorless, concentrations of nitrogen dioxide ($NO_2$) can often be seen as a reddish-brown layer over many urban areas. NOx form when fuel is burned at high temperatures, as in a combustion process. The primary manmade sources of NOx are motor vehicles, electric utilities, and other industrial, commercial, and residential sources that burn fuel. NOx reacts with other pollutants to form, ground-level ozone, nitrate particles, acid aerosols, as well as $NO_2$, which cause respiratory problems. NOx and the pollutants formed from NOx can be transported over long distances, following the patterns of prevailing winds. Therefore, controlling NOx is often most effective if done from a regional perspective, rather than focusing on the nearest sources.

#### *iii) Ozone*

Ozone ($O_3$) is not usually emitted directly into the air but at ground-level is created by a chemical reaction between NOx and volatile organic compounds (VOC) in the presence of sunlight. Motor vehicle exhaust, industrial emissions, gasoline vapors, chemical solvents as well as natural sources emit NOx and VOC that help form ozone. Ground-level ozone is the primary constituent of smog. Sunlight and hot weather cause ground-level ozone to form with the greatest concentrations usually occurring downwind from urban areas. Ozone is subsequently considered a regional pollutant. Ground-level ozone is a respiratory irritant and an oxidant that increases susceptibility to respiratory infections and can cause substantial damage to vegetation and other materials. Because NOx and VOC are ozone precursors, the health effects associated with ozone are also indirect health effects associated with significant levels of NOx and VOC emissions.

#### *iv) Carbon Monoxide*

Carbon monoxide (CO) is a colorless, odorless gas that is formed when carbon in fuel is not burned completely. It is a component of motor vehicle exhaust, which contributes about 56 percent of all CO emissions nationwide. In cities, 85 to 95 percent of all CO emissions may come from motor vehicle exhaust.

Other sources of CO emissions include industrial processes (such as metals processing and chemical manufacturing), residential wood burning, and natural sources such as forest fires. Woodstoves, gas stoves, cigarette smoke, and unvented gas and kerosene space heaters are indoor sources of CO. The highest levels of CO in the outside air typically occur during the colder months of the year when inversion conditions are more frequent. The air pollution becomes trapped near the ground beneath a layer of warm air. CO is described as having only a local influence because it dissipates quickly. Since CO concentrations are strongly associated with motor vehicle emissions, high CO concentrations generally occur in the immediate vicinity of roadways with high traffic volumes and traffic congestion, active parking lots, and in automobile tunnels. Areas adjacent to heavily traveled and congested intersections are particularly susceptible to high CO concentrations.

CO is a public health concern because it combines readily with hemoglobin and thus reduces the amount of oxygen transported in the bloodstream. The health threat from lower levels of CO is most serious for those who suffer from heart disease such as angina, clogged arteries, or congestive heart failure. For a person with heart disease, a single exposure to CO at low levels may cause chest pain and reduce that person's ability to exercise; repeated exposures may contribute to other cardiovascular effects. High levels of CO can affect even healthy people. People who breathe high levels of CO can develop vision problems, reduced ability to work or learn, reduced manual dexterity, and difficulty performing complex tasks. At extremely high levels, CO is poisonous and can cause death.

#### *v) Sulfur Dioxide*

Sulfur Oxide (SOx) gases (including sulfur dioxide [SO2]) are formed when fuel containing sulfur, such as coal and oil is burned, and from the refining of gasoline. SOx dissolves easily in water vapor to form acid and interacts with other gases and particles in the air to form sulfates and other products that can be harmful to people and the environment.

#### *vi) Lead*

Lead (Pb) is a metal found naturally in the environment as well as manufactured products. The major sources of lead emissions have historically been motor vehicles and industrial sources. Due to the phase out of leaded gasoline, metal processing is now the primary source of lead emissions to the air. High levels of lead in the air are typically only found near lead smelters, waste incinerators, utilities, and lead-

acid battery manufacturers. Exposure of fetuses, infants, and children to low levels of lead can adversely affect the development and function of the central nervous system, leading to learning disorders, distractibility, inability to follow simple commands, and lower intelligence quotient. In adults, increased lead levels are associated with increased blood pressure.

#### *vii) Particulate Matter*

Particulate matter (PM) is the term for a mixture of solid particles and liquid droplets found in the air. Particulate matter is made up of a number of components including acids (such as nitrates and sulfates), organic chemicals, metals, and soil or dust particles. The size of particles is directly linked to their potential for causing health problems. Particles that are less than 10 micrometers in diameter (PM10) are the particles that generally pass through the throat and nose and enter the lungs. Once inhaled, these particles can affect the heart and lungs and cause serious health effects. Particles that are less than 2.5 micrometers in diameter (PM2.5) have been designated as a subset of PM10 due to their increased negative health impacts and its ability to remain suspended in the air longer and travel further.

#### *viii) Reactive Organic Gases (ROG)*

Although not a criteria pollutant, reactive organic gases (ROGs), or volatile organic compounds (VOCs), are defined as any compound of carbon—excluding carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, and ammonium carbonate—that participates in atmospheric photochemical reactions. Although there are slight differences in the definition of ROGs and VOCs, the two terms are often used interchangeably. Indoor sources of VOCs include paints, solvents, aerosol sprays, cleansers, tobacco smoke, etc. Outdoor sources of VOCs are from combustion and fuel evaporation. A reduction in VOC emissions reduces certain chemical reactions that contribute to the formulation of ozone. VOCs are transformed into organic aerosols in the atmosphere, which contribute to higher PM10 and lower visibility.

### C. Other Pollutants of Concern

#### *i) Toxic Air Contaminants*

In addition to the above-listed criteria pollutants, toxic air contaminants (TACs) are another group of pollutants of concern. Sources of toxic air contaminants include industrial processes such as petroleum refining and chrome plating operations, commercial operations such as gasoline stations and dry cleaners, and motor vehicle exhaust. Cars and trucks release at least forty different toxic air contaminants. The most important of these toxic air contaminants, in terms of health risk, are diesel particulates, benzene, formaldehyde, 1,3-butadiene, and acetaldehyde. Public exposure to toxic air

contaminants can result from emissions from normal operations as well as from accidental releases. Health effects of toxic air contaminants include cancer, birth defects, neurological damage, and death.

Toxic air contaminants are less pervasive in the urban atmosphere than criteria air pollutants, however they are linked to short-term (acute) or long-term (chronic or carcinogenic) adverse human health effects. There are hundreds of different types of toxic air contaminants with varying degrees of toxicity. Sources of toxic air contaminants include industrial processes, commercial operations (e.g., gasoline stations and dry cleaners), and motor vehicle exhaust.

According to *the 2013 California Almanac of Emissions and Air Quality* (CARB 2013), the majority of the estimated health risk from toxic air contaminants can be attributed to relatively few compounds, the most important of which is diesel particulate matter (DPM). Diesel particulate matter is a subset of PM2.5 because the size of diesel particles are typically 2.5 microns and smaller. The identification of diesel particulate matter as a toxic air contaminant in 1998 led the California Air Resources Board (CARB) to adopt the Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-fueled Engines and Vehicles in September 2000. The plan's goals are a 75-percent reduction in diesel particulate matter by 2010 and an 85-percent reduction by 2020 from the 2000 baseline. Diesel engines emit a complex mixture of air pollutants, composed of gaseous and solid material. The visible emissions in diesel exhaust are known as particulate matter or PM, which includes carbon particles or "soot". Diesel exhaust also contains a variety of harmful gases and over 40 other cancer-causing substances. California's identification of diesel particulate matter as a toxic air contaminant was based on its potential to cause cancer, premature deaths, and other health problems. Exposure to diesel particulate matter is a health hazard, particularly to children whose lungs are still developing and the elderly who may have other serious health problems. Overall, diesel engine emissions are responsible for the majority of California's potential airborne cancer risk from combustion sources.

#### *ii) Asbestos*

Asbestos is listed as a TAC by the ARB and as a Hazardous Air Pollutant by the EPA. Asbestos occurs naturally in mineral formations and crushing or breaking these rocks, through construction or other means, can release asbestiform fibers into the air. Asbestos emissions can result from the sale or use of asbestos-containing materials, road surfacing with such materials, grading activities, and surface mining. The risk of disease is dependent upon the intensity and duration of exposure. When inhaled, asbestos fibers may remain in the lungs and with time may be linked to such diseases as asbestosis, lung cancer, and mesothelioma. Naturally occurring asbestos is not present in Los Angeles County. The nearest likely locations of naturally occurring asbestos, as identified in the General Location Guide for Ultramafic Rocks in California prepared by the California Division of Mines and Geology, is located at Asbestos Mountain in the San Jacinto Valley, over 123 miles southeast of the site. Due to the distance to the nearest natural occurrences of asbestos, the project site is not likely to contain asbestos.

# 2. REGULATORY SETTING

The project is addressed through the efforts of various international, federal, state, regional, and local government agencies. These agencies work jointly, as well as individually, to improve air quality through legislation, regulations, planning, policy-making, education, and a variety of programs. The agencies responsible for improving the air quality are discussed below.

## A. Federal – United States Environmental Protection Agency

The EPA is responsible for setting and enforcing the National Ambient Air Quality Standards (NAAQS) for atmospheric pollutants. It regulates emission sources that are under the exclusive authority of the federal government, such as aircraft, ships, and certain locomotives. The NAAQS pollutants were identified using medical evidence and are shown below in **Table 2, State and Federal Criteria Pollutant Standards**.

The EPA and the California Air Resource Board (CARB) designate air basins where ambient air quality standards are exceeded as "nonattainment" areas. If standards are met, the area is designated as an "attainment" area. If there is inadequate or inconclusive data to make a definitive attainment designation, they are considered "unclassified." National nonattainment areas are further designated as marginal, moderate, serious, severe, or extreme as a function of deviation from standards. Each standard has a different definition, or 'form' of what constitutes attainment, based on specific air quality statistics. For example, the Federal 8-hour CO standard is not to be exceeded more than once per year; therefore, an area is in attainment of the CO standard if no more than one 8-hour ambient air monitoring values exceeds the threshold per year. In contrast, the Federal annual $PM_{2.5}$ standard is met if the three-year average of the annual average $PM_{2.5}$ concentration is less than or equal to the standard. Attainment status is shown in **Table 3, South Coast Air Basin Attainment Status**.

As part of its enforcement responsibilities, the EPA requires each state with federal nonattainment areas to prepare and submit a State Implementation Plan (SIP) that demonstrates the means to attain the national standards. The SIP must integrate federal, state, and local components and regulations to identify specific measures to reduce pollution, using a combination of performance standards and market-based programs within the timeframe identified in the SIP.

As indicated below in **Table 3**, the South Coast Air Basin has been designated by the EPA as a non-attainment area for ozone ($O_3$) and suspended particulates ($PM_{10}$). Currently, the Basin is in attainment with the ambient air quality standards for carbon monoxide (CO), lead, sulfur dioxide ($SO_2$), nitrogen dioxide ($NO_2$) and particulate matter ($PM_{2.5}$).

**Table 2**
**State and Federal Criteria Pollutant Standards**

| Air Pollutant | Concentration / Averaging Time | | Most Relevant Effects |
|---|---|---|---|
| | California Standards | Federal Primary Standards | |
| Ozone ($O_3$) | 0.09 ppm/1-hour<br>0.07 ppm/8-hour | 0.070 ppm/8-hour | (a) Decline in pulmonary function and localized lung edema in humans and animals; (b) Risk to public health implied by alterations in pulmonary morphology and host defense in animals; (c) Increased mortality risk; (d) Risk to public health implied by altered connective tissue metabolism and altered pulmonary morphology in animals after long-term exposures and pulmonary function decrements in chronically exposed humans; (e) Vegetation damage; and (f) Property damage. |
| Carbon Monoxide (CO) | 20.0 ppm/1-hour<br>9.0 ppm/8-hour | 35.0 ppm/1-hour<br>9.0 ppm/8-hour | (a) Aggravation of angina pectoris and other aspects of coronary heart disease; (b) Decreased exercise tolerance in persons with peripheral vascular disease and lung disease; (c) Impairment of central nervous system functions; and (d) Possible increased risk to fetuses. |
| Nitrogen Dioxide ($NO_2$) | 0.18 ppm/1-hour<br>0.03 ppm/annual | 100 ppb/1-hour<br>0.053 ppm/annual | (a) Potential to aggravate chronic respiratory disease and respiratory symptoms in sensitive groups; (b) Risk to public health implied by pulmonary and extra-pulmonary biochemical and cellular changes and pulmonary structural changes; and (c) Contribution to atmospheric discoloration. |
| Sulfur Dioxide ($SO_2$) | 0.25 ppm/1-hour<br>0.04 ppm/24-hour | 75 ppb/1-hour<br>0.14 ppm/annual | (a) Bronchoconstriction accompanied by symptoms which may include wheezing, shortness of breath and chest tightness, during exercise or physical activity in persons with asthma. |
| Suspended Particulate Matter ($PM_{10}$) | 50 µg/$m^3$/24-hour<br>20 µg/$m^3$/annual | 150 µg/$m^3$/24-hour | (a) Exacerbation of symptoms in sensitive patients with respiratory or cardiovascular disease; (b) Declines in pulmonary function growth in children; (c) Increased risk of premature death from heart or lung diseases in elderly. |
| Suspended Particulate Matter ($PM_{2.5}$) | 12 µg/$m^3$ / annual | 35 µg/$m^3$/24-hour<br>12 µg/$m^3$/annual | |
| Sulfates | 25 µg/$m^3$/24-hour | No Federal Standards | (a) Decrease in ventilatory function; (b) Aggravation of asthmatic symptoms; (c) Aggravation of cardio-pulmonary disease; (d) Vegetation damage; (e) Degradation of visibility; (f) property damage. |
| Lead | 1.5 µg/$m^3$/30-day | 0.15 µg/$m^3$/3-month rolling | (a) Learning disabilities; (b) Impairment of blood formation and nerve conduction. |
| Visibility Reducing Particles | Extinction coefficient of 0.23 per kilometer-visibility of 10 miles or more due to particles when humidity is less than 70 percent. | No Federal Standards | Visibility impairment on days when relative humidity is less than 70 percent. |

*Source: US Environmental Protection Agency, Overview of Greenhouse Gases. http://www3.epa.gov/climatechange/ghgemissions/gases.html.*

**Table 3**
**South Coast Air Basin Attainment Status**

| Pollutant | State Status | National Status |
|---|---|---|
| Ozone | Nonattainment | Nonattainment (Extreme) |
| Carbon monoxide | Attainment | Maintenance (Serious) |
| Nitrogen dioxide | Attainment | Maintenance (Primary) |
| Sulfur dioxide | Attainment | Attainment/Unclassified |
| PM10 | Nonattainment | Maintenance (Serious) |
| PM2.5 | Nonattainment | Nonattainment (Serious) |

*(Federal and State Status): California Air Resources Board (2020). https://ww2.arb.ca.gov/resources/documents/maps-state-and-federal-area-designations & US EPA (2020) https://www.epa.gov/green-book.*

### B. State – California Air Resources Board

The CARB, which is a part of the California Environmental Protection Agency, is responsible for the coordination and administration of both federal and state air pollution control programs within California. In this capacity, the CARB conducts research, sets the California Ambient Air Quality Standards (CAAQS), compiles emission inventories, develops suggested control measures, provides oversight of local programs, and prepares the SIP. The CAAQS for criteria pollutants are shown in **Table 2**. In addition, the CARB establishes emission standards for motor vehicles sold in California, consumer products (e.g., hairspray, aerosol paints, and barbeque lighter fluid), and various types of commercial equipment. It also sets fuel specifications to further reduce vehicular emissions.

The SCAQMD-portion of the South Coast Air Basin (SCAB) has been designated by the CARB as a nonattainment area for ozone, $PM_{10}$ and $PM_{2.5}$. Currently, the SCAB is in attainment with the ambient air quality standards for CO, lead, $SO_2$, $NO_2$, and sulfates and is unclassified for visibility reducing particles and Hydrogen Sulfide.

On June 20, 2002, the CARB revised the PM10 annual average standard to 20 µg/$m^3$ and established an annual average standard for $PM_{2.5}$ of 12 µg/$m^3$. These standards were approved by the Office of Administrative Law in June 2003 and are now effective. On September 27, 2007 CARB approved the South Coast Air Basin and the Coachella Valley 2007 Air Quality Management Plan for Attaining the Federal 8-hour Ozone and $PM_{2.5}$ Standards. The plan projects attainment for the 8-hour Ozone standard by 2024 and the $PM_{2.5}$ standard by 2015.

On December 12, 2008 the CARB adopted Resolution 08-43, which limits NOx, $PM_{10}$ and $PM_{2.5}$ emissions from on-road diesel truck fleets that operate in California. On October 12, 2009 Executive Order R-09-010 was adopted that codified Resolution 08-43 into Section 2025, Title 13 of the California Code of Regulations. This regulation requires that by the year 2023 all commercial diesel trucks that operate in California shall meet model year 2010 (Tier 4) or latter emission standards. In the interim period, this regulation provides annual interim targets for fleet owners to meet. This regulation also provides a few exemptions including a onetime per year 3-day pass for trucks registered outside of California.

The CARB is also responsible for regulations pertaining to toxic air contaminants. The Air Toxics "Hot Spots" Information and Assessment Act (AB 2588, 1987, Connelly) was enacted in 1987 as a means to establish a formal air toxics emission inventory risk quantification program. AB 2588, as amended, establishes a process that requires stationary sources to report the type and quantities of certain substances their facilities routinely release into the South Coast Air Basin. The data is ranked by high, intermediate, and low categories, which are determined by: the potency, toxicity, quantity, volume, and proximity of the facility to nearby receptors.

#### *i) AB 617 Nonvehicular Air Pollution: Criteria Air Pollutants and Toxic Air Contaminants*

This bill requires the state board to develop a uniform statewide system of annual reporting of emissions of criteria air pollutants and toxic air contaminants for use by certain categories of stationary sources. The bill requires those stationary sources to report their annual emissions of criteria air pollutants and toxic air contaminants, as specified. This bill required the state board, by October 1, 2018, to prepare a monitoring plan regarding technologies for monitoring criteria air pollutants and toxic air contaminants and the need for and benefits of additional community air monitoring systems, as defined. The bill requires the state board to select, based on the monitoring plan, the highest priority locations in the state for the deployment of community air monitoring systems. The bill requires an air district containing a selected location, by July 1, 2019, to deploy a system in the selected location. The bill would authorize the air district to require a stationary source that emits air pollutants in, or that materially affect, the selected location to deploy a fence-line monitoring system, as defined, or other specified real-time, on-site monitoring. The bill authorizes the state board, by January 1, 2020, and annually thereafter, to select additional locations for the deployment of the systems. The bill would require air districts that have deployed a system to provide to the state board air quality data produced by the system. By increasing the duties of air districts, this bill would impose a state-mandated local program. The bill requires the state board to publish the data on its Internet Web site.

### C. Regional

The SCAQMD is the agency principally responsible for comprehensive air pollution control in the South Coast Air Basin. To that end, as a regional agency, the SCAQMD works directly with the Southern California Association of Governments (SCAG), county transportation commissions, and local governments and cooperates actively with all federal and state agencies.

### *i) Southern California Association of Governments*

SCAG is the regional planning agency for Los Angeles, Orange, Ventura, Riverside, San Bernardino, and Imperial Counties and addresses regional issues relating to transportation, the economy, community development and the environment. Although SCAG is not an air quality management agency, it is responsible for developing transportation, land use, and energy conservation measures that affect air quality. SCAG's 2020-2045 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) identifies growth forecasts that are used in the development of air quality-related land use and transportation control strategies by the South Coast Air Quality Management District.

On May 7, 2020, SCAG's Regional Council adopted Connect SoCal (RTP/SCS) for federal transportation conformity purposes only. On September 3, 2020, SCAG's Regional Council approved and fully adopted Connect SoCal (RTP/SCS). Connect SoCal is a long-range visioning plan that builds upon and expands land use and transportation strategies established over several planning cycles to increase mobility options and achieve a more sustainable growth pattern. Connect SoCal outlines more than $638 billion in transportation system investments through 2045. It was prepared through a collaborative, continuous, and comprehensive process with input from local governments, county transportation commissions, tribal governments, non-profit organizations, businesses and local stakeholders within the counties of Imperial, Los Angeles, Orange, Riverside, San Bernardino and Ventura.

### *ii) South Coast Air Quality Management District*

The SCAQMD develops rules and regulations, establishes permitting requirements for stationary sources, inspects emission sources, and enforces such measures through educational programs or fines, when necessary. The SCAQMD is directly responsible for reducing emissions from stationary, mobile, and indirect sources. It has responded to this requirement by preparing a sequence of AQMPs.

#### 1) AQMP

On June 30, 2016, the SCAQMD released its Draft 2016 AQMP. The 2016 AQMP is a regional blueprint for achieving the federal air quality standards and healthful air. The 2016 AQMP includes both stationary and mobile source strategies to ensure that rapidly approaching attainment deadlines are met, that public health is protected to the maximum extent feasible, and that the region is not faced with burdensome sanctions if the Plan is not approved or if the NAAQS are not met on time. As with every AQMP, a comprehensive analysis of emissions, meteorology, atmospheric chemistry, regional growth projections, and the impact of existing control measures is updated with the latest data and methods. The most significant air quality challenge in the Basin is to reduce nitrogen oxide (NOx) emissions sufficiently to meet the upcoming ozone standard deadlines. On March 23, 2017 the CARB approved the 2016 AQMP. The primary goal of this Air Quality Management Plan is to meet clean air standards and protect public health, including ensuring benefits to environmental justice and disadvantaged

communities. Now that the Plan has been approved by the CARB, it has been forwarded to the U.S. EPA for its review. The Plan was approved by the EPA on June 15, 2017.

Every three (3) years the SCAQMD prepares a new AQMP, updating the previous plan and having a 20-year horizon.[3] In May 2022, the SCAQMD completed the 2022 Draft AQMP. The 2022 Draft AQMP is focused on attaining the 2015 8-hour ozone standard (70 ppb) for the South Coast Air Basin and Coachella Valley. The Draft 2022 AQMP builds upon measures already in place from previous AQMPs. It also includes a variety of additional strategies such as regulation, accelerated deployment of available cleaner technologies (e.g., zero emission technologies, when cost-effective and feasible, and low NOx technologies in other applications), best management practices, co-benefits from existing programs (e.g., climate and energy efficiency), incentives, and other CAA measures to achieve the 2015 8-hour ozone standard. The 2022 AQMP was adopted December 2, 2022, by SCAQMD Governing Board. The 2022 AQMP strategy includes the following:[4]

- Wide adoption of zero emissions technologies anywhere available.
- Low NOx technologies where zero emissions aren't feasible.
- Federal Action.
- Zero emissions technologies for residential and industrial sources such as water and space heaters in buildings and homes regionwide.
- Incentive funding in environmental justice areas.
- Prioritize benefits on the most disadvantaged communities.

The 2022 AQMP was approved and adopted by CARB on January 26, 2023.

### 2) SCAQMD Rules

During construction and operation, the project must comply with applicable rules and regulations. The following are rules that the project may be required to comply with, either directly, or indirectly:

***SCAQMD Rule 402***

Prohibits a person from discharging from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public, or which endanger the comfort, repose, health, or safety of any such persons

[3] *CARB is in the process of adopting the 2022 AQMP; however, it has not been adopted at this time and the 2016 AQMP is the operating plan.*

[4] *SCAQMD 2022 AQMP Infographic. http://www.aqmd.gov/home/air-quality/clean-air-plans/air-quality-mgt-plan/2022-aqmp-infographic.*

or the public, or which cause, or have a natural tendency to cause, injury or damage to business or property.

***SCAQMD Rule 403***

Governs emissions of fugitive dust during construction and operation activities. Compliance with this rule is achieved through application of standard Best Management Practices, such as application of water or chemical stabilizers to disturbed soils, covering haul vehicles, restricting vehicle speeds on unpaved roads to 15 miles per hour, sweeping loose dirt from paved site access roadways, cessation of construction activity when winds exceed 25 mph, and establishing a permanent ground cover on finished sites.

Rule 403 requires that fugitive dust be controlled with best available control measures so that the presence of such dust does not remain visible in the atmosphere beyond the property line of the emission source. In addition, SCAQMD Rule 403 requires implementation of dust suppression techniques to prevent fugitive dust from creating a nuisance off-site. Applicable dust suppression techniques from Rule 403 are summarized below. Implementation of these dust suppression techniques can reduce the fugitive dust generation (and thus the $PM_{10}$ component). Compliance with these rules would reduce impacts on nearby sensitive receptors. Rule 403 measures may include but are not limited to the following:

- Apply nontoxic chemical soil stabilizers according to manufacturers' specifications to all inactive construction areas (previously graded areas inactive for 10 days or more).
- Water active sites at least three times daily (locations where grading is to occur will be thoroughly watered prior to earthmoving).
- Cover all trucks hauling dirt, sand, soil, or other loose materials, or maintain at least 0.6 meters (2 feet) of freeboard (vertical space between the top of the load and top of the trailer) in accordance with the requirements of California Vehicle Code section 23114.

***SCAQMD Rule 445***

Prohibits permanently installed wood burning devices into any new development. A wood burning device means any fireplace, wood burning heater, or pellet-fueled wood heater, or any similarly enclosed, permanently installed, indoor or outdoor device burning any solid fuel for aesthetic or space-heating purposes, which has a heat input of less than one million British thermal units per hour.

***SCAQMD Rule 481***

Applies to all spray painting and spray coating operations and equipment. The rule states that a person shall not use or operate any spray painting or spray coating equipment unless one of the following conditions is met:

(1) The spray coating equipment is operated inside a control enclosure, which is approved by the Executive Officer. Any control enclosure for which an application for permit for new construction, alteration, or change of ownership or location is submitted after the date of adoption of this rule shall be exhausted only through filters at a design face velocity not less than 100 feet per minute nor greater than 300 feet per minute, or through a water wash system designed to be equally effective for the purpose of air pollution control.

(2) Coatings are applied with high-volume low-pressure, electrostatic, and/or airless spray equipment.

(3) An alternative method of coating application or control is used which has effectiveness equal to or greater than the equipment specified in the rule.

***SCAQMD Rule 1108***

Governs the sale, use, and manufacturing of asphalt and limits the volatile organic compound (VOC) content in asphalt used in the South Coast Air Basin. This rule would regulate the VOC content of asphalt used during construction. Therefore, all asphalt used during construction of the project must comply with SCAQMD Rule 1108.

***SCAQMD Rule 1113***

Governs the sale, use, and manufacturing of architectural coating and limits the VOC content in paints and paint solvents. This rule regulates the VOC content of paints available during construction. Therefore, all paints and solvents used during construction and operation of the project must comply with SCAQMD Rule 1113.

***SCAQMD Rule 1143***

Governs the manufacture, sale, and use of paint thinners and solvents used in thinning of coating materials, cleaning of coating application equipment, and other solvent cleaning operations by limiting their VOC content. This rule regulates the VOC content of solvents used during construction. Solvents used during the construction phase must comply with this rule.

***SCAQMD Rule 1186***

Limits the presence of fugitive dust on paved and unpaved roads and sets certification protocols and requirements for street sweepers that are under contract to provide sweeping services to any federal, state, county, agency, or special district such as water, air, sanitation, transit, or school district.

***SCAQMD Rule 1403***

Asbestos Emissions from Demolition/Renovation Activities, specifies work practice requirements to limit asbestos emissions from building demolition and renovation activities, including the removal and associated disturbance of asbestos-containing materials (ACM).

***SCAQMD Rule 2202***

On-Road Motor Vehicle Mitigation Options, is to provide employers with a menu of options to reduce mobile source emissions generated from employee commutes, to comply with federal and state Clean Air Act requirements, Health & Safety Code Section 40458, and Section 182(d)(1)(B) of the federal Clean Air Act. It applies to any employer who employs 250 or more employees on a full or part-time basis at a worksite for a consecutive six-month period calculated as a monthly average.

### 3) SCAQMD and CEQA

Although the SCAQMD is responsible for regional air quality planning efforts, it does not have the authority to directly regulate air quality issues associated with plans and new development projects throughout the South Coast Air Basin. Instead, this is controlled through local jurisdictions in accordance with the California Environmental Quality Act (CEQA). In order to assist local jurisdictions with air quality compliance issues the *CEQA Air Quality Handbook (SCAQMD CEQA Handbook)* prepared by the SCAQMD (1993) with the most current updates found at http://www.aqmd.gov/ceqa/hdbk.html, was developed in accordance with the projections and programs of the AQMP. The purpose of the SCAQMD CEQA Handbook is to assist Lead Agencies, as well as consultants, project proponents, and other interested parties in evaluating a project's potential air quality impacts. Specifically, the SCAQMD CEQA Handbook explains the procedures that the SCAQMD recommends be followed for the environmental review process required by CEQA. The SCAQMD CEQA Handbook provides direction on how to evaluate potential air quality impacts, how to determine whether these impacts are significant, and how to mitigate these impacts. SCAQMD is in the process of developing an "Air Quality Analysis Guidance Handbook" to replace the CEQA Air Quality Handbook approved by the AQMD Governing Board in 1993. The 1993 CEQA Air Quality Handbook is still available but not online. In addition, there are sections of the 1993 Handbook that are obsolete. In order to assist the CEQA practitioner in conducting an air quality analysis while the new Handbook is being prepared, supplemental information regarding: significance thresholds and analysis, emissions factors, cumulative impacts emissions analysis, and other useful subjects, are available at the SCAQMD website[5]. The SCAQMD CEQA Handbook and supplemental information are used in this analysis.

[5] *South Coast Air Quality Management District. http://www.aqmd.gov/home/regulations/ceqa/air-quality-analysis-handbook.*

### D. Local – City of Los Angeles

Local jurisdictions, such as the City of Los Angeles, have the authority and responsibility to reduce air pollution through its police power and decision-making authority. Specifically, the City is responsible for the assessment and mitigation of air emissions resulting from its land use decisions. The City is also responsible for the implementation of transportation control measures as outlined in the 2016 AQMP and SCAQMD Attainment Plans. Examples of such measures include bus turnouts, energy-efficient streetlights, and synchronized traffic signals. In accordance with CEQA requirements and the CEQA review process, the City assesses the air quality impacts of new development projects, requires mitigation of potentially significant air quality impacts by conditioning discretionary permits, and monitors and enforces implementation of such mitigation.

The City relies on the expertise of the SCAQMD and utilizes the SCAQMD CEQA Air Quality Handbook as the guidance document for the environmental review of plans and development proposals within its jurisdiction.

The City of Los Angeles General Plan Air Quality Element, adopted November 24, 1992 contains the following air quality-related goals, objectives, and policies that are applicable to the project:

Goal 1 Good air quality and mobility in an environment of continued population growth and healthy economic structure.

Objective 1.1 It is the objective of the City of Los Angeles to reduce air pollutants consistent with the Regional Air Quality Management Plan (AQMP), increase traffic mobility, and sustain economic growth citywide.

Objective 1.2 It is the objective of the City of Los Angeles to demonstrate the City's commitment to air quality improvement through the development and revision of the City's General Plan Elements as appropriate, and to work cooperatively with federal, state, regional, and other local jurisdiction in attaining clean air.

*Policy 1.2.1* Implement the Air Quality Element policies set forth in this Chapter through adoption of the Clean Air Program which shall be amended as Council sees necessary without General Plan Amendment.

*Policy 1.2.2* Pursue the City's air quality objectives in cooperation with regional and other local jurisdictions.

Objective 1.3 It is the objective of the City of Los Angles to reduce particulate air pollutants emanating from unpaved areas, parking lots, and construction sites.

*Policy 1.3.1* Minimize particulate emissions from construction sites.

*Policy 1.3.2* Minimize particulate emissions from unpaved roads and parking lots which are associated with vehicular traffic.

Goal 2 Less reliance on single-occupant vehicles with fewer commute and non-work trips.

Objective 2.1 It is the objective of the City of Los Angeles to reduce work trips as a step towards attaining trip reduction objective necessary to achieve regional air quality goals.

Goal 4 Minimal impact of existing land use pattern and future land use development on air quality by addressing the relationship between land use, transportation, and air quality.

Objective 4.1 It is the objective of the City of Los Angeles to include regional attainment of ambient air quality standards as a primary consideration in land use planning.

Objective 4.2 It is the objective of the City of Los Angeles to reduce vehicle trips and vehicle miles traveled associated with land use patterns.

Goal 5 Energy efficiency through land use and transportation planning, the use of renewable resources and less-polluting fuels, and the implementation of conservation measures including passive methods such as site orientation and tree planting.

Objective 5.1 It is the objective of the City of Los Angeles to increase energy efficiency of City facilities and private developments.

Objective 5.3 It is the objective of the City of Los Angeles to reduce the use of polluting fuels in stationary sources.

## 3. MONITORED AIR QUALITY

The air quality at any site is dependent on the regional air quality and local pollutant sources. Regional air quality is determined by the release of pollutants throughout the air basin. Estimates of the existing emissions in the Basin provided in the Final 2022 Air Quality Management Plan prepared by SCAQMD (December 2022) indicate that collectively, mobile sources account for 46 percent of the VOC, 85 percent of the NOx emissions, 89 percent of the CO emissions and 29 percent of directly emitted $PM_{2.5}$, with another 18 percent of $PM_{2.5}$ from road dust.

The SCAQMD has divided the South Coast Air Basin into 38 air-monitoring areas with a designated ambient air monitoring station representative of each area. The project site is located in the West San Fernando Valley Source Receptor Area (SRA 6). The nearest air monitoring station to the project site is the Reseda Monitoring Station (Reseda Station). The Reseda Station is located approximately 1.7 miles northeast of the project site at 18330 Gault Street, Reseda. **Table 4** presents the monitored pollutant levels from the Reseda Station. However, it should be noted that due to the air monitoring station distance from the project site, recorded air pollution levels at the air monitoring station reflect with varying degrees of accuracy, local air quality conditions at the project site. As nitrogen dioxide and PM-10 data was not available for the Reseda station, data was obtained from the Los Angeles- North Main Street Station.

**Table 4** summarizes 2019 through 2021 published monitoring data, which is the most recent 3-year period available. The data shows that during the past few years, the project area has exceeded the State ozone and Particulate Matter ($PM_{10}$) standards.

**Table 4**
**Air Quality Monitoring Summary**

| Pollutant (Standard)[1] | | Year | | |
|---|---|---|---|---|
| | | 2019 | 2020 | 2021 |
| Ozone: | Maximum 1-Hour Concentration (ppm) | 0.122 | 0.142 | 0.110 |
| | Days > CAAQS (0.09 ppm) | **14** | **33** | **4** |
| | Maximum 8-Hour Concentration (ppm) | 0.094 | 0.115 | 0.083 |
| | Days > NAAQS/CAAQS (0.070 ppm) | **34** | **62** | **31** |
| Carbon Monoxide: | Maximum 8-Hour Concentration (ppm) | * | * | * |
| | Days > CAAQS (9 ppm) | 0 | 0 | 0 |
| | Days > NAAQS (9 ppm) | 0 | 0 | 0 |
| Nitrogen Dioxide:[2] | Maximum 1-Hour Concentration (ppm) | 0.0697 | 0.0618 | 0.0778 |
| | Days > CAAQS (0.18 ppm) | 0 | 0 | 0 |
| Inhalable Particulates (PM10):[2] | Maximum 24-Hour Concentration (µg/m$^3$) | 93.9 | 185.2 | 138.5 |
| | Days > NAAQS (150 µg/m3) | 0 | 0 | * |
| | Days > CAAQS (50 µg/m3) | **15** | **34** | **14** |
| | Annual Average (µg/m3) | 34 | 34 | 34 |
| Ultra-Fine Particulates (PM2.5): | Maximum 24-Hour Concentration (µg/m3) | 30.0 | 73.8 | 55.5 |
| | Days > NAAQS (35 µg/m3) | 0 | **3** | **3** |
| | Annual Average (µg/m3) | 11.9 | 11.0 | 11.6 |

*Notes:*
*Source: California Air Resources Board. http://www.arb.ca.gov/adam/topfour/topfour1.php. Data from the Reseda Monitoring Station, unless otherwise noted.*
*(1) CAAQS = California Ambient Air Quality Standard; NAAQS = National Ambient Air Quality Standard; ppm = parts per million*
*(2) Data obtained from the Los Angeles - North Main Street Station.*
** Means there was insufficient data available to determine value.*

### A. Ozone

During the 2019 to 2021 monitoring period, the State 1-hour concentration standard for ozone was exceeded between 4 and 14 days at the Reseda Station. The State/Federal 8-hour ozone standard has been exceeded between 31 and 62 days each year over the past three years at the Reseda Station. Ozone is a secondary pollutant as it is not directly emitted. Ozone is the result of chemical reactions between other pollutants, most importantly hydrocarbons and $NO_2$, which occur only in the presence of bright sunlight. Pollutants emitted from upwind cities react during transport downwind to produce the oxidant concentrations experienced in the area. Many areas of the SCAQMD contribute to the ozone levels experienced at the monitoring station, with the more significant areas being those directly upwind.

### B. Carbon Monoxide

CO is another important pollutant that is due mainly to motor vehicles. The Reseda Station did not record an exceedance of the state or federal 8-hour CO standard for the last three years.

### C. Nitrogen Dioxide

The Reseda Station did not record an exceedance of the State or Federal $NO_2$ standards for the last three years.

### D. Particulate Matter

From 2019 to 2021, the State 24-hour concentration standards for $PM_{10}$ was exceeded between 14 and 34 days at the Los Angeles – North Main Street Station. There was insufficient data to determine the number of days the Federal standards for $PM_{10}$ were exceeded. Over the past three years, the Federal 24-hour standards for $PM_{2.5}$ were exceeded for 3 days at the Reseda Station.

According to the EPA, some people are much more sensitive than others to breathing fine particles ($PM_{10}$ and $PM_{2.5}$). People with influenza, chronic respiratory and cardiovascular diseases, and the elderly may suffer worsening illness and premature death due to breathing these fine particles. People with bronchitis can expect aggravated symptoms from breathing in fine particles. Children may experience decline in lung function due to breathing in $PM_{10}$ and $PM_{2.5}$. Other groups considered sensitive are smokers and people who cannot breathe well through their noses. Exercising athletes are also considered sensitive, because many breathe through their mouths during exercise.

## 4. AIR QUALITY STANDARDS

### A. Significance Thresholds

#### *i) Appendix G of the State CEQA Guidelines*

Appendix G of the State CEQA Guidelines states that, where available, the significance criteria established by the applicable air quality management district or air pollution control district may be relied upon to make a significance determination. Pursuant to Appendix G, the project would result in a significant impact related to air quality if it would:

- Conflict with or obstruct the implementation of the applicable air quality plan;
- Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard;
- Expose sensitive receptors to substantial pollutant concentrations; or
- Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people.

The CEQA Guidelines Section 15064.7 provides the significance criteria established by the applicable air quality management district or air pollution control district, when available, may be relied upon to make determinations of significance. The potential air quality impacts of the project are, therefore, evaluated according to thresholds developed by SCAQMD in their CEQA Air Quality Handbook, Air Quality Analysis Guidance Handbook, and subsequent guidance, which are listed below.[6] Therefore, the project would result in a potentially significant impact to air quality if it would:

AIR-1: Conflict with or obstruct the implementation of the applicable air quality plan;

AIR-2: Violate any air quality standard or contribute substantially to an existing or projected air quality violation as a result of:

- Criteria pollutant emissions during construction (direct and indirect) in excess of the SCAQMD's regional significance thresholds,
- Criteria pollutant emissions during operation (direct and indirect) in excess of the SCAQMD's regional significance thresholds.

AIR-3: Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors);

AIR-4: Expose sensitive receptors to substantial pollutant concentrations that would:

- Exceed SCAQMD's localized significance thresholds,
- Cause or contribute to the formation of CO hotspots.

AIR-5: Create objectionable odors affecting a substantial number of people.

### B. Regional Air Quality

Many air quality impacts that derive from dispersed mobile sources, which are the dominate pollution generators in the basin, often occurs hours later and miles away after photochemical processes have converted primary exhaust pollutants into secondary contaminants such as ozone. The incremental regional air quality impact of an individual project is generally very small and difficult to measure. Therefore, the SCAQMD has developed significance thresholds based on the volume of pollution emitted rather than on actual ambient air quality because the direct air quality impact of a project is not quantifiable on a regional scale. The SCAQMD CEQA Handbook states that any project in the South Coast

[6] *While the SCAQMD CEQA Air Quality Handbook contains significance thresholds for lead, project construction and operation would not include sources of lead emissions and would not exceed the established thresholds for lead. Unleaded fuel and unleaded paints have virtually eliminated lead emissions from industrial land use projects such as the project. As a result, lead emissions are not further evaluated herein.*

Air Basin with daily emissions that exceed any of the identified significance thresholds should be considered as having an individually and cumulatively significant air quality impact. For the purposes to this air quality impact analysis, a regional air quality impact would be considered significant if emissions exceed the SCAQMD significance thresholds identified in **Table 5, SCQAMD Air Quality Significance Thresholds.**

**Table 5**
**SCAQMD Air Quality Significance Thresholds**

| **Mass Daily Thresholds** | | |
|---|---|---|
| **Pollutant** | **Construction (lbs/day)** | **Operation (lbs/day)** |
| NOx | 100 | 55 |
| VOC | 75 | 55 |
| $PM_{10}$ | 150 | 150 |
| $PM_{2.5}$ | 55 | 55 |
| SOx | 150 | 150 |
| CO | 550 | 550 |
| Lead | 3 | 3 |
| **Toxic Air Contaminants, Odor and GHG Thresholds** | | |
| TACs | Maximum Incremental Cancer Risk ≥ 10 in 1 million<br>Cancer Burden > 0.5 excess cancer cases (in areas ≥ 1 in 1 million)<br>Chronic & Acute Hazard Index > 1.0 (project increment) | |
| Odor | Project creates an odor nuisance pursuant to SCAQMD Rule 402 | |
| GHG | 10,000 MT/yr CO2e for industrial projects | |
| **Ambient Air Quality Standards** | | |
| **Pollutant** | **SCAQMD Standards** | |
| $NO_2$ -1-hour average<br>Annual arithmetic mean | 0.18 ppm (338 µg/m^3)<br>0.03 ppm (state) and 0.0534 (federal) | |
| $PM_{10}$ -24-hour average<br>Construction<br>Operations<br>Annual average | <br>10.4 µg/m^3<br>2.5 ug/m^3<br>1.0 µg/m^3 | |
| $PM_{2.5}$ -24-hour average<br>Construction<br>Operations | <br>10.4 µg/m^3<br>2.5 µg/m^3 | |
| $SO_2$<br>1-hour average<br>24-hour average | <br>0.25 ppm (state) and 0.075 ppm (federal – 99$^{th}$ percentile)<br>0.04 ppm (state) | |
| CO<br>1-hour average<br>8-hour average | <br>20 ppm (23,000 µg/m^3)<br>9 ppm (10,000 µg/m^3) | |
| Lead<br>30-day average<br>Rolling 3-month average<br>Quarterly average | <br>1.5 µg/m^3<br>0.15 µg/m^3<br>1.5 µg/m^3 | |

*Source: AQMD. http://www.aqmd.gov/docs/default-source/ceqa/handbook/scaqmd-air-quality-significance-thresholds.pdf?sfvrsn=2.*

### C. Local Air Quality and Localized Significance Thresholds

Project-related construction air emissions may have the potential to exceed the State and Federal air quality standards in the project vicinity, even though these pollutant emissions may not be significant enough to create a regional impact to the South Coast Air Basin. In order to assess local air quality impacts the SCAQMD has developed Localized Significance Thresholds (LSTs) to assess the project-related air emissions in the project vicinity. The SCAQMD has also provided Final Localized Significant Threshold Methodology (LST Methodology), July 2008, which details the methodology to analyze local air emission impacts. The Localized Significant Threshold Methodology found that the primary emissions of concern are $NO_2$, CO, $PM_{10}$, and $PM_{2.5}$.

The significance thresholds for the local emissions of $NO_2$ and CO are determined by subtracting the highest background concentration from the last three years of these pollutants from **Table 4**, above, from the most restrictive ambient air quality standards for these pollutants that are outlined in the Localized Significant Thresholds. **Table 5,** above, shows the ambient air quality standards for $NO_2$, CO, and $PM_{10}$ and $PM_{2.5}$.

### D. Toxic Air Contaminants (TACs)

#### *i) Construction*

Temporary TAC emissions associated with DPM emissions from heavy construction equipment would occur during the construction phase of the project. According to the Office of Environmental Health Hazard Assessment (OEHHA)[7] and the SCAQMD *Health Risk Assessment Guidance for Analyzing Cancer Risks from Mobile Source Diesel Idling Emissions for CEQA Air Quality Analysis* (August 2003),[8] health effects from TACs are described in terms of individual cancer risk. "Individual Cancer Risk" is the likelihood that a person exposed to concentrations of TACs over a 30-year lifetime will contract cancer based on the use of standard risk-assessment methodology. Additionally, the SCAQMD CEQA guidance does not require a HRA for short-term construction emissions. Construction activities associated with the project would be sporadic, transitory, and short-term in nature (approximately 24 months). Thus, construction of the project would not result in a substantial, long-term (i.e., 30-year) source of TAC emissions. Nonetheless, a qualitative assessment of TAC emissions associated with short-term construction TAC emissions is provided in the analysis section below.

[7] *Office of Environmental Health Hazard Assessment, Air Toxic Hot Spots Program Risk Assessment Guidelines Guidance Manual for Preparation of Health Risk Assessment, February 2015. https://oehha.ca.gov/media/downloads/crnr/2015guidancemanual.pdf.*

[8] *South Coast Air Quality Management District, Health Risk Assessment Guidance for Analyzing Cancer Risks from Mobile Source Diesel Idling Emissions for CEQA Air Quality Analysis, August 2003. http://www.aqmd.gov/docs/default-source/ceqa/handbook/mobile-source-toxics-analysis.doc?sfvrsn=2.*

#### *ii) Operation*

CARB published the *Air Quality and Land Use Handbook* in April 2005 to serve as a general guide for considering impacts to sensitive receptors from facilities that emit TAC emissions. The recommendations provided therein are voluntary and do not constitute a requirement or mandate for either land use agencies or local air districts. The goal of the guidance document is to protect sensitive receptors, such as children, the elderly, acutely ill, and chronically ill persons, from exposure to TAC emissions. Some examples of CARB's siting recommendations include the following: (1) avoid siting sensitive receptors within 500 feet of a freeway, urban road with 100,000 vehicles per day, or rural roads with 50,000 vehicles per day; (2) avoid siting sensitive receptors within 1,000 feet of a distribution center (that accommodates more than 100 trucks per day, more than 40 trucks with operating transport refrigeration units per day, or where transport refrigeration unit operations exceed 300 hours per week); (3) avoid siting sensitive receptors within 300 feet of any dry cleaning operation using perchloroethylene and within 500 feet of operations with two or more machines; and (4) avoid siting sensitive receptors within 300 feet of a large gasoline dispensing facility (3.6 million gallons per year or more) or 50 feet of a typical gasoline dispensing facility (less than 3.6 million gallons per year). The closest freeway, the 405 freeway, is located approximately 1.65 miles east of the site, and there are no gas stations or dry cleaners located in the project vicinity; therefore, emissions from these types of TAC sources are not anticipated.

### E. Odor Impacts

The SCAQMD CEQA Handbook states that an odor impact would occur if the project creates an odor nuisance pursuant to SCAQMD Rule 402, which states:

A person shall not discharge from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance, or annoyance to any considerable number of persons to the public, or which endanger the comfort, repose, health, or safety of any such persons or the public, or which cause, or have a natural tendency to cause, injury or damage to business or property.

The provisions of this rule shall not apply to odors emanating from agricultural operations necessary for the growing of crops or the raising of fowl or animals.

If the project results in a violation of Rule 402 with regards to odor impacts, then the project would create a significant odor impact.

## 5. SHORT-TERM CONSTRUCTION EMISSIONS

Construction activities associated with the project would have the potential to generate air emissions, toxic air contaminant emissions, and odor impacts. Assumptions for the phasing, duration, and required equipment for the construction of the project were obtained from the project applicant. The

construction activities for the project are anticipated to include: demolition of the existing 4,212 SF commercial building and approximately 45,000 square feet (SF) of existing parking lot,[9] site preparation/foundation work, construction of a 110,891 SF, 4-story apartment complex with 111 dwelling units, plus 5,300 SF of commercial uses, and 182-space, approximately 72,800 SF subterranean parking garage, paving, and application of architectural coatings. The project is anticipated to export approximately 23,000 CY of material during site preparation. See Appendix A for more details.

The project is anticipated to start construction no sooner than September 2023 and take approximately 24 months to complete. The project is anticipated to be operational in 2025.

### A. Methodology

The following provides a discussion of the methodology used to calculate regional construction air emissions and an analysis of the project's short-term construction emissions for the criteria pollutants. The construction-related regional air quality impacts have been analyzed for both criteria pollutants and GHGs.

Emissions are estimated using the CalEEMod (Version 2022.1.1.6) software, which is a statewide land use emissions computer model designed to provide a uniform platform for government agencies, land use planners, and environmental professionals to quantify potential criteria pollutant and GHG emissions from a variety of land use projects. CalEEMod was developed in collaboration with the air districts of California. Regional data (e.g., emission factors, trip lengths, meteorology, source inventory, etc.) have been provided by the various California air districts to account for local requirements and conditions. The model is considered to be an accurate and comprehensive tool for quantifying air quality and GHG impacts from land use projects throughout California.

Daily regional emissions during construction are forecasted by assuming a conservative estimate of construction activities (i.e., assuming all construction occurs at the earliest feasible date) and applying the mobile source and fugitive dust emissions factors. The input values used in this analysis were adjusted to be project-specific for the construction schedule and the equipment used was based on CalEEMod defaults. The CalEEMod program uses the EMFAC2021 computer program to calculate the emission rates specific for Los Angeles County for construction-related employee vehicle trips and the OFFROAD2017 computer program to calculate emission rates for heavy truck operations. EMFAC2021 and OFFROAD2017 are computer programs generated by CARB that calculates composite emission rates for vehicles. Emission rates are reported by the program in grams per trip and grams per mile or grams per running hour. Daily truck trips and CalEEMod default trip length data were used to assess roadway emissions from truck exhaust. The maximum daily emissions are estimated values for the worst-case day

[9] *Parking lot is assumed to be 0.3 feet thick, which would yield 303.75 tons of asphalt. The 4,212 SF building would yield 193.8 tons of demolition debris. The total demolition debris = 497.55 tons.*

and do not represent the emissions that would occur for every day of project construction. The maximum daily emissions are compared to the SCAQMD daily regional numeric indicators. Detailed construction equipment lists, construction scheduling, and emission calculations are provided in Appendix A.

The project will be required to comply with existing SCAQMD rules for the reduction of fugitive dust emissions. SCAQMD Rule 403 establishes these procedures. Compliance with this rule is achieved through application of standard best management practices in construction and operation activities, such as application of water or chemical stabilizers to disturbed soils, managing haul road dust by application of water, covering haul vehicles, restricting vehicle speeds on unpaved roads to 15 mph, sweeping loose dirt from paved site access roadways, cessation of construction activity when winds exceed 25 mph and establishing a permanent, stabilizing ground cover on finished sites. In addition, projects that disturb 50 acres or more of soil or move 5,000 cubic yards of materials per day are required to submit a Fugitive Dust Control Plan or a Large Operation Notification Form to SCAQMD. Based on the size of the project area (approximately 1.13 acres) a Fugitive Dust Control Plan or Large Operation Notification would not be required.

SCAQMD's Rule 403 minimum requirements require that the application of the best available dust control measures is used for all grading operations and include the application of water or other soil stabilizers in sufficient quantity to prevent the generation of visible dust plumes. Compliance with Rule 403 would require the use of water trucks during all phases where earth moving operations would occur. Compliance with Rule 403 has been included in the CalEEMod modeling for the project.

Per SCAQMD Rule 1113 as amended on June 3, 2011, the architectural coatings that would be applied to buildings after January 1, 2014 will be limited to an average of 50 grams per liter or less. CalEEMod defaults have been adjusted accordingly.

The phases of the construction activities which have been analyzed below for each phase are: (1) demolition, (2) site preparation/foundation work (3) building construction, (4) paving, and (5) application of architectural coatings. Details pertaining to the project's construction timing and the type of equipment modeled for each construction phase are available in the CalEEMod output in Appendix A of this technical report.

### B. Construction-Related Regional Impacts

The construction-related criteria maximum daily pollutant emissions for each phase are shown below in **Table 6 Construction-Related Regional Pollutant Emissions**. **Table 6** shows the worst-case of either summer or winter criteria pollutant maximum daily emissions and that none of the project's emissions will exceed regional thresholds. Therefore, a less than significant regional air quality impact would occur from construction of the project.

**Table 6**
**Construction-Related Regional Pollutant Emissions**

| Activity | Maximum Pollutant Emissions (pounds/day) | | | | | |
|---|---|---|---|---|---|---|
| | ROG | NOx | CO | $SO_2$ | PM10 | PM2.5 |
| Maximum Daily Emissions[1,2] | 13.1 | 18.9 | 21.6 | 0.03 | 3.68 | 2.04 |
| SCAQMD Thresholds | 75 | 100 | 550 | 150 | 150 | 55 |
| Exceeds Thresholds? | No | No | No | No | No | No |

*Notes:*
*(1) Includes emissions from on-site and off-site. On-site emissions from equipment operated on-site that is not operated on public roads. Emissions include compliance with SCAQMD Rule 403.*
*(2) Construction and painting phases may overlap.*

*Source: CalEEMod Version 2022.1.1.6*

### C. Construction-Related Local Impacts

Construction-related air emissions may have the potential to exceed the State and Federal air quality standards in the project vicinity, even though these pollutant emissions may not be significant enough to create a regional impact to the South Coast Air Basin. The project has been analyzed for the potential local air quality impacts created from: construction-related fugitive dust and diesel emissions; from toxic air contaminants; and from construction-related odor impacts. The local air quality emissions from construction were analyzed using the SCAQMD's Mass Rate Localized Significant Threshold Look-up Tables and the methodology described in *Localized Significance Threshold Methodology* prepared by SCAQMD (revised July 2008). The Look-up Tables were developed by the SCAQMD in order to readily determine if the daily emissions of CO, NOx, $PM_{10,}$ and $PM_{2.5}$from the project could result in a significant impact to the local air quality. The emission thresholds were calculated based on the West San Fernando Valley source receptor area (SRA) 6 and a disturbance value of one acre per day (as the site is 1.13 acres). According to LST Methodology, any receptor located closer than 25 meters (82 feet) shall be based on the 25-meter thresholds.

The nearest sensitive receptors to the project site are: the multi-family residential uses located adjacent to the northeastern corner of the site, the single-family residential uses located approximately 40 feet (approximately 12 meters) north of the site, north of Cantlay Street; the single-family residential uses located approximately 50 feet (approximately 15 meters) west of the site, west of Genesta Avenue; and the single family residential uses located approximately 134 feet (approximately 41 meters) southwest of the site, south of Sherman Way; therefore, the SCAQMD 25-meter Look-up Tables was used. **Table 7, Local Construction Emissions at the Nearest Receptors,** shows the on-site emissions from the CalEEMod model for the different construction phases and the LST emissions thresholds. Other air quality sensitive land uses are located further from the project site and would experience lower impacts.

The data provided in **Table 7** shows that none of the analyzed criteria pollutants would exceed the local emissions thresholds at the nearest sensitive receptors. Therefore, a less than significant local air quality impact would occur from construction of the project.

**Table 7**
**Local Construction Emissions at the Nearest Receptors**

| Activity | On-Site Pollutant Emissions (pounds/day) | | | |
|---|---|---|---|---|
| | **NOx** | **CO** | **PM10** | **PM2.5** |
| Demolition | 17.0 | 16.9 | 1.1 | 0.75 |
| Site Preparation/Foundation | 17.2 | 16.5 | 3.01 | 1.86 |
| Building Construction | 9.44 | 10.1 | 0.37 | 0.34 |
| Architectural Coating | 1.42 | 1.72 | 0.03 | 0.03 |
| **SCAQMD Thresholds[1]** | **103** | **426** | **4** | **3** |
| Exceeds Threshold? | No | No | No | No |

*Notes:*
*(1) The nearest sensitive receptors to the site are: the multi-family residential uses located adjacent to the northeastern corner of the site, the single-family residential uses located approximately 40 feet (approximately 12 meters) north of the site, north of Cantlay Street; the single-family residential uses located approximately 50 feet (approximately 15 meters) west of the site, west of Genesta Avenue; and the single family residential uses located approximately 134 feet (approximately 41 meters) southwest of the site, south of Sherman Way; therefore, the 25-meter threshold was used.*
*Source: Calculated from CalEEMod and SCAQMD's Mass Rate Look-up Tables for 1 acre, at a distance of 25 m in SRA 6 West San Fernando Valley.*

### D. Construction-Related Toxic Contaminant Impacts

The greatest potential for toxic air contaminant emissions would be related to diesel particulate emissions associated with heavy equipment operations during construction of the project. According to the Office of Environmental Health Hazard Assessment (OEHHA) and the SCAQMD Health Risk Assessment Guidance for Analyzing Cancer Risks from Mobile Source Diesel Idling Emissions for CEQA Air Quality Analysis (August 2003), health effects from TACs are described in terms of individual cancer risk based on a lifetime (i.e., 30-year) resident exposure duration. Given the temporary and short-term construction schedule (approximately 24 months), the project would not result in a long-term (i.e., lifetime or 30-year) exposure as a result of project construction. Furthermore, construction-based particulate matter (PM) emissions (including diesel exhaust emissions) do not exceed any local or regional thresholds.

The project would comply with the CARB Air Toxics Control Measure that limits diesel powered equipment and vehicle idling to no more than 5 minutes at a location, and the CARB In-Use Off-Road Diesel Vehicle Regulation; compliance with these would minimize emissions of TACs during construction. Therefore, impacts from TACs during construction would be less than significant.

### E. Construction-Related Odor Impacts

Potential sources that may emit odors during construction activities include the application of materials such as asphalt pavement. The objectionable odors that may be produced during the construction process are of short-term in nature and the odor emissions are expected to cease upon the drying or hardening of the odor producing materials. Due to the short-term nature and limited amounts of odor producing materials being utilized, no significant impact related to odors would occur during construction of the project. Diesel exhaust and VOCs would be emitted during construction of the project, which are objectionable to some; however, emissions would disperse rapidly from the project site and therefore should not reach an objectionable level at the nearest sensitive receptors.

## 6. LONG-TERM OPERATIONAL EMISSIONS

The on-going operation of the project would result in a long-term increase in air emissions. This increase would be due to emissions from the project-generated vehicle trips and through other operational emissions from the on-going use of the project. The following section provides an analysis of potential long-term air quality impacts due to: regional air quality impacts with the on-going operations of the project.

### A. Operations-Related Regional Air Quality Impacts

The operations-related criteria air quality impacts created by the project have been analyzed through the use of the CalEEMod model. The operating emissions were based on the year 2025, which is the anticipated opening year for the project. The operational emissions printouts from the CalEEMod model are provided in Appendix A. The CalEEMod analyzes operational emissions from area sources, energy usage, and mobile sources, which are discussed below.

#### *i) Mobile Sources*

Mobile sources include emissions from the additional vehicle miles generated from the project. The vehicle trips associated with the project have been analyzed by inputting the project-generated VMT data from the City of Los Angeles Transportation Impact Assessment (TIA) for the Sherman Way Mixed-Use Project (January 5, 2023) for the project into the CalEEMod Model. The VMT analysis in the TIA showed that the project would generate 767 daily vehicle trips and 6,017 daily VMT. The highest mobile source emissions for weekday and weekends were reported in **Table 8, Regional Operational Pollutant Emissions**. The CalEEMod program then applies the emission factors for each trip, which is provided by the EMFAC2021 model, to determine the vehicular traffic pollutant emissions.

**Table 8**
**Regional Operational Pollutant Emissions**

| Activity | Pollutant Emissions (tons/year) | | | | | |
|---|---|---|---|---|---|---|
| | ROG | NOx | CO | SO2 | PM10 | PM2.5 |
| **Maximum Daily Emissions** | **6.43** | **2.44** | **30.9** | **0.05** | **1.75** | **0.37** |
| SCAQMD Thresholds | **55** | **55** | **550** | **150** | **150** | **55** |
| Exceeds Threshold? | No | No | No | No | No | No |

*Notes:*
*Source: CalEEMod Version 2022.1.1.6; the higher of either summer or winter emissions (see Appendix A for CalEEMod output).*

***ii) Area Sources***

Area sources include emissions from consumer products, landscape equipment and architectural coatings. Landscape maintenance includes fuel combustion emissions from equipment such as lawn mowers, rototillers, shredders/grinders, blowers, trimmers, chain saws, and hedge trimmers, as well as air compressors, generators, and pumps. As specifics were not known about the landscaping equipment fleet, CalEEMod defaults were used to estimate emissions from landscaping equipment. No changes were made to the default area source parameters.

***iii) Energy Usage***

Energy usage includes emissions from the generation of electricity and natural gas used on-site. No changes were made to the default energy usage parameters.

***iv) Project Impacts***

The worst-case summer or winter criteria pollutant emissions created from the project's long-term operations have been calculated and are shown in **Table 8**, above. **Table 8** shows that none of the analyzed criteria pollutants would exceed the regional emissions thresholds. Therefore, a less than significant regional air quality impact would occur from operation of the project.

**B. Operations-Related Local Air Quality Impacts**

Project-related air emissions may have the potential to exceed the State and Federal air quality standards in the project vicinity, even though these pollutant emissions may not be significant enough to create a regional impact to the South Coast Air Basin. The project has been analyzed for the potential local CO emission impacts from the project-generated vehicular trips and from the potential local air quality impacts from on-site operations. The following analysis analyzes the vehicular CO emissions, local impacts from on-site operations per SCAQMD LST methodology, and odor impacts.

### *i) Local CO Emission Impacts from Project-Related Vehicular Trips*

CO is the pollutant of major concern along roadways because the most notable source of CO is motor vehicles. For this reason, CO concentrations are usually indicative of the local air quality generated by a roadway network and are used as an indicator of potential local air quality impacts. Local air quality impacts can be assessed by comparing future without and with project CO levels to the State and Federal CO standards which were presented above.

To determine if the project could cause emission levels in excess of the CO standards discussed above, a sensitivity analysis is typically conducted to determine the potential for CO "hot spots" at a number of intersections in the general project vicinity. Because of reduced speeds and vehicle queuing, "hot spots" potentially can occur at high traffic volume intersections with a Level of Service E or worse.

The analysis prepared for CO attainment in the South Coast Air Basin by the SCAQMD can be used to assist in evaluating the potential for CO exceedances in the South Coast Air Basin. CO attainment was thoroughly analyzed as part of the SCAQMD's 2003 Air Quality Management Plan (2003 AQMP) and the 1992 Federal Attainment Plan for Carbon Monoxide (1992 CO Plan). As discussed in the 1992 CO Plan, peak carbon monoxide concentrations in the South Coast Air Basin are due to unusual meteorological and topographical conditions, and not due to the impact of particular intersections. Considering the region's unique meteorological conditions and the increasingly stringent CO emissions standards, CO modeling was performed as part of 1992 CO Plan and subsequent plan updates and air quality management plans. In the 1992 CO Plan, a CO hot spot analysis was conducted for four busy intersections in Los Angeles at the peak morning and afternoon time periods. The intersections evaluated included: South Long Beach Boulevard and Imperial Highway (Lynwood); Wilshire Boulevard and Veteran Avenue (Westwood); Sunset Boulevard and Highland Avenue (Hollywood); and La Cienega Boulevard and Century Boulevard (Inglewood). These analyses did not predict a violation of CO standards. The busiest intersection evaluated was that at Wilshire Boulevard and Veteran Avenue, which has a daily traffic volume of approximately 100,000 vehicles per day. The Los Angeles Department of Transportation evaluated the Level of Service in the vicinity of the Wilshire Boulevard/Veteran Avenue intersection and found it to be Level of Service E during the morning peak hour and Level of Service F during the afternoon peak hour.

The VMT analysis in the TIA showed that the project would generate 767 daily vehicle trips. Traffic count data from NavigateLA shows that the traffic volumes at Balboa Boulevard south of Sherman Way (the closest intersection with available data) would total 30,888 average daily trips (ADT). The 1992 Federal Attainment Plan for Carbon Monoxide (1992 CO Plan) showed that an intersection which has a daily traffic volume of approximately 100,000 vehicles per day would not violate the CO standard. If all of the project's traffic were added to that road segment, the traffic volume would increase to 31,655 ADT. Therefore, as the existing plus project traffic volumes would fall far short of 100,000 vehicles, no CO

"hot spot" modeling was performed and no significant long-term air quality impact is anticipated to local air quality with the on-going use of the project.

#### *ii) Local Air Quality Impacts from On-Site Operations*

Project-related air emissions from on-site sources such as architectural coatings, landscaping equipment, on-site usage of natural gas appliances as well as the operation of vehicles on-site may have the potential to exceed the State and Federal air quality standards in the project vicinity, even though these pollutant emissions may not be significant enough to create a regional impact to the South Coast Air Basin. The nearest sensitive receptors to the project site are: the multi-family residential uses located adjacent to the northeastern corner of the site, the single-family residential uses located approximately 40 feet north of the site, north of Cantlay Street; the single-family residential uses located approximately 50 feet west of the site, west of Genesta Avenue; and the single-family residential uses located approximately 134 feet southwest of the site, south of Sherman Way.

According to SCAQMD LST methodology, LSTs would apply to the operational phase of a project, if the project includes stationary sources, or attracts mobile sources (such as heavy-duty trucks) that may spend long periods queuing and idling at the site; such as industrial warehouse/transfer facilities. The project consists of a mixed residential/commercial use, and does not include such uses. Therefore, due the lack of stationary source emissions, no long-term localized significance threshold analysis is warranted.

### C. Operations-Related Odor Impacts

Potential sources that may emit odors during the on-going operations of the project would include odor emissions from the intermittent diesel delivery truck emissions and trash storage areas. Due to the distance of the nearest receptors from the project site and through compliance with SCAQMD's Rule 402 no significant impact related to odors would occur during the on-going operations of the project.

## 7. CUMULATIVE AIR QUALITY IMPACTS

There are a number of cumulative projects in the project area that have not yet been built or are currently under construction. Since the timing or sequencing of the cumulative projects is unknown, any quantitative analysis to ascertain daily construction emissions that assumes multiple, concurrent construction projects would be speculative. Further, cumulative projects include local development as well as general growth within the project area. However, as with most development, the greatest source of emissions is from mobile sources, which travel well out of the local area. Therefore, from an air quality standpoint, the cumulative analysis would extend beyond any local projects and when wind patterns are considered would cover an even larger area. The SCAQMD recommends using two different methodologies: (1) that project-specific air quality impacts be used to determine the potential

cumulative impacts to regional air quality;[10] and (2) that a project's consistency with the current AQMP be used to determine its potential cumulative impacts.

### A. Project Specific Impacts

The project area is out of attainment for ozone and in 2021 was out of attainment for $PM_{10}$, as indicated in **Table 3**. Construction and operation of cumulative projects will further degrade the local air quality, as well as the air quality of the South Coast Air Basin. The greatest cumulative impact on the quality of regional air quality will be the incremental addition of pollutants mainly from increased traffic volumes from residential, commercial, and industrial development and the use of heavy equipment and trucks associated with the construction of these projects. Air quality will be temporarily degraded during construction activities that occur separately or simultaneously. However, in accordance with the SCAQMD methodology, projects that do not exceed the SCAQMD criteria or can be mitigated to less than criteria levels are not significant and do not add to the overall cumulative impact. A significant impact may occur if a project would add a cumulatively considerable contribution of a federal or state non-attainment pollutant. As stated previously, the Air Basin is currently in non-attainment for ozone, $PM_{10,}$ and $PM_{2.5}$.

The project would result in the emission of criteria pollutants for which the region is in nonattainment during both construction and operation. The emissions from construction of the project are not predicted to exceed any applicable SCAQMD regional or local impact threshold and therefore, are not expected to result in ground level concentrations that exceed the NAAQS or CAAQS. Therefore, the project would not result in a cumulatively considerable net increase for non-attainment pollutants or ozone precursors and would result in a less than significant impact for construction emissions.

Project operations would generate emissions of NOx, ROG, CO, $PM_{10,}$ and $PM_{2.5}$, which would not exceed the SCAQMD regional or local thresholds and would not be expected to result in ground level concentrations that exceed the NAAQS or CAAQS. Since the project would not introduce any substantial stationary sources of emissions, CO is the benchmark pollutant for assessing local area air quality impacts from post-construction motor vehicle operations. As indicated earlier, no violations of the state and federal CO standards are projected to occur for the project, based on the magnitude of traffic the project is anticipated to create. Therefore, operation of the project would not result in a cumulatively considerable net increase for non-attainment of criteria pollutants or ozone precursors. As a result, the project would result in a less than significant cumulative impact for operational emissions.

[10] *South Coast Air Quality Management District, Potential Control Strategies to Address Cumulative Impacts from Air Pollution White Paper, 1993, http://www.aqmd.gov/home/regulations/ceqa/air-quality-analysis-handbook.*

### B. Air Quality Compliance

The California Environmental Quality Act (CEQA) requires a discussion of any inconsistencies between a project and applicable General Plans and Regional Plans (CEQA Guidelines Section 15125). The regional plan that applies to the project includes the SCAQMD Air Quality Management Plan (AQMP). Therefore, this section discusses any potential inconsistencies of the project with the AQMP.

The purpose of this discussion is to set forth the issues regarding consistency with the assumptions and objectives of the AQMP and discuss whether the project would interfere with the region's ability to comply with Federal and State air quality standards. If the decision-makers determine that the project is inconsistent, the lead agency may consider project modifications or inclusion of mitigation to eliminate the inconsistency.

The SCAQMD CEQA Handbook states that "New or amended General Plan Elements (including land use zoning and density amendments), Specific Plans, and significant projects must be analyzed for consistency with the AQMP". Strict consistency with all aspects of the plan is usually not required. A project should be considered to be consistent with the AQMP if it furthers one or more policies and does not obstruct other policies. The SCAQMD CEQA Handbook identifies two key indicators of consistency:

(1) Whether the project will result in an increase in the frequency or severity of existing air quality violations or cause or contribute to new violations, or delay timely attainment of air quality standards or the interim emission reductions specified in the AQMP.

(2) Whether the project will exceed the assumptions in the AQMP in 2022 or increments based on the year of project buildout and phase.

Both of these criteria are evaluated below.

#### *i) Air Quality Compliance Analysis*

##### 1) Criteria 1 – Increase in the Frequency or Severity of Violations

Based on the air quality modeling analysis contained in this Air Quality Analysis, short-term construction impacts will not result in significant impacts based on the SCAQMD regional and local thresholds of significance. This Air Analysis also found that long-term operations impacts will not result in significant impacts based on the SCAQMD local and regional thresholds of significance.

Therefore, the project is not projected to contribute to the exceedance of any air pollutant concentration standards and is found to be consistent with the AQMP for the first criterion.

### 2) Criteria 2 – Exceed Assumptions in the AQMP?

Consistency with the AQMP assumptions is determined by performing an analysis of the project with the assumptions in the AQMP. The emphasis of this criterion is to ensure that the analyses conducted for the project are based on the same forecasts as the AQMP. The *2020-2045 Regional Transportation/Sustainable Communities Strategy* prepared by SCAG (2020) includes chapters on: the challenges in a changing region, creating a plan for our future, and the road to greater mobility and sustainable growth. These chapters currently respond directly to federal and state requirements placed on SCAG. Local governments are required to use these as the basis of their plans for purposes of consistency with applicable regional plans under CEQA. For this project, the City of Los Angeles Land Use Plan defines the assumptions that are represented in the AQMP.

The project site is located in the Reseda – West Van Nuys Community Plan area and has a General Plan Land Use Designation of Neighborhood Office Commercial. The project site is zoned (Q)C1-1VL, P-1VL. The project will include a JJJ compliant Vesting Zone Change from (Q)C1-1VL, CR-1VL, P-1VL to (T)(Q) RAS4-1VL. Under Measure JJJ and pursuant to the Los Angeles Municipal Code (LAMC) Section 11.511(e), the Applicant is requesting two developer's incentives for, 1) a reduction in parking to allow 160 residential automobile parking spaces and 2) relief from General Plan Footnote 7 to allow 4 stories in lieu of 3 stories. Site Plan Review is required for a residential development with proposed base density Greater than 50 units.

The project consists of the construction and operation of a mixed-use building that contains 111 apartments, 5,300 SF of commercial use, and a 178-space subterranean parking structure. C1 uses allow for Local Retail Stores < 100,000 sq-ft, Offices or Businesses, Hotels, Hospitals and/or Clinics, Parking Areas, CR Uses except for Churches, Schools, Museums, R3 Uses. With the zone change, R4 uses, Limited ground floor commercial will be allowed. Although the current zoning may initially result in an inconsistency with the AQMP on paper, the inconsistency would not necessarily constitute a conflict with the AQMP. The SCAQMD acknowledges that strict consistency with all aspects of the AQMP is not required in order to make a finding of no conflict. Rather, a project is considered to be consistent with the AQMP if it furthers one or more policies and does not obstruct other policies. The benefits of high-density development include reduced congestion and vehicle emissions (due to increased walkability and alternative transportation options), smaller ecological footprints, and long-term economic sustainability. Furthermore, the project would implement contemporary energy-efficient technologies and regulatory/operational programs required per Title 24, CALGreen and City standards. Generally, compliance with SCAQMD emissions reductions and control requirements also act to reduce project air pollutant emissions. Project compliance with regulatory/operational programs is consistent with and supports overarching AQMP air pollution reduction strategies. Project support of these strategies promotes timely attainment of AQMP air quality standards and would bring the project into conformance with the AQMP. Therefore, the project is not anticipated to exceed the AQMP

assumptions for the project site and is found to be consistent with the AQMP for the second criterion. Therefore, a less than significant impact will occur.

# III. GLOBAL CLIMATE CHANGE ANALYSIS

## 1. EXISTING GREENHOUSE GAS ENVIRONMENT

Constituent gases of the Earth's atmosphere, called atmospheric greenhouse gases (GHG), play a critical role in the Earth's radiation amount by trapping infrared radiation emitted from the Earth's surface, which otherwise would have escaped to space. Prominent greenhouse gases contributing to this process include carbon dioxide ($CO_2$), methane ($CH_4$), ozone, water vapor, nitrous oxide ($N_2O$), and chlorofluorocarbons (CFCs). This phenomenon, known as the Greenhouse Effect, is responsible for maintaining a habitable climate. Anthropogenic (caused or produced by humans) emissions of these greenhouse gases in excess of natural ambient concentrations are responsible for the enhancement of the Greenhouse Effect and have led to a trend of unnatural warming of the Earth's natural climate, known as global warming or climate change. Emissions of gases that induce global warming are attributable to human activities associated with industrial/manufacturing, agriculture, utilities, transportation, and residential land uses. Transportation is responsible for 41 percent of the State's greenhouse gas emissions, followed by electricity generation. Emissions of $CO_2$ and nitrous oxide (NOx) are byproducts of fossil fuel combustion. Methane, a potent greenhouse gas, results from off-gassing associated with agricultural practices and landfills. Sinks of $CO_2$, where $CO_2$ is stored outside of the atmosphere, include uptake by vegetation and dissolution into the ocean. The following provides a description of each of the greenhouse gases and their global warming potential.

### A. Water Vapor

Water vapor is the most abundant, important, and variable GHG in the atmosphere. Water vapor is not considered a pollutant; in the atmosphere it maintains a climate necessary for life. Changes in its concentration are primarily considered a result of climate feedbacks related to the warming of the atmosphere rather than a direct result of industrialization. The feedback loop in which water is involved is critically important to projecting future climate change. As the temperature of the atmosphere rises, more water is evaporated from ground storage (rivers, oceans, reservoirs, soil). Because the air is warmer, the relative humidity can be higher (in essence, the air is able to "hold" more water when it is warmer), leading to more water vapor in the atmosphere. As a GHG, the higher concentration of water vapor is then able to absorb more thermal indirect energy radiated from the Earth, thus further warming the atmosphere. The warmer atmosphere can then hold more water vapor and so on and so on. This is referred to as a "positive feedback loop". The extent to which this positive feedback loop will continue is unknown as there is also dynamics that put the positive feedback loop in check. As an example, when water vapor increases in the atmosphere, more of it will eventually also condense into clouds, which are more able to reflect incoming solar radiation (thus allowing less energy to reach the Earth's surface and heat it up).

### B. Carbon Dioxide ($CO_2$)

The natural production and absorption of $CO_2$ is achieved through the terrestrial biosphere and the ocean. However, humankind has altered the natural carbon cycle by burning coal, oil, natural gas, and wood. Since the industrial revolution began in the mid-1700s. Each of these activities has increased in scale and distribution. $CO_2$ was the first GHG demonstrated to be increasing in atmospheric concentration with the first conclusive measurements being made in the last half of the 20th century. Prior to the industrial revolution, concentrations were fairly stable at 280 parts per million (ppm). The International Panel on Climate Change (IPCC Fifth Assessment Report, 2014) Emissions of $CO_2$ from fossil fuel combustion and industrial processes contributed about 78% of the total GHG emissions increase from 1970 to 2010, with a similar percentage contribution for the increase during the period 2000 to 2010. Globally, economic and population growth continued to be the most important drivers of increases in $CO_2$ emissions from fossil fuel combustion. The contribution of population growth between 2000 and 2010 remained roughly identical to the previous three decades, while the contribution of economic growth has risen sharply.

### C. Nitrous Oxide ($N_2O$)

Concentrations of $N_2O$ also began to rise at the beginning of the industrial revolution. In 1998, the global concentration of this GHG was documented at 314 parts per billion (ppb). $N_2O$ is produced by microbial processes in soil and water, including those reactions which occur in fertilizer containing nitrogen. In addition to agricultural sources, some industrial processes (fossil fuel-fired power plants, nylon production, nitric acid production, and vehicle emissions) also contribute to its atmospheric load. It is also commonly used as an aerosol spray propellant, (i.e., in whipped cream bottles, in potato chip bags to keep chips fresh, and in rocket engines and in race cars).

### D. Hydrofluorocarbons (HFC)

HFCs are synthetic man-made chemicals that are used as a substitute for CFCs. Out of all the GHGs, they are one of three groups with the highest global warming potential. The HFCs with the largest measured atmospheric abundances are (in order), HFC-23 ($CHF_3$), HFC-134a ($CF_3CH_2F$), and HFC-152a ($CH_3CHF_2$). Prior to 1990, the only significant emissions were HFC-23. HFC-134a use is increasing due to its use as a refrigerant. Concentrations of HFC-23 and HFC-134a in the atmosphere are now about 10 parts per trillion (ppt) each. Concentrations of HFC-152a are about 1 ppt. HFCs are manmade for applications such as automobile air conditioners and refrigerants.

### E. Perfluorocarbons (PFC)

PFCs have stable molecular structures and do not break down through the chemical processes in the lower atmosphere. High-energy ultraviolet rays about 60 kilometers above Earth's surface can destroy the compounds. Because of this, PFCs have very long lifetimes, between 10,000 and 50,000 years. Two

common PFCs are tetrafluoromethane ($CF_4$) and hexafluoroethane ($C_2F_6$). Concentrations of $CF_4$ in the atmosphere are over 70 ppt. The two main sources of PFCs are primary aluminum production and semiconductor manufacturing.

### F. Sulfur Hexafluoride ($SF_6$)

$SF_6$ is an inorganic, odorless, colorless, nontoxic, nonflammable gas. $SF_6$ has the highest global warming potential of any gas evaluated; 23,900 times that of $CO_2$. Concentrations in the 1990s where about 4 ppt. Sulfur hexafluoride is used for insulation in electric power transmission and distribution equipment, in the magnesium industry, in semiconductor manufacturing, and as a tracer gas for leak detection.

### G. Aerosols

Aerosols are particles emitted into the air through burning biomass (plant material) and fossil fuels. Aerosols can warm the atmosphere by absorbing and emitting heat and can cool the atmosphere by reflecting light. Cloud formation can also be affected by aerosols. Sulfate aerosols are emitted when fuel containing sulfur is burned. Black carbon (or soot) is emitted during biomass burning due to the incomplete combustion of fossil fuels. Particulate matter regulation has been lowering aerosol concentrations in the United States; however, global concentrations are likely increasing.

### H. Global Warming Potential

The Global Warming Potential (GWP) was developed to allow comparisons of the global warming impacts of different gases. Specifically, it is a measure of how much energy the emissions of 1 ton of a gas will absorb over a given period, relative to the emissions of 1 ton of carbon dioxide ($CO_2$). The larger the GWP, the more that a given gas warms the Earth compared to $CO_2$ over that time period. The time period usually used for GWPs is 100 years. GWPs provide a common unit of measure, which allows analysts to add up emissions estimates of different gases (e.g., to compile a national GHG inventory), and allows policymakers to compare emissions reduction opportunities across sectors and gases. A summary of the atmospheric lifetime and the global warming potential of selected gases are summarized in **Table 9, Global Warming Potentials and Atmospheric Lifetimes**. As shown in **Table 9,** the global warming potential of GHGs ranges from 1 to 22,800.

**Table 9**
**Global Warming Potentials and Atmospheric Lifetimes**

| Gas | Atmospheric Lifetime | Global Warming Potential[1] (100 Year Horizon) |
|---|---|---|
| Carbon Dioxide ($CO_2$) | —[2] | 1 |
| Methane ($CH_4$) | 12 | 28-36 |
| Nitrous Oxide (NO) | 114 | 298 |
| Hydrofluorocarbons (HFCs) | 1-270 | 12-14,800 |
| Perfluorocarbons (PFCs) | 2,600-50,000 | 7,390-12,200 |
| Nitrogen trifluoride ($NF_3$) | 740 | 17,200 |
| Sulfur Hexafluoride ($SF_6$) | 3,200 | 22,800 |

*Notes:*
*(1) Compared to the same quantity of $CO_2$ emissions.*
*(2) Carbon dioxide's lifetime is poorly defined because the gas is not destroyed over time, but instead moves among different parts of the ocean–atmosphere–land system. Some of the excess carbon dioxide will be absorbed quickly (for example, by the ocean surface), but some will remain in the atmosphere for thousands of years, due in part to the very slow process by which carbon is transferred to ocean sediments.*

*Source: US Environmental Protection Agency, Overview of Greenhouse Gases. http://www3.epa.gov/climatechange/ghgemissions/gases.html.*

## 2. GREENHOUSE GAS STANDARDS AND REGULATION

### A. International

#### *i) Montreal Protocol*

In 1988, the United Nations established the Intergovernmental Panel on Climate Change (IPCC) to evaluate the impacts of global climate change and to develop strategies that nations could implement to curtail global climate change. In 1992, the United States joined other countries around the world in signing the United Nations' Framework Convention on Climate Change (UNFCCC) agreement with the goal of controlling GHG emissions. As a result, the Climate Change Action Plan was developed to address the reduction of GHGs in the United States. The plan consists of more than 50 voluntary programs.

Additionally, the Montreal Protocol was originally signed in 1987 and substantially amended in 1990 and 1992. The Montreal Protocol stipulates that the production and consumption of compounds that deplete ozone in the stratosphere—CFCs, halons, carbon tetrachloride, and methyl chloroform—were to be phased out, with the first three by the year 2000 and methyl chloroform by 2005.

#### *ii) The Paris Agreement*

The Paris Agreement became effective on November 4, 2016. Thirty days after this date at least 55 Parties to the United Nations Framework Convention on Climate Change (Convention), accounting in total for at

least an estimated 55 % of the total global greenhouse gas emissions, had deposited their instruments of ratification, acceptance, approval, or accession with the Depositary.

The Paris Agreement built upon the Convention and – for the first time – attempted to bring all nations into a common cause to undertake ambitious efforts to combat climate change and adapt to its effects, with enhanced support to assist developing countries to do so. As such, it charts a new course in the global climate effort.

The Paris Agreement's central aim is to strengthen the global response to the threat of climate change by keeping a global temperature rise this century well below 2 degrees Celsius above pre-industrial levels and to pursue efforts to limit the temperature increase even further to 1.5 degrees Celsius. Additionally, the agreement aims to strengthen the ability of countries to deal with the impacts of climate change. To reach these ambitious goals, appropriate financial flows, a new technology framework and an enhanced capacity building framework will be put in place, thus supporting action by developing countries and the most vulnerable countries, in line with their own national objectives. The Agreement also provides for enhanced transparency of action and support through a more robust transparency framework. Although the Trump administration withdrew the United States federal government from the Paris Agreement on November 4, 2020, the current administration reversed course and the federal government rejoined the Paris Agreement on January 20, 2021.

### B. Federal

The United States Environmental Protection Agency (USEPA) is responsible for implementing federal policy to address GHGs. The federal government administers a wide array of public-private partnerships to reduce the GHG intensity generated in the United States. These programs focus on energy efficiency, renewable energy, methane and other non-CO2 gases, agricultural practices, and implementation of technologies to achieve GHG reductions. The USEPA implements numerous voluntary programs that contribute to the reduction of GHG emissions. These programs (e.g., the ENERGY STAR labeling system for energy-efficient products) play a significant role in encouraging voluntary reductions from large corporations, consumers, industrial and commercial buildings, and many major industrial sectors.

In Massachusetts v. Environmental Protection Agency (Docket No. 05–1120), argued November 29, 2006, and decided April 2, 2007, the U.S. Supreme Court held that not only did the EPA have authority to regulate greenhouse gases, but the EPA's reasons for not regulating this area did not fit the statutory requirements. As such, the U.S. Supreme Court ruled that the EPA should be required to regulate $CO_2$ and other greenhouse gases as pollutants under the federal Clean Air Act (CAA).

In response to the FY2008 Consolidations Appropriations Act (H.R. 2764; Public Law 110-161), EPA proposed a rule on March 10, 2009, that requires mandatory reporting of GHG emissions from large sources in the United States. On September 22, 2009, the Final Mandatory Reporting of GHG Rule was

signed and published in the Federal Register on October 30, 2009. The rule became effective on December 29, 2009. This rule requires suppliers of fossil fuels or industrial GHGs, manufacturers of vehicles and engines, and facilities that emit 25,000 metric tons or more per year of GHG emissions to submit annual reports to EPA.

On December 7, 2009, the EPA Administrator signed two distinct findings under section 202(a) of the Clean Air Act. One is an endangerment finding that finds concentrations of the six GHGs in the atmosphere threaten the public health and welfare of current and future generations. The other is a cause or contribute finding, that finds emissions from new motor vehicles and new motor vehicle engines contribute to the GHG pollution which threatens public health and welfare. These actions will not themselves impose any requirements on industry or other entities. However, it is a prerequisite to finalizing the EPA's proposed GHG emission standards for light-duty vehicles, which were jointly proposed by the EPA and Department of Transportation on September 15, 2009.

On February 14, 2023, the EPA announced initial guidance on the design of the Greenhouse Gas Reduction Fund (GGRF) program, created by President Biden's Inflation Reduction Act. EPA published two Federal Assistance Listings outlining key parameters of the grant competitions that will ultimately award nearly $27 billion to leverage private capital for clean energy and clean air investments across the country. Federal Assistance Listings are the first public notice requirement to implement a federal grant program. The Inflation Reduction Act invests $350 million for grants, technical assistance and tools, including carbon labeling, to help manufacturers, institutional buyers, real estate developers, builders and others measure, report and substantially lower the levels of embodied carbon and other greenhouse gas emissions associated with all relevant stages of production, use and disposal of construction materials and products including steel, concrete, asphalt and glass.

Embodied greenhouse gas emissions refer to the amount of greenhouse gas (GHG) emissions associated with the extraction, production, transport and manufacturing of materials. Low embodied carbon materials have less climate impact associated with mining, manufacturing and transportation. Traditionally, steel, concrete, asphalt and flat glass contain a high quantity of embodied emissions due to the energy-intensive processes used to extract raw materials like limestone, taconite ore and silica and then converting those raw materials into products.

EPA's Pollution Prevention program will implement these programs to:

- Spur market demand for construction materials and products that have substantially lower embodied greenhouse gas emissions;
- Increase the transparency of greenhouse gas emissions data associated with the production, use, and disposal of construction materials and products; and

- Assist businesses in disclosing and verifying these data, as well as states, Indian tribes and non-profit organizations that assist these businesses.

#### *i) Clean Air Act*

In Massachusetts v. Environmental Protection Agency (Docket No. 05–1120), the U.S. Supreme Court held in April of 2007 that the USEPA has statutory authority under Section 202 of the federal Clean Air Act (CAA) to regulate GHGs. The court did not hold that the USEPA was required to regulate GHG emissions; however, it indicated that the agency must decide whether GHGs cause or contribute to air pollution that is reasonably anticipated to endanger public health or welfare. On December 7, 2009, the USEPA Administrator signed two distinct findings regarding GHGs under Section 202(a) of the CAA. The USEPA adopted a Final Endangerment Finding for the six defined GHGs ($CO_2$, $CH_4$, $N_2O$, HFCs, PFCs, and $SF_6$) on December 7, 2009. The Endangerment Finding is required before USEPA can regulate GHG emissions under Section 202(a)(1) of the CAA consistently with the United States Supreme Court decision. The USEPA also adopted a Cause or Contribute Finding in which the USEPA Administrator found that GHG emissions from new motor vehicle and motor vehicle engines are contributing to air pollution, which is endangering public health and welfare. These findings do not, by themselves, impose any requirements on industry or other entities. However, these actions were a prerequisite for implementing GHG emissions standards for vehicles.

#### *ii) Energy Independence Security Act*

The Energy Independence and Security Act of 2007 (EISA) facilitates the reduction of national GHG emissions by requiring the following:

- Increasing the supply of alternative fuel sources by setting a mandatory Renewable Fuel Standard (RFS) that requires fuel producers to use at least 36 billion gallons of biofuel in 2022;
- Prescribing or revising standards affecting regional efficiency for heating and cooling products, procedures for new or amended standards, energy conservation, energy efficiency labeling for consumer electronic products, residential boiler efficiency, electric motor efficiency, and home appliances;
- Requiring approximately 25 percent greater efficiency for light bulbs by phasing out incandescent light bulbs between 2012 and 2014; requiring approximately 200 percent greater efficiency for light bulbs, or similar energy savings, by 2020; and
- While superseded by the USEPA and NHTSA actions described above, (i) establishing miles per gallon targets for cars and light trucks and (ii) directing the NHTSA to establish a fuel economy program for medium- and heavy-duty trucks and create a separate fuel economy standard for trucks.

Additional provisions of EISA address energy savings in government and public institutions, promote research for alternative energy, additional research in carbon capture, international energy programs, and the creation of green jobs.[8]

#### *iii) Executive Order 13432*

In response to the Massachusetts v. Environmental Protection Agency ruling, the President signed Executive Order 13432 on May 14, 2007, directing the USEPA, along with the Departments of Transportation, Energy, and Agriculture, to initiate a regulatory process that responds to the Supreme Court's decision. Executive Order 13432 was codified into law by the 2009 Omnibus Appropriations Law signed on February 17, 2009. The order sets goals in the areas of energy efficiency, acquisition, renewable energy, toxics reductions, recycling, sustainable buildings, electronics stewardship, fleets, and water conservation. Light-Duty Vehicle Greenhouse Gas and Corporate Average Fuel Economy Standards.

On May 19, 2009, President Obama announced a national policy for fuel efficiency and emissions standards in the United States auto industry. The adopted federal standard applies to passenger cars and light-duty trucks for model years 2012 through 2016. The rule surpasses the prior Corporate Average Fuel Economy standards (CAFE)[9] and requires an average fuel economy standard of 35.5 miles per gallon (mpg) and 250 grams of CO2 per mile by model year 2016, based on USEPA calculation methods. These standards were formally adopted on April 1, 2010. In August 2012, standards were adopted for model year 2017 through 2025 for passenger cars and light-duty trucks. By 2025, vehicles are required to achieve 54.5 mpg (if GHG reductions are achieved exclusively through fuel economy improvements) and 163 grams of CO2 per mile. According to the USEPA, a model year 2025 vehicle would emit one-half of the GHG emissions from a model year 2010 vehicle.[10] In 2017, the USEPA recommended no change to the GHG standards for light-duty vehicles for model years 2022-2025.

Issued by NHTSA and EPA in March 2020 (published on April 30, 2020 and effective after June 29, 2020), the Safer Affordable Fuel-Efficient Vehicles Rule would maintain the CAFE and $CO_2$ standards applicable in model year 2020 for model years 2021 through 2026. The estimated CAFE and $CO_2$ standards for model year 2020 are 43.7 mpg and 204 grams of $CO_2$ per mile for passenger cars and 31.3 mpg and 284 grams of $CO_2$ per mile for light trucks, projecting an overall industry average of 37 mpg, as compared to 46.7 mpg under the standards issued in 2012. This Rule also excludes $CO_2$- equivalent emission improvements

[8] *A green job, as defined by the United States Department of Labor, is a job in business that produces goods or provides services that benefit the environment or conserve natural resources.*

[9] *The Corporate Average Fuel Economy standards are regulations in the United States, first enacted by Congress in 1975, to improve the average fuel economy of cars and light trucks. The U.S Department of Transportation has delegated the National Highway Traffic Safety Administration as the regulatory agency for the Corporate Average Fuel Economy standards.*

[10] *United States Environmental Protection Agency, EPA and NHTSA Set Standards to Reduce Greenhouse Gases and Improve Fuel Economy for Model Years 2017-2025 Cars and Light Trucks, August 2012, https://nepis.epa.gov/ Exe/ZyPDF.cgi/P100EZ7C.PDF?Dockey=P100EZ7C.PDF.*

associated with air conditioning refrigerants and leakage (and, optionally, offsets for nitrous oxide and methane emissions) after model year 2020.[11]

### C. State of California

#### *i) California Air Resources Board*

CARB, a part of the California Environmental Protection Agency (CalEPA), is responsible for the coordination and administration of both federal and state air pollution control programs within California. In this capacity, CARB conducts research, sets state ambient air quality standards (California Ambient Air Quality Standards [CAAQS]), compiles emission inventories, develops suggested control measures, and provides oversight of local programs. CARB establishes emissions standards for motor vehicles sold in California, consumer products (such as hairspray, aerosol paints, and barbecue lighter fluid), and various types of commercial equipment. It also sets fuel specifications to further reduce vehicular emissions.

In 2004, the California Air Resources Board (CARB) adopted an Airborne Toxic Control Measure to limit heavy-duty diesel motor vehicle idling in order to reduce public exposure to diesel particulate matter and other toxic air contaminants (Title 13 California Code of Regulations [CCR], Section 2485). The measure applies to diesel-fueled commercial vehicles with gross vehicle weight ratings greater than 10,000 pounds that are licensed to operate on highways, regardless of where they are registered. This measure generally does not allow diesel-fueled commercial vehicles to idle for more than 5 minutes at any given location with certain exemptions for equipment in which idling is a necessary function such as concrete trucks. While this measure primarily targets diesel particulate matter emissions, it has co-benefits of minimizing GHG emissions from unnecessary truck idling.

In 2008, CARB approved the Truck and Bus regulation to reduce particulate matter and nitrogen oxide emissions from existing diesel vehicles operating in California (13 CCR, Section 2025, subsection (h)). CARB has also promulgated emission standards for off-road diesel construction equipment of greater than 25 horsepower such as bulldozers, loaders, backhoes, and forklifts, as well as many other self-propelled off-road diesel vehicles. The regulation, adopted by the CARB on July 26, 2007, aims to reduce emissions by installation of diesel soot filters and encouraging the retirement, replacement, or repower of older, dirtier engines with newer emission-controlled models. While these regulations primarily target reductions in criteria air pollutant emission, they have co-benefits of minimizing GHG emissions due to improved engine efficiencies.

[11] *National Highway Traffic Safety Administration (NHTSA) and U.S. Environmental Protection Agency (USEPA), 2018. Federal Register / Vol. 83, No. 165 / Friday, August 24, 2018 / Proposed Rules, The Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule for Model Years 2021–2026 Passenger Cars and Light Trucks 2018. Available at: https://www.gpo.gov/fdsys/pkg/FR-2018-08-24/pdf/2018-16820.pdf.*

The State currently has no regulations that establish ambient air quality standards for GHGs. However, the State has passed laws directing CARB to develop actions to reduce GHG emissions, which are listed below.

#### *ii) Assembly Bill 1493*

California Assembly Bill 1493 enacted on July 22, 2002, required the CARB to develop and adopt regulations that reduce GHGs emitted by passenger vehicles and light duty trucks. In 2005, the CARB submitted a "waiver" request to the EPA from a portion of the federal Clean Air Act in order to allow the State to set more stringent tailpipe emission standards for $CO_2$ and other GHG emissions from passenger vehicles and light duty trucks. On December 19, 2007, the EPA announced that it denied the "waiver" request. On January 21, 2009, CARB submitted a letter to the EPA administrator regarding the State's request to reconsider the waiver denial. The EPA approved the waiver on June 30, 2009. EPA's recent withdrawal of the waiver was upheld by the Ninth Circuit on February 10, 2021. Per CARB, while the federal action is in effect, CARB will administer the zero-emission vehicle program on a voluntary basis. After adopting these initial greenhouse gas standards for passenger vehicles, CARB adopted continuing standards for future model years.

#### *iii) Executive Order S-3-05*

The California Governor issued Executive Order S-3-05, GHG Emission, in June 2005, which established the following reduction targets:

- By 2010, California shall reduce GHG emissions to 2000 levels;
- By 2020, California shall reduce GHG emissions to 1990 levels; and
- By 2050, California shall reduce GHG emissions to 80 percent below 1990 levels.

The Executive Order directed the secretary of the California Environmental Protection Agency (CalEPA) to coordinate a multi-agency effort to reduce GHG emissions to the target levels. To comply with the Executive Order, the secretary of CalEPA created the California Climate Action Team (CAT), made up of members from various state agencies and commissions. The team released its first report in March 2006. The report proposed to achieve the targets by building on the voluntary actions of businesses, local governments, and communities and through State incentive and regulatory programs.

#### *iv) Executive Order N-79-20*

Executive Order N-79-20 Signed in September 2020, Executive Order N-79-20 establishes as a goal that where feasible, all new passenger cars and trucks, as well as all drayage/cargo trucks and off-road vehicles and equipment, sold in California, will be zero-emission by 2035. The executive order sets a similar goal requiring that all medium and heavy-duty vehicles will be zero-emission by 2045 where feasible. It also directs CARB to

develop and propose rulemaking for passenger vehicles and trucks, medium-and heavy-duty fleets where feasible, drayage trucks, and off-road vehicles and equipment "requiring increasing volumes" of new zero emission vehicles (ZEVs) "towards the target of 100 percent." The executive order directs the California Environmental Protection Agency, the California Geologic Energy Management Division (CalGEM), and the California Natural Resources Agency to transition and repurpose oil production facilities with a goal toward meeting carbon neutrality by 2045. Executive Order N-79-20 builds upon the CARB Advanced Clean Trucks regulation, which was adopted by CARB in July 2020.

#### *v) Assembly Bill 32 (California Health and Safety Code, Division 25.2. – California Global Warming Solutions Act of 2006*

In 2006, the California State Legislature adopted Assembly Bill (AB) 32 (codified in the California Health and Safety Code [HSC], Division 25.5 – California Global Warming Solutions Act of 2006), which focuses on reducing GHG emissions in California to 1990 levels by 2020. HSC Division 25.5 defines GHGs as CO2, CH4, N2O, HFCs, PFCs, and SF6 and represents the first enforceable statewide program to limit emissions of these GHGs from all major industries with penalties for noncompliance. The law further requires that reduction measures be technologically feasible and cost effective. Under HSC Division 25.5, CARB has the primary responsibility for reducing GHG emissions. CARB is required to adopt rules and regulations directing state actions that would achieve GHG emissions reductions equivalent to 1990 statewide levels by 2020.

#### *vi) Senate Bill 32 and Assembly Bill 197*

In 2016, the California State Legislature adopted Senate Bill (SB) 32 and its companion bill AB 197, and both were signed by Governor Brown. SB 32 and AB 197 amends HSC Division 25.5 and establishes a new climate pollution reduction target of 40 percent below 1990 levels by 2030 and includes provisions to ensure the benefits of state climate policies reach into disadvantaged communities.

#### *vii) Climate Change Scoping Plan (2008)*

A specific requirement of AB 32 was to prepare a Climate Change Scoping Plan for achieving the maximum technologically feasible and cost-effective GHG emission reduction by 2020 (Health and Safety Code section 38561 (h)). CARB developed an AB 32 Scoping Plan that contains strategies to achieve the 2020 emissions cap. The initial Scoping Plan was approved in 2008 and contains a mix of recommended strategies that combined direct regulations, market-based approaches, voluntary measures, policies, and other emission reduction programs calculated to meet the 2020 statewide GHG emission limit and initiate the transformations needed to achieve the State's long-range climate objectives.

As required by HSC Division 25.5, CARB approved the 1990 GHG emissions inventory, thereby establishing the emissions limit for 2020. The 2020 emissions limit was originally set at 427 MMTCO2e using the GWP values from the IPCC SAR. CARB also projected the state's 2020 GHG emissions under no-action-taken

(NAT) conditions – that is, emissions that would occur without any plans, policies, or regulations to reduce GHG emissions. CARB originally used an average of the state's GHG emissions from 2002 through 2004 and projected the 2020 levels at approximately 596 MMTCO2e (using GWP values from the IPCC SAR). Therefore, under the original projections, the state must reduce its 2020 NAT emissions by 28.4 percent in order to meet the 1990 target of 427 MMTCO2e.

#### *viii) First Update to the Climate Change Scoping Plan (2014)*

The First Update to the Scoping Plan was approved by CARB in May 2014 and builds upon the initial Scoping Plan with new strategies and recommendations. In 2014, CARB revised the target using the GWP values from the IPCC AR4 and determined that the 1990 GHG emissions inventory and 2020 GHG emissions limit is 431 MMTCO2e. CARB also updated the State's 2020 NAT emissions estimate to account for the effect of the 2007–2009 economic recession, new estimates for future fuel and energy demand, and the reductions required by regulation that were recently adopted for motor vehicles and renewable energy. CARB's projected statewide 2020 emissions estimate using the GWP values from the IPCC AR4 was 509.4 MMTCO2e.

#### *ix) 2017 Climate Change Scoping Plan*

In response to the 2030 GHG reduction target, CARB adopted the 2017 Climate Change Scoping Plan at a public meeting held in December 2017. The 2017 Scoping Plan outlines the strategies the State will implement to achieve the 2030 GHG reduction target of 40 percent below 1990 levels. The 2017 Scoping Plan also addresses GHG emissions from natural and working lands of California, including the agriculture and forestry sectors. The 2017 Scoping Plan considered the Scoping Plan Scenario and four alternatives for achieving the required GHG reductions but ultimately selected the Scoping Plan Scenario.

CARB states that the Scoping Plan Scenario "is the best choice to achieve the State's climate and clean air goals." [12] Under the Scoping Plan Scenario, the majority of the reductions would result from the continuation of the Cap-and-Trade regulation. Additional reductions are achieved from electricity sector standards (i.e., utility providers to supply at least 50 percent renewable electricity by 2030), doubling the energy efficiency savings at end uses, additional reductions from the LCFS, implementing the short-lived GHG strategy (e.g., hydrofluorocarbons), and implementing the mobile source strategy and sustainable freight action plan. The alternatives were designed to consider various combinations of these programs, as well as consideration of a carbon tax in the event the Cap-and-Trade regulation is not continued. However, in July 2017, the California Legislature voted to extend the Cap-and-Trade regulation to 2030. Implementing this Scoping Plan will ensure that California's climate actions continue to promote innovation, drive the generation of new jobs, and achieve continued reductions of smog and air toxics.

[12] *California Air Resources Board, California's 2017 Climate Change Scoping Plan, November 2017, https://www.arb.ca.gov/cc/scopingplan/scoping_plan_2017.pdf.*

The ambitious approach draws on a decade of successful programs that address the major sources of climate-changing gases in every sector of the economy:

- More Clean Cars and Trucks: The plan sets out far-reaching programs to incentivize the sale of millions of zero-emission vehicles, drive the deployment of zero-emission trucks, and shift to a cleaner system of handling freight statewide.
- Increased Renewable Energy: California's electric utilities are ahead of schedule meeting the requirement that 33 percent of electricity come from renewable sources by 2020. The Scoping Plan guides utilities to 50 percent renewables, as required under SB 350.
- Slashing Super-Pollutants: The plan calls for a significant cut in super-pollutants such as methane and HFC refrigerants, which are responsible for as much as 40 percent of global warming.
- Cleaner Industry and Electricity: California's renewed cap-and-trade program extends the declining cap on emissions from utilities and industries and the carbon allowance auctions. The auctions will continue to fund investments in clean energy and efficiency, particularly in disadvantaged communities.
- Cleaner Fuels: The Low Carbon Fuel Standard will drive further development of cleaner, renewable transportation fuels to replace fossil fuels.
- Smart Community Planning: Local communities will continue developing plans which will further link transportation and housing policies to create sustainable communities.
- Improved Agriculture and Forests: The Scoping Plan also outlines innovative programs to account for and reduce emissions from agriculture, as well as forests and other natural lands.

The 2017 Scoping Plan also evaluates reductions of smog-causing pollutants through California's climate programs.

#### *x) 2022 Climate Change Scoping Plan*

CARB adopted the 2022 Scoping Plan for Achieving Carbon Neutrality on November 16, 2022. The 2022 Scoping Plan lays out the sector-by-sector roadmap for California, the world's fifth largest economy, to achieve carbon neutrality by 2045 or earlier, outlining a technologically feasible, cost-effective, and equity-focused path to achieve the state's climate target. The Plan addresses recent legislation and direction from Governor Newsom and extends and expands upon earlier plans with a target of reducing anthropogenic emissions to 85 percent below 1990 levels by 2045. The plan also takes the unprecedented step of adding carbon neutrality as a science-based guide and touchstone for California's climate work. Specifically, this plan:

- Identifies a path to keep California on track to meet its SB 32 GHG reduction target of at least 40 percent below 1990 emissions by 2030.
- Identifies a technologically feasible, cost-effective path to achieve carbon neutrality by 2045 and a reduction in anthropogenic emissions by 85 percent below 1990 levels.
- Focuses on strategies for reducing California's dependency on petroleum to provide consumers with clean energy options that address climate change, improve air quality, and support economic growth and clean sector jobs.
- Integrates equity and protecting California's most impacted communities as driving principles throughout the document.
- Incorporates the contribution of natural and working lands (NWL) to the state's GHG emissions, as well as their role in achieving carbon neutrality.
- Relies on the most up-to-date science, including the need to deploy all viable tools to address the existential threat that climate change presents, including carbon capture and sequestration, as well as direct air capture.
- Evaluates the substantial health and economic benefits of taking action.
- Identifies key implementation actions to ensure success.

#### *xi) Senate Bill 32, California Global Warming Solutions Act 2006*

The California Global Warming Solutions Act of 2006 designates the State Air Resources Board as the state agency charged with monitoring and regulating sources of emissions of greenhouse gases. The state board is required to approve a statewide greenhouse gas emissions limit equivalent to the statewide greenhouse gas emissions level in 1990 to be achieved by 2020 and to adopt rules and regulations in an open public process to achieve the maximum, technologically feasible, and cost-effective greenhouse gas emissions reductions. This bill would require the state board to ensure that statewide greenhouse gas emissions are reduced to 40% below the 1990 level by 2030.

This bill would become operative only if AB 197 of the 2015–16 Regular Session is enacted and becomes effective on or before January 1, 2017. AB 197 requires that the California Air Resources Board, which directs implementation of emission-reduction programs, should target direct reductions at both stationary and mobile sources. AB 197 of the 2015-2016 Regular Session was approved on September 8, 2016.

#### *xii) Executive Order S-1-07*

Executive Order S-1-07 was issued in 2007 and proclaims that the transportation sector is the main source of GHG emissions in the State, since it generates more than 40 percent of the State's GHG emissions. It establishes a goal to reduce the carbon intensity of transportation fuels sold in the State by at least ten percent by 2020. This Order also directs the CARB to determine whether this Low Carbon Fuel Standard (LCFS) could be adopted as a discrete early-action measure as part of the effort to meet the mandates in AB 32.

On April 23, 2009, the CARB approved the proposed regulation to implement the low carbon fuel standard. The low carbon fuel standard is anticipated to reduce GHG emissions by about 16 MMT per year by 2020. The low carbon fuel standard is designed to provide a framework that uses market mechanisms to spur the steady introduction of lower carbon fuels. The framework establishes performance standards that fuel producers and importers must meet each year beginning in 2011. Separate standards are established for gasoline and diesel fuels and the alternative fuels that can replace each. The standards are "back-loaded", with more reductions required in the last five years, than during the first five years. This schedule allows for the development of advanced fuels that are lower in carbon than today's fuels and the market penetration of plug-in hybrid electric vehicles, battery electric vehicles, fuel cell vehicles, and flexible fuel vehicles. It is anticipated that compliance with the low carbon fuel standard will be based on a combination of both lower carbon fuels and more efficient vehicles.

Reformulated gasoline mixed with corn-derived ethanol at ten percent by volume and low sulfur diesel fuel represent the baseline fuels. Lower carbon fuels may be ethanol, biodiesel, renewable diesel, or blends of these fuels with gasoline or diesel as appropriate. Compressed natural gas and liquefied natural gas also may be low carbon fuels. Hydrogen and electricity, when used in fuel cells or electric vehicles are also considered as low carbon fuels for the low carbon fuel standard.

#### *xiii) Senate Bill 97*

Senate Bill 97 (SB 97) was adopted August 2007 and acknowledges that climate change is a prominent environmental issue that requires analysis under CEQA. SB 97 directed the Governor's Office of Planning and Research (OPR), which is part of the State Natural Resources Agency, to prepare, develop, and transmit to the CARB guidelines for the feasible mitigation of GHG emissions or the effects of GHG emissions, as required by CEQA, by July 1, 2009. The Natural Resources Agency was required to certify and adopt those guidelines by January 1, 2010.

Pursuant to the requirements of SB 97 as stated above, on December 30, 2009, the Natural Resources Agency adopted amendments to the state CEQA guidelines that address GHG emissions. The CEQA Guidelines Amendments changed 14 sections of the CEQA Guidelines and incorporate GHG language throughout the Guidelines. However, no GHG emissions thresholds of significance were provided, and no

specific mitigation measures were identified. The GHG emission reduction amendments went into effect on March 18, 2010, and are summarized below:

- Climate action plans and other greenhouse gas reduction plans can be used to determine whether a project has significant impacts, based upon its compliance with the plan.
- Local governments are encouraged to quantify the greenhouse gas emissions of proposed projects, noting that they have the freedom to select the models and methodologies that best meet their needs and circumstances. The section also recommends consideration of several qualitative factors that may be used in the determination of significance, such as the extent to which the given project complies with state, regional, or local GHG reduction plans and policies. OPR does not set or dictate specific thresholds of significance. Consistent with existing CEQA Guidelines, OPR encourages local governments to develop and publish their own thresholds of significance for GHG impacts assessment.
- When creating their own thresholds of significance, local governments may consider the thresholds of significance adopted or recommended by other public agencies or recommended by experts.
- New amendments include guidelines for determining methods to mitigate the effects of greenhouse gas emissions in Appendix F of the CEQA Guidelines.
- OPR is clear to state that "to qualify as mitigation, specific measures from an existing plan must be identified and incorporated into the project; general compliance with a plan, by itself, is not mitigation".
- OPR's emphasizes the advantages of analyzing GHG impacts on an institutional, programmatic level. OPR therefore approves tiering of environmental analyses and highlights some benefits of such an approach.
- Environmental impact reports (EIRs) must specifically consider a project's energy use and energy efficiency potential.

#### *xiv) Senate Bill 100*

Senate Bill 100 (SB 100) requires 100 percent of total retail sales of electricity in California to come from eligible renewable energy resources and zero-carbon resources by December 31, 2045. SB 100 was adopted September 2018.

The interim thresholds from prior Senate Bills and Executive Orders would also remain in effect. These include Senate Bill 1078 (SB 1078), which requires retail sellers of electricity, including investor-owned utilities and community choice aggregators, to provide at least 20 percent of their supply from renewable sources by 2017. Senate Bill 107 (SB 107) which changed the target date to 2010. Executive Order S-14-08, which was signed on November 2008 and expanded the State's Renewable Energy Standard to 33 percent renewable energy by 2020. Executive Order S-21-09 directed the CARB to adopt regulations by

July 31, 2010, to enforce S-14-08. Senate Bill X1-2 codifies the 33 percent renewable energy requirement by 2020.

#### *xv) Senate Bill 375*

Senate Bill 375 (SB 375) was adopted September 2008 and aligns regional transportation planning efforts, regional GHG emission reduction targets, and land use and housing allocation. SB 375 requires Metropolitan Planning Organizations (MPO) to adopt a sustainable communities strategy (SCS) or alternate planning strategy (APS) that will prescribe land use allocation in that MPOs Regional Transportation Plan (RTP). The CARB, in consultation with each MPO, will provide each affected region with reduction targets for GHGs emitted by passenger cars and light trucks in the region for the years 2020 and 2035. These reduction targets will be updated every eight years but can be updated every four years if advancements in emissions technologies affect the reduction strategies to achieve the targets. The CARB is also charged with reviewing each MPO's sustainable communities strategy or alternate planning strategy for consistency with its assigned targets.

The proposed project is located within the Southern California Association of Governments (SCAG) jurisdiction, which has authority to develop the SCS or APS. For the SCAG region, the targets set by the CARB are at eight percent below 2005 per capita GHG emissions levels by 2020 and 19 percent below 2005 per capita GHG emissions levels by 2035. These reduction targets became effective October 2018.

#### *xvi) Senate Bill X7-7*

Senate Bill X7-7 (SB X7-7), enacted on November 9, 2009, mandates water conservation targets and efficiency improvements for urban and agricultural water suppliers. SB X7-7 requires the Department of Water Resources (DWR) to develop a task force and technical panel to develop alternative best management practices for the water sector. In addition, SB X7-7 required the DWR to develop criteria for baseline uses for residential, commercial, and industrial uses for both indoor and landscaped area uses. The DWR was also required to develop targets and regulations that achieve a statewide 20 percent reduction in water usage.

#### *xvii) Assembly Bill 939 and Senate Bill 1374*

Assembly Bill 939 (AB 939) requires that each jurisdiction in California to divert at least 50 percent of its waste away from landfills, whether through waste reduction, recycling, or other means. Senate Bill 1374 (SB 1374) requires the California Integrated Waste Management Board to adopt a model ordinance by March 1, 2004, suitable for adoption by any local agency to require 50 to 75 percent diversion of construction and demolition of waste materials from landfills.

### *xviii) California Code of Regulations (CCR) Title 24, Part 6*

CCR Title 24, Part 6: California's Energy Efficiency Standards for Residential and Nonresidential Buildings (Title 24) were first established in 1978 in response to a legislative mandate to reduce California's energy consumption. The standards are updated periodically to allow consideration and possible incorporation of new energy efficiency technologies and methods. Although it was not originally intended to reduce GHG emissions, electricity production by fossil fuels results in GHG emissions and energy efficient buildings require less electricity. Therefore, increased energy efficiency results in decreased GHG emissions.

2019 standards were published July 1, 2019 and became effective January 1, 2020. The current version of CalEEMod defaults to the 2019 Standards.

Per Section 100 Scope, the 2019 Title 24, Part 6 Building Code now requires healthcare facilities, such as assisted living facilities, hospitals, and nursing homes, to meet documentation requirements of Title 24, Part 1 Chapter 7 – Safety Standards for Health Facilities. A healthcare facility is defined as any building or portion thereof licensed pursuant to California Health and Safety Code Division 2, Chapter 1, Section 1204 or Chapter 2, Section 1250. Section 120.1 Ventilation and Indoor Air Quality included both additions and revisions in the 2019 Code. This section now requires nonresidential and hotel/motel buildings to have air filtration systems that use forced air ducts to supply air to occupiable spaces to have air filters. Further, the air filter efficiency must be either MERV 13 or use a particle size efficiency rating specific in the Energy Code AND be equipped with air filters with a minimum 2-inch depth or minimum 1-inch depth if sized according to the equation 120.1-A. If natural ventilation is to be used the space must also use mechanical unless ventilation openings are either permanently open or controlled to stay open during occupied times. The 2019 version of the Code also completely revised the minimum ventilation requirements including DVC airflow rates within Section 120.1 Table 120.1–A. Table 120.1-A now includes air classification and recirculation limitations, these are based on either the number of occupants or the CFM/$ft^2$ (cubic feet per minute per square foot), whichever is greater.

Section 120.1 Ventilation and Indoor Air Quality also included additions for high-rise residential buildings. Requirements include that mechanical systems must provide air filters that and that air filters must be MERV 13 or use a particle size efficiency rating specified in the Energy Code. Window operation is no longer a method allowed to meet ventilation requirements, continuous operation of central forced air system handlers used in central fan integrated ventilation system is not a permissible method of providing the dwelling unit ventilation airflow, and central ventilation systems that serve multiple dwelling units must be balanced to provide ventilation airflow to each dwelling unit. In addition, requirements for kitchen range hoods were also provided in the updated Section 120.1.

Per Section 120.1(a) healthcare facilities must be ventilated in accordance with Chapter 4 of the California Mechanical Code and are NOT required to meet the ventilations requirements of Title 24, Part 6. Section

140.4 Space Conditioning Systems included both additions and revisions within the 2019 Code. The changes provided new requirements for cooling tower efficiency, new chilled water-cooling system requirements, as well as new formulas for calculating allowed fan power. Section 140.4(n) also provide a new exception for mechanical system shut offs for high-rise multifamily dwelling units, while Section 140.4(o) added new requirements for conditioned supply air being delivered to space with mechanical exhaust.

Section 120.6 Covered Processes added information in regards to adiabatic chiller requirements that included that all condenser fans for air-cooled converseness, evaporative-cooled condensers, adiabatic condensers, gas coolers, air or water fluid coolers or cooling towers must be continuously variable speed, with the speed of all fans serving a common condenser high side controlled in unison .Further, the mid-condensing setpoint must be 70 degrees Fahrenheit for all of the above mentioned systems.

New regulations were also adopted under Section 130.1 Indoor Lighting Controls. These included new exceptions being added for restrooms, the exception for classrooms being removed, as well as exceptions regarding sunlight provided through skylights and overhangs.

Section 130.2 Outdoor Lighting Controls and Equipment added automatic scheduling controls which included that outdoor lighting power must be reduced by 50 to 90 percent, turn the lighting off during unoccupied times and have at least two scheduling options for each luminaire independent from each other and with a 2-hour override function. Furthermore, motion sensing controls must have the ability to reduce power within 15 minutes of area being vacant and be able to come back on again when occupied. An exception allows for lighting subject to a health or life safety statute, ordinance, or regulation may have a minimum time-out period longer than 15 minutes or a minimum dimming level above 50% when necessary to comply with the applicable law.

The 2022 Building Energy Efficiency Standards became effective on January 1, 2023.[13] The core focus of the building standards has been efficiency, but the 2019 Energy Code ventured into onsite generation by requiring solar PV on new homes, providing significant GHG savings. The 2022 update builds off this progress with expanded solar standards and the move to onsite energy storage that will help Californians save on utility bills while bolstering the grid. The 2022 Energy Code update focuses on four key areas in new construction of homes and businesses:

- Encouraging electric heat pump technology and use, which consumes less energy and produces fewer emissions than traditional HVACs and water heaters.

[13] *California Energy Commission (CEC). 2022. Building Energy Efficiency Standards. https://www.energy.ca.gov/programs-and-topics/programs/building-energy-efficiency-standards/2022-building-energy-efficiency.*

- Establishing electric-ready requirements when natural gas is installed, which positions owners to use cleaner electric heating, cooking and electric vehicle (EV) charging options whenever they choose to adopt those technologies.
- Expanding solar photovoltaic (PV) system and battery storage standards to make clean energy available onsite and complement the state's progress toward a 100 percent clean electricity grid.
- Strengthening ventilation standards to improve indoor air quality.

The 2022 Energy Code affects homes by establishing energy budgets based on efficient heat pumps for space or water heating to encourage builders to install heat pumps over gas-fueled HVAC units; requiring homes to be electric-ready, with dedicated 240-volt outlets and space (with plumbing for water heaters) so electric appliances can eventually replace installed gas appliances; increasing minimum kitchen ventilation requirements so that fans over cooktops have higher airflow or capture efficiency to better exhaust pollution from gas cooking and improve indoor air quality; and allowing exceptions to existing solar PV standards when roof area is not available (such as for smaller homes). In addition, the effect on businesses includes establishing combined solar PV and battery standards for select businesses with systems being sized to maximize onsite use of solar energy and avoid electricity demand during times when the grid must use gas-powered plants; establishing new efficiency standards for commercial greenhouses (primarily cannabis growing); and improving efficiency standards for building envelope, various internal systems, and grid integration equipment, such as demand-responsive controls to buoy grid stability.[14,15]

#### *xix) California Code of Regulations (CCR) Title 24, Part 11 (California Green Building Standards)*

##### 1) 2019

2019 CALGreen Code: During the 2019-2020 fiscal year, the Department of Housing and Community Development (HCD) updated the California Green Building Standards Code (CALGreen) through the 2019 Triennial Code Adoption Cycle.

HCD modified the best management practices for stormwater pollution prevention adding Section 5.106.2 for projects that disturb one or more acres of land. This section requires projects that disturb one acre or more of land or less than one acre of land but are part of a larger common plan of development or sale must comply with the postconstruction requirement detailed in the applicable National Pollutant Discharge Elimination System (NPDES) General Permit for Stormwater Discharges Associated with

[14] *California Energy Commission. https://www.lightnowblog.com/2021/08/california-energy-commission-adopts-2022-building-energy-efficiency-standards/*

[15] *State of California Energy Commission. 2022 Building Energy Efficiency Standards Summary. https://www.energy.ca.gov/sites/default/files/2021-08/CEC_2022_EnergyCodeUpdateSummary_ADA.pdf.*

Construction and Land Disturbance Activities issued by the State Water Resources Control Board. The NPDES permits require postconstruction runoff (post-project hydrology) to match the preconstruction runoff pre-project hydrology) with installation of postconstruction stormwater management measures.

HCD added sections 5.106.4.1.3 and 5.106.4.1.5 regarding bicycle parking. Section 5.106.4.1.3 requires new buildings with tenant spaces that have 10 or more tenant-occupants, provide secure bicycle parking for 5 percent of the tenant-occupant vehicular parking spaces with a minimum of one bicycle parking facility. In addition, Section 5.106.4.1.5 states that acceptable bicycle parking facility for Sections 5.106.4.1.2 through 5.106.4.1.4 shall be convenient from the street and shall meeting one of the following: (1) covered, lockable enclosures with permanently anchored racks for bicycles; (2) lockable bicycle rooms with permanently anchored racks; or (3) lockable, permanently anchored bicycle lockers.

HCD amended section 5.106.5.3.5 allowing future charging spaces to qualify as designated parking for clean air vehicles.

HCD updated section 5.303.3.3 regarding showerhead flow rates. This update reduced the flow rate to 1.8 GPM.

HCD amended section 5.304.1 for outdoor potable water use in landscape areas and repealed sections 5.304.2 and 5.304.3. The update requires nonresidential developments to comply with a local water efficient landscape ordinance or the current California Department of Water Resource's' Model Water Efficient Landscape Ordinance (MWELO), whichever is more stringent. Some updates were also made regarding the outdoor potable water use in landscape areas for public schools and community colleges.

HCD updated Section 5.504.5.3 regarding the use of MERV filters in mechanically ventilated buildings. This update changed the filter use from MERV 8 to MERV 13. MERV 13 filters are to be installed prior to occupancy, and recommendations for maintenance with filters of the same value shall be included in the operation and maintenance manual.

#### 2) 2022

The 2022 California Green Building Standards Code became effective on January 1, 2023.[16] The 2022 CALGreen Standards build upon the 2019 CALGreen Standards and have added the following:

HCD amended Section 5.106.5.3 in regard to increasing the EV capable space percentages and adding a new requirement for installed Level 2 DCFC chargers.

[16] *California Building Standards Commission. 2022. California Green Building Standards. https://codes.iccsafe.org/content/CAGBC2022P1.*

HCD under Section 5.106.5.4 added new regulation for electric vehicle charging readiness requirements for new construction of warehouse, grocery stores, and retail stores with planned off-street loading spaces.[17]

#### *xx) Executive Order B-30-15*

On April 29, 2015, Governor Brown issued Executive Order B-30-15. Therein, the Governor directed the following:

- Established a new interim statewide reduction target to reduce GHG emissions to 40 percent below 1990 levels by 2030.
- Ordered all state agencies with jurisdiction over sources of GHG emissions to implement measures to achieve reductions of GHG emissions to meet the 2030 and 2050 reduction targets.
- Directed CARB to update the Climate Change Scoping Plan to express the 2030 target in terms of million metric tons of carbon dioxide equivalent.

#### *xxi) Executive Order B-29-15*

Executive Order B-29-15 mandates a statewide 25 percent reduction in potable water usage. EO B-29-15 signed into law on April 1, 2015.

#### *xxii) Executive Order B-37-16*

Executive Order B-37-16, continuing the State's adopted water reductions, was signed into law on May 9, 2016. The water reductions build off the mandatory 25 percent reduction called for in EO B-29-15.

#### *xxiii) Senate Bill X1 2*

Signed into law in April 2011, Senate Bill (SB)X1 2, requires one-third of the State's electricity to come from renewable sources. The legislation increases California's current 20 percent renewables portfolio standard target in 2010 to a 33 percent renewables portfolio standard by December 31, 2020.

#### *xxiv) Senate Bill 350*

Signed into law October 7, 2015, SB 350 increases California's renewable electricity procurement goal from 33 percent by 2020 to 50 percent by 2030. This will increase the use of Renewables Portfolio Standard (RPS) eligible resources, including solar, wind, biomass, geothermal, and others. In addition, SB 350 requires the state to double statewide energy efficiency savings in electricity and natural gas end uses by 2030. To help ensure these goals are met and the greenhouse gas emission reductions are realized, large utilities will be required to develop and submit Integrated Resource Plans (IRPs). These IRPs will

[17] *California, Building Standards Commission. https://www.dgs.ca.gov/BSC/Resources/2022-Title-24-California-Code-Changes.*

detail how each entity will meet their customers resource needs, reduce greenhouse gas emissions, and ramp up the deployment of clean energy resources.

#### *xxv) Executive Order N-79-20*

Executive Order N-79-20 was signed into law on September 23, 2020 and mandates 100 percent of in-state sales of new passenger cars and trucks be zero-emission by 2035; 100 percent of medium- and heavy-duty vehicles in the state be zero-emission vehicles by 2045 for all operations where feasible and by 2035 for drayage trucks; and to transition to 100 percent zero-emission off-road vehicles and equipment by 2035 where feasible.

#### *xxvi) Energy Sector and CEQA Guidelines Appendix F*

The CEC first adopted Energy Efficiency Standards for Residential and Nonresidential Buildings (CCR, Title 24, Part 6) in 1978 in response to a legislative mandate to reduce energy consumption in the state. Although not originally intended to reduce GHG emissions, increased energy efficiency and reduced consumption of electricity, natural gas, and other fuels would result in fewer GHG emissions from residential and nonresidential buildings subject to the standard. The standards are updated periodically (typically every three years) to allow for the consideration and inclusion of new energy efficiency technologies and methods. The 2019 update to the Energy Efficiency Standards for Residential and Nonresidential Buildings focuses on several key areas to improve the energy efficiency of renovations and addition to existing buildings as well as newly constructed buildings and renovations and additions to existing buildings. The major efficiency improvements to the residential Standards involve improvements for attics, walls, water heating, and lighting, whereas the major efficiency improvements to the nonresidential Standards include alignment with the American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) 90.1-2013 national standards. Furthermore, the 2019 update requires that enforcement agencies determine compliance with CCR, Title 24, Part 6 before issuing building permits for any construction.[18]

Part 11 of the Title 24 Building Energy Efficiency Standards is referred to as the California Green Building Standards (CALGreen) Code. The purpose of the CALGreen Code is to "improve public health, safety and general welfare by enhancing the design and construction of buildings through the use of building concepts having a reduced negative impact or positive environmental impact and encouraging sustainable construction practices in the following categories: (1) Planning and design; (2) Energy efficiency; (3) Water efficiency and conservation; (4) Material conservation and resource efficiency; and (5) Environmental air quality."19 As of January 1, 2011, the CALGreen Code is mandatory for all new buildings constructed in the state. The CALGreen Code establishes mandatory measures for new residential and non-residential

[18] *California Energy Commission, 2016 Building Energy Efficiency Standards, June 2015, http://www.energy.ca.gov/2015publications/CEC-400-2015-037/CEC-400-2015-037-CMF.pdf*

[19] *California Building Standards Commission, 2010 California Green Building Standards Code, (2010).*

buildings. Such mandatory measures include energy efficiency, water conservation, material conservation, planning and design, and overall environmental quality. The CALGreen Code was most recently updated in 2022 to include new mandatory measures for residential and nonresidential uses; the new measures took effect on January 1, 2023.

### D. Regional – South Coast Air Quality Management District

The project is within the South Coast Air Basin, which is under the jurisdiction of the South Coast Air Quality Management District (SCAQMD).

#### *i) SCAQMD Regulation XXVII, Climate Change*

SCAQMD Regulation XXVII currently includes three rules:

- The purpose of Rule 2700 is to define terms and post global warming potentials.
- The purpose of Rule 2701, SoCal Climate Solutions Exchange, is to establish a voluntary program to encourage, quantify, and certify voluntary, high quality certified greenhouse gas emission reductions in the SCAQMD.
- Rule 2702, Greenhouse Gas Reduction Program, was adopted on February 6, 2009. The purpose of this rule is to create a Greenhouse Gas Reduction Program for greenhouse gas emission reductions in the SCAQMD. The SCAQMD will fund projects through contracts in response to requests for proposals or purchase reductions from other parties.

A variety of agencies have developed greenhouse gas emission thresholds and/or have made recommendations for how to identify a threshold. However, the thresholds for projects in the jurisdiction of the SCAQMD remain in flux. The California Air Pollution Control Officers Association explored a variety of threshold approaches but did not recommend one approach (2008). The ARB recommended approaches for setting interim significance thresholds (California Air Resources Board 2008b), in which a draft industrial project threshold suggests that non-transportation related emissions under 7,000 MTCO2e per year would be less than significant; however, the ARB has not approved those thresholds and has not published anything since then. The SCAQMD is in the process of developing thresholds, as discussed below.

#### *ii) SCAQMD Threshold Development*

On December 5, 2008, the SCAQMD Governing Board adopted an interim greenhouse gas significance threshold for stationary sources, rules, and plans where the SCAQMD is lead agency (SCAQMD permit threshold). The SCAQMD permit threshold consists of five tiers. However, the SCAQMD is not the lead agency for this project. Therefore, the five permit threshold tiers do not apply to the proposed project.

The SCAQMD is in the process of preparing recommended significance thresholds for greenhouse gases for local lead agency consideration ("SCAQMD draft local agency threshold"); however, the SCAQMD Board has not approved the thresholds as of the date of the Notice of Preparation. The current draft thresholds consist of the following tiered approach:

- Tier 1 consists of evaluating whether or not the project qualifies for any applicable exemption under CEQA.
- Tier 2 consists of determining whether the project is consistent with a greenhouse gas reduction plan. If a project is consistent with a qualifying local greenhouse gas reduction plan, it does not have significant greenhouse gas emissions.
- Tier 3 consists of screening values, which the lead agency can choose, but must be consistent with all projects within its jurisdiction. A project's construction emissions are averaged over 30 years and are added to a project's operational emissions. If a project's emissions are under one of the following screening thresholds, then the project is less than significant:
  - All land use types: 3,000 MTCO2e per year
  - Based on land use type: residential: 3,500 MTCO2e per year; commercial: 1,400 MTCO2e per year; or mixed use: 3,000 MTCO2e per year.
  - Based on land type: Industrial (where SCAQMD is the lead agency), 10,000 MTCO2e per year.
- Tier 4 has the following options:
  - Option 1: Reduce emissions from business as usual (BAU) by a certain percentage; this percentage is currently undefined.
  - Option 2: Early implementation of applicable AB 32 Scoping Plan measures.
  - Option 3, 2020 target for service populations (SP), which includes residents and employees: 4.8 MTCO2e/SP/year for projects and 6.6 MTCO2e/SP/year for plans;
  - Option 3, 2035 target: 3.0 MTCO2e/SP/year for projects and 4.1 MTCO2e/SP/year for plans.
- Tier 5 involves mitigation offsets to achieve target significance threshold.

The SCAQMD's draft threshold uses the Executive Order S-3-05 goal as the basis for the Tier 3 screening level. Achieving the Executive Order's objective would contribute to worldwide efforts to cap carbon dioxide concentrations at 450 ppm, thus stabilizing global climate. Specifically, the Tier 3 screening level for stationary sources is based on an emission capture rate of 90 percent for all new or modified projects. A 90 percent emission capture rate means that 90 percent of total emissions from all new or modified stationary source projects would be subject to a CEQA analysis, including a negative declaration, a mitigated negative declaration, or an environmental impact report, which includes analyzing feasible alternatives and imposing feasible mitigation measures. A GHG significance threshold based on a 90 percent emission capture rate may be more appropriate to address the long-term adverse impacts associated with global climate change because most projects will be required to implement GHG reduction measures. Further, a 90 percent emission capture rate sets the emission threshold low enough

to capture a substantial fraction of future stationary source projects that will be constructed to accommodate future statewide population and economic growth, while setting the emission threshold high enough to exclude small projects that will in aggregate contribute a relatively small fraction of the cumulative statewide GHG emissions. This assertion is because staff estimates that these GHG emissions would account for slightly less than one percent of future 2050 statewide GHG emissions target (85 MMTCO2eq/year). In addition, these small projects may be subject to future applicable GHG control regulations that would further reduce their overall future contribution to the statewide GHG inventory. Finally, these small sources are already subject to BACT for criteria pollutants and are more likely to be single-permit facilities, so they are more likely to have few opportunities readily available to reduce GHG emissions from other parts of their facility.

### E. Local – City of Los Angeles

#### *i) City of Los Angeles LA Green Plan*

The City of Los Angeles adopted the Green LA: An Action Plan to Lead the Nation in Fighting Global Warming (LA Green Action Plan) in May 2007. This document outlines the goals and actions the City has established to reduce the generation and emission of GHGs from both public and private activities. According to the LA Green Action Plan, the City of Los Angeles is committed to the goal of reducing emissions of CO2 to 35 percent below 1990 levels by 2030. To achieve this, the City will increase the generation of renewable energy, improve energy conservation and efficiency, and change transportation and land use patterns to reduce dependence on automobiles. Some of the City's goals include:

- Recycling 62% of solid waste, a figure that exceeds California's strict recycling goals and represents the highest diversion rate among the nation's top five big cities;
- Investing in renewable energy to generate 20% of total power from clean sources by 2010 and reduce municipal CO2 output by 17.5% below 1990 levels;
- Holding water use steady through aggressive conservation despite overall population growth of 15% since 1990;
- Reducing the number of smoggy days from more than 200 in 1978, to 30 in 2005;
- Mandating green building standards for all new public buildings and providing incentives for private green development; and
- Investing in a fleet of alternative fuel vehicles that includes nearly half of the city's refuse collection trucks and street sweepers, all 188 DASH buses, and nearly 1,000 hybrid passenger cars that saved over 10 million gallons of fuel in 2006.

As part of the LA Green Action Plan, the Los Angeles Green Building Ordinance was passed in April 2008 that promotes green building practices by creating a series of requirements and incentives for developers to meet the U.S. Building Council's Energy and Design (LEED) standards. The requirements apply to all new projects greater than 50 units or 50,000 square feet.

### *ii) City of Los Angeles Sustainable City pLAn and Green New Deal*

The Sustainable City pLAn is a comprehensive and actionable directive from the Mayor to improve the environmental, economic, and equitable conditions in the city of Los Angeles.[20] The pLAn is a tool that the Mayor will use to manage the City and establish visions, goals, and metrics for City departments. The Sustainable City pLAn sets targets to reduce GHG emissions below the 1990 baseline by 45 percent by 2025, 60 percent by 2035, and 80 percent by 2050, and establishes the following visions for City departments for the following categories:

- Environment: Local Water (lead the nation in water conservation and source the majority of water locally); Local Solar (increase Los Angeles's clean and resilient energy supplies by capturing energy from abundant sunshine); Energy Efficient Buildings (save money and energy by increasing the efficiency of buildings); Carbon and Climate Leadership (as a proactive leader on climate issues, strengthen Los Angeles's economy by dramatically reducing GHG emissions and rallying other cities to follow Los Angeles's lead); and Waste and Landfills (become the first big city in the United States to achieve zero-waste, and recycle and reuse most of its waste locally).

- Economy: Housing and Development (address Los Angeles's housing shortage, ensure that most new units are accessible to high-quality transit, and close the gap between income and rents); Mobility and Transit (invest in rail, bus lines, pedestrian/bike safety, and complete neighborhoods that provide more mobility options and reduce vehicle miles traveled); Prosperity and Green Jobs (strengthen and grow the economy including through increased jobs and investments in clean technology sectors); and Preparedness and Resiliency (prepare for natural disasters and decrease vulnerability to climate change).

- Equity: Air Quality (healthy air to breathe); Environmental Justice (ensure the benefits of the pLAn extend to all Angelenos); Urban Ecosystem (have access to parks, open space, including a revitalized Los Angeles River Watershed); and Livable Neighborhoods (live in safe, vibrant, well-connected, and healthy neighborhoods).

[20] *City of Los Angeles, Mayor's Office of Sustainability, Sustainable City pLAn, 2015, http://plan.lamayor.org/wpcontent/uploads/2017/03/the-plan.pdf.*

In 2019, the Mayor launched an update to the Sustainable City pLAn the Los Angeles Green New Deal Sustainable City pLAn 2019. The 2019 Green New Deal is to tackle the climate emergency with accelerated targets, strengthen the economy, and set L.A. on course to be carbon neutral by 2050. By 2050, the milestones of the Green New Deal are expected to save more than 1,600 lives, 660 trips to the hospital, and $16 billion in avoided healthcare expenses each year.

The leads accelerated goals and targets in the Green New Deal include:

- Building a zero-carbon electricity grid — reaching an accelerated goal of 80% renewable energy supply by 2036 as we lead California toward 100% renewables by 2045.
- Creating a Jobs Cabinet to bring city, labor, educational, and business leaders together to support our effort to create 300,000 green jobs by 2035 and 400,000 by 2050.
- Mandating that all new municipally owned buildings and major renovations be all-electric, effective immediately, and that every building in Los Angeles — from skyscrapers to single family homes — become emissions free by 2050.
- Achieving a zero-waste future by phasing out styrofoam by 2021, ending the use of plastic straws and single-use takeout containers by 2028, and no longer sending any trash to landfills by 2050.
- Recycling 100% of our wastewater by 2035; sourcing 70% of our water locally — a significant increase from our existing pathway; and nearly tripling the maximum amount of stormwater captured.
- Planting and maintaining at least 90,000 trees — which will provide 61 million square feet of shade — citywide by 2021 and increasing tree canopy in low-income, severely heat impacted areas by at least 50% by 2028.

#### *iii) City of Los Angeles Green Building Code*

In 2011, 2014, 2017, 2020 and 2022 Chapter IX of the Los Angeles Municipal Code (LAMC), referred to as the L.A. Green Building Code, was amended to incorporate various provisions of the CALGreen Code. The City's Green Building Code includes mandatory requirements and elective measures for three categories of buildings: (1) low-rise residential buildings; (2) non-residential and high-rise residential buildings; and (3) additions and alterations to residential and non-residential buildings.

#### *iv) Transportation Impact Study Guidelines*

The City of Los Angeles Department of Transportation (LADOT) has developed the Transportation Impact Study Guidelines (TISG) (December 2016) to provide the public, private consultants, and City staff with standards, guidelines, objectives, and criteria to be used in the preparation of a traffic impact study. The TISG emphasize sustainability, smart growth, transportation demand management strategies, multi-modal strategies, and reduction of GHG emissions in addition to traditional traffic flow considerations when evaluating and minimizing impacts to the City's transportation system because of land use policy decisions. The TISG establish the reduction of vehicle trips and vehicle miles traveled (VMT) as a policy goal and thus is an implementing mechanism of the City's strategy to reduce land use transportation related GHG emissions consistent with HSC Division 25.5 and SB 375.

On July 30, 2019, the City of Los Angeles adopted VMT as a criterion in determining transportation impacts under the State's California Environmental Quality Act (CEQA). This adoption was required by Senate Bill (SB) 743 and the recent changes to Section 15064.3 of the CEQA Guidelines. While the State has replaced delay-based LOS with VMT impact criteria for purposes of CEQA, LADOT remains committed to evaluating the performance of the streets through the development review process. In their review, LADOT rely on comprehensive performance metrics that align with the City's Mobility Plan 2035 to ensure that important safety and accessibility needs are met including critical vehicle queuing, in addition to the environmental goals captured in the new emphasis on VMT. LADOT has reconstituted the new guidance in the newly released Transportation Assessment Guidelines (TAG), which aims to provide clarity on methodologies, and distinction between impact categories that are required by CEQA from analyses to address access, circulation, and safety concerns.

## 3. SIGNIFICANCE THRESHOLDS

### A. Appendix G of State CEQA Guidelines

The CEQA Guidelines recommend that a lead agency consider the following when assessing the significance of impacts from GHG emissions on the environment:

- The extent to which the project may increase (or reduce) GHG emissions as compared to the existing environmental setting;
- Whether the project emissions exceed a threshold of significance that the lead agency determines applies to the project;

- The extent to which the project complies with regulations or requirements adopted to implement an adopted statewide, regional, or local plan for the reduction or mitigation of GHG emissions[21].

### B. Thresholds of Significance for this Project

CEQA Guidelines Section 15064.4 recommends that lead agencies quantify GHG emissions of projects and consider several other factors that may be used in the determination of significance of GHG emissions from a project: the extent to which the project may increase or reduce GHG emissions; whether the project exceeds an applicable significance threshold; and the extent to which the project complies with regulations or requirements adopted to implement a reduction or mitigation of GHGs.

Section 15064.4 does not establish a threshold of significance. Lead agencies have the discretion to establish significance thresholds for their respective jurisdictions, and in establishing those thresholds, a lead agency may appropriately look to thresholds developed by other public agencies, or suggested by other experts, such as the California Air Pollution Control Officers Association (CAPCOA), as long as any threshold chosen is supported by substantial evidence (see CEQA Guidelines Section 15064.7(c)). The CEQA Guidelines also clarify that the effects of GHG emissions are cumulative, and should be analyzed in the context of CEQA's requirements for cumulative impact analysis (see CEQA Guidelines Section 15130(f)).[22] It is noted that the CEQA Guidelines were amended in response to SB 97. In particular, the CEQA Guidelines were amended to specify that compliance with a GHG emissions reduction plan renders a cumulative impact less than significant.

Per CEQA Guidelines Section 15064(h)(3), a project's incremental contribution to a cumulative impact can be found not cumulatively considerable if the project would comply with an approved plan or mitigation program that provides specific requirements that would avoid or substantially lessen the cumulative problem within the geographic area of the project.[23] To qualify, such plans or programs must be specified in law or adopted by the public agency with jurisdiction over the affected resources through a public review process to implement, interpret, or make specific the law enforced or administered by the public agency.[24] Examples of such programs include a "water quality control plan, air quality attainment or maintenance plan, integrated waste management plan, habitat conservation plan, natural community conservation plans [and] plans or regulations for the reduction of greenhouse gas emissions."[25] Put another way, CEQA Guidelines Section 15064(h)(3) allows a lead agency to make a finding of less than

[21] *The Governor's Office of Planning and Research recommendations include a requirement that such a plan must be adopted through a public review process and include specific requirements that reduce or mitigate the project's incremental contribution of GHG emissions. If there is substantial evidence that the possible effects of a particular project are still cumulatively considerable, notwithstanding compliance with the adopted regulations or requirements, an EIR must be prepared for the project.*

[22] *See, generally, CEQA Guidelines Section 15130(f); see also Letter from Cynthia Bryant, Director of the Office of Planning and Research to Mike Chrisman, Secretary for Natural Resources, dated April 13, 2009.*

[23] *14 CCR §15064(h)(3).*

[24] *14 CCR §15064(h)(3).*

[25] *14 CCR §15064(h)(3).*

significant for GHG emissions if a project complies with adopted programs, plans, policies, and/or other regulatory schemes to reduce GHG emissions.[26]

In the absence of any applicable adopted numeric threshold, the significance of the project's GHG emissions is evaluated consistent with CEQA Guidelines Section 15064.4(b) by considering whether the project is consistent with applicable regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of greenhouse gas emissions. For this project, as a land use development project, the most directly applicable adopted regulatory plan to reduce GHG emissions is the 2020-2045 RTP/SCS,[27] which is designed to achieve regional GHG reductions from the land use and transportation sectors as required by SB 375 and the State's long-term climate goals. This analysis also considers consistency with regulations or requirements adopted by the CARB *Climate Change Scoping Plan* and subsequent updates, and the LA Sustainable City pLAn/ Green New Deal.

**SCAQMD Thresholds**

As discussed above, SCAQMD only has an interim GHG significance threshold of 10,000 $MTCO_2e$ per year for stationary source/industrial projects where SCAQMD is the lead agency. This SCAQMD interim GHG significance threshold is not applicable to the project as the project is a mixed use residential/commercial project and the City of Los Angeles is the Lead Agency.

**City of Los Angeles Thresholds**

For the reasons set forth above, to answer both of the above Appendix G thresholds, the City will consider whether the project is consistent with AB 32 and SB 375 (through demonstration of conformance with the 2020-2045 RTP/SCS), and the LA Sustainable City pLAn/ Green New Deal. As discussed above, OPR has noted that lead agencies "should make a good-faith effort to calculate or estimate GHG emissions from a project.[28] GHG emissions are quantified below, consistent with OPR guidelines.

The City has not adopted a numerical significance threshold for assessing impacts related to GHG emissions and has not formally adopted a local plan for reducing GHG emissions. Nor have SCAQMD, OPR,

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[26] *See, for example, San Joaquin Valley Air Pollution Control District, CEQA Determinations of Significance for Projects Subject to ARB's GHG Cap-and-Trade Regulation, APR—2030 (June 25, 2014), in which the SJVAPCD "determined that GHG emissions increases that are covered under ARB's Cap-and-Trade regulation cannot constitute significant increases under CEQA..." Further, the South Coast Air Quality Management District (SCAQMD) has taken this position in CEQA documents it has produced as a lead agency. SCAQMD has prepared three Negative Declarations and one Draft Environmental Impact Report that demonstrate SCAQMD has applied its 10,000 $MTCO_2e$ /yr. significance threshold in such a way that GHG emissions covered by the Cap-and-Trade Program do not constitute emissions that must be measured against the threshold. See: SCAQMD, Final Negative Declaration for: Ultramar Inc. Wilmington Refinery Cogeneration Project, SCH No. 2012041014 (October 2014); SCAQMD, Final Negative Declaration tor Phillips 66 Los Angeles Refinery Carson Plant—Crude Oil Storage Capacity Project, SCH No. 2013091029 (December 2014); Final Mitigated Negative Declaration for Toxic Air Contaminant Reduction for Compliance with SCAQMD Rules 1420.1 and 1402 at the Exide Technologies Facility in Vernon, CA, SCH No. 2014101040 (December 2014); and Draft Environmental Impact Report for the Breitburn Santa Fe Springs Blocks 400/700 Upgrade Project, SCH No. 2014121014 (April 2014).*

[27] *As stated above, the goals and policies of the 2020–2045 RTP/SCS are similar to, and consistent with, those of the 2016–2040 RTP/SCS. Hence, because the project would be consistent with the 2016–2040 RTP/SCS, the project would also be consistent with the 2020–2045 RTP/SCS.*

[28] *OPR Technical Advisory, page 5.*

CARB, CAPCOA, or any other state or regional agency adopted a numerical significance threshold for assessing GHG emissions that is applicable to the project. Since there is no applicable adopted or accepted numerical threshold of significance for GHG emissions, the methodology for evaluating the project's impacts related to GHG emissions focuses on its consistency with statewide, regional, and local plans adopted for the purpose of reducing and/or mitigating GHG emissions. This evaluation of consistency with such plans is the sole basis for determining the significance of the project's GHG-related impacts on the environment.

## 4. METHODOLOGY

CalEEMod Version 2022.1.1.6 was used to calculate the GHG emissions from the proposed project. This analysis quantifies the project's total annual GHG emissions, considering compliance with regulation and GHG emission reduction features that would be incorporated into the project's design.

The proposed project is anticipated to generate GHG emissions from area sources, energy usage, mobile sources, waste, water, and construction equipment. The following provides the methodology used to calculate the project related GHG emissions and the project impacts.

The CalEEMod Output for year 2025 is available in Appendix B. Each source of GHG emissions is described in greater detail below.

### A. Area Sources

Area sources include emissions from consumer products, landscape equipment and architectural coatings. No changes were made to the default area source emissions.

### B. Energy Usage

Energy usage includes emissions from the generation of electricity and natural gas used on-site. No other changes were made to the default energy usage parameters.

### C. Mobile Sources

Mobile sources include emissions from the additional vehicle miles generated from the proposed project. The vehicle trips associated with the proposed project have been analyzed by inputting the project-generated VMT data from the City of Los Angeles Transportation Impact Assessment (TIA) for the Sherman Way Mixed-Use Project (January 5, 2023) for the proposed project into the CalEEMod Model. The VMT analysis in the TIA showed that the project would generate 767 daily vehicle trips and 6,017 daily VMT. See Section II for more details.

### D. Waste

Waste includes the GHG emissions generated from the processing of waste from the proposed project as well as the GHG emissions from the waste once it is interred into a landfill. According to the City of Los Angeles Zero Waste Progress Report (March 2013), the City achieved a landfill diversion rate of approximately 76 percent by year 2012.[29] AB 341 required that 75 percent of waste be diverted from landfills by 2020; however, to be conservative, no reductions were taken. No changes were made to the default waste parameters.

### E. Water

Water includes the water used for the interior of the building as well as for landscaping and is based on the GHG emissions associated with the energy used to transport and filter the water. CALGreen requires a 20 percent reduction in indoor water use and water efficient irrigation systems; however, to be conservative, no changes were made to the default water usage parameters.

### F. Construction

The construction-related GHG emissions were also included in the analysis and were based on a 30-year amortization rate as recommended in the SCAQMD GHG Working Group meeting on November 19, 2009. The construction related GHG emissions were calculated by CalEEMod using the methodology detailed above in *Section II, Air Quality Analysis*, of this technical report.

## 5. PROJECT GREENHOUSE GAS EMISSIONS

The GHG emissions have been calculated based on the parameters described above. A summary of the results is shown in **Table 10,** below. **Table 10** shows that the project's total emissions would be 1,200.77 MTCO2e per year.

**Table 10**
**Project-Related Greenhouse Gas Emissions**

| Category | Greenhouse Gas Emissions (Metric Tons/Year) | | | | | |
|---|---|---|---|---|---|---|
| | **Bio-CO2** | **NonBio-$CO_2$** | **$CO_2$** | **$CH_4$** | **$N_2O$** | **$CO_2e$** |
| Maximum Annual Operations | 9.27 | 1,120 | 1,130 | 1.00 | 0.04 | 1,168 |
| Construction[1] | 0.00 | 32.27 | 32.27 | 0.0013 | 0.0013 | 32.77 |
| **Total Emissions** | | | | | | **1,200.77** |

*Notes:*
*(1) Construction GHG emissions CO2e based on a 30-year amortization rate.*

*Source: CalEEMod Version 2022.1.1.6 for Opening Year 2025.*

[29] *City of Los Angeles, Department of Public Works, LA Sanitation, Zero Waste Progress Report, March 2013, https://bioenergyproducers.files.wordpress.com/2016/11/la-zero-waste-report.pdf. Accessed December 2018.*

# 6. CONSISTENCY WITH APPLICABLE GREENHOUSE GAS REDUCTION PLANS AND POLICIES

The project's GHG impacts are evaluated by assessing the project's consistency with applicable statewide, regional, and local GHG reduction plans and strategies. As discussed previously, the City has established goals and actions to reduce the generation and emission of GHGs from both public and private activities in the LA Sustainable City pLAn/ Green New Deal.

The OPR encourages lead agencies to make use of programmatic mitigation plans and programs from which to tier when they perform individual project analyses. Although the City does not have a programmatic mitigation plan to tier from, such as a Greenhouse Gas Emissions Reduction Plan, the City has adopted a number of plans to help reduce GHG emissions, including the LA Sustainable City pLAn/ Green New Deal, and Green Building Code, which encourage and require applicable projects to implement energy efficiency measures. In addition, the California CAT Report provides recommendations for specific emission reduction strategies for reducing GHG emissions and reaching the targets established in AB 32 and Executive Order S-3-05. On a statewide level, the 2008 Climate Change Scoping Plan provides measures to achieve AB 32 targets. On a regional level, the SCAG 2020 RTP/SCS contains measures to achieve VMT reductions required under SB 375. Thus, if the project complies with these plans, policies, regulations, and requirements, the project would result in a less than significant impact because it would be consistent with the overarching state, regional, and local plans for GHG reduction.

A consistency analysis is provided below and describes the project's compliance with or exceedance of performance-based standards included in the regulations outlined in the applicable portions of the 2022 Climate Change Scoping Plan and subsequent updates, LA Sustainable City pLAn/ Green New Deal and the 2020-2045 RTP/SCS.

## A. Consistency with CARB Scoping Plan

Emission reductions in California alone would not be able to stabilize the concentration of greenhouse gases in the earth's atmosphere. However, California's actions set an example and drive progress towards a reduction in greenhouse gases elsewhere. If other states and countries were to follow California's emission reduction targets, this could avoid medium or higher ranges of global temperature increases. Thus, severe consequences of climate change could also be avoided.

The ARB Board approved a Climate Change Scoping Plan in December 2008. The Scoping Plan outlines the State's strategy to achieve the 2020 greenhouse gas emissions limit. The Scoping Plan "proposes a comprehensive set of actions designed to reduce overall greenhouse gas emissions in California, improve our environment, reduce our dependence on oil, diversify our energy sources, save energy, create new

jobs, and enhance public health" (California Air Resources Board 2008). The measures in the Scoping Plan have been in place since 2012.

This Scoping Plan calls for an "ambitious but achievable" reduction in California's greenhouse gas emissions, cutting approximately 30 percent from business-as-usual emission levels projected for 2020, or about 10 percent from today's levels. On a per-capita basis, that means reducing annual emissions of 14 tons of carbon dioxide for every man, woman and child in California down to about 10 tons per person by 2020.

In May 2014, the CARB released its *First Update to the Climate Change Scoping Plan* (CARB 2014). This *Update* identifies the next steps for California's leadership on climate change. While California continues on its path to meet the near-term 2020 greenhouse gas limit, it must also set a clear path toward long-term, deep GHG emission reductions. This report highlights California's success to date in reducing its GHG emissions and lays the foundation for establishing a broad framework for continued emission reductions beyond 2020, on the path to 80 percent below 1990 levels by 2050.

In November 2017, the CARB released the 2017 Scoping Plan. This Scoping Plan incorporates, coordinates, and leverages many existing and ongoing efforts and identifies new policies and actions to accomplish the State's climate goals, and includes a description of a suite of specific actions to meet the State's 2030 GHG limit. In addition, Chapter 4 provides a broader description of the many actions and proposals being explored across the sectors, including the natural resources sector, to achieve the State's mid and long-term climate goals.

Guided by legislative direction, the actions identified in the 2017 Scoping Plan reduce overall GHG emissions in California and deliver policy signals that will continue to drive investment and certainty in a low carbon economy. The 2017 Scoping Plan builds upon the successful framework established by the Initial Scoping Plan and First Update, while identifying new, technologically feasible, and cost-effective strategies to ensure that California meets its GHG reduction targets for SB 32 in a way that promotes and rewards innovation, continues to foster economic growth, and delivers improvements to the environment and public health, including in disadvantaged communities. The Plan includes policies to require direct GHG reductions at some of the State's largest stationary sources and mobile sources. These policies include the use of lower GHG fuels, efficiency regulations, and the Cap-and Trade Program, which constrains and reduces emissions at covered sources.

Independent studies confirm CARB's determination that the state's existing and proposed regulatory framework will put the state on a pathway to reduce its GHG emissions level to 40 percent below 1990 levels by 2030, and to 80 percent below 1990 levels by 2050 if additional appropriate reduction measures are adopted.[30] Even though these studies did not provide an exact regulatory and technological roadmap

[30] *Energy and Environmental Economics (E3). "Summary of the California State Agencies' PATHWAYS Project: Long-term Greenhouse Gas Reduction Scenarios" (April 2015); Greenblatt, Jeffrey, Energy Policy, "Modeling California Impacts on Greenhouse Gas Emissions" (Vol.*

to achieve the 2030 and 2050 goals, they demonstrated that various combinations of policies could allow the statewide emissions level to remain very low through 2050, suggesting that the combination of new technologies and other regulations not analyzed in the studies would allow the state to meet the 2050 target.

CARB's Scoping Plan identifies strategies to reduce California's GHG emissions in support of Assembly Bill ("AB") 32 which requires the State to reduce its GHG emissions to 1990 levels by 2020. Many of the strategies identified in the Scoping Plan are not applicable at the project level, such as long-term technological improvements to reduce emissions from vehicles. Some measures are applicable and supported by the project, such as energy efficiency. Finally, while some measures are not directly applicable, the project would not conflict with their implementation.

Reduction measures are grouped into 18 action categories, as follows:

1. **California Cap-and-Trade Program Linked to Western Climate Initiative Partner Jurisdictions.** Implement a broad-based California cap-and-trade program to provide a firm limit on emissions. Link the California cap–and-trade program with other Western Climate Initiative Partner programs to create a regional market system to achieve greater environmental and economic benefits for California. Ensure California's program meets all applicable AB 32 requirements for market-based mechanisms.

2. **California Light-Duty Vehicle Greenhouse Gas Standards.** Implement adopted Pavley standards and planned second phase of the program. Align zero-emission vehicle, alternative and renewable fuel and vehicle technology programs with long-term climate change goals.

3. **Energy Efficiency.** Maximize energy efficiency building and appliance standards, and pursue additional efficiency efforts including new technologies, and new policy and implementation mechanisms. Pursue comparable investment in energy efficiency from all retail providers of electricity in California (including both investor-owned and publicly owned utilities).

4. **Renewables Portfolio Standards.** Achieve 33 percent renewable energy mix statewide.

5. **Low Carbon Fuel Standard.** Develop and adopt the Low Carbon Fuel Standard.

6. **Regional Transportation-Related GHG Targets.** Develop regional GHG emissions reduction targets for passenger vehicles.

*78, pp. 158–172). The California Air Resources Board, California Energy Commission, California Public Utilities Commission, and the California Independent System Operator engaged E3 to evaluate the feasibility and cost of a range of potential 2030 targets along the way to the state's goal of reducing GHG emissions to 80 percent below 1990 levels by 2050. With input from the agencies, E3 developed scenarios that explore the potential pace at which emission reductions can be achieved, as well as the mix of technologies and practices deployed. E3 conducted the analysis using its California PATHWAYS model. Enhanced specifically for this study, the model encompasses the entire California economy with detailed representations of the buildings, industry, transportation and electricity sectors. https://www.ethree.com/wp-content/uploads/2017/02/E3_Project_Overview_20150406.pdf.*

7. **Vehicle Efficiency Measures.** Implement light-duty vehicle efficiency measures.

8. **Goods Movement.** Implement adopted regulations for the use of shore power for ships at berth. Improve efficiency in goods movement activities.

9. **Million Solar Roofs Program.** Install 3,000 megawatts of solar-electric capacity under California's existing solar programs.

10. **Medium- and Heavy-Duty Vehicles.** Adopt medium- (MD) and heavy-duty (HD) vehicle efficiencies. Aerodynamic efficiency measures for HD trucks pulling trailers 53-feet or longer that include improvements in trailer aerodynamics and use of rolling resistance tires were adopted in 2008 and went into effect in 2010. Future, yet to be determined improvements, includes hybridization of MD and HD trucks.

11. **Industrial Emissions.** Require assessment of large industrial sources to determine whether individual sources within a facility can cost-effectively reduce GHG emissions and provide other pollution reduction co-benefits. Reduce GHG emissions from fugitive emissions from oil and gas extraction and gas transmission. Adopt and implement regulations to control fugitive methane emissions and reduce flaring at refineries.

12. **High Speed Rail.** Support implementation of a high-speed rail system.

13. **Green Building Strategy.** Expand the use of green building practices to reduce the carbon footprint of California's new and existing inventory of buildings.

14. **High Global Warming Potential Gases.** Adopt measures to reduce high warming global potential gases.

15. **Recycling and Waste.** Reduce methane emissions at landfills. Increase waste diversion, composting and other beneficial uses of organic materials, and mandate commercial recycling. Move toward zero-waste.

16. **Sustainable Forests.** Preserve forest sequestration and encourage the use of forest biomass for sustainable energy generation. The 2020 target for carbon sequestration was 5 million MTCO2e/yr.

17. **Water.** Continue efficiency programs and use cleaner energy sources to move and treat water.

18. **Agriculture.** In the near-term, encourage investment in manure digesters. The program was made mandatory in 2020.

**Table 11, Scoping Plan Consistency Summary**, summarizes the project's consistency with the State Scoping Plan. As summarized, the project will not conflict with any of the provisions of the Scoping Plan

and in fact supports seven of the action categories through energy efficiency, water conservation, recycling, and landscaping.

**Table 11**
**Scoping Plan Consistency Summary**

| Action | Supporting Measures | Consistency |
|---|---|---|
| Cap-and-Trade Program | -- | **Not Applicable**. These programs involve capping emissions from electricity generation, industrial facilities, and broad scoped fuels. Caps do not directly affect commercial/residential projects. |
| Light-Duty Vehicle Standards | T-1 | **Not Applicable**. This is a statewide measure establishing vehicle emissions standards. |
| Energy Efficiency | E-1<br>E-2<br>CR-1<br>CR-2 | **No Conflict**. The project will include a variety of building, water, and solid waste efficiencies consistent with 2022 or better CALGreen requirements. |
| Renewables Portfolio Standard | E-3 | **Not Applicable**. Establishes the minimum statewide renewable energy mix. |
| Low Carbon Fuel Standard | T-2 | **Not Applicable**. Establishes reduced carbon intensity of transportation fuels. |
| Regional Transportation-Related Greenhouse Gas Targets | T-3 | **Not Applicable.** This is a statewide measure and is not within the purview of this project. |
| Vehicle Efficiency Measures | T-4 | **Not Applicable**. Identifies measures such as minimum tire-fuel efficiency, lower friction oil, and reduction in air conditioning use. |
| Goods Movement | T-5<br>T-6 | **Not Applicable**. Identifies measures to improve goods movement efficiencies such as advanced combustion strategies, friction reduction, waste heat recovery, and electrification of accessories. While these measures are yet to be implemented and will be voluntary, the proposed project would not interfere with their implementation. |
| Million Solar Roofs (MSR) Program | E-4 | **Not Applicable**. The MSR program sets a goal for use of solar systems throughout the State as a whole. The building roof structure is designed to support solar panels in the future. |
| Medium- & Heavy-Duty Vehicles | T-7<br>T-8 | **Not Applicable**. MD and HD trucks and trailers accessing the project will be subject to aerodynamic and hybridization requirements as established by ARB; no feature of the project would interfere with implementation of these requirements and programs. |
| Industrial Emissions | I-1<br>I-2<br>I-3<br>I-4<br>I-5 | **Not Applicable**. These measures are applicable to large industrial facilities (> 500,000 $MTCO_2e$/yr) and other intensive uses such as refineries. |
| High Speed Rail | T-9 | **Not Applicable**. Supports increased mobility choice. |

**Table 11**
**Scoping Plan Consistency Summary**

| Action | Supporting Measures | Consistency |
|---|---|---|
| Green Building Strategy | GB-1 | **No Conflict**. The project will include a variety of building, water, and solid waste efficiencies consistent with CALGreen requirements. |
| High Global Warming Potential Gases | H-1<br>H-2<br>H-3<br>H-4<br>H-5<br>H-6<br>H-7 | **Not Applicable**. The proposed project is not a substantial source of high GWP emissions and will comply with any future changes in air conditioning, fire protection suppressant, and other requirements. |
| Recycling and Waste | RW-1<br>RW-2<br>RW-3 | **No Conflict**. The project will recycle a minimum of 50 percent diversion to recycling from construction activities and operations pursuant to AB 939, AB 341 and AB 75 requirements. |
| Sustainable Forests | F-1 | **No Conflict**. The project will increase carbon sequestration by increasing on-site trees per the project landscaping plan. |
| Water | W-1<br>W-2<br>W-3<br>W-4<br>W-5<br>W-6 | **No Conflict**. The project will include use of low-flow fixtures and water-efficient landscaping pursuant to CALGreen requirements. |
| Agriculture | A-1 | **Not Applicable**. The project is not an agricultural use. |
| *Note: Supporting measures can be found at the following link: https://www.arb.ca.gov/cc/scopingplan/2013_update/appendix_b.pdf.*<br>*Table Source: EcoTierra Consulting, 2022.* | | |

As shown above, the project would be consistent with the applicable measures established in the Scoping Plan.

### B. Consistency with SB 32

At the state level, Executive Orders S-3-05 and B-30-15 are orders from the State's Executive Branch for the purpose of reducing GHG emissions. The goal of Executive Order S-3-05, to reduce GHG emissions to 1990 levels by 2020 was codified by the Legislature as the 2006 Global Warming Solutions Act (AB 32). The project, as analyzed above, is consistent with AB 32. Therefore, the project does not conflict with this component of Executive Order S-3-05. The Executive Orders also establish goals to reduce GHG emissions to 40 percent below 1990 levels by 2030 and 80 percent below 1990 levels by 2050. However, studies have shown that, in order to meet the 2030 and 2050 targets, aggressive technologies in the transportation and energy sectors, including electrification and the decarbonization of fuel, will be required. In its Climate Change Scoping Plan, CARB acknowledged that the "measures needed to meet the 2050 target are too far in the future to define in detail." In the First Scoping Plan Update, however, CARB

generally described the type of activities required to achieve the 2050 target: "energy demand reduction through efficiency and activity changes; largescale electrification of on-road vehicles, buildings, and industrial machinery; decarbonizing electricity and fuel supplies; and rapid market penetration of efficiency and clean energy technologies that requires significant efforts to deploy and scale markets for the cleanest technologies immediately."

Unlike the 2020 and 2030 reduction targets of AB 32 and SB 32, respectively, the 2050 target of Executive Order S-3-05 has not been codified, so the 2050 reduction target has not been the subject of any analysis by CARB. For example, CARB has not prepared an update to the aforementioned Scoping Plan that provides guidance to local agencies as to how they may seek to contribute to the achievement of the 2050 reduction target.

In 2017, the California Supreme Court examined the need to use the Executive Order S-3-05 2050 reduction target in Cleveland National Forest Foundation v. San Diego Association of Governments (2017) 3 Cal.5th 497 (Cleveland National). The case arose from San Diego Association of Governments (SANDAG's) adoption of its 2050 Regional Transportation Plan, which included its Sustainable Communities Strategy, as required by SB 375. On review, the Supreme Court held that SANDAG did not violate CEQA by not considering the Executive Order S-3-05 2050 reduction target. Accordingly, since the project is much smaller in size and scope in comparison to the Regional Transportation Plan examined in Cleveland National, assessing the project's consistency with regard to the 2050 target of Executive Order S-3-05 is not necessary for determining compliance with CEQA.

The 2017 Scoping Plan builds on the 2008 Scoping Plan in order to achieve the 40 percent reduction from 1990 levels by 2030. Major elements of the 2017 Scoping Plan framework that will achieve the GHG reductions include:

- Implementing and/or increasing the standards of the Mobile Source Strategy, which include increasing Zero Emission Vehicle (ZEV) buses and trucks. When adopted, this measure would apply to all trucks accessing the project site; this may include existing trucks or new trucks purchased by the project proponent, which could be eligible for incentives that expedite the project's implementation of ZEVs.

- Low Carbon Fuel Standard (LCFS), with an increased stringency (20 percent by 2030). When adopted, this measure would apply to all fuel purchased and used by the project in the state.

- Implementing SB 350, which expands Renewables Portfolio Standard (RPS) to 50 percent and doubles energy efficiency savings by 2030. When adopted, this measure would apply when electricity is provided to the project by a utility company.

- California Sustainable Freight Action Plan, which improves freight system efficiency, utilizes near-zero emissions technology, and deployment of ZEV trucks. When adopted, this measure would

apply to all trucks accessing the project site, this may include existing trucks or new trucks that are part of the statewide goods movement sector.

- Implementing the proposed Short-Lived Climate Pollutant Strategy (SLPS), which focuses on reducing methane and hydrofluorocarbon emissions by 40 percent and anthropogenic black carbon emissions by 50 percent by year 2030.

- Continued implementation of SB 375. The project is not within the purview of SB 375 and would therefore not conflict with this measure.

- Post-2020 Cap-and-Trade Program that includes declining caps. When adopted, the project would be required to comply with the Cap-and-Trade Program if it generates emissions from sectors covered by Cap-and-Trade.

- 20 percent reduction in GHG emissions from refineries by 2030. When adopted, the project would be required to comply with this measure if it were to utilize any fuel from refineries.

- Development of a Natural and Working Lands Action Plan to secure California's land base as a net carbon sink. This is a statewide measure that would not apply to the project.

As shown above, the project would not conflict with any of the 2017 Scoping Plan elements as any regulations adopted would apply directly or indirectly to the project. Further, recent studies show that the State's existing and proposed regulatory framework will allow the State to reduce its GHG emissions level to 40 percent below 1990 levels by 2030.[31]

In November of 2022, the CARB released the 2022 Scoping Plan. The 2022 Scoping Plan lays out a path to achieve targets for carbon neutrality and reduce anthropogenic GHG emissions by 85 percent below 1990 levels no later than 2045, as directed by Assembly Bill 1279. The actions and outcomes in the plan will achieve significant reductions in fossil fuel combustion by deploying clean technologies and fuels, further reductions in short-lived climate pollutants, support for sustainable development, increased action on natural and working lands to reduce emissions and sequester carbon, and the capture and storage of carbon. The 2022 Scoping Plan included the following Key Actions and Recommendations:

- 100 percent of light-duty vehicle sales are ZEVs by 2035.

- VMT per capita reduced 25 percent below 2019 levels by 2030 and 30 percent below 2019 levels by 2045.

- All electric appliances in new construction beginning 2026 (residential) and 2029 (commercial).

[31] *California Legislative Information, Senate Bill No. 32, September 8, 2016. https://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=201520160SB32.*

- For existing residential buildings, 80 percent of appliance sales are electric by 2030 and 100 percent of appliance sales are electric by 2035 (appliances replaced at end of life). For existing commercial buildings, 80 percent of appliance sales are electric by 2030 and 100 percent of appliance sales are electric by 2045 (appliances replaced at end of life)

Through regulation, the project will not conflict with any of these Key Actions and Recommendations and is consistent with the applicable goals/policies of the 2022 CARB Scoping Plan.

### C. LA Sustainable City pLAn

While not a plan adopted solely to reduce GHG emissions, within L.A.'s Green New Deal (Sustainable City pLAn 2019), climate mitigation is one of eight explicit benefits that help define its strategies and goals.

The 2019 L.A. New Green Deal is the first four-year update to the Sustainable City pLAn. It augments, expands, and elaborates in more detail the City's vision for a sustainable future and it addresses the climate emergency with accelerated targets and new aggressive goals. The project will contribute towards the attainment of the aspirations and goals previously identified in the Regulatory Framework discussion above by:

- Obtaining power from a utility provider that supplies 55% renewable energy by 2025.
- Including components that will reduce building energy use per square foot 22% by 2025.
- Reducing Vehicle Miles Traveled per capita by at least 13% by 2025.
- Ensuring 57% of new housing units are built within 1,500 feet of transit.

The project would use energy from the Los Angeles Department of Water and Power (LADWP), which currently provides 34 percent of electricity via renewable sources but has committed to providing an increasing percentage from renewable sources that exceed the RPS requirements by providing 50 percent by 2025, 55 percent by 2030, and 65 percent by 2036. The proposed project would be designed and constructed to meet LA Green Building Code standards, where applicable, by including several measures designed to reduce energy consumption. The project would include Energy Star® appliances where applicable and would be a modern development with energy efficient heaters and air conditioning systems. As such, the proposed project would be consistent with the goals and initiatives in the L.A. Green New Deal.

A discussion of the project's consistency with the Sustainable City pLAn targets is provided below in **Table 12, Project Consistency with the LA Sustainable City pLAn**.

**Table 12**
**Project Consistency with the LA Sustainable City pLAn**

| Targets | Project Consistency |
|---|---|
| **Local Water.** 20% reduction in water use per capita by 2017; 22.5% by 2025; and 25% by 2035. | **No conflict**. The project would be consistent with the LAMC to reduce water consumption by 20 percent. The project is required to follow CALGreen Standards which also mandates a 20 percent reduction in indoor water use. |
| **Solar Power.** Increase cumulative total megawatts of local solar photovoltaic power to between 900-1,500 megawatts by 2025 and 1,500 to 1,800 megawatts by 2035 as well as increasing the cumulative total megawatts of energy storage capacity to at least 1,654 to 1,750 megawatts by 2025. | **No conflict**. Compliance with the LA Green Building Code and CALGreen Code would ensure energy efficiency. The project would include, but not be limited to: air-tight and insulated envelope, Low-E windows, Energy Star appliances, and LED lighting. |
| **Energy Efficient Buildings.** Reduce energy use per square foot below 2013 baseline levels for all building types by at least 14% by 2025 and 30% by 2035 and use energy efficiency to deliver 15% of all of the City's projected electricity needs by 2020. | **No conflict**. Compliance with the LA Green Building Code and CALGreen Code would ensure energy efficiency. Project would include, but not be limited to: The project would include, but not be limited to: air-tight and insulated envelope, Low-E windows, Energy Star appliances, and LED lighting. |
| **Carbon and Climate Leadership.** Reduce GHG emissions below 1990 baseline by at least 45 percent by 2025, 60 percent by 2035, and 80 percent by 2050. Improve GHG efficiency of the City from 2009 levels by 55 percent by 2025 and 75 percent by 2035. | **No conflict.** The project would be designed to incorporate energy and water efficient design that meet or exceed the 2022 Title 24 Building Energy Efficiency Standards and CALGreen Code standards and incorporate energy and water efficiency measures. The project includes design features and compliance with Code measures that will assist in the reduction of project-related GHG emissions. Some of these design features include: The project would include, but not be limited to: enhanced energy-efficiency via high-performance glazing as well as enhanced façade, roof and deck insulation values. The air conditioning system will be comprised of highly efficient Variable Refrigerant Flow systems allowing for minimal electrical consumption, particularly when the building is lightly occupied. The building systems will include enhanced filtration of outside air being delivered to the occupied areas, and operable windows and oversize folding glass walls will enhance the natural ventilation whenever weather conditions permit. Water usage will be minimized via the use of ultra-low flow plumbing fixtures throughout the project. The irrigation system shall be designed to meet or exceed the state Model Water Efficient Landscape Ordinance (MWELO). The system should utilize a dedicated landscape water meter and automatic weather-based controllers with electronically operated control valves and seasonal irrigation schedules. All areas will include high efficiency irrigation emitters, including micro spray and drip irrigation. Bubblers may be used for trees or shrubs where drip irrigation is not feasible. |

**Table 12**
**Project Consistency with the LA Sustainable City pLAn**

| Targets | Project Consistency |
|---|---|
| | There is a total of 57 short-term and long-term bicycle parking spaces that encourage alternative transportation use. The parking area includes 12 EV spaces and 2 clean air vehicle spaces. The roof space is solar-ready. |
| **Waste and Landfills.** Increase land fill diversion rates to at least 90 percent by 2025 and 95 percent by 2035, as well as increasing proportion of waste products and recyclable commodities productively reused and repurposed within the County of Los Angeles to at least 25 percent by 2025 and 50 percent by 2035. | **No conflict**. the project would be required to implement recycling programs that reduce waste to landfills by a minimum of 75 percent (per AB 341). The project would be served by a solid waste collection and recycling service that may include mixed-waste processing, and that yields waste diversion results comparable to source separation and consistent with citywide recycling targets. The project would also comply with the City of Los Angeles Space Allocation Ordinance (171,687) which requires that developments include a recycling area or a room of a specified size on the project site. |
| **Housing and Development.** Increase cumulative new housing unit construction to 100k by 2021, 150k by 2025, and 275k by 2035. Ensure proportion of new housing units built within 1,500 feet of transit is at least 57 percent by 2025 and 65 percent by 2035. | **Not applicable.** The project includes construction of a new, 106,560 SF, 4-story apartment complex with 111 dwelling units, plus 5,300 SF of commercial uses. The proposed project's infill location would promote the concentration of development in an urban location with extensive infrastructure and access to public transit facilities, which would reduce vehicle miles traveled for the residential and commercial uses. |
| **Mobility and Transit.** Reduce daily VMT per capita by at least 5 percent by 2025 and 10 percent by 2035. Increase the percentage of all trips made by walking, biking, or transit to at least 35 percent by 2025 and 50 percent by 2035. | **No conflict.** The project is an urban center/infill development located in close proximity to transit. Additionally, the project is a 110,891 SF, 4-story apartment complex with 111 dwelling units, plus 5,300 SF of commercial uses. As part of the 182 parking spaces, 2 spaces would be designated for clean air vehicles, and 12 spaces would be designated for EV charging stations. The project provides 57 short term and long-term bicycle parking spaces, located and configured in compliance with applicable requirements of the LAMC. |
| **Air Quality.** Increase the percentage of electric and zero emissions vehicles in the city to 10 percent by 2025 and 25 percent by 2035 as well as increasing the percentage of port-related goods movement trips that use zero-emissions technology to at least 15 percent in 2025 and 25 percent in 2035. | **No conflict**. The project will comply with applicable City of Los Angeles Building Codes pertaining to building code requirements for charging station prewiring and installation of charging stations at workplaces. |
| *Note: This analysis focuses on the Sustainable City pLAn targets most applicable to the project.*<br>*Source: City of Los Angles Sustainable City pLAn, April 2015 and L.A.'s Green New Deal Sustainable City pLAn 2019.* | |

The analysis above describes the consistency of the project with the City's *Sustainable City pLAn*. As discussed in **Tables 11 and 12**, generally the project's consistency with the plans and policies should be

demonstrated by a combination of regulatory compliance (green building code etc.) as well as project-specific characteristics (water conservation, energy conservation, and other features consistent with these plans). Therefore, the project would be consistent with the City's applicable plans, policies, or regulations for the reduction of GHG emissions.

As discussed above, the project would comply with the LA Green Building Code and CALGreen Code which would ensure energy efficiency and installation of water conserving fixtures. Moreover, the project site would utilize energy from LADWP, which is actively increasing its use of renewable sources. The project would locate residential uses and a commercial/retail land use close to transit opportunities. The project site is served by several bus lines on Sherman Way and Balboa Boulevard. The proximity of the project site to these transit stops would provide residents, patrons and employees easy access to the new development on the project site. In addition, the project would provide at least 57 bicycle parking spaces. Therefore, the project would be consistent with the goals of the LA Green Plan.

### D. City of Los Angeles Sustainable City pLAn

The Sustainable City pLAn, a mayoral initiative, includes both short-term and long-term aspirations through the year 2035 in various topic areas, including: water, solar power, energy-efficient buildings, carbon and climate leadership, waste and landfills, housing and development, mobility and transit, and air quality, among others. While not a plan adopted solely to reduce GHG emissions, within L.A.'s Green New Deal (Sustainable City pLAn 2019), climate mitigation is one of eight explicit benefits that help define its strategies and goals.

The Sustainable City pLAn provides information as to what the City will do with buildings and infrastructure in their control. It also provides specific targets related to housing and development, as well as mobility and transit, including the reduction of VMT per capita by 5 percent by 2025, and increasing trips made by walking, biking, or transit by at least 35 percent by 2025. The Sustainable City pLAn was updated in April 2019 and renamed as L.A.'s Green New Deal. This latest document establishes targets such as 100 percent renewable energy by 2045, diversion of 100 percent of waste by 2050, and recycling 100 percent of wastewater by 2035. Although the Sustainable city pLAn/Green New Deal is not an adopted plan or directly applicable to private development projects, the project would generally comply with these aspirations as the project is an infill development that would densify an existing land use within a HQTA.

Through the Green New Deal, the City would reduce an additional 30 percent in GHG emissions above and beyond the 2015 pLAn and ensures that the City stays within its carbon budget between 2020 and 2050.The project would generally comply with these aspirations as the project is an infill development, which is located near regional and local transit services. The project would be well-served by transit and would generally further goals to reduce GHG emissions by promoting infill development, density, more efficient transportation, etc. Furthermore, the project would comply with the City's Solid Waste Management Policy Plan, the RENEW LA Plan, and the Exclusive Franchise System Ordinance (Ordinance

No. 182,986) in furtherance of the aspirations included in the Sustainable City pLAn with regard to waste and landfills. The project would also provide secure short- and long-term bicycle storage areas for project residents, employees and patrons. Therefore, the project would be consistent with the Sustainable City pLAn and the Green New Deal.

### E. LA Green Building Code

The Los Angeles Green Building Ordinance requires that all projects filed on or after January 1, 2020 comply with the current Los Angeles Green Building Code as amended to comply with the 2019 CALGreen Code. Mandatory measures under the Green Building Ordinance that would help reduce GHG emissions include: ten percent of the required and proposed parking spaces will have chargers for electric vehicles and 30 percent of the required and provided parking spaces will be pre-plumbed for future electric vehicle charging; enhanced energy-efficiency via high-performance glazing as well as enhanced façade, roof and deck insulation values; low-water use plumbing fixtures/appliances, rainwater harvesting cistern, water-efficient landscaping and drip irrigation. The project will comply with the City of Los Angeles' Green Building Ordinance standards and reduce emissions beyond a "Business-as-Usual" scenario.

### F. 2020-2045 RTP/SCS

To implement SB 375 and reduce GHG emissions by correlating land use and transportation planning, SCAG adopted the 2016–2040 Regional Transportation Plan / Sustainable Communities Strategy (2016-2040 RTP/SCS) on April 7, 2016.[32,33]

On September 3, 2020, SCAG's Regional Council adopted an updated Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) known as the 2020– 2045 RTP/SCS or Connect SoCal. As with the 2016–2020 RTP/SCS, the purpose of the 2020–2045 RTP/SCS is to meet the mobility needs of the six-county SCAG region over the subject planning period through a roadmap identifying sensible ways to expand transportation options, improve air quality and bolster Southern California long-term economic viability.[34] Applicable Goals and Guiding Principles of the 2020-2045 RTP/STS include:

- Improve mobility, accessibility, reliability, and travel safety for people and goods.
- Enhance the preservation, security, and resilience of the regional transportation system.
- Increase person and goods movement and travel choices within the transportation system.
- Reduce greenhouse gas emissions and improve air quality

[32] *Southern California Association of Governments, Final 2016-2040 RTP/SCS.*
[33] *Southern California Association of Governments, Executive Order G-16-066, SCAG 2016 SCS ARB Acceptance off GHG Quantification Determination, June 2016.*
[34] *SCAG, News Release: SCAG Regional Council Formally Adopts Connect SoCal, September 3, 2020.*

- Support health and equitable communities.
- Adapt to a changing climate and support an integrated regional development pattern and transportation network
- Leverage new transportation technologies and data-driven solutions that result in more efficient travel.
- Encourage development of diverse housing types in areas that are supported by multiple transportation options.

The goals and policies of the 2020–2045 RTP/SCS are similar to, and consistent with, those of the 2016–2040 RTP/SCS. Hence, because the proposed project would be consistent with the 2016–2040 RTP/SCS as discussed below, the proposed project would also be consistent with the 2020–2045 RTP/SCS.[35]

Consistent with SCAG's 2020 RTP/SCS alignment of transportation, land use, and housing strategies, the project would accommodate increases in population, households, employment, and travel demand. The project site is located within an HQTA. As discussed previously, the project site is an urban center location close to jobs, off-site housing, shopping and entertainment uses and in close proximity to public transit stops, which would result in reduced VMT, as compared to a project of similar size and land uses at a location without close and walkable access to off-site destinations and public transit stops. Further, the vertical integration of land uses on the project site will produce substantial reductions in auto mode share to and from the project site that will help the region accommodate growth and promote public transit ridership that minimizes GHG emission increases and reduces per capita emissions consistent with the RTP/SCS. Additionally, the inclusion of electric vehicle charging infrastructure (per LA Green Building Code) will support the penetration of electric zero-emission vehicles into the vehicle fleet.

The project would be located in an area well-served by public transit. Specifically, Metro operates bus routes in close proximity to the site, along Sherman Way and Balboa Boulevard. The project would include bicycle facilities and create a pedestrian-friendly environment by providing landscaped walkways. The project site is located adjacent to a mature network of streets that include vehicular, pedestrian and bicycle facilities. Development of the project within this established community would promote a variety of travel choices and would create new employment and housing opportunities the area. The project would not conflict with RTP/SCS goals to maximize mobility and accessibility for all people and goods in the region, ensure travel safety and reliability, preserve and ensure a sustainable regional transportation

[35] *For example, the project would be consistent with both the 2016–2040 RTP/SCS and the 2020–2045 RTP/SCS because it would increase urban density within a High-Quality Transit Area (HQTA) located in close proximity to numerous bus routes, would include transit-oriented development, all of which would reduce the City's per capita VMT and associated air emissions. Another example is that because the project would be consistent with the City's existing General Plan land use designation and the re-zoning of the project site will increase density which reduces VMT, and it has been accounted for in the regional growth projections in both the 2016–2040 RTP/SCS and 2020–2045 RTP/SCS.*

system, protect the environment, encourage energy efficiency and facilitate the use of alternative modes of transportation.

As demonstrated above, the project would be consistent with the applicable goals, including those pertaining to reductions in GHG emissions, in the 2020 RTP/SCS.

The project would not conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases. Furthermore, because the project is consistent and does not conflict with these plans, policies, and regulations, the project's incremental increase in GHG emissions as described above would not result in a significant impact on the environment. project-specific impacts with respect to GHG emissions would be less than significant, and no mitigation is required.

## 7. CUMULATIVE GREENHOUSE GAS IMPACTS

Although the project is expected to emit GHGs, the emission of GHGs by a single project into the atmosphere is not itself necessarily an adverse environmental effect. Rather, it is the increased accumulation of GHG from more than one project and many sources in the atmosphere that may result in global climate change. Therefore, in the case of global climate change, the proximity of the project to other GHG emission generating activities is not directly relevant to the determination of a cumulative impact because climate change is a global condition. According to CAPCOA, "GHG impacts are exclusively cumulative impacts; there are no non-cumulative GHG emission impacts from a climate change perspective."[36] The resultant consequences of that climate change can cause adverse environmental effects. A project's GHG emissions typically would be very small in comparison to state or global GHG emissions and, consequently, they would, in isolation, have no significant direct impact on climate change.

The state has mandated a goal of reducing statewide emissions to 1990 levels by 2020, even though statewide population and commerce are predicted to continue to expand. In order to achieve this goal, CARB is in the process of establishing and implementing regulations to reduce statewide GHG emissions. Consistent with CEQA Guidelines Section 15064h(3),[37] the City, as lead agency, has determined that the project's contribution to cumulative GHG emissions and global climate change would be less than significant if the project is consistent with the applicable regulatory plans and policies to reduce GHG

[36] *California Air Pollution Control Officers Association, CEQA & Climate change: Evaluating and Addressing Greenhouse Gas Emissions from Projects Subject to the California Environmental Quality Act, (2008).*

[37] *The State CEQA Guidelines were amended in response to SB 97. In particular, the State CEQA Guidelines were amended to specify that compliance with a GHG emissions reduction program renders a cumulative impact insignificant. Per State CEQA Guidelines Section 15064(h)(3), a project's incremental contribution to a cumulative impact can be found not cumulatively considerable if the project will comply with an approved plan or mitigation program that provides specific requirements that will avoid or substantially lessen the cumulative problem within the geographic area of the project. To qualify, such a plan or program must be specified in law or adopted by the public agency with jurisdiction over the affected resources through a public review process to implement, interpret, or make specific the law enforced or administered by the public agency. Examples of such programs include a "water quality control plan, air quality attainment or maintenance plan, integrated waste management plan, habitat conservation plan, natural community conservation plan, [and] plans or regulations for the reduction of greenhouse gas emissions."*

emissions.

As discussed in the Consistency With Applicable Greenhouse Gas Reduction Plans and Policies section above, the project is consistent with the CARB Scoping Plan, SCAG's 2020 RTP/SCS, and the LA Sustainable City pLAn/ Green New Deal.

Thus, given the project's consistency with the CARB Scoping Plan, SCAG 2020 RTP/SCS, City of L.A. Green Plan, and Sustainable City pLAn, the project would not conflict with any applicable plan, policy, or regulation of an agency adopted for the purpose of reducing the emissions of GHGs. Given this consistency, it is concluded that the project's incremental contribution to greenhouse gas emissions and their effects on climate change would not be cumulatively considerable.

# IV. ENERGY ANALYSIS

## 1. EXISTING CONDITIONS

This section provides an overview of the existing energy conditions in the project area and region.

### A. Overview

California's estimated annual energy use as of 2021 included:

- Approximately 277,764 gigawatt hours of electricity;[21]
- Approximately 2,092,612 million cubic feet of natural gas per year[22]; and
- Approximately 23.2 billion gallons of transportation fuel (for the year 2015).[23]

As of 2020, the year of most recent data currently available by the United States Energy Information Administration (EIA), energy use in California by demand sector was:

- Approximately 34.0 percent transportation;
- Approximately 24.6 percent industrial;
- Approximately 21.8 percent residential; and
- Approximately 19.6 percent commercial.[24]

California's electricity in-state generation system generates approximately 190,913 gigawatt-hours each year. In 2020, California produced approximately 70 percent of the electricity it uses; the rest was imported from the Pacific Northwest (approximately 15 percent) and the U.S. Southwest (approximately 15 percent). Natural gas is the main source for electricity generation at approximately 48.34 percent of the total in-state electric generation system power as shown in **Table 13**.

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[21] *California Energy Commission. Energy Almanac. Total Electric Generation. [Online] 2022. https://www.energy.ca.gov/data-reports/energy-almanac/california-electricity-data/2021-total-system-electric-generation.*

[22] *Natural Gas Consumption by End Use. U.S. Energy Information Administration. [Online] December 6, 2022. https://www.eia.gov/dnav/ng/ng_cons_sum_dcu_SCA_a.htm.*

[23] *California Energy Commission. Revised Transportation Energy Demand Forecast 2018-2030. [Online] April 19, 2018. https://www.energy.ca.gov/assessments/.*

[24] *U.S. Energy Information Administration. California Energy Consumption by End-Use Sector. California State Profile and Energy Estimates.[Online December 6, 2022, https://www.eia.gov/state/?sid=CA#tabs-2.*

**Table 13**
**Total Electricity System Power (California 2021)**

| Fuel Type | California In-State Generation (GWh) | Percent of California In-State Generation | Northwest Imports (GWh) | Southwest Imports (GWh) | Total California Energy Mix (GWh) | Total California Power Mix |
|---|---|---|---|---|---|---|
| Coal | 303 | 0.2% | 181 | 7,788 | 8,272 | 3.0% |
| Natural Gas | 97,431 | 50.2% | 45 | 7,880 | 105,356 | 37.9% |
| Oil | 37 | 0.0% | - | - | 37 | 0.0% |
| Other (Petroleum Coke/Waste Heat) | 382 | 0.2% | 68 | 15 | 465 | 0.2% |
| Nuclear | 16,477 | 8.5% | 524 | 8,756 | 25,758 | 9.3% |
| Large Hydro | 12,036 | 6.2% | 12,042 | 1,578 | 25,656 | 9.2% |
| Unspecified Sources of Power | - | 0.0% | 8,156 | 10,731 | 18,887 | 6.8% |
| Renewables | 67,461 | 34.8% | 11,555 | 14,317 | 93,333 | 33.6% |
| Biomass | 5,381 | 2.8% | 864 | 26 | 6,271 | 2.3% |
| Geothermal | 11,116 | 5.7% | 192 | 1,906 | 13,214 | 4.8% |
| Small Hydro | 2,531 | 1.3% | 304 | 1 | 2,835 | 1.0% |
| Solar | 33,260 | 17.1% | 220 | 5,979 | 39,458 | 14.2% |
| Wind | 15,173 | 7.8% | 9,976 | 6,405 | 31,555 | 11.4% |
| **Total System Energy** | 194,127 | 100.0% | 35,572 | 51,064 | 277,764 | 100.0% |

*Source: California Energy Commission. 2021 Total System electric Generation. https://www.energy.ca.gov/data-reports/energy-almanac/california-electricity-data/2021-total-system-electric-generation.*

A summary of and context for energy consumption and energy demands within the State is presented in "U.S. Energy Information Administration, California State Profile and Energy Estimates, Quick Facts" excerpted below:

- In 2021, California was the seventh-largest producer of crude oil among the 50 states, and, as of January 2021, it ranked third in crude oil refining capacity.
- California is the largest consumer of jet fuel and second-largest consumer of motor gasoline among the 50 states and, the state accounted for 15% of the nation's jet fuel consumption and 10% of motor gasoline consumption in 2020.
- In 2019, California was the second-largest total energy consumer among the states, but its per capita energy consumption was less than in all other states except Rhode Island, due in part to its mild climate and its energy efficiency programs.
- In 2021, California was the nation's top producer of electricity from solar, geothermal, and biomass energy. The state was fourth in the nation in conventional hydroelectric power generation, down from second in 2019, in part because of drought and increased water demand.

- In 2021, California was the fourth-largest electricity producer in the nation, but the state was also the nation's second-largest consumer of electricity, and in 2020, it received about 30% of its electricity supply from generating facilities outside of California, including imports from Mexico.[25].

As indicated above, California is one of the nation's leading energy-producing states, and California per capita energy use is among the nation's most efficient. Given the nature of the project, the remainder of this discussion will focus on the three sources of energy that are most relevant to the project—namely, electricity and natural gas for building uses, and transportation fuel for vehicle trips associated with the project.

### B. Electricity

Electricity would be provided to the project by the Los Angeles Department of Water and Power (LADWP). LADWP serves a population of 4 million residents with 1.54 million power customers in the City of Los Angeles and another 6,000 power customers in the Owens Valley, within a service area encompassing approximately 465 square miles.[26] LADWP derives electricity from varied energy resources including: renewable energy, natural gas, nuclear, large hydroelectric, and coal.

**Table 14** identifies LADWP's specific proportional shares of electricity sources in 2021. As shown in **Table 14**, the 2021 LADWP Power Mix has renewable energy at 35.2 percent of the overall energy resources, of which biomass and biowaste is at 0.1 percent, geothermal is at 9.7 percent, eligible hydroelectric is at 0.5 percent, solar energy is at 14.3 percent, and wind power is at 10.6 percent; other energy sources include coal at 18.6 percent, large hydroelectric at 6.6 percent, natural gas at 25.9 percent, and nuclear at 13.7 percent.

[25] *State Profile and Energy Estimates. Independent Statistics and Analysis. [Online] [Cited: December 6, 2022.] http://www.eia.gov/state/?sid=CA#tabs2.*

[26] *City of Los Angeles, Los Angeles Department of Water and Power, Facts & Figure. https://www.ladwp.com/ladwp/faces/ladwp/aboutus/a-power/a-p-factandfigures?_adf.ctrl-state=13pl302nr1_4&_afrLoop=221757335931853.*

**Table 14**
**LADWP 2021 Power Content Mix**

| Energy Resources | Power Mix |
|---|---|
| Eligible Renewable | 35.2% |
| Biomass & Biowaste | 0.1% |
| Geothermal | 9.7% |
| Eligible Hydroelectric | 0.5% |
| Solar | 14.3% |
| Wind | 10.6% |
| Coal | 18.6% |
| Large Hydroelectric | 6.6% |
| Natural Gas | 25.9% |
| Nuclear | 13.7% |
| Other | 0.0% |
| Unspecified Sources of power* | 0.0% |
| Total | 100% |

*Notes:*
** Unspecified sources of power means electricity from transactions that are not traceable to specific generation sources.*

*Source: City of Los Angeles, Los Angeles Department of Water and Power, Power Content Label. https://www.ladwp.com/ladwp/faces/ladwp/aboutus/a-power/a-p-powercontentlabel?_adf.ctrl-state=fliuimfhk_30&_afrLoop=172005023098762.*

### C. Natural Gas

Natural gas would be provided to the project by Southern California Gas (SoCalGas). The following summary of natural gas resources and service providers, delivery systems, and associated regulation is excerpted from information provided by the California Public Utilities Commission (CPUC).

The CPUC regulates natural gas utility service for approximately 11 million customers that receive natural gas from Pacific Gas and Electric (PG&E), Southern California Gas (SoCalGas), San Diego Gas & Electric (SDG&E), Southwest Gas, and several smaller investor-owned natural gas utilities. The CPUC also regulates independent storage operators Lodi Gas Storage, Wild Goose Storage, Central Valley Storage, and Gill Ranch Storage.

The vast majority of California's natural gas customers are residential and small commercial customers, referred to as "core" customers. Larger volume gas customers, like electric generators and industrial customers, are called "noncore" customers. Although very small in number relative to core customers, noncore customers consume about 65% of the natural gas delivered by the state's natural gas utilities, while core customers consume about 35%.

The PUC regulates the California utilities' natural gas rates and natural gas services, including in-state transportation over the utilities' transmission and distribution pipeline systems, storage, procurement, metering, and billing.

Most of the natural gas used in California comes from out-of-state natural gas basins. In 2017, for example, California utility customers received 38% of their natural gas supply from basins located in the U.S. Southwest, 27% from Canada, 27% from the U.S. Rocky Mountain area, and 8% from production located in California."[27]

### D. Transportation Energy Resources

The project would attract additional vehicle trips with resulting consumption of energy resources, predominantly gasoline and diesel fuel. Gasoline (and other vehicle fuels) are commercially-provided commodities and would be available to the project patrons and employees via commercial outlets.

The most recent data available shows the transportation sector emits 40 percent of the total greenhouse gases in the state and about 84 percent of smog-forming oxides of nitrogen (NOx).[28,29] About 28 percent of total United States energy consumption in 2019 was for transporting people and goods from one place to another. In 2019, petroleum comprised about 91 percent of all transportation energy use, excluding fuel consumed for aviation and most marine vessels.[30] In 2020, about 123.49 billion gallons (or about 2.94 billion barrels) of finished motor gasoline were consumed in the United States, an average of about 337 million gallons (or about 8.03 million barrels) per day.[31]

## 2. REGULATORY BACKGROUND

Federal and state agencies regulate energy use and consumption through various means and programs. On the federal level, the United States Department of Transportation, the United States Department of Energy, and the United States Environmental Protection Agency are three federal agencies with substantial influence over energy policies and programs. On the state level, the PUC, and the California Energy Commissions (CEC) are two agencies with authority over different aspects of energy. Relevant federal and state energy-related laws and plans are summarized below.

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[27] *California Public Utilities Commission. Natural Gas and California. http://www.cpuc.ca.gov/natural_gas/.*

[28] *CARB. California Greenhouse Gas Emissions Inventory – 2020 Edition. https://www.arb.ca.gov/cc/inventory/data/data.htm*

[29] *CARB. 2016 SIP Emission Projection Data. https://www.arb.ca.gov/app/emsinv/2017/emseic1_query.php?F_DIV=-4&F_YR=2012&F_SEASON=A&SP=SIP105ADJ&F_AREA=CA.*

[30] *US Energy Information Administration. Use of Energy in the United States Explained: Energy Use for Transportation. https://www.eia.gov/energyexplained/?page=us_energy_transportation.*

[31] *US Energy Information Administration. Frequently Asked Questions. How much gasoline does the United States consume? https://www.eia.gov/tools/faqs/faq.php?id=23&t=10.*

## A. Federal Regulations

### *i) Corporate Average Fuel Economy (CAFE) Standards*

First established by the U.S. Congress in 1975, the Corporate Average Fuel Economy (CAFE) standards reduce energy consumption by increasing the fuel economy of cars and light trucks. The National Highway Traffic Safety Administration (NHTSA) and U.S. Environmental Protection Agency (USEPA) jointly administer the CAFE standards. The U.S. Congress has specified that CAFE standards must be set at the "maximum feasible level" with consideration given for: (1) technological feasibility; (2) economic practicality; (3) effect of other standards on fuel economy; and (4) need for the nation to conserve energy.[32]

### *ii) Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA)*

The Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA) promoted the development of inter-modal transportation systems to maximize mobility as well as address national and local interests in air quality and energy. ISTEA contained factors that Metropolitan Planning Organizations (MPOs) were to address in developing transportation plans and programs, including some energy-related factors. To meet the new ISTEA requirements, MPOs adopted explicit policies defining the social, economic, energy, and environmental values guiding transportation decisions.

### *iii) The Transportation Equity Act of the 21st Century (TEA-21)*

The Transportation Equity Act for the 21st Century (TEA-21) was signed into law in 1998 and builds upon the initiatives established in the ISTEA legislation, discussed above. TEA-21 authorizes highway, highway safety, transit, and other efficient surface transportation programs. TEA-21 continues the program structure established for highways and transit under ISTEA, such as flexibility in the use of funds, emphasis on measures to improve the environment, and focus on a strong planning process as the foundation of good transportation decisions. TEA-21 also provides for investment in research and its application to maximize the performance of the transportation system through, for example, deployment of Intelligent Transportation Systems, to help improve operations and management of transportation systems and vehicle safety.

## B. State Regulations

### *i) Integrated Energy Policy Report (IEPR)*

Senate Bill 1389 requires the California Energy Commission (CEC) to prepare a biennial integrated energy policy report that assesses major energy trends and issues facing the State's electricity, natural gas, and

[32] *US Department of Transportation, National Highway Traffic Safety Administration, Laws and Regulations, Corporate Average Fuel Economy, website: https://www.nhtsa.gov/laws-regulations/corporate-average-fuel-economy.*

transportation fuel sectors and provides policy recommendations to conserve resources; protect the environment; ensure reliable, secure, and diverse energy supplies; enhance the state's economy; and protect public health and safety. The Energy Commission prepares these assessments and associated policy recommendations every two years, with updates in alternate years, as part of the Integrated Energy Policy Report.

The recently-approved 2017 Integrated Energy Policy Report Updated (2017 IEPR) was published in April 2018, and continues to work towards improving electricity, natural gas, and transportation fuel energy use in California. The 2016 IEPR focuses on a variety of topics such as implementation of Senate Bill 350, integrated resource planning, distributed energy resources, transportation electrification, solutions to increase resiliency in the electricity sector, energy efficiency, transportation electrification, barriers faced by disadvantaged communities, demand response, transmission and landscape-scale planning, the California Energy Demand Preliminary Forecast, the preliminary transportation energy demand forecast, renewable gas (in response to Senate Bill 1383), updates on Southern California electricity reliability, natural gas outlook, and climate adaptation and resiliency.[33]

#### *ii) State of California Energy Plan*

The CEC is responsible for preparing the State Energy Plan, which identifies emerging trends related to energy supply, demand, conservation, public health and safety, and the maintenance of a healthy economy. The Plan calls for the state to assist in the transformation of the transportation system to improve air quality, reduce congestion, and increase the efficient use of fuel supplies with the least environmental and energy costs. To further this policy, the plan identifies a number of strategies, including assistance to public agencies and fleet operators and encouragement of urban designs that reduce vehicle miles traveled and accommodate pedestrian and bicycle access.

#### *iii) California Building Standards Code (Title 24)*

The California Building Standards Code Title 24 was previously discussed in Section II Air Quality Analysis of this report.

##### 1) California Building Energy Efficiency Standards (Title 24, Part 6)

The California Building Energy Efficiency Standards for Residential and Nonresidential Buildings (California Code of Regulations, Title 24, Part 6) were adopted to ensure that building construction and system design and installation achieve energy efficiency and preserve outdoor and indoor environmental quality. The current California Building Energy Efficiency Standards (Title 24 standards) are the 2019 Title 24 standards, which became effective on January 1, 2020. The 2019 Title 24 standards include efficiency improvements

[33] *California Energy Commission. Final 2017 Integrated Energy Policy Report. April 16, 2018. https://www.energy.ca.gov/data-reports/integrated-energy-policy-report/2017-intergrated-energy-policy-report-update.*

to the lighting and efficiency improvements to the non-residential standards include alignment with the American Society of Heating and Air-Conditioning Engineers. For example, window operation is no longer a method allowed to meet ventilation requirements, continuous operation of central forced air system handlers used in central fan integrated ventilation system is not a permissible method of providing the dwelling unit ventilation airflow, and central ventilation systems that serve multiple dwelling units must be balanced to provide ventilation airflow to each dwelling unit. In addition, requirements for kitchen range hoods were also provided in the updated Section 120.1. Ventilation and Indoor Air Quality included both additions and revisions in the 2019 Code. This section now requires nonresidential and hotel/motel buildings to have air filtration systems that use forced air ducts to supply air to occupiable spaces to have air filters. Further, the air filter efficiency must be either MERV 13 or use a particle size efficiency rating specific in the Energy Code AND be equipped with air filters with a minimum 2-inch depth or minimum 1-inch depth if sized according to the equation 120.1-A. If natural ventilation is to be used the space must also use mechanical unless ventilation openings are either permanently open or controlled to stay open during occupied times.

New regulations were also adopted under Section 130.1 Indoor Lighting Controls. These included new exceptions being added for restrooms, the exception for classrooms being removed, as well as exceptions in regards to sunlight provided through skylights and overhangs.

All buildings for which an application for a building permit is submitted on or after January 1, 2020 must follow the 2019 standards. The 2019 residential standards are estimated to be approximately 7 percent more efficient than the 2016 standards. Furthermore, once rooftop solar electricity generation is factored in, 2019 residential standards are estimated to be approximately 53 percent more efficient than the 2016 standards. Under the 2019 standards, nonresidential buildings are estimated to be approximately 30 percent more efficient than the 2016 standards. Energy efficient buildings require less electricity; therefore, increased energy efficiency reduces fossil fuel consumption and decreases greenhouse gas emissions.

The 2022 Building Energy Efficiency Standards became effective on January 1, 2023.[34] The core focus of the building standards has been efficiency, but the 2019 Energy Code ventured into onsite generation by requiring solar PV on new homes, providing significant GHG savings. The 2022 update builds off this progress with expanded solar standards and the move to onsite energy storage that will help Californians save on utility bills while bolstering the grid. The 2022 Energy Code update focuses on four key areas in new construction of homes and businesses:

- Encouraging electric heat pump technology and use, which consumes less energy and produces fewer emissions than traditional HVACs and water heaters.

[34] *California Energy Commission. 2022. Building Energy Efficiency Standards. https://www.energy.ca.gov/programs-and-topics/programs/building-energy-efficiency-standards/2022-building-energy-efficiency.*

- Establishing electric-ready requirements when natural gas is installed, which positions owners to use cleaner electric heating, cooking and electric vehicle (EV) charging options whenever they choose to adopt those technologies.
- Expanding solar photovoltaic (PV) system and battery storage standards to make clean energy available onsite and complement the state's progress toward a 100 percent clean electricity grid.
- Strengthening ventilation standards to improve indoor air quality.

The 2022 Energy Code affects homes by establishing energy budgets based on efficient heat pumps for space or water heating to encourage builders to install heat pumps over gas-fueled HVAC units; requiring homes to be electric-ready, with dedicated 240-volt outlets and space (with plumbing for water heaters) so electric appliances can eventually replace installed gas appliances; increasing minimum kitchen ventilation requirements so that fans over cooktops have higher airflow or capture efficiency to better exhaust pollution from gas cooking and improve indoor air quality; and allowing exceptions to existing solar PV standards when roof area is not available (such as for smaller homes). In addition, the effect on businesses includes establishing combined solar PV and battery standards for select businesses with systems being sized to maximize onsite use of solar energy and avoid electricity demand during times when the grid must use gas-powered plants; establishing new efficiency standards for commercial greenhouses (primarily cannabis growing); and improving efficiency standards for building envelope, various internal systems, and grid integration equipment, such as demand-responsive controls to buoy grid stability.[35,36]

### 2) California Building Energy Efficiency Standards (Title 24, Part 11)

The 2019 California Green Building Standards Code (California Code of Regulations, Title 24, Part 11), commonly referred to as the CALGreen Code, went into effect on January 1, 2020. The 2019 CALGreen Code includes mandatory measures for non-residential development related to site development; energy efficiency; water efficiency and conservation; material conservation and resource efficiency; and environmental quality.

As previously discussed in Section III of this report, the Department of Housing and Community Development (HCD) updated CALGreen through the 2019 Triennial Code Adoption Cycle. HCD modified the best management practices for stormwater pollution prevention adding Section 5.106.2 for projects that disturb one or more acres of land. This section requires projects that disturb one acre or more of land or less than one acre of land but are part of a larger common plan of development or sale must comply with the postconstruction requirement detailed in the applicable National Pollutant Discharge Elimination

[35] *California Energy Commission. https://www.lightnowblog.com/2021/08/california-energy-commission-adopts-2022-building-energy-efficiency-standards/.*

[36] *State of California Energy Commission. 2022 Building Energy Efficiency Standards Summary. https://www.energy.ca.gov/sites/default/files/2021-08/CEC_2022_EnergyCodeUpdateSummary_ADA.pdf.*

System (NPDES) General Permit for Stormwater Discharges Associated with Construction and Land Disturbance Activities issued by the State Water Resources Control Board. The NPDES permits require postconstruction runoff (post-project hydrology) to match the preconstruction runoff pre-project hydrology) with installation of postconstruction stormwater management measures.

HCD added sections 5.106.4.1.3 and 5.106.4.1.5 in regards to bicycle parking. Section 5.106.4.1.3 requires new buildings with tenant spaces that have 10 or more tenant-occupants, provide secure bicycle parking for 5 percent of the tenant-occupant vehicular parking spaces with a minimum of one bicycle parking facility. In addition, Section 5.106.4.1.5 states that acceptable bicycle parking facility for Sections 5.106.4.1.2 through 5.106.4.1.4 shall be convenient from the street and shall meeting one of the following: (1) covered, lockable enclosures with permanently anchored racks for bicycles; (2) lockable bicycle rooms with permanently anchored racks; or (3) lockable, permanently anchored bicycle lockers.

HCD amended section 5.106.5.3.5 allowing future charging spaces to qualify as designated parking for clean air vehicles.

HCD updated section 5.303.3.3 in regards to showerhead flow rates. This update reduced the flow rate to 1.8 GPM.

HCD amended section 5.304.1 for outdoor potable water use in landscape areas and repealed sections 5.304.2 and 5.304.3. The update requires nonresidential developments to comply with a local water efficient landscape ordinance or the current California Department of Water Resource's' Model Water Efficient Landscape Ordinance (MWELO), whichever is more stringent. Some updates were also made in regards to the outdoor potable water use in landscape areas for public schools and community colleges.

HCD updated Section 5.504.5.3 in regards to the use of MERV filters in mechanically ventilated buildings. This update changed the filter use from MERV 8 to MERV 13. MERV 13 filters are to be installed prior to occupancy, and recommendations for maintenance with filters of the same value shall be included in the operation and maintenance manual.

The 2022 California Green Building Standards Code became effective on January 1, 2023.[37] HCD amended Section 5.106.5.3 in regard to increasing the EV capable space percentages and adding a new requirement for installed Level 2 DCFC chargers. HCD under Section 5.106.5.4 added new regulation for electric vehicle charging readiness requirements for new construction of warehouse, grocery stores, and retail stores with planned off-street loading spaces. [38]

[37] *California Building Standards Commission (CBSC). 2022. California Green Building Standards. https://codes.iccsafe.org/content/CAGBC2022P1.*

[38] *California, Building Standards Commission. https://www.dgs.ca.gov/BSC/Resources/2022-Title-24-California-Code-Changes.*

#### *iv) Senate Bill 100*

Senate Bill 100 (SB 100) requires 100 percent of total retail sales of electricity in California to come from eligible renewable energy resources and zero-carbon resources by December 31, 2045. SB 100 was adopted September 2018.

The interim thresholds from prior Senate Bills and Executive Orders would also remain in effect. These include Senate Bill 1078 (SB 1078), which requires retail sellers of electricity, including investor-owned utilities and community choice aggregators, to provide at least 20 percent of their supply from renewable sources by 2017. Senate Bill 107 (SB 107) which changed the target date to 2010. Executive Order S-14-08, which was signed on November 2008 and expanded the State's Renewable Energy Standard to 33 percent renewable energy by 2020. Executive Order S-21-09 directed the CARB to adopt regulations by July 31, 2010 to enforce S-14-08. Senate Bill X1-2 codified the 33 percent renewable energy requirement in 2020.

#### *v) Senate Bill 350*

As previously discussed in Section III of this report, Senate Bill 350 (SB 350) was signed into law October 7, 2015, SB 350 increases California's renewable electricity procurement goal from 33 percent by 2020 to 50 percent by 2030. This will increase the use of Renewables Portfolio Standard (RPS) eligible resources, including solar, wind, biomass, geothermal, and others. In addition, SB 350 requires the state to double statewide energy efficiency savings in electricity and natural gas end uses by 2030. To help ensure these goals are met and the greenhouse gas emission reductions are realized, large utilities will be required to develop and submit Integrated Resource Plans (IRPs). These IRPs will detail how each entity will meet their customers resource needs, reduce greenhouse gas emissions, and ramp up the deployment of clean energy resources.

#### *vi) Assembly Bill 32*

As discussed in Section III of this report, in 2006 the California State Legislature adopted Assembly Bill 32 (AB 32), the California Global Warming Solutions Act of 2006. AB 32 requires CARB, to adopt rules and regulations that would achieve GHG emissions equivalent to statewide levels in 1990 by 2020 through an enforceable statewide emission cap which will be phased in starting in 2012. Emission reductions shall include carbon sequestration projects that would remove carbon from the atmosphere and best management practices that are technologically feasible and cost effective. Please see Section 4 for further detail on AB 32.

#### *vii) Assembly Bill 1493/Pavley Regulations*

As discussed in Section III of this report, California Assembly Bill 1493 enacted on July 22, 2002, required CARB to develop and adopt regulations that reduce GHGs emitted by passenger vehicles and light duty trucks. In 2005, the CARB submitted a "waiver" request to the EPA from a portion of the federal Clean Air Act in order to allow the State to set more stringent tailpipe emission standards for $CO_2$ and other GHG emissions from passenger vehicles and light duty trucks. On December 19, 2007 the EPA announced that it denied the "waiver" request. On January 21, 2009, CARB submitted a letter to the EPA administrator regarding the State's request to reconsider the waiver denial. The EPA approved the waiver on June 30, 2009. EPA's recent withdrawal of the waiver was upheld by the Ninth Circuit on February 10, 2021. Per CARB, while the federal action is in effect, CARB will administer the zero-emission vehicle program on a voluntary basis. After adopting these initial greenhouse gas standards for passenger vehicles, CARB adopted continuing standards for future model years.

#### *viii) Executive Order S-1-07/Low Carbon Fuel Standard*

As discussed in Section III of this report, Executive Order S-1-07 was issued in 2007 and proclaims that the transportation sector is the main source of GHG emissions in the State, since it generates more than 40 percent of the State's GHG emissions. It establishes a goal to reduce the carbon intensity of transportation fuels sold in the State by at least ten percent by 2020. This Order also directs CARB to determine whether this Low Carbon Fuel Standard (LCFS) could be adopted as a discrete early-action measure as part of the effort to meet the mandates in AB 32.

On April 23, 2009 CARB approved the proposed regulation to implement the low carbon fuel standard. The low carbon fuel standard is anticipated to reduce GHG emissions by about 16 MMT per year by 2020. The low carbon fuel standard is designed to provide a framework that uses market mechanisms to spur the steady introduction of lower carbon fuels. The framework establishes performance standards that fuel producers and importers must meet each year beginning in 2011. Separate standards are established for gasoline and diesel fuels and the alternative fuels that can replace each. The standards are "back-loaded", with more reductions required in the last five years, than during the first five years. This schedule allows for the development of advanced fuels that are lower in carbon than today's fuels and the market penetration of plug-in hybrid electric vehicles, battery electric vehicles, fuel cell vehicles, and flexible fuel vehicles. It is anticipated that compliance with the low carbon fuel standard will be based on a combination of both lower carbon fuels and more efficient vehicles.

Reformulated gasoline mixed with corn-derived ethanol at ten percent by volume and low sulfur diesel fuel represent the baseline fuels. Lower carbon fuels may be ethanol, biodiesel, renewable diesel, or blends of these fuels with gasoline or diesel as appropriate. Compressed natural gas and liquefied natural gas also may be low carbon fuels. Hydrogen and electricity, when used in fuel cells or electric vehicles are also considered as low carbon fuels for the low carbon fuel standard.

### *ix) Executive Order N-79-20*

Executive Order N-79-20 Signed in September 2020, Executive Order N-79-20 establishes as a goal that where feasible, all new passenger cars and trucks, as well as all drayage/cargo trucks and off-road vehicles and equipment, sold in California, will be zero-emission by 2035. The executive order sets a similar goal requiring that all medium and heavy-duty vehicles will be zero-emission by 2045 where feasible. It also directs CARB to develop and propose rulemaking for passenger vehicles and trucks, medium-and heavy-duty fleets where feasible, drayage trucks, and off-road vehicles and equipment "requiring increasing volumes" of new zero emission vehicles (ZEVs) "towards the target of 100 percent." The executive order directs the California Environmental Protection Agency, the California Geologic Energy Management Division (CalGEM), and the California Natural Resources Agency to transition and repurpose oil production facilities with a goal toward meeting carbon neutrality by 2045. Executive Order N-79-20 builds upon the CARB Advanced Clean Trucks regulation, which was adopted by CARB in July 2020.

### *x) California Air Resources Board*

#### 1) CARB's Advanced Clean Cars Program

Closely associated with the Pavley regulations, the Advanced Clean Cars emissions control program was approved by CARB in 2012. The program combines the control of smog, soot, and GHGs with requirements for greater numbers of zero-emission vehicles for model years 2015–2025.15 The components of the Advanced Clean Cars program include the Low-Emission Vehicle (LEV) regulations that reduce criteria pollutants and GHG emissions from light- and medium-duty vehicles, and the Zero-Emission Vehicle (ZEV) regulation, which requires manufacturers to produce an increasing number of pure ZEVs (meaning battery electric and fuel cell electric vehicles), with provisions to also produce plug-in hybrid electric vehicles (PHEV) in the 2018 through 2025 model years.[39]

#### 2) Airborne Toxic Control Measure to Limit Diesel-Fueled Commercial Motor Vehicle Idling

The Airborne Toxic Control Measure to Limit Diesel-Fueled Commercial Motor Vehicle Idling (Title 13, California Code of Regulations, Division 3, Chapter 10, Section 2435) was adopted to reduce public exposure to diesel particulate matter and other air contaminants by limiting the idling of diesel-fueled commercial motor vehicles. This section applies to diesel-fueled commercial motor vehicles with gross vehicular weight ratings of greater than 10,000 pounds that are or must be licensed for operation on highways. Reducing idling of diesel-fueled commercial motor vehicles reduces the amount of petroleum-based fuel used by the vehicle.

[39] *California Air Resources Board, California's Advanced Clean Cars Program, January 18, 2017. www.arb.ca.gov/msprog/acc/acc.htm.*

**3) Regulation to Reduce Emissions of Diesel Particulate Matter, Oxides of Nitrogen, and other Criteria Pollutants, form In-Use Heavy-Duty Diesel-Fueled Vehicles**

The Regulation to Reduce Emissions of Diesel Particulate Matter, Oxides of Nitrogen, and other Criteria Pollutants, from In-Use Heavy-Duty Diesel-Fueled Vehicles (Title 13, California Code of Regulations, Division 3, Chapter 1, Section 2025) was adopted to reduce emissions of diesel particulate matter, oxides of nitrogen ($NO_X$) and other criteria pollutants from in-use diesel-fueled vehicles. This regulation is phased, with full implementation by 2023. The regulation aims to reduce emissions by requiring the installation of diesel soot filters and encouraging the retirement, replacement, or repower of older, dirtier engines with newer emission-controlled models. The newer emission-controlled models would use petroleum-based fuel in a more efficient manner.

***xi) Sustainable Communities Strategy***

The Sustainable Communities and Climate Protection Act of 2008, or Senate Bill 375 (SB 375), coordinates land use planning, regional transportation plans, and funding priorities to help California meet the GHG reduction mandates established in AB 32.

As previously stated in Section 3 of this report, Senate Bill 375 (SB 375) was adopted September 2008 and aligns regional transportation planning efforts, regional GHG emission reduction targets, and land use and housing allocation. SB 375 requires Metropolitan Planning Organizations (MPO) to adopt a sustainable communities strategy (SCS) or alternate planning strategy (APS) that will prescribe land use allocation in that MPOs Regional Transportation Plan (RTP). CARB, in consultation with each MPO, will provide each affected region with reduction targets for GHGs emitted by passenger cars and light trucks in the region for the years 2020 and 2035. These reduction targets will be updated every eight years but can be updated every four years if advancements in emissions technologies affect the reduction strategies to achieve the targets. CARB is also charged with reviewing each MPO's sustainable communities strategy or alternate planning strategy for consistency with its assigned targets.

The project is located within the Southern California Association of Governments (SCAG) jurisdiction, which has authority to develop the SCS or APS. For the SCAG region, the targets set by CARB are at eight percent below 2005 per capita GHG emissions levels by 2020 and 19 percent below 2005 per capita GHG emissions levels by 2035. These reduction targets became effective October 2018.

## 3. PROJECT ENERGY DEMANDS AND ENERGY EFFICIENCY MEASURES

### A. Evaluation Criteria

In compliance with Appendix G of the State CEQA Guidelines, this report analyzes the project's anticipated energy use to determine if the project would:

- Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation; or
- Conflict with or obstruct a state or local plan for renewable energy or energy efficiency.

In addition, Appendix F of the State CEQA Guidelines states that the means of achieving the goal of energy conservation includes the following:

- Decreasing overall per capita energy consumption;
- Decreasing reliance on fossil fuels such as coal, natural gas and oil; and
- Increasing reliance on renewable energy sources.

### B. Methodology

Information from the CalEEMod 2022.1.1.6 Output contained in **Appendix A** of this technical report, utilized for air quality and greenhouse gas analyses in Sections II and III of this report, were also used for this analysis. The CalEEMod outputs detail project related construction equipment, transportation energy demands, and facility energy demands.

### C. Construction Energy Demands

Construction of the project is anticipated to start construction no sooner than September 2023 and take approximately 24 months to complete. Staging of construction vehicles and equipment will occur on-site. The approximately 24-month schedule is relatively short and the project site is relatively small at approximately 1.13 acres.

#### *i) Construction Equipment Electricity Usage Estimates*

As stated previously, electrical service will be provided by LADWP. The focus within this section is the energy implications of the construction process, specifically the power cost from on-site electricity consumption during construction of the project. Based on the 2021 National Construction Estimator, Richard Pray (2021)[40], the typical power cost per 1,000 square feet of building construction per month is estimated to be $2.37. The project plans to develop the site with a total of 116,191 thousand square-feet (TSF) of mixed-use/residential uses. Based on **Table 15, Project Construction Power Cost and Electricity Usage,** the total power cost of the on-site electricity usage during the construction of the project is estimated to be approximately $6,608.94. At a cost of $0.04 per kWh,[41] the total construction energy usage would be approximately 169,678 kWh.

[40] *Pray, Richard. 2021 National Construction Estimator. Carlsbad : Craftsman Book Company, 2021.*

[41] *Assumes the project will be under the A-2 Large Commercial & Multi-Family Service rate under LADWP. https://www.ladwp.com/ladwp/faces/ladwp/aboutus/a-financesandreports/a-fr-electricrates/a-fr-er-stcommindrates?_adf.ctrl-state=4uqberzct_4&_afrLoop=958662023680086.*

**Table 15**
**Project Construction Power Cost and Electricity Usage**

| Power Cost (per 1,000 square foot of building per month of construction) | Total Building Size (1,000 Square Foot) | Construction Duration (months) | Total Project Construction Power Cost |
|---|---|---|---|
| $2.37 | 116.191 | 24 | $6,608.94 |

Although Title 24 requirements typically apply to energy usage for buildings, construction equipment would also comply with Title 24 requirements where applicable. Therefore, construction of the project would not result in the wasteful, inefficient, or unnecessary consumption of electricity. Accordingly, impacts would be less than significant and no mitigation measures would be required.

***ii) Natural Gas***

Construction activities, including the construction of new buildings and facilities, typically do not involve the consumption of natural gas. Thus, there would be no demand generated by construction. Therefore, construction of the project would not result in the wasteful, inefficient, or unnecessary consumption of natural gas. Accordingly, impacts would be less than significant and no mitigation measures would be required.

***iii) Construction Equipment Fuel Estimates***

Fuel consumed by construction equipment would be the primary energy resource expended over the course of project construction. Fuel consumed by construction equipment was evaluated with the following assumptions:

- Construction schedule of 24 months
- All construction equipment was assumed to run on diesel fuel
- Typical daily use of 8 hours, with some equipment operating from ~2-6 hours
- Aggregate fuel consumption rate for all equipment was estimated at 18.5 horsepower hour per gallon (hp-hr/gal) (from CARB's 2017 Emissions Factors Tables and fuel consumption rate factors as shown in Table D-21 of the Moyer Guidelines: (https://www.arb.ca.gov/msprog/moyer/guidelines/2017gl/2017_gl_appendix_d.pdf).
- Diesel fuel would be the responsibility of the equipment operators/contractors and would be sources within the region.
- Project construction represents a "single-event" for diesel fuel demand and would not require on-going or permanent commitment of diesel fuel resources during long term operation.

Using the CalEEMod data input for the air quality and greenhouse gas analyses (Sections II and IV of this report), the project's construction phase would consume electricity and fossil fuels as a single energy

demand, that is, once construction is completed their use would cease. CARB's 2017 Emissions Factors Tables show that on average aggregate fuel consumption (gasoline and diesel fuel) would be approximately 18.5 hp-hr-gal. **Table 16, Construction Equipment Fuel Consumption Estimates,** shows the results of the analysis of construction equipment.

As presented in **Table 16**, project construction activities would consume an estimated 49,341 gallons of diesel fuel. As stated previously, project construction would represent a "single-event" diesel fuel demand and would not require on-going or permanent commitment of diesel fuel resources for this purpose.

**Table 16**
**Construction Equipment Fuel Consumption Estimates**

| Phase | Number of Days | Off Road Equipment Type | Quantity | Usage Hours | Horse Power | Load Factor | HP-hrs/ day | Total Fuel Consumption (gal diesel fuel)[1] |
|---|---|---|---|---|---|---|---|---|
| Demolition | 20 | Concrete/Industrial Saws | 1 | 8 | 33 | 0.73 | 193 | 208 |
| | 20 | Rubber Tired Dozers | 1 | 8 | 367 | 0.4 | 1174 | 1270 |
| | 20 | Tractors/Loaders/ Backhoes | 3 | 8 | 84 | 0.37 | 746 | 806 |
| Site Preparation/ Foundation | 180 | Excavators | 1 | 8 | 36 | 0.38 | 109 | 1065 |
| | 180 | Tractors/Loaders/ Backhoes | 1 | 8 | 84 | 0.37 | 249 | 2419 |
| | 180 | Bore/Drill Rigs | 1 | 6 | 83 | 0.5 | 249 | 2423 |
| | 180 | Pumps | 2 | 6 | 11 | 0.74 | 98 | 950 |
| | 180 | Cement and Mortar Mixers | 3 | 6 | 10 | 0.56 | 101 | 981 |
| | 180 | Forklifts | 1 | 8 | 82 | 0.2 | 131 | 1277 |
| | 180 | Welders | 1 | 6 | 46 | 0.45 | 124 | 1208 |
| | 180 | Rubber Tired Dozers | 1 | 7 | 367 | 0.4 | 1028 | 9998 |
| Building Construction | 321 | Cranes | 1 | 6 | 367 | 0.29 | 639 | 11080 |
| | 321 | Forklifts | 1 | 6 | 82 | 0.2 | 98 | 1707 |
| | 321 | Generator Sets | 1 | 8 | 14 | 0.74 | 83 | 1438 |
| | 321 | Welders | 3 | 8 | 46 | 0.45 | 497 | 8620 |
| | 321 | Tractors/Loaders/ Backhoes | 1 | 6 | 84 | 0.37 | 186 | 3236 |
| Architectural Coating | 63 | Aerial Lifts | 1 | 6 | 46 | 0.31 | 86 | 291 |
| | 63 | Air Compressors | 1 | 6 | 37 | 0.48 | 107 | 363 |
| **CONSTRUCTION FUEL DEMAND (gallons of diesel fuel)** | | | | | | | | **49,341** |

*Notes:*
*(1) Using Carl Moyer Guidelines Table D-21 Fuel consumption rate factors (bhp-hr/gal) for engines less than 750 hp.*

*Source: California Air Resources Board. https://www.arb.ca.gov/msprog/moyer/guidelines/2017gl/2017_gl_appendix_d.pdf.*

The project would comply with CARB's anti-idling regulations as well as the In-Use Off-Road Diesel-Fueled Fleets regulation. Although these regulations are intended to reduce criteria pollutant emissions,

compliance with the anti-idling and emissions regulations would also result in efficient use of construction-related energy. Therefore, construction of the project would not result in the wasteful, inefficient, or unnecessary consumption of petroleum-based fuels. Accordingly, impacts would be less than significant and no mitigation measures would be required.

#### *iv) Construction Worker Fuel Estimates*

It is assumed that construction worker trips are from light duty autos (LDA), light duty truck 1 (LDT1), and light duty truck 2 (LDT2) at a mix of 25 percent/50 percent/25 percent, respectively, along area roadways.[42] With respect to estimated VMT, the construction worker trips would generate an estimated 787,419 VMT. Data regarding project related construction worker trips were based on CalEEMod 2022.1.1.6 model defaults.

Vehicle fuel efficiencies for construction workers were estimated in the air quality and greenhouse gas analyses (Sections II and IV of this report) using information generated using CARB's EMFAC 2021 model for year 2023 emissions (see Appendix B). An aggregate fuel efficiency of 27.07 miles per gallon (mpg) was used to calculate vehicle miles traveled for construction worker trips. **Table 17, Construction Worker Fuel Consumption Estimates,** shows that an estimated 29,088 gallons of fuel would be consumed for construction worker trips.

**Table 17**
**Construction Worker Fuel Consumption Estimates[1,2]**

| Phase | Number of Days | Worker Trips/Day | Trip Length (miles) | Vehicle Miles Traveled | Average Vehicle Fuel Economy (mpg) | Estimated Fuel Consumption (gallons) |
|---|---|---|---|---|---|---|
| Demolition | 20 | 12.5 | 18.5 | 4,625 | 27.07 | 171 |
| Site Preparation/ Foundation | 180 | 27.5 | 18.5 | 91,575 | 27.07 | 3,383 |
| Building Construction | 321 | 112 | 18.5 | 665,112 | 27.07 | 24,570 |
| Architectural Coating | 63 | 22.4 | 18.5 | 26,107 | 27.07 | 964 |
| **Total Construction Worker Fuel Consumption** | | | | | | **29,088** |

*Notes:*
*(1) Assumptions for the worker trip length and vehicle miles traveled are consistent with CalEEMod 2022.1.1.6 defaults.*
*(2) Per CalEEMod User's Guide Appendix C (April 2022), CalEEMod assumes that construction work trips are made by a fleet consisting of 25 percent light-duty auto (or passenger car), 50 percent light-duty truck type 1 (LDT1), and 25 percent light duty truck type 2 (LDT2).*

#### *v) Construction Vendor and Hauling Fuel Estimates*

**Table 18, Construction Vendor Fuel Consumption Estimates (MHD Trucks),** and **Table 19, Construction Hauling Fuel Consumption Estimates (HHD Trucks),** show the estimated fuel consumption for vendor and hauling during building construction and architectural coating. With respect to estimated VMT, the vendor

[42] *CalEEMod User's Guide Appendix C (April 2022) states that construction work trips are made by a fleet consisting of 25 percent light-duty auto (or passenger car), 50 percent light-duty truck type 1 (LDT1), and 25 percent light duty truck type 2 (LDT2).*

trips would generate an estimated 80,873 VMT and hauling trips would generate an estimated 60,100 VMT. Data regarding project related construction worker trips were based on CalEEMod 2022.1.1.6 model defaults.

**Table 18**
**Construction Vendor Fuel Consumption Estimates (MHD & HHDT Trucks)[1,2]**

| Phase | Number of Days | Vendor Trips/Day | Trip Length (miles) | Vehicle Miles Traveled | Average Vehicle Fuel Economy (mpg) | Estimated Fuel Consumption (gallons) |
|---|---|---|---|---|---|---|
| Demolition | 20 | 0 | 10.2 | 0 | 6.98 | 0 |
| Site Preparation/ Foundation | 180 | 0 | 10.2 | 0 | 6.98 | 0 |
| Building Construction | 321 | 24.7 | 10.2 | 80,873 | 6.98 | 11,586 |
| Architectural Coating | 321 | 24.7 | 10.2 | 80,873 | 6.98 | 11,586 |
| **Total Construction Worker Fuel Consumption** | | | | | | **11,586** |

*Notes:*
*(1) Assumptions for the vendor trip length and vehicle miles traveled are consistent with CalEEMod 2022.1.1.6 defaults.*
*(2) Per CalEEMod User's Guide Appendix C (April 2022), CalEEMod assumes vendor trips are made by a fleet consisting of 50 percent medium trucks (MHDT) and 50 percent heavy trucks (HHDT).*

For the architectural coatings it is assumed that the contractors would be responsible for bringing coatings and equipment with them in their light duty vehicles. Therefore, vendors delivering construction material would use medium with an average fuel consumption of 6.98 mpg and those hauling debris from the site during grading would use heavy duty vehicles with an average fuel economy of 6.29 mpg. **Tables 18** and **19** show that an estimated 21,141 gallons of fuel would be consumed for vendor and hauling trips.

**Table 19**
**Construction Hauling Fuel Consumption Estimates (HHD Trucks)[1]**

| Phase | Number of Days | Hauling Trips/Day | Trip Length (miles) | Vehicle Miles Traveled | Average Vehicle Fuel Economy (mpg) | Estimated Fuel Consumption (gallons) |
|---|---|---|---|---|---|---|
| Demolition | 20 | 6.25 | 20 | 2,500 | 6.29 | 397 |
| Site Prep/Foundation | 180 | 16 | 20 | 57,600 | 6.29 | 9,157 |
| Building Construction | 321 | 0 | 20 | 0 | 6.29 | 0 |
| Architectural Coating | 321 | 0 | 20 | 0 | 6.29 | 0 |
| **Total Construction Worker Fuel Consumption** | | | | | | **9,555** |

*Notes:*
*(1) Assumptions for the hauling trip length and vehicle miles traveled are consistent with CalEEMod 2020.4.0 defaults.*

#### *vi) Construction Energy Efficiency/Conservation Measures*

Construction equipment used over the approximately 24-month construction phase would conform to CARB regulations and California emissions standards and is evidence of related fuel efficiencies. There are no unusual project characteristics or construction processes that would require the use of equipment that would be more energy intensive than is used for comparable activities; or equipment that would not conform to current emissions standards (and related fuel efficiencies). Equipment employed in construction of the project would therefore not result in inefficient wasteful, or unnecessary consumption of fuel.

The project would utilize construction contractors which practice compliance with applicable CARB regulation regarding retrofitting, repowering, or replacement of diesel off-road construction equipment. Additionally, CARB has adopted the Airborne Toxic Control Measure to limit heavy-duty diesel motor vehicle idling in order to reduce public exposure to diesel particulate matter and other Toxic Air Contaminants. Compliance with these measures would result in a more efficient use of construction-related energy and would minimize or eliminate wasteful or unnecessary consumption of energy. Idling restrictions and the use of newer engines and equipment would result in less fuel combustion and energy consumption. Additionally, as required by California Code of Regulations Title 13, Motor Vehicles, section 2449(d)(3) Idling, limits idling times of construction vehicles to no more than five minutes, thereby minimizing, or eliminating unnecessary and wasteful consumption of fuel due to unproductive idling of construction equipment. Enforcement of idling limitations is realized through periodic site inspections conducted by City building officials, and/or in response to citizen complaints.

### D. Operational Energy Demands

Energy consumption in support of or related to project operations would include transportation energy demands (energy consumed by employee and patron vehicles accessing the project site) and facilities energy demands (energy consumed by building operations and site maintenance activities).

#### *i) Transportation Fuel Consumption*

Using Operational related fuel consumption was calculated using the annual VMT from the CalEEMod output from the air quality and greenhouse gas analyses (Sections 2 and 3 of this report) and using information generated using CARB's 2021 EMFAC model (see Appendix B for details).[43]

[43] *Based on the California Air Resources Board on-road vehicle emissions model, EMFAC2021 (Modeling input: Los Angeles County; Fleet Aggregate; Annual; Year 2025). Gasoline-fueled vehicles account for approximately 88.77 percent of the total VMT at 25.01 miles per gallon and diesel-fueled vehicles account for approximately 5.08 percent of the total VMT at 8.65 miles per gallon.*

**Table 20, Estimated Vehicle Operations Fuel Consumption,** shows that an estimated 77,952 gallons of gasoline and 12,898 gallons of diesel fuel would be consumed per year for the operation of the project.

**Table 20**
**Estimated Vehicle Operations Fuel Consumption**

| Land Use | Annual VMT | Gasoline Usage[1] | Diesel Usage[1] |
|---|---|---|---|
| All Land Uses | 2,196,205 | 77,952 | 12,898 |

Notes:
*(1) Based on the California Air Resources Board on-road vehicle emissions model, EMFAC2021 (Modeling input: Los Angeles County; Fleet Aggregate; Annual; Year 2025 for project). For Year 2025, gasoline-fueled vehicles account for approximately 88.77 percent of the total VMT at 25.01 miles per gallon and diesel-fueled vehicles account for approximately 5.08 percent of the total VMT at 8.65 miles per gallon.*

Trip generation and VMT generated by the project are consistent with other similar mixed uses of similar scale and configuration as reflected respectively in the Institute of Transportation Engineers (ITE) Trip Generation Manual (11th Edition, 2021). That is, the project does not propose uses or operations that would inherently result in excessive and wasteful vehicle trips and VMT, nor associated excess and wasteful vehicle energy consumption. Furthermore, the state of California consumed approximately 4.2 billion gallons of diesel and 15.1 billion gallons of gasoline in 2015.[44,45] Therefore, the increase in fuel consumption from the project is insignificant in comparison to the State's demand. Therefore, project transportation energy consumption would not be considered inefficient, wasteful, or otherwise unnecessary.

### *ii) Facility Energy Demands (Electricity and Natural Gas)*

Building operation and site maintenance (including landscape maintenance) would result in the consumption of electricity (provided by the Los Angeles Department of Water and Power) and natural gas (provided by Southern California Gas Company). The annual natural gas and electricity demands were provided per the CalEEMod output from the air quality and greenhouse gas analyses (Sections II and III of this report) and in **Table 21**, **Project Annual Operational Energy Demand Summary.**

Energy use in buildings is divided into energy consumed by the built environment and energy consumed by uses that are independent of the construction of the building such as in plug-in appliances. In California, the California Building Standards Code Title 24 governs energy consumed by the built environment,

[44] *California Energy Commission, 2022 Title 24 California Code Changes. https://www.energy.ca.gov/data-reports/energy-almanac/transportation-energy/california-gasoline-data-facts-and-statistics.*
[45] *California Energy Commission, California Gasoline Data, Facts, and Statistics, https://www.energy.ca.gov/data-reports/energy-almanac/transportation-energy/diesel-fuel-data-facts-and-statistics.*

mechanical systems, and some types of fixed lighting. Non-building energy use, or "plug-in" energy use can be further subdivided by specific end-use (refrigeration, cooking, appliances, etc.).

As shown in **Table 21**, the estimated electricity demand for the project is approximately 762,229 kWh per year. In 2021, the non-residential sector of the County of Los Angeles consumed approximately 44,438 million kWh of electricity.[46] In addition, the estimated natural gas consumption for the project is approximately 1,558,238 kBTU per year. In 2021, the non-residential sector of the County of Los Angeles consumed approximately 1,743 million therms of gas.[47] Therefore, the increase in both electricity and natural gas demand from the project is insignificant compared to the County's 2021 non-residential sector demand.

**Table 21**
**Project Annual Operational Energy Demand Summary**

| Electricity Demand | kWh/year[1] | Water Usage[2] | | | Total Annual Electricity Use (kWhr) |
|---|---|---|---|---|---|
| | | Indoor (gal/yr) | Outdoor (gal/yr) | Water-Related Electricity Use (kWhr/yr) | |
| Apartments Mid Rise | 440,407 | 4,137,392 | 0 | 28,163.23 | 468,570.23 |
| Regional Shopping Center | 53,086 | 392,584 | 0 | 2,672.32 | 55,758.32 |
| Enclosed Parking with Elevator | 268,736 | - | - | - | 268,736.00 |
| **Total** | **762,229** | **4,529,976** | **0** | **30,836** | **793,065** |
| **Natural Gas Demand** | **kBTU/year[1]** | | | | |
| Apartments Mid Rise | 1,532,356 | | | | |
| Regional Shopping Center | 25,882 | | | | |
| **Total** | **1,558,238** | | | | |

*Notes:*
*(1) Taken from the CalEEMod 2022.1.1.6 output (Appendix A of this report).*
*(2) Indoor Water results in 0.006807 kWhr of electricity usage per gallon from the supplying, treating, and distributing of water and the processing of resulting wastewater within South Coast. Outdoor water results in 0.005306 kWhr of electricity usage per gallon from supplying, treating, and distributing of water within South Coast. (Source: CalEEMod Version 2022.1 User's Guide Appendix G, Table G-32)*

Furthermore, the project energy demands in total would be comparable to other mixed-use projects of similar scale and configuration. Therefore, the project facilities energy demands, and energy consumption would not be considered inefficient, wasteful, or otherwise unnecessary.

[46] *California Energy Commission, Electricity Consumption by County. https://ecdms.energy.ca.gov/elecbycounty.aspx*
[47] *California Energy Commission, Gas Consumption by County. http://ecdms.energy.ca.gov/gasbycounty.aspx.*

## 4. RENEWABLE ENERGY AND ENERGY EFFICIENCY PLAN CONSISTENCY

Regarding federal transportation regulations, the project site is located in an already developed area. Access to/from the project site is from existing roads. These roads are already in place so the project would not interfere with, nor otherwise obstruct intermodal transportation plans or projects that may be proposed pursuant to the ISTEA because SCAG is not planning for intermodal facilities in the project area.

Regarding the State's Energy Plan and compliance with Title 24 CCR energy efficiency standards, the applicant is required to comply with the California Green Building Standard Code requirements for energy efficient buildings and appliances as well as utility energy efficiency programs implemented by PWP and Southern California Gas Company.

Regarding Pavley (AB 1493) regulations, an individual project does not have the ability to comply or conflict with these regulations because they are intended for agencies and their adoption of procedures and protocols for reporting and certifying GHG emission reductions from mobile sources.

Regarding the State's Renewable Energy Portfolio Standards, the project would be required to meet or exceed the energy standards established in the California Green Building Standards Code, Title 24, Part 11 (CALGreen). CALGreen Standards require that new buildings reduce water consumption, employ building commissioning to increase building system efficiencies, divert construction waste from landfills, and install low pollutant-emitting finish materials.

As shown in *Section III, Global Climate Change Analysis*, above, the project is consistent with the applicable strategies of CARB Scoping Plan, SCAG 2020 RTP/SCS, City of L.A. Green Plan, and Sustainable City pLAn.

## 5. CONCLUSION

As supported by the preceding analyses, project construction and operations would not result in the inefficient, wasteful, or unnecessary consumption of energy. Further, the energy demands of the project can be accommodated within the context of available resources and energy delivery systems. The project would therefore not cause or result in the need for additional energy producing or transmission facilities. The project would not engage in wasteful or inefficient uses of energy and aims to achieve energy conservations goals within the City of Los Angeles and the State of California. Notwithstanding, the project proposes residential uses and will not have any long-term effects on an energy provider's future energy development or future energy conservation strategies.

# V. EMISSIONS/EXPOSURE REDUCTION MEASURES

## 1. CONSTRUCTION MEASURES

Adherence to SCAQMD Rule 403 is required.

## 2. OPERATIONAL MEASURES

No mitigation measures required.

# VI. LIST OF ACRONYMS AND ABBREVIATIONS

| | |
|---|---|
| AQMP | Air Quality Management Plan |
| BACT | Best Available Control Technologies |
| CAAQS | California Ambient Air Quality Standards |
| CalEPA | California Environmental Protection Agency |
| CARB | California Air Resources Board |
| CCAA | California Clean Air Act |
| CCAR | California Climate Action Registry |
| CEQA | California Environmental Quality Act |
| CFCs | Chlorofluorocarbons |
| $CH_4$ | Methane |
| CNG | Compressed natural gas |
| CO | Carbon monoxide |
| $CO_2$ | Carbon dioxide |
| $CO_2e$ | Carbon dioxide equivalent |
| DPM | Diesel particulate matter |
| EPA | U.S. Environmental Protection Agency |
| GHG | Greenhouse gas |
| GWP | Global warming potential |
| HIDPM | Hazard Index Diesel Particulate Matter |
| HFCs | Hydrofluorocarbons |
| IPCC | International Panel on Climate Change |
| LCFS | Low Carbon Fuel Standard |
| LST | Localized Significant Thresholds |
| $MTCO_2e$ | Metric tons of carbon dioxide equivalent |
| $MMTCO_2e$ | Million metric tons of carbon dioxide equivalent |
| MPO | Metropolitan Planning Organization |
| NAAQS | National Ambient Air Quality Standards |
| NOx | Nitrogen Oxides |
| $NO_2$ | Nitrogen dioxide |
| $N_2O$ | Nitrous oxide |
| $O_3$ | Ozone |
| OPR | Governor's Office of Planning and Research |
| PFCs | Perfluorocarbons |
| PM | Particulate matter |
| PM10 | Particles that are less than 10 micrometers in diameter |

| | |
|---|---|
| PM2.5 | Particles that are less than 2.5 micrometers in diameter |
| PMI | Point of maximum impact |
| PPM | Parts per million |
| PPB | Parts per billion |
| RTIP | Regional Transportation Improvement Plan |
| RTP | Regional Transportation Plan |
| SCAB | South Coast Air Basin |
| SCAG | Southern California Association of Governments |
| SCAQMD | South Coast Air Quality Management District |
| SSAB | Salton Sea Air Basin |
| $SF_6$ | Sulfur hexafluoride |
| SIP | State Implementation Plan |
| SOx | Sulfur Oxides |
| TAC | Toxic air contaminants |
| VOC | Volatile organic compounds |

# VII. REFERENCES


**California Air Resources Board (CARB)**

2008 Resolution 08-43

2008 Recommended Approaches for Setting Interim Significance Thresholds for Greenhouse Gases under the California Environmental Quality Act

2008 Climate Change Scoping Plan, a framework for change.

2011 Supplement to the AB 32 Scoping Plan Functional Equivalent Document

2013 California Almanac of Emissions and Air Quality – 2013 Edition.

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2014 First Update to the Climate Change Scoping Plan, Building on the Framework Pursuant to AB32, the California Global Warming Solutions Act of 2006. May.

2017 California's 2017 Climate Change Scoping Plan. November.

2022 2022 Scoping Plan for Achieving Carbon Neutrality. November 16.

2022 Historical Air Quality, Top 4 Summary

**City of Los Angeles**

1992 City of Los Angeles General Plan Air Quality Element. November 24.

2007 Green LA: An Action Plan to Lead the Nation in Fighting Global Warming. May.

2019 L.A.'s Green New Deal Sustainable City pLAn. 2019.

2023 Transportation Impact Assessment For The Sherman Way Mixed-Use Project Located At 16949-16955 West Sherman Way (CPC-2022-7854-ZCJ-SPR-WDI-HCA/ENV-2022-7855-EAF). January 5.

**Governor's Office of Planning and Research**

2008 CEQA and Climate: Addressing Climate Change Through California Environmental Quality Act (CEQA) Review

2018 CEQA Guideline Sections to be Added or Amended

**Intergovernmental Panel on Climate Change (IPCC).**

2014 IPCC Fifth Assessment Report, Climate Change 2014: Synthesis Report

**South Coast Air Quality Management District (SCAQMD)**

1993 CEQA Air Quality Handbook

2003 Health Risk Assessment Guidance for Analyzing Cancer Risks from Mobile Source Diesel Idling Emissions for CEQA Air Quality Analysis

2005 Rule 403 Fugitive Dust

2007 2007 Air Quality Management Plan

2008 Final Localized Significance Threshold Methodology, Revised

2012 Final 2012 Air Quality Management Plan

2016 2016 Air Quality Management Plan

2022 2022 Air Quality Management Plan. December 2.

**Office of Environmental Health Hazard Assessment**

2015 Air Toxics Hot Spots Program Risk Assessment Guidelines

**Southern California Association of Governments**

2016 2016-2040 Regional Transportation Plan/Sustainable Communities Strategy

2020 2020-2045 Regional Transportation Plan/Sustainable Communities Strategy

**U.S. Environmental Protection Agency (EPA)**

2017 Understanding Global Warming Potentials

(Source: https://www.epa.gov/ghgemissions/understanding-global-warming-potentials)

**U.S. Geological Survey**

2011 Reported Historic Asbestos Mines, Historic Asbestos Prospects, and Other Natural Occurrences of Asbestos in California

# APPENDICES

Appendix A: CalEEMod Model Daily Emissions Printouts

Appendix B: EMFAC Data

# APPENDIX A: CALEEMOD MODEL EMISSIONS PRINTOUTS

# Sherman Way Detailed Report

## Table of Contents

# 1. Basic Project Information

## 1.1. Basic Project Information

| Data Field | Value |
|---|---|
| Project Name | Sherman Way |
| Lead Agency | City of Los Angeles |
| Land Use Scale | Project/site |
| Analysis Level for Defaults | County |
| Windspeed (m/s) | 2.50 |
| Precipitation (days) | 18.6 |
| Location | 16955 Sherman Way, Van Nuys, CA 91406, USA |
| County | Los Angeles-South Coast |
| City | Los Angeles |
| Air District | South Coast AQMD |
| Air Basin | South Coast |
| TAZ | 3870 |
| EDFZ | 17 |
| Electric Utility | Los Angeles Department of Water & Power |
| Gas Utility | Southern California Gas |

## 1.2. Land Use Types

| Land Use Subtype | Size | Unit | Lot Acreage | Building Area (sq ft) | Landscape Area (sq ft) | Special Landscape Area (sq ft) | Population | Description |
|---|---|---|---|---|---|---|---|---|
| Apartments Mid Rise | 111 | Dwelling Unit | 0.00 | 110,891 | 2,202 | — | 329 | — |
| Regional Shopping Center | 5.30 | 1000sqft | 0.00 | 5,300 | 0.00 | — | — | — |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Enclosed Parking with Elevator | 182 | Space | 1.13 | 72,800 | 0.00 | — | — | — |

## 1.3. User-Selected Emission Reduction Measures by Emissions Sector

No measures selected

# 2. Emissions Summary

## 2.1. Construction Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Un/Mit. | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Unmit. | 13.1 | 18.8 | 21.6 | 0.03 | 0.78 | 2.90 | 3.68 | 0.72 | 1.31 | 2.04 | — | 4,689 | 4,689 | 0.19 | 0.21 | 8.96 | 4,760 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Unmit. | 1.99 | 18.9 | 19.0 | 0.03 | 0.78 | 2.90 | 3.68 | 0.72 | 1.31 | 2.04 | — | 4,099 | 4,099 | 0.19 | 0.21 | 0.22 | 4,157 |
| Average Daily (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Unmit. | 2.74 | 9.95 | 13.0 | 0.02 | 0.37 | 1.57 | 1.94 | 0.34 | 0.57 | 0.91 | — | 2,908 | 2,908 | 0.13 | 0.14 | 2.02 | 2,954 |
| Annual (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Unmit. | 0.50 | 1.82 | 2.37 | < 0.005 | 0.07 | 0.29 | 0.35 | 0.06 | 0.10 | 0.17 | — | 481 | 481 | 0.02 | 0.02 | 0.33 | 489 |

## 2.2. Construction Emissions by Year, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Year | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|

| | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Daily - Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| 2023 | 1.99 | 18.8 | 19.3 | 0.03 | 0.78 | 2.90 | 3.68 | 0.72 | 1.31 | 2.04 | — | 4,023 | 4,023 | 0.19 | 0.21 | 4.28 | 4,096 |
| 2024 | 1.86 | 17.4 | 19.0 | 0.03 | 0.70 | 2.89 | 3.59 | 0.64 | 1.31 | 1.96 | — | 4,181 | 4,181 | 0.18 | 0.21 | 8.41 | 4,247 |
| 2025 | 13.1 | 11.8 | 21.6 | 0.03 | 0.37 | 1.97 | 2.34 | 0.34 | 0.47 | 0.81 | — | 4,689 | 4,689 | 0.19 | 0.19 | 8.96 | 4,760 |
| Daily - Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| 2023 | 1.99 | 18.9 | 19.0 | 0.03 | 0.78 | 2.90 | 3.68 | 0.72 | 1.31 | 2.04 | — | 4,003 | 4,003 | 0.19 | 0.21 | 0.11 | 4,072 |
| 2024 | 1.86 | 17.5 | 18.1 | 0.03 | 0.70 | 2.89 | 3.59 | 0.64 | 1.31 | 1.96 | — | 4,099 | 4,099 | 0.18 | 0.21 | 0.22 | 4,157 |
| 2025 | 1.56 | 10.4 | 17.1 | 0.02 | 0.34 | 1.68 | 2.02 | 0.31 | 0.40 | 0.71 | — | 4,055 | 4,055 | 0.17 | 0.18 | 0.20 | 4,113 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| 2023 | 0.46 | 4.41 | 4.46 | 0.01 | 0.18 | 0.56 | 0.75 | 0.17 | 0.25 | 0.42 | — | 900 | 900 | 0.04 | 0.04 | 0.38 | 915 |
| 2024 | 1.25 | 9.95 | 13.0 | 0.02 | 0.37 | 1.57 | 1.94 | 0.34 | 0.57 | 0.91 | — | 2,908 | 2,908 | 0.13 | 0.14 | 2.02 | 2,954 |
| 2025 | 2.74 | 5.26 | 8.85 | 0.01 | 0.17 | 0.84 | 1.01 | 0.15 | 0.20 | 0.35 | — | 2,040 | 2,040 | 0.09 | 0.09 | 1.70 | 2,070 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| 2023 | 0.08 | 0.80 | 0.81 | < 0.005 | 0.03 | 0.10 | 0.14 | 0.03 | 0.04 | 0.08 | — | 149 | 149 | 0.01 | 0.01 | 0.06 | 151 |
| 2024 | 0.23 | 1.82 | 2.37 | < 0.005 | 0.07 | 0.29 | 0.35 | 0.06 | 0.10 | 0.17 | — | 481 | 481 | 0.02 | 0.02 | 0.33 | 489 |
| 2025 | 0.50 | 0.96 | 1.62 | < 0.005 | 0.03 | 0.15 | 0.18 | 0.03 | 0.04 | 0.06 | — | 338 | 338 | 0.01 | 0.01 | 0.28 | 343 |

## 2.4. Operations Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Un/Mit. | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Unmit. | 6.43 | 2.35 | 30.9 | 0.05 | 0.07 | 1.68 | 1.75 | 0.07 | 0.30 | 0.37 | 56.0 | 7,622 | 7,678 | 6.07 | 0.24 | 18.6 | 7,920 |

| | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Unmit. | 5.27 | 2.44 | 19.7 | 0.05 | 0.06 | 1.68 | 1.74 | 0.06 | 0.30 | 0.36 | 56.0 | 7,388 | 7,444 | 6.08 | 0.25 | 1.28 | 7,672 |
| Average Daily (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Unmit. | 6.02 | 2.52 | 26.8 | 0.05 | 0.07 | 1.68 | 1.74 | 0.07 | 0.30 | 0.37 | 56.0 | 6,768 | 6,824 | 6.03 | 0.24 | 8.50 | 7,056 |
| Annual (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Unmit. | 1.10 | 0.46 | 4.89 | 0.01 | 0.01 | 0.31 | 0.32 | 0.01 | 0.05 | 0.07 | 9.27 | 1,120 | 1,130 | 1.00 | 0.04 | 1.41 | 1,168 |

## 2.5. Operations Emissions by Sector, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Sector | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Mobile | 2.58 | 1.87 | 21.0 | 0.05 | 0.03 | 1.68 | 1.71 | 0.03 | 0.30 | 0.33 | — | 4,844 | 4,844 | 0.25 | 0.20 | 17.8 | 4,927 |
| Area | 3.82 | 0.09 | 9.68 | < 0.005 | 0.01 | — | 0.01 | 0.01 | — | 0.01 | 0.00 | 778 | 778 | 0.05 | 0.01 | — | 782 |
| Energy | 0.02 | 0.39 | 0.17 | < 0.005 | 0.03 | — | 0.03 | 0.03 | — | 0.03 | — | 1,941 | 1,941 | 0.15 | 0.02 | — | 1,949 |
| Water | — | — | — | — | — | — | — | — | — | — | 8.68 | 58.3 | 67.0 | 0.89 | 0.02 | — | 95.8 |
| Waste | — | — | — | — | — | — | — | — | — | — | 47.3 | 0.00 | 47.3 | 4.73 | 0.00 | — | 165 |
| Refrig. | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 0.82 | 0.82 |
| Total | 6.43 | 2.35 | 30.9 | 0.05 | 0.07 | 1.68 | 1.75 | 0.07 | 0.30 | 0.37 | 56.0 | 7,622 | 7,678 | 6.07 | 0.24 | 18.6 | 7,920 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Mobile | 2.54 | 2.05 | 19.5 | 0.05 | 0.03 | 1.68 | 1.71 | 0.03 | 0.30 | 0.33 | — | 4,641 | 4,641 | 0.26 | 0.21 | 0.46 | 4,710 |
| Area | 2.70 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | — | 0.00 | 0.00 | 747 | 747 | 0.05 | 0.01 | — | 751 |

| | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Energy | 0.02 | 0.39 | 0.17 | < 0.005 | 0.03 | — | 0.03 | 0.03 | — | 0.03 | — | 1,941 | 1,941 | 0.15 | 0.02 | — | 1,949 |
| Water | — | — | — | — | — | — | — | — | — | — | 8.68 | 58.3 | 67.0 | 0.89 | 0.02 | — | 95.8 |
| Waste | — | — | — | — | — | — | — | — | — | — | 47.3 | 0.00 | 47.3 | 4.73 | 0.00 | — | 165 |
| Refrig. | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 0.82 | 0.82 |
| Total | 5.27 | 2.44 | 19.7 | 0.05 | 0.06 | 1.68 | 1.74 | 0.06 | 0.30 | 0.36 | 56.0 | 7,388 | 7,444 | 6.08 | 0.25 | 1.28 | 7,672 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Mobile | 2.52 | 2.07 | 20.0 | 0.05 | 0.03 | 1.68 | 1.71 | 0.03 | 0.30 | 0.33 | — | 4,696 | 4,696 | 0.26 | 0.21 | 7.68 | 4,772 |
| Area | 3.47 | 0.06 | 6.63 | < 0.005 | < 0.005 | — | < 0.005 | 0.01 | — | 0.01 | 0.00 | 72.3 | 72.3 | < 0.005 | < 0.005 | — | 72.6 |
| Energy | 0.02 | 0.39 | 0.17 | < 0.005 | 0.03 | — | 0.03 | 0.03 | — | 0.03 | — | 1,941 | 1,941 | 0.15 | 0.02 | — | 1,949 |
| Water | — | — | — | — | — | — | — | — | — | — | 8.68 | 58.3 | 67.0 | 0.89 | 0.02 | — | 95.8 |
| Waste | — | — | — | — | — | — | — | — | — | — | 47.3 | 0.00 | 47.3 | 4.73 | 0.00 | — | 165 |
| Refrig. | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 0.82 | 0.82 |
| Total | 6.02 | 2.52 | 26.8 | 0.05 | 0.07 | 1.68 | 1.74 | 0.07 | 0.30 | 0.37 | 56.0 | 6,768 | 6,824 | 6.03 | 0.24 | 8.50 | 7,056 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Mobile | 0.46 | 0.38 | 3.65 | 0.01 | 0.01 | 0.31 | 0.31 | 0.01 | 0.05 | 0.06 | — | 777 | 777 | 0.04 | 0.03 | 1.27 | 790 |
| Area | 0.63 | 0.01 | 1.21 | < 0.005 | < 0.005 | — | < 0.005 | < 0.005 | — | < 0.005 | 0.00 | 12.0 | 12.0 | < 0.005 | < 0.005 | — | 12.0 |
| Energy | < 0.005 | 0.07 | 0.03 | < 0.005 | 0.01 | — | 0.01 | 0.01 | — | 0.01 | — | 321 | 321 | 0.02 | < 0.005 | — | 323 |
| Water | — | — | — | — | — | — | — | — | — | — | 1.44 | 9.66 | 11.1 | 0.15 | < 0.005 | — | 15.9 |
| Waste | — | — | — | — | — | — | — | — | — | — | 7.83 | 0.00 | 7.83 | 0.78 | 0.00 | — | 27.4 |
| Refrig. | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 0.14 | 0.14 |
| Total | 1.10 | 0.46 | 4.89 | 0.01 | 0.01 | 0.31 | 0.32 | 0.01 | 0.05 | 0.07 | 9.27 | 1,120 | 1,130 | 1.00 | 0.04 | 1.41 | 1,168 |

# 3. Construction Emissions Details

## 3.1. Demolition (2023) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Location | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Onsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 1.74 | 17.0 | 16.9 | 0.02 | 0.76 | — | 0.76 | 0.70 | — | 0.70 | — | 2,494 | 2,494 | 0.10 | 0.02 | — | 2,502 |
| Demolition | — | — | — | — | — | 0.34 | 0.34 | — | 0.05 | 0.05 | — | — | — | — | — | — | — |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.10 | 0.93 | 0.93 | < 0.005 | 0.04 | — | 0.04 | 0.04 | — | 0.04 | — | 137 | 137 | 0.01 | < 0.005 | — | 137 |
| Demolition | — | — | — | — | — | 0.02 | 0.02 | — | < 0.005 | < 0.005 | — | — | — | — | — | — | — |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.02 | 0.17 | 0.17 | < 0.005 | 0.01 | — | 0.01 | 0.01 | — | 0.01 | — | 22.6 | 22.6 | < 0.005 | < 0.005 | — | 22.7 |
| Demolition | — | — | — | — | — | < 0.005 | < 0.005 | — | < 0.005 | < 0.005 | — | — | — | — | — | — | — |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Offsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

| | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Worker | 0.06 | 0.07 | 1.02 | 0.00 | 0.00 | 0.16 | 0.16 | 0.00 | 0.04 | 0.04 | — | 180 | 180 | 0.01 | 0.01 | 0.77 | 183 |
| Vendor | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Hauling | 0.01 | 0.58 | 0.22 | < 0.005 | 0.01 | 0.12 | 0.12 | 0.01 | 0.03 | 0.04 | — | 448 | 448 | 0.03 | 0.07 | 1.02 | 470 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | < 0.005 | < 0.005 | 0.05 | 0.00 | 0.00 | 0.01 | 0.01 | 0.00 | < 0.005 | < 0.005 | — | 9.51 | 9.51 | < 0.005 | < 0.005 | 0.02 | 9.64 |
| Vendor | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Hauling | < 0.005 | 0.03 | 0.01 | < 0.005 | < 0.005 | 0.01 | 0.01 | < 0.005 | < 0.005 | < 0.005 | — | 24.5 | 24.5 | < 0.005 | < 0.005 | 0.02 | 25.8 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | < 0.005 | < 0.005 | 0.01 | 0.00 | 0.00 | < 0.005 | < 0.005 | 0.00 | < 0.005 | < 0.005 | — | 1.57 | 1.57 | < 0.005 | < 0.005 | < 0.005 | 1.60 |
| Vendor | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Hauling | < 0.005 | 0.01 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | 4.06 | 4.06 | < 0.005 | < 0.005 | < 0.005 | 4.26 |

## 3.3. Site Preparation (2023) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Location | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Onsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 1.84 | 17.2 | 16.5 | 0.02 | 0.77 | — | 0.77 | 0.71 | — | 0.71 | — | 2,482 | 2,482 | 0.10 | 0.02 | — | 2,491 |
| Dust From Material Movement | — | — | — | — | — | 2.24 | 2.24 | — | 1.15 | 1.15 | — | — | — | — | — | — | — |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

| | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 1.84 | 17.2 | 16.5 | 0.02 | 0.77 | — | 0.77 | 0.71 | — | 0.71 | — | 2,482 | 2,482 | 0.10 | 0.02 | — | 2,491 |
| Dust From Material Movement | — | — | — | — | — | 2.24 | 2.24 | — | 1.15 | 1.15 | — | — | — | — | — | — | — |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.33 | 3.13 | 3.01 | < 0.005 | 0.14 | — | 0.14 | 0.13 | — | 0.13 | — | 452 | 452 | 0.02 | < 0.005 | — | 453 |
| Dust From Material Movement | — | — | — | — | — | 0.41 | 0.41 | — | 0.21 | 0.21 | — | — | — | — | — | — | — |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.06 | 0.57 | 0.55 | < 0.005 | 0.03 | — | 0.03 | 0.02 | — | 0.02 | — | 74.8 | 74.8 | < 0.005 | < 0.005 | — | 75.0 |
| Dust From Material Movement | — | — | — | — | — | 0.07 | 0.07 | — | 0.04 | 0.04 | — | — | — | — | — | — | — |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Offsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.13 | 0.14 | 2.25 | 0.00 | 0.00 | 0.36 | 0.36 | 0.00 | 0.08 | 0.08 | — | 397 | 397 | 0.02 | 0.01 | 1.68 | 403 |

| | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Vendor | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Hauling | 0.02 | 1.47 | 0.56 | 0.01 | 0.01 | 0.30 | 0.32 | 0.01 | 0.08 | 0.10 | — | 1,144 | 1,144 | 0.07 | 0.18 | 2.60 | 1,202 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.13 | 0.17 | 1.91 | 0.00 | 0.00 | 0.36 | 0.36 | 0.00 | 0.08 | 0.08 | — | 376 | 376 | 0.02 | 0.01 | 0.04 | 381 |
| Vendor | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Hauling | 0.02 | 1.53 | 0.56 | 0.01 | 0.01 | 0.30 | 0.32 | 0.01 | 0.08 | 0.10 | — | 1,145 | 1,145 | 0.07 | 0.18 | 0.07 | 1,200 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.02 | 0.03 | 0.36 | 0.00 | 0.00 | 0.06 | 0.06 | 0.00 | 0.02 | 0.02 | — | 69.5 | 69.5 | < 0.005 | < 0.005 | 0.13 | 70.4 |
| Vendor | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Hauling | < 0.005 | 0.28 | 0.10 | < 0.005 | < 0.005 | 0.05 | 0.06 | < 0.005 | 0.01 | 0.02 | — | 208 | 208 | 0.01 | 0.03 | 0.20 | 219 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | < 0.005 | 0.01 | 0.07 | 0.00 | 0.00 | 0.01 | 0.01 | 0.00 | < 0.005 | < 0.005 | — | 11.5 | 11.5 | < 0.005 | < 0.005 | 0.02 | 11.7 |
| Vendor | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Hauling | < 0.005 | 0.05 | 0.02 | < 0.005 | < 0.005 | 0.01 | 0.01 | < 0.005 | < 0.005 | < 0.005 | — | 34.5 | 34.5 | < 0.005 | 0.01 | 0.03 | 36.2 |

## 3.5. Site Preparation (2024) - Unmitigated

### Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Location | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Onsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 1.71 | 15.9 | 15.8 | 0.02 | 0.68 | — | 0.68 | 0.63 | — | 0.63 | — | 2,481 | 2,481 | 0.10 | 0.02 | — | 2,490 |

| | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Dust From Material Movement | — | — | — | — | — | 2.24 | 2.24 | — | 1.15 | 1.15 | — | — | — | — | — | — | — |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 1.71 | 15.9 | 15.8 | 0.02 | 0.68 | — | 0.68 | 0.63 | — | 0.63 | — | 2,481 | 2,481 | 0.10 | 0.02 | — | 2,490 |
| Dust From Material Movement | — | — | — | — | — | 2.24 | 2.24 | — | 1.15 | 1.15 | — | — | — | — | — | — | — |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.54 | 4.98 | 4.94 | 0.01 | 0.21 | — | 0.21 | 0.20 | — | 0.20 | — | 777 | 777 | 0.03 | 0.01 | — | 780 |
| Dust From Material Movement | — | — | — | — | — | 0.70 | 0.70 | — | 0.36 | 0.36 | — | — | — | — | — | — | — |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.10 | 0.91 | 0.90 | < 0.005 | 0.04 | — | 0.04 | 0.04 | — | 0.04 | — | 129 | 129 | 0.01 | < 0.005 | — | 129 |
| Dust From Material Movement | — | — | — | — | — | 0.13 | 0.13 | — | 0.07 | 0.07 | — | — | — | — | — | — | — |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

| | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Offsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.12 | 0.13 | 2.07 | 0.00 | 0.00 | 0.36 | 0.36 | 0.00 | 0.08 | 0.08 | — | 388 | 388 | 0.02 | 0.01 | 1.53 | 394 |
| Vendor | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Hauling | 0.02 | 1.41 | 0.54 | 0.01 | 0.01 | 0.30 | 0.31 | 0.01 | 0.08 | 0.10 | — | 1,126 | 1,126 | 0.06 | 0.18 | 2.59 | 1,184 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.12 | 0.16 | 1.75 | 0.00 | 0.00 | 0.36 | 0.36 | 0.00 | 0.08 | 0.08 | — | 368 | 368 | 0.02 | 0.01 | 0.04 | 373 |
| Vendor | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Hauling | 0.02 | 1.46 | 0.54 | 0.01 | 0.01 | 0.30 | 0.31 | 0.01 | 0.08 | 0.10 | — | 1,127 | 1,127 | 0.06 | 0.18 | 0.07 | 1,182 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.04 | 0.05 | 0.58 | 0.00 | 0.00 | 0.11 | 0.11 | 0.00 | 0.03 | 0.03 | — | 117 | 117 | 0.01 | < 0.005 | 0.21 | 119 |
| Vendor | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Hauling | 0.01 | 0.46 | 0.17 | < 0.005 | < 0.005 | 0.09 | 0.10 | < 0.005 | 0.03 | 0.03 | — | 353 | 353 | 0.02 | 0.06 | 0.35 | 370 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.01 | 0.01 | 0.11 | 0.00 | 0.00 | 0.02 | 0.02 | 0.00 | < 0.005 | < 0.005 | — | 19.4 | 19.4 | < 0.005 | < 0.005 | 0.03 | 19.6 |
| Vendor | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Hauling | < 0.005 | 0.08 | 0.03 | < 0.005 | < 0.005 | 0.02 | 0.02 | < 0.005 | < 0.005 | 0.01 | — | 58.4 | 58.4 | < 0.005 | 0.01 | 0.06 | 61.3 |

## 3.7. Building Construction (2024) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Location | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Onsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

| | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Off-Road Equipment | 1.13 | 9.44 | 10.1 | 0.02 | 0.37 | — | 0.37 | 0.34 | — | 0.34 | — | 1,801 | 1,801 | 0.07 | 0.01 | — | 1,807 |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 1.13 | 9.44 | 10.1 | 0.02 | 0.37 | — | 0.37 | 0.34 | — | 0.34 | — | 1,801 | 1,801 | 0.07 | 0.01 | — | 1,807 |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.46 | 3.81 | 4.07 | 0.01 | 0.15 | — | 0.15 | 0.14 | — | 0.14 | — | 726 | 726 | 0.03 | 0.01 | — | 729 |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.08 | 0.69 | 0.74 | < 0.005 | 0.03 | — | 0.03 | 0.03 | — | 0.03 | — | 120 | 120 | < 0.005 | < 0.005 | — | 121 |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Offsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.50 | 0.54 | 8.46 | 0.00 | 0.00 | 1.47 | 1.47 | 0.00 | 0.34 | 0.34 | — | 1,584 | 1,584 | 0.07 | 0.05 | 6.25 | 1,608 |
| Vendor | 0.02 | 0.94 | 0.46 | 0.01 | 0.01 | 0.21 | 0.22 | 0.01 | 0.06 | 0.07 | — | 796 | 796 | 0.03 | 0.11 | 2.16 | 831 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.50 | 0.64 | 7.15 | 0.00 | 0.00 | 1.47 | 1.47 | 0.00 | 0.34 | 0.34 | — | 1,501 | 1,501 | 0.07 | 0.06 | 0.16 | 1,520 |

| | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Vendor | 0.02 | 0.97 | 0.47 | 0.01 | 0.01 | 0.21 | 0.22 | 0.01 | 0.06 | 0.07 | — | 796 | 796 | 0.03 | 0.11 | 0.06 | 830 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.20 | 0.26 | 3.03 | 0.00 | 0.00 | 0.58 | 0.58 | 0.00 | 0.14 | 0.14 | — | 614 | 614 | 0.03 | 0.02 | 1.09 | 623 |
| Vendor | 0.01 | 0.40 | 0.19 | < 0.005 | < 0.005 | 0.08 | 0.09 | < 0.005 | 0.02 | 0.03 | — | 321 | 321 | 0.01 | 0.04 | 0.37 | 335 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.04 | 0.05 | 0.55 | 0.00 | 0.00 | 0.11 | 0.11 | 0.00 | 0.02 | 0.02 | — | 102 | 102 | < 0.005 | < 0.005 | 0.18 | 103 |
| Vendor | < 0.005 | 0.07 | 0.03 | < 0.005 | < 0.005 | 0.02 | 0.02 | < 0.005 | < 0.005 | 0.01 | — | 53.1 | 53.1 | < 0.005 | 0.01 | 0.06 | 55.4 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

## 3.9. Building Construction (2025) - Unmitigated

### Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Location | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Onsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 1.07 | 8.95 | 10.0 | 0.02 | 0.33 | — | 0.33 | 0.30 | — | 0.30 | — | 1,801 | 1,801 | 0.07 | 0.01 | — | 1,807 |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 1.07 | 8.95 | 10.0 | 0.02 | 0.33 | — | 0.33 | 0.30 | — | 0.30 | — | 1,801 | 1,801 | 0.07 | 0.01 | — | 1,807 |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

| | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.51 | 4.27 | 4.79 | 0.01 | 0.16 | — | 0.16 | 0.14 | — | 0.14 | — | 860 | 860 | 0.03 | 0.01 | — | 863 |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.09 | 0.78 | 0.87 | < 0.005 | 0.03 | — | 0.03 | 0.03 | — | 0.03 | — | 142 | 142 | 0.01 | < 0.005 | — | 143 |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Offsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.48 | 0.49 | 7.81 | 0.00 | 0.00 | 1.47 | 1.47 | 0.00 | 0.34 | 0.34 | — | 1,551 | 1,551 | 0.07 | 0.05 | 5.68 | 1,574 |
| Vendor | 0.02 | 0.89 | 0.44 | 0.01 | 0.01 | 0.21 | 0.22 | 0.01 | 0.06 | 0.06 | — | 783 | 783 | 0.03 | 0.11 | 2.14 | 818 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.48 | 0.54 | 6.62 | 0.00 | 0.00 | 1.47 | 1.47 | 0.00 | 0.34 | 0.34 | — | 1,470 | 1,470 | 0.07 | 0.06 | 0.15 | 1,489 |
| Vendor | 0.02 | 0.93 | 0.44 | 0.01 | 0.01 | 0.21 | 0.22 | 0.01 | 0.06 | 0.06 | — | 783 | 783 | 0.03 | 0.11 | 0.06 | 817 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.23 | 0.28 | 3.32 | 0.00 | 0.00 | 0.69 | 0.69 | 0.00 | 0.16 | 0.16 | — | 713 | 713 | 0.03 | 0.03 | 1.17 | 722 |
| Vendor | 0.01 | 0.45 | 0.21 | < 0.005 | 0.01 | 0.10 | 0.11 | < 0.005 | 0.03 | 0.03 | — | 374 | 374 | 0.02 | 0.05 | 0.44 | 390 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.04 | 0.05 | 0.61 | 0.00 | 0.00 | 0.13 | 0.13 | 0.00 | 0.03 | 0.03 | — | 118 | 118 | 0.01 | < 0.005 | 0.19 | 120 |

| | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Vendor | < 0.005 | 0.08 | 0.04 | < 0.005 | < 0.005 | 0.02 | 0.02 | < 0.005 | 0.01 | 0.01 | — | 61.9 | 61.9 | < 0.005 | 0.01 | 0.07 | 64.6 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

## 3.11. Architectural Coating (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Location | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Onsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.16 | 1.42 | 1.72 | < 0.005 | 0.03 | — | 0.03 | 0.03 | — | 0.03 | — | 244 | 244 | 0.01 | < 0.005 | — | 245 |
| Architectural Coatings | 11.3 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.03 | 0.25 | 0.30 | < 0.005 | 0.01 | — | 0.01 | < 0.005 | — | < 0.005 | — | 42.2 | 42.2 | < 0.005 | < 0.005 | — | 42.3 |
| Architectural Coatings | 1.95 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | < 0.005 | 0.04 | 0.05 | < 0.005 | < 0.005 | — | < 0.005 | < 0.005 | — | < 0.005 | — | 6.98 | 6.98 | < 0.005 | < 0.005 | — | 7.00 |

| | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Architectu Coatings | 0.36 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Offsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.10 | 0.10 | 1.56 | 0.00 | 0.00 | 0.29 | 0.29 | 0.00 | 0.07 | 0.07 | — | 310 | 310 | 0.01 | 0.01 | 1.14 | 315 |
| Vendor | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.02 | 0.02 | 0.24 | 0.00 | 0.00 | 0.05 | 0.05 | 0.00 | 0.01 | 0.01 | — | 51.5 | 51.5 | < 0.005 | < 0.005 | 0.08 | 52.2 |
| Vendor | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | < 0.005 | < 0.005 | 0.04 | 0.00 | 0.00 | 0.01 | 0.01 | 0.00 | < 0.005 | < 0.005 | — | 8.53 | 8.53 | < 0.005 | < 0.005 | 0.01 | 8.64 |
| Vendor | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

# 4. Operations Emissions Details

## 4.1. Mobile Emissions by Land Use

### 4.1.1. Unmitigated

Mobile source emissions results are presented in Sections 2.6. No further detailed breakdown of emissions is available.

## 4.2. Energy

### 4.2.1. Electricity Emissions By Land Use - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Land Use | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Apartments Mid Rise | — | — | — | — | — | — | — | — | — | — | — | 833 | 833 | 0.06 | 0.01 | — | 837 |
| Regional Shopping Center | — | — | — | — | — | — | — | — | — | — | — | 100 | 100 | 0.01 | < 0.005 | — | 101 |
| Enclosed Parking with Elevator | — | — | — | — | — | — | — | — | — | — | — | 508 | 508 | 0.04 | 0.01 | — | 511 |
| Total | — | — | — | — | — | — | — | — | — | — | — | 1,442 | 1,442 | 0.10 | 0.01 | — | 1,449 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Apartments Mid Rise | — | — | — | — | — | — | — | — | — | — | — | 833 | 833 | 0.06 | 0.01 | — | 837 |
| Regional Shopping Center | — | — | — | — | — | — | — | — | — | — | — | 100 | 100 | 0.01 | < 0.005 | — | 101 |
| Enclosed Parking with Elevator | — | — | — | — | — | — | — | — | — | — | — | 508 | 508 | 0.04 | 0.01 | — | 511 |
| Total | — | — | — | — | — | — | — | — | — | — | — | 1,442 | 1,442 | 0.10 | 0.01 | — | 1,449 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Apartment Mid Rise | — | — | — | — | — | — | — | — | — | — | — | 138 | 138 | 0.01 | < 0.005 | — | 139 |
| Regional Shopping Center | — | — | — | — | — | — | — | — | — | — | — | 16.6 | 16.6 | < 0.005 | < 0.005 | — | 16.7 |
| Enclosed Parking with Elevator | — | — | — | — | — | — | — | — | — | — | — | 84.2 | 84.2 | 0.01 | < 0.005 | — | 84.6 |
| Total | — | — | — | — | — | — | — | — | — | — | — | 239 | 239 | 0.02 | < 0.005 | — | 240 |

### 4.2.3. Natural Gas Emissions By Land Use - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Land Use | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Apartments Mid Rise | 0.02 | 0.39 | 0.16 | < 0.005 | 0.03 | — | 0.03 | 0.03 | — | 0.03 | — | 491 | 491 | 0.04 | < 0.005 | — | 492 |
| Regional Shopping Center | < 0.005 | 0.01 | 0.01 | < 0.005 | < 0.005 | — | < 0.005 | < 0.005 | — | < 0.005 | — | 8.29 | 8.29 | < 0.005 | < 0.005 | — | 8.32 |
| Enclosed Parking with Elevator | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | — | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 |
| Total | 0.02 | 0.39 | 0.17 | < 0.005 | 0.03 | — | 0.03 | 0.03 | — | 0.03 | — | 499 | 499 | 0.04 | < 0.005 | — | 501 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Apartments Mid Rise | 0.02 | 0.39 | 0.16 | < 0.005 | 0.03 | — | 0.03 | 0.03 | — | 0.03 | — | 491 | 491 | 0.04 | < 0.005 | — | 492 |

| | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Regional Shopping Center | < 0.005 | 0.01 | 0.01 | < 0.005 | < 0.005 | — | < 0.005 | < 0.005 | — | < 0.005 | — | 8.29 | 8.29 | < 0.005 | < 0.005 | — | 8.32 |
| Enclosed Parking with Elevator | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | — | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 |
| Total | 0.02 | 0.39 | 0.17 | < 0.005 | 0.03 | — | 0.03 | 0.03 | — | 0.03 | — | 499 | 499 | 0.04 | < 0.005 | — | 501 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Apartments Mid Rise | < 0.005 | 0.07 | 0.03 | < 0.005 | 0.01 | — | 0.01 | 0.01 | — | 0.01 | — | 81.3 | 81.3 | 0.01 | < 0.005 | — | 81.5 |
| Regional Shopping Center | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | < 0.005 | < 0.005 | — | < 0.005 | — | 1.37 | 1.37 | < 0.005 | < 0.005 | — | 1.38 |
| Enclosed Parking with Elevator | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | — | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 |
| Total | < 0.005 | 0.07 | 0.03 | < 0.005 | 0.01 | — | 0.01 | 0.01 | — | 0.01 | — | 82.7 | 82.7 | 0.01 | < 0.005 | — | 82.9 |

## 4.3. Area Emissions by Source

### 4.3.2. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Source | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Hearths | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | — | 0.00 | 0.00 | 747 | 747 | 0.05 | 0.01 | — | 751 |
| Consumer Products | 2.49 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

| | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Architectu Coatings | 0.21 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Landscap e Equipme nt | 1.12 | 0.09 | 9.68 | < 0.005 | 0.01 | — | 0.01 | 0.01 | — | 0.01 | — | 30.8 | 30.8 | < 0.005 | < 0.005 | — | 30.9 |
| Total | 3.82 | 0.09 | 9.68 | < 0.005 | 0.01 | — | 0.01 | 0.01 | — | 0.01 | 0.00 | 778 | 778 | 0.05 | 0.01 | — | 782 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Hearths | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | — | 0.00 | 0.00 | 747 | 747 | 0.05 | 0.01 | — | 751 |
| Consume r Products | 2.49 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Architectu ral Coatings | 0.21 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Total | 2.70 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | — | 0.00 | 0.00 | 747 | 747 | 0.05 | 0.01 | — | 751 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Hearths | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | — | 0.00 | 0.00 | 8.47 | 8.47 | < 0.005 | < 0.005 | — | 8.51 |
| Consume r Products | 0.45 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Architectu ral Coatings | 0.04 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Landscap e Equipme nt | 0.14 | 0.01 | 1.21 | < 0.005 | < 0.005 | — | < 0.005 | < 0.005 | — | < 0.005 | — | 3.49 | 3.49 | < 0.005 | < 0.005 | — | 3.51 |
| Total | 0.63 | 0.01 | 1.21 | < 0.005 | < 0.005 | — | < 0.005 | < 0.005 | — | < 0.005 | 0.00 | 12.0 | 12.0 | < 0.005 | < 0.005 | — | 12.0 |

## 4.4. Water Emissions by Land Use

### 4.4.2. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Land Use | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Apartments Mid Rise | — | — | — | — | — | — | — | — | — | — | 7.93 | 53.3 | 61.2 | 0.82 | 0.02 | — | 87.5 |
| Regional Shopping Center | — | — | — | — | — | — | — | — | — | — | 0.75 | 5.05 | 5.81 | 0.08 | < 0.005 | — | 8.31 |
| Enclosed Parking with Elevator | — | — | — | — | — | — | — | — | — | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 |
| Total | — | — | — | — | — | — | — | — | — | — | 8.68 | 58.3 | 67.0 | 0.89 | 0.02 | — | 95.8 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Apartments Mid Rise | — | — | — | — | — | — | — | — | — | — | 7.93 | 53.3 | 61.2 | 0.82 | 0.02 | — | 87.5 |
| Regional Shopping Center | — | — | — | — | — | — | — | — | — | — | 0.75 | 5.05 | 5.81 | 0.08 | < 0.005 | — | 8.31 |
| Enclosed Parking with Elevator | — | — | — | — | — | — | — | — | — | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 |
| Total | — | — | — | — | — | — | — | — | — | — | 8.68 | 58.3 | 67.0 | 0.89 | 0.02 | — | 95.8 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

| | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Apartments Mid Rise | — | — | — | — | — | — | — | — | — | — | 1.31 | 8.82 | 10.1 | 0.14 | < 0.005 | — | 14.5 |
| Regional Shopping Center | — | — | — | — | — | — | — | — | — | — | 0.12 | 0.84 | 0.96 | 0.01 | < 0.005 | — | 1.38 |
| Enclosed Parking with Elevator | — | — | — | — | — | — | — | — | — | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 |
| Total | — | — | — | — | — | — | — | — | — | — | 1.44 | 9.66 | 11.1 | 0.15 | < 0.005 | — | 15.9 |

## 4.5. Waste Emissions by Land Use

### 4.5.2. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Land Use | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Apartments Mid Rise | — | — | — | — | — | — | — | — | — | — | 44.3 | 0.00 | 44.3 | 4.43 | 0.00 | — | 155 |
| Regional Shopping Center | — | — | — | — | — | — | — | — | — | — | 3.00 | 0.00 | 3.00 | 0.30 | 0.00 | — | 10.5 |
| Enclosed Parking with Elevator | — | — | — | — | — | — | — | — | — | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 |
| Total | — | — | — | — | — | — | — | — | — | — | 47.3 | 0.00 | 47.3 | 4.73 | 0.00 | — | 165 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

| | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Apartment Mid Rise | — | — | — | — | — | — | — | — | — | — | 44.3 | 0.00 | 44.3 | 4.43 | 0.00 | — | 155 |
| Regional Shopping Center | — | — | — | — | — | — | — | — | — | — | 3.00 | 0.00 | 3.00 | 0.30 | 0.00 | — | 10.5 |
| Enclosed Parking with Elevator | — | — | — | — | — | — | — | — | — | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 |
| Total | — | — | — | — | — | — | — | — | — | — | 47.3 | 0.00 | 47.3 | 4.73 | 0.00 | — | 165 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Apartments Mid Rise | — | — | — | — | — | — | — | — | — | — | 7.33 | 0.00 | 7.33 | 0.73 | 0.00 | — | 25.7 |
| Regional Shopping Center | — | — | — | — | — | — | — | — | — | — | 0.50 | 0.00 | 0.50 | 0.05 | 0.00 | — | 1.74 |
| Enclosed Parking with Elevator | — | — | — | — | — | — | — | — | — | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 |
| Total | — | — | — | — | — | — | — | — | — | — | 7.83 | 0.00 | 7.83 | 0.78 | 0.00 | — | 27.4 |

## 4.6. Refrigerant Emissions by Land Use

### 4.6.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Land Use | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Apartments Mid Rise | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 0.79 | 0.79 |

| | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Regional Shopping Center | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 0.03 | 0.03 |
| Total | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 0.82 | 0.82 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Apartments Mid Rise | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 0.79 | 0.79 |
| Regional Shopping Center | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 0.03 | 0.03 |
| Total | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 0.82 | 0.82 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Apartments Mid Rise | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 0.13 | 0.13 |
| Regional Shopping Center | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | < 0.005 | < 0.005 |
| Total | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 0.14 | 0.14 |

## 4.7. Offroad Emissions By Equipment Type

### 4.7.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Equipment Type | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

| | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Total | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Total | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Total | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

## 4.8. Stationary Emissions By Equipment Type

### 4.8.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Equipment Type | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Total | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Total | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Total | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

## 4.9. User Defined Emissions By Equipment Type

### 4.9.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Equipme Type | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Total | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Total | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Total | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

## 4.10. Soil Carbon Accumulation By Vegetation Type

### 4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Vegetation | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Total | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Total | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Total | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

### 4.10.2. Above and Belowground Carbon Accumulation by Land Use Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Land Use | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Total | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Total | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Total | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

## 4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Species | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Avoided | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Subtotal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Sequestered | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Subtotal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Removed | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Subtotal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Avoided | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

| | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Subtotal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Sequestered | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Subtotal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Removed | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Subtotal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Avoided | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Subtotal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Sequestered | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Subtotal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Removed | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Subtotal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

# 5. Activity Data

## 5.1. Construction Schedule

| Phase Name | Phase Type | Start Date | End Date | Days Per Week | Work Days per Phase | Phase Description |
|---|---|---|---|---|---|---|
| Demolition | Demolition | 9/1/2023 | 9/29/2023 | 5.00 | 20.0 | — |
| Site Preparation | Site Preparation | 9/30/2023 | 6/8/2024 | 5.00 | 180 | — |
| Construction | Building Construction | 6/9/2024 | 9/1/2025 | 5.00 | 321 | — |
| Architectural Coating | Architectural Coating | 6/5/2025 | 9/1/2025 | 5.00 | 63.0 | — |

## 5.2. Off-Road Equipment

### 5.2.1. Unmitigated

| Phase Name | Equipment Type | Fuel Type | Engine Tier | Number per Day | Hours Per Day | Horsepower | Load Factor |
|---|---|---|---|---|---|---|---|
| Demolition | Tractors/Loaders/Backhoes | Diesel | Average | 3.00 | 8.00 | 84.0 | 0.37 |
| Demolition | Rubber Tired Dozers | Diesel | Average | 1.00 | 8.00 | 367 | 0.40 |
| Demolition | Concrete/Industrial Saws | Diesel | Average | 1.00 | 8.00 | 33.0 | 0.73 |
| Site Preparation | Rubber Tired Dozers | Diesel | Average | 1.00 | 7.00 | 367 | 0.40 |
| Site Preparation | Tractors/Loaders/Backhoes | Diesel | Average | 1.00 | 8.00 | 84.0 | 0.37 |
| Architectural Coating | Air Compressors | Diesel | Average | 1.00 | 6.00 | 37.0 | 0.48 |
| Construction | Cranes | Diesel | Average | 1.00 | 6.00 | 367 | 0.29 |
| Construction | Forklifts | Diesel | Average | 1.00 | 6.00 | 82.0 | 0.20 |
| Construction | Generator Sets | Diesel | Average | 1.00 | 8.00 | 14.0 | 0.74 |
| Construction | Tractors/Loaders/Backhoes | Diesel | Average | 1.00 | 6.00 | 84.0 | 0.37 |
| Construction | Welders | Diesel | Average | 3.00 | 8.00 | 46.0 | 0.45 |
| Site Preparation | Excavators | Diesel | Average | 1.00 | 8.00 | 36.0 | 0.38 |
| Site Preparation | Bore/Drill Rigs | Diesel | Average | 1.00 | 6.00 | 83.0 | 0.50 |
| Site Preparation | Forklifts | Diesel | Average | 1.00 | 8.00 | 82.0 | 0.20 |
| Site Preparation | Welders | Diesel | Average | 1.00 | 6.00 | 46.0 | 0.45 |
| Site Preparation | Cement and Mortar Mixers | Diesel | Average | 3.00 | 6.00 | 10.0 | 0.56 |
| Site Preparation | Pumps | Diesel | Average | 2.00 | 6.00 | 11.0 | 0.74 |
| Architectural Coating | Aerial Lifts | Diesel | Average | 1.00 | 6.00 | 46.0 | 0.31 |

## 5.3. Construction Vehicles

### 5.3.1. Unmitigated

| Phase Name | Trip Type | One-Way Trips per Day | Miles per Trip | Vehicle Mix |
|---|---|---|---|---|
| Demolition | — | — | — | — |
| Demolition | Worker | 12.5 | 18.5 | LDA,LDT1,LDT2 |
| Demolition | Vendor | — | 10.2 | HHDT,MHDT |
| Demolition | Hauling | 6.25 | 20.0 | HHDT |
| Demolition | Onsite truck | — | — | HHDT |
| Site Preparation | — | — | — | — |
| Site Preparation | Worker | 27.5 | 18.5 | LDA,LDT1,LDT2 |
| Site Preparation | Vendor | — | 10.2 | HHDT,MHDT |
| Site Preparation | Hauling | 16.0 | 20.0 | HHDT |
| Site Preparation | Onsite truck | — | — | HHDT |
| Architectural Coating | — | — | — | — |
| Architectural Coating | Worker | 22.4 | 18.5 | LDA,LDT1,LDT2 |
| Architectural Coating | Vendor | — | 10.2 | HHDT,MHDT |
| Architectural Coating | Hauling | 0.00 | 20.0 | HHDT |
| Architectural Coating | Onsite truck | — | — | HHDT |
| Construction | — | — | — | — |
| Construction | Worker | 112 | 18.5 | LDA,LDT1,LDT2 |
| Construction | Vendor | 24.7 | 10.2 | HHDT,MHDT |
| Construction | Hauling | 0.00 | 20.0 | HHDT |
| Construction | Onsite truck | — | — | HHDT |

## 5.4. Vehicles

### 5.4.1. Construction Vehicle Control Strategies

| Control Strategies Applied | PM10 Reduction | PM2.5 Reduction |
|---|---|---|
| Water unpaved roads twice daily | 55% | 55% |

## 5.5. Architectural Coatings

| Phase Name | Residential Interior Area Coated (sq ft) | Residential Exterior Area Coated (sq ft) | Non-Residential Interior Area Coated (sq ft) | Non-Residential Exterior Area Coated (sq ft) | Parking Area Coated (sq ft) |
|---|---|---|---|---|---|
| Architectural Coating | 215,784 | 71,928 | 10,165 | 2,896 | 2,953 |

## 5.6. Dust Mitigation

### 5.6.1. Construction Earthmoving Activities

| Phase Name | Material Imported (Cubic Yards) | Material Exported (Cubic Yards) | Acres Graded (acres) | Material Demolished (Ton of Debris) | Acres Paved (acres) |
|---|---|---|---|---|---|
| Demolition | 0.00 | 0.00 | 0.00 | 498 | — |
| Site Preparation | — | 23,000 | 78.8 | 0.00 | — |

### 5.6.2. Construction Earthmoving Control Strategies

| Control Strategies Applied | Frequency (per day) | PM10 Reduction | PM2.5 Reduction |
|---|---|---|---|
| Water Exposed Area | 2 | 61% | 61% |
| Water Demolished Area | 2 | 36% | 36% |

## 5.7. Construction Paving

| Land Use | Area Paved (acres) | % Asphalt |
|---|---|---|
| Apartments Mid Rise | — | 0% |
| Regional Shopping Center | 0.00 | 0% |
| Enclosed Parking with Elevator | 1.13 | 100% |

## 5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

| Year | kWh per Year | CO2 | CH4 | N2O |
|---|---|---|---|---|
| 2023 | 0.00 | 690 | 0.05 | 0.01 |
| 2024 | 0.00 | 690 | 0.05 | 0.01 |
| 2025 | 0.00 | 690 | 0.05 | 0.01 |

## 5.9. Operational Mobile Sources

### 5.9.1. Unmitigated

| Land Use Type | Trips/Weekday | Trips/Saturday | Trips/Sunday | Trips/Year | VMT/Weekday | VMT/Saturday | VMT/Sunday | VMT/Year |
|---|---|---|---|---|---|---|---|---|
| Total all Land Uses | 767 | 767 | 767 | 279,955 | 6,017 | 6,017 | 6,017 | 2,196,205 |

## 5.10. Operational Area Sources

### 5.10.1. Hearths

#### 5.10.1.1. Unmitigated

| Hearth Type | Unmitigated (number) |
|---|---|
| Apartments Mid Rise | — |
| Wood Fireplaces | 0 |
| Gas Fireplaces | 0 |
| Propane Fireplaces | 0 |
| Electric Fireplaces | 100 |
| No Fireplaces | 11 |
| Conventional Wood Stoves | 0 |
| Catalytic Wood Stoves | 0 |
| Non-Catalytic Wood Stoves | 0 |
| Pellet Wood Stoves | 0 |

### 5.10.2. Architectural Coatings

| Residential Interior Area Coated (sq ft) | Residential Exterior Area Coated (sq ft) | Non-Residential Interior Area Coated (sq ft) | Non-Residential Exterior Area Coated (sq ft) | Parking Area Coated (sq ft) |
|---|---|---|---|---|
| 224554.275 | 74,851 | 10,165 | 2,896 | 2,953 |

### 5.10.3. Landscape Equipment

| Season | Unit | Value |
|---|---|---|
| Snow Days | day/yr | 0.00 |
| Summer Days | day/yr | 250 |

## 5.11. Operational Energy Consumption

### 5.11.1. Unmitigated

Electricity (kWh/yr) and CO2 and CH4 and N2O and Natural Gas (kBTU/yr)

| Land Use | Electricity (kWh/yr) | CO2 | CH4 | N2O | Natural Gas (kBTU/yr) |
|---|---|---|---|---|---|
| Apartments Mid Rise | 440,407 | 690 | 0.0489 | 0.0069 | 1,532,356 |
| Regional Shopping Center | 53,086 | 690 | 0.0489 | 0.0069 | 25,882 |
| Enclosed Parking with Elevator | 268,736 | 690 | 0.0489 | 0.0069 | 0.00 |

## 5.12. Operational Water and Wastewater Consumption

### 5.12.1. Unmitigated

| Land Use | Indoor Water (gal/year) | Outdoor Water (gal/year) |
|---|---|---|
| Apartments Mid Rise | 4,137,392 | 0.00 |
| Regional Shopping Center | 392,584 | 0.00 |
| Enclosed Parking with Elevator | 0.00 | 0.00 |

## 5.13. Operational Waste Generation

### 5.13.1. Unmitigated

| Land Use | Waste (ton/year) | Cogeneration (kWh/year) |
|---|---|---|
| Apartments Mid Rise | 27.7 | 0.00 |
| Regional Shopping Center | 5.57 | 0.00 |
| Enclosed Parking with Elevator | 0.00 | 0.00 |

## 5.14. Operational Refrigeration and Air Conditioning Equipment

### 5.14.1. Unmitigated

| Land Use Type | Equipment Type | Refrigerant | GWP | Quantity (kg) | Operations Leak Rate | Service Leak Rate | Times Serviced |
|---|---|---|---|---|---|---|---|
| Apartments Mid Rise | Average room A/C & Other residential A/C and heat pumps | R-410A | 2,088 | < 0.005 | 2.50 | 2.50 | 10.0 |
| Apartments Mid Rise | Household refrigerators and/or freezers | R-134a | 1,430 | 0.12 | 0.60 | 0.00 | 1.00 |
| Regional Shopping Center | Other commercial A/C and heat pumps | R-410A | 2,088 | < 0.005 | 4.00 | 4.00 | 18.0 |
| Regional Shopping Center | Stand-alone retail refrigerators and freezers | R-134a | 1,430 | 0.04 | 1.00 | 0.00 | 1.00 |

## 5.15. Operational Off-Road Equipment

### 5.15.1. Unmitigated

| Equipment Type | Fuel Type | Engine Tier | Number per Day | Hours Per Day | Horsepower | Load Factor |
|---|---|---|---|---|---|---|

## 5.16. Stationary Sources

### 5.16.1. Emergency Generators and Fire Pumps

| Equipment Type | Fuel Type | Number per Day | Hours per Day | Hours per Year | Horsepower | Load Factor |
|---|---|---|---|---|---|---|

### 5.16.2. Process Boilers

| Equipment Type | Fuel Type | Number | Boiler Rating (MMBtu/hr) | Daily Heat Input (MMBtu/day) | Annual Heat Input (MMBtu/yr) |
|---|---|---|---|---|---|

## 5.17. User Defined

| Equipment Type | Fuel Type |
|---|---|
| — | — |

## 5.18. Vegetation

### 5.18.1. Land Use Change

#### 5.18.1.1. Unmitigated

| Vegetation Land Use Type | Vegetation Soil Type | Initial Acres | Final Acres |
|---|---|---|---|

### 5.18.1. Biomass Cover Type

#### 5.18.1.1. Unmitigated

| Biomass Cover Type | Initial Acres | Final Acres |
|---|---|---|

### 5.18.2. Sequestration

#### 5.18.2.1. Unmitigated

| Tree Type | Number | Electricity Saved (kWh/year) | Natural Gas Saved (btu/year) |
|---|---|---|---|

# 6. Climate Risk Detailed Report

## 6.1. Climate Risk Summary

Cal-Adapt midcentury 2040–2059 average projections for four hazards are reported below for your project location. These are under Representation Concentration Pathway (RCP) 8.5 which assumes GHG emissions will continue to rise strongly through 2050 and then plateau around 2100.

| Climate Hazard | Result for Project Location | Unit |
|---|---|---|
| Temperature and Extreme Heat | 18.8 | annual days of extreme heat |
| Extreme Precipitation | 5.55 | annual days with precipitation above 20 mm |
| Sea Level Rise | 0.00 | meters of inundation depth |
| Wildfire | 0.00 | annual hectares burned |

Temperature and Extreme Heat data are for grid cell in which your project are located. The projection is based on the 98th historical percentile of daily maximum/minimum temperatures from observed historical data (32 climate model ensemble from Cal-Adapt, 2040–2059 average under RCP 8.5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Extreme Precipitation data are for the grid cell in which your project are located. The threshold of 20 mm is equivalent to about ¾ an inch of rain, which would be light to moderate rainfall if received over a full day or heavy rain if received over a period of 2 to 4 hours. Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Sea Level Rise data are for the grid cell in which your project are located. The projections are from Radke et al. (2017), as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider different increments of sea level rise coupled with extreme storm events. Users may select from four model simulations to view the range in potential inundation depth for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 50 meters (m) by 50 m, or about 164 feet (ft) by 164 ft.
Wildfire data are for the grid cell in which your project are located. The projections are from UC Davis, as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider historical data of climate, vegetation, population density, and large (> 400 ha) fire history. Users may select from four model simulations to view the range in potential wildfire probabilities for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

## 6.2. Initial Climate Risk Scores

| Climate Hazard | Exposure Score | Sensitivity Score | Adaptive Capacity Score | Vulnerability Score |
|---|---|---|---|---|
| Temperature and Extreme Heat | 2 | 0 | 0 | N/A |
| Extreme Precipitation | N/A | N/A | N/A | N/A |
| Sea Level Rise | 1 | 0 | 0 | N/A |
| Wildfire | 1 | 0 | 0 | N/A |
| Flooding | N/A | N/A | N/A | N/A |
| Drought | N/A | N/A | N/A | N/A |

| | | | | |
|---|---|---|---|---|
| Snowpack Reduction | N/A | N/A | N/A | N/A |
| Air Quality Degradation | 0 | 0 | 0 | N/A |

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores do not include implementation of climate risk reduction measures.

## 6.3. Adjusted Climate Risk Scores

| Climate Hazard | Exposure Score | Sensitivity Score | Adaptive Capacity Score | Vulnerability Score |
|---|---|---|---|---|
| Temperature and Extreme Heat | 2 | 1 | 1 | 3 |
| Extreme Precipitation | N/A | N/A | N/A | N/A |
| Sea Level Rise | 1 | 1 | 1 | 2 |
| Wildfire | 1 | 1 | 1 | 2 |
| Flooding | N/A | N/A | N/A | N/A |
| Drought | N/A | N/A | N/A | N/A |
| Snowpack Reduction | N/A | N/A | N/A | N/A |
| Air Quality Degradation | 1 | 1 | 1 | 2 |

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores include implementation of climate risk reduction measures.

## 6.4. Climate Risk Reduction Measures

# 7. Health and Equity Details

## 7.1. CalEnviroScreen 4.0 Scores

The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.

| Indicator | Result for Project Census Tract |
|---|---|

| | |
|---|---|
| Exposure Indicators | — |
| AQ-Ozone | 88.7 |
| AQ-PM | 94.8 |
| AQ-DPM | 35.1 |
| Drinking Water | 83.1 |
| Lead Risk Housing | 91.6 |
| Pesticides | 0.00 |
| Toxic Releases | 56.6 |
| Traffic | 49.8 |
| Effect Indicators | — |
| CleanUp Sites | 11.8 |
| Groundwater | 11.0 |
| Haz Waste Facilities/Generators | 37.7 |
| Impaired Water Bodies | 51.2 |
| Solid Waste | 0.00 |
| Sensitive Population | — |
| Asthma | 82.7 |
| Cardio-vascular | 84.7 |
| Low Birth Weights | 11.6 |
| Socioeconomic Factor Indicators | — |
| Education | 58.1 |
| Housing | 93.1 |
| Linguistic | 37.7 |
| Poverty | 35.4 |
| Unemployment | 74.1 |

## 7.2. Healthy Places Index Scores

The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

| Indicator | Result for Project Census Tract |
|---|---|
| Economic | — |
| Above Poverty | 62.19684332 |
| Employed | 79.81521879 |
| Median HI | 53.29141537 |
| Education | — |
| Bachelor's or higher | 47.36301809 |
| High school enrollment | 20.74939048 |
| Preschool enrollment | 42.14038239 |
| Transportation | — |
| Auto Access | 71.35891184 |
| Active commuting | 65.1353779 |
| Social | — |
| 2-parent households | 28.38444758 |
| Voting | 46.41344797 |
| Neighborhood | — |
| Alcohol availability | 26.58796356 |
| Park access | 51.41793918 |
| Retail density | 68.47170538 |
| Supermarket access | 84.72988579 |
| Tree canopy | 53.71487232 |
| Housing | — |
| Homeownership | 75.19568844 |
| Housing habitability | 31.39997434 |
| Low-inc homeowner severe housing cost burden | 4.427049917 |
| Low-inc renter severe housing cost burden | 18.72192994 |
| Uncrowded housing | 39.26600796 |

| | |
|---|---|
| Health Outcomes | — |
| Insured adults | 28.7950725 |
| Arthritis | 48.2 |
| Asthma ER Admissions | 18.5 |
| High Blood Pressure | 68.0 |
| Cancer (excluding skin) | 45.0 |
| Asthma | 55.1 |
| Coronary Heart Disease | 47.4 |
| Chronic Obstructive Pulmonary Disease | 40.0 |
| Diagnosed Diabetes | 45.6 |
| Life Expectancy at Birth | 33.3 |
| Cognitively Disabled | 72.6 |
| Physically  Disabled | 67.1 |
| Heart Attack ER Admissions | 22.2 |
| Mental Health Not Good | 42.4 |
| Chronic Kidney Disease | 55.3 |
| Obesity | 42.2 |
| Pedestrian Injuries | 92.3 |
| Physical Health Not Good | 40.7 |
| Stroke | 51.7 |
| Health Risk Behaviors | — |
| Binge Drinking | 35.4 |
| Current Smoker | 43.7 |
| No Leisure Time for Physical Activity | 50.2 |
| Climate Change Exposures | — |
| Wildfire Risk | 0.0 |
| SLR Inundation Area | 0.0 |

| | |
|---|---|
| Children | 41.8 |
| Elderly | 56.5 |
| English Speaking | 73.0 |
| Foreign-born | 79.5 |
| Outdoor Workers | 24.5 |
| Climate Change Adaptive Capacity | — |
| Impervious Surface Cover | 58.6 |
| Traffic Density | 57.1 |
| Traffic Access | 23.0 |
| Other Indices | — |
| Hardship | 52.4 |
| Other Decision Support | — |
| 2016 Voting | 34.7 |

## 7.3. Overall Health & Equity Scores

| Metric | Result for Project Census Tract |
|---|---|
| CalEnviroScreen 4.0 Score for Project Location (a) | 71.0 |
| Healthy Places Index Score for Project Location (b) | 52.0 |
| Project Located in a Designated Disadvantaged Community (Senate Bill 535) | No |
| Project Located in a Low-Income Community (Assembly Bill 1550) | No |
| Project Located in a Community Air Protection Program Community (Assembly Bill 617) | No |

a: The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.
b: The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

## 7.4. Health & Equity Measures

No Health & Equity Measures selected.

## 7.5. Evaluation Scorecard

Health & Equity Evaluation Scorecard not completed.

## 7.6. Health & Equity Custom Measures

No Health & Equity Custom Measures created.

# 8. User Changes to Default Data

| Screen | Justification |
|---|---|
| Land Use | 4-story, 111 apartment units with 5.3 TSF of commercial uses on top of 2 levels of subterranean parking structures with 182 spaces on 1.13 acres. |
| Construction: Construction Phases | Demolition and construction to start 9/2023 and take 24 months. |
| Construction: Off-Road Equipment | Extra equipment added for site prep/excavation/foundation work. |
| Construction: Architectural Coatings | SCAQMD Rule 1113 limits paints applied to buildings to 50g/L VOC content. |
| Operations: Hearths | No wood stoves and only electric fireplaces |

# APPENDIX B: EMFAC DATA

Source: EMFAC2021 (v1.0.1) Emissions Inventory
Region Type: Air Basin
Region: South Coast
Calendar Year: 2023
Season: Annual
Vehicle Classification: EMFAC2007 Categories
Units: miles/day for CVMT and EVMT, trips/day for Trips, kWh/day for Energy Consumption, tons/day for Emissions, 1000 gallons/day for Fuel Consumption

| Region | Calendar Year | Vehicle Category | Model Year | Speed | Fuel | Population | Trips | Energy Consumption | Fuel Consumption | Fuel Consumption | Total Fuel Consumption | Total VMT | Total VMT | Miles Per Gallon | Vehicle Class |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| South Coast | 2023 | HHDT | Aggregate | Aggregate | Gasoline | 77.76705152 | 1555.963167 | 0 | 1.13577086 | 1135.77086 | 1904593.073 | 4463.059823 | 11986522.09 | **6.29** | **HHDT** |
| South Coast | 2023 | HHDT | Aggregate | Aggregate | Diesel | 88939.48335 | 1354183.938 | 0 | 1901.434302 | 1901434.302 | | 11341687.62 | | | |
| South Coast | 2023 | HHDT | Aggregate | Aggregate | Electricity | 69.55210742 | 1090.269168 | 7969.44745 | 0 | 0 | | 4465.990707 | | | |
| South Coast | 2023 | HHDT | Aggregate | Aggregate | Natural Gas | 9734.51825 | 62334.09461 | 0 | 108.4243363 | 108424.3363 | | 635905.4264 | | | |
| South Coast | 2023 | LDA | Aggregate | Aggregate | Gasoline | 5370115.979 | 25014254.84 | 0 | 7560.140191 | 7560140.191 | 7688683.513 | 216250190.4 | 234402460.7 | **30.49** | **LDA** |
| South Coast | 2023 | LDA | Aggregate | Aggregate | Diesel | 15648.45784 | 65526.69936 | 0 | 11.94439033 | 11944.39033 | | 486634.8854 | | | |
| South Coast | 2023 | LDA | Aggregate | Aggregate | Electricity | 241152.5368 | 1208859.723 | 4312325.17 | 0 | 0 | | 11169438.62 | | | |
| South Coast | 2023 | LDA | Aggregate | Aggregate | Plug-in Hybrid | 136333.5236 | 563739.1202 | 971420.6342 | 116.5989322 | 116598.9322 | | 6496196.814 | | | |
| South Coast | 2023 | LDT1 | Aggregate | Aggregate | Gasoline | 499113.9009 | 2195668.394 | 0 | 753.4930394 | 753493.0394 | 754054.6567 | 18009866.74 | 18076073.23 | **23.97** | **LDT1** |
| South Coast | 2023 | LDT1 | Aggregate | Aggregate | Diesel | 197.6298759 | 575.4909742 | 0 | 0.161278255 | 161.278255 | | 3756.265001 | | | |
| South Coast | 2023 | LDT1 | Aggregate | Aggregate | Electricity | 1012.723437 | 4715.252993 | 14723.34847 | 0 | 0 | | 38135.23576 | | | |
| South Coast | 2023 | LDT1 | Aggregate | Aggregate | Plug-in Hybrid | 463.9603347 | 1918.475984 | 3964.563568 | 0.400339089 | 400.3390888 | | 24314.99018 | | | |
| South Coast | 2023 | LDT2 | Aggregate | Aggregate | Gasoline | 2429950.117 | 11422828.59 | 0 | 4340.074795 | 4340074.795 | 4365928.785 | 100292660.9 | 101911704.2 | **23.34** | **LDT2** |
| South Coast | 2023 | LDT2 | Aggregate | Aggregate | Diesel | 7734.815855 | 37335.71589 | 0 | 10.96643985 | 10966.43985 | | 337920.5463 | | | |
| South Coast | 2023 | LDT2 | Aggregate | Aggregate | Electricity | 11160.73812 | 57317.98395 | 159502.5609 | 0 | 0 | | 413130.7341 | | | |
| South Coast | 2023 | LDT2 | Aggregate | Aggregate | Plug-in Hybrid | 17128.65814 | 70827.00142 | 136848.0138 | 14.88755019 | 14887.55019 | | 867992.1123 | | | |
| South Coast | 2023 | LHDT1 | Aggregate | Aggregate | Gasoline | 200398.3929 | 2985637.46 | 0 | 589.944376 | 589944.376 | 795980.0519 | 7820670.654 | 12015327.21 | **15.10** | **LHDT1** |
| South Coast | 2023 | LHDT1 | Aggregate | Aggregate | Diesel | 99896.36028 | 1256570.543 | 0 | 206.0356758 | 206035.6758 | | 4194656.56 | | | |
| South Coast | 2023 | LHDT2 | Aggregate | Aggregate | Gasoline | 31213.47663 | 465034.2937 | 0 | 99.14469838 | 99144.69838 | 206307.908 | 1156671.072 | 2985280.201 | **14.47** | **LHDT2** |
| South Coast | 2023 | LHDT2 | Aggregate | Aggregate | Diesel | 43691.53059 | 549584.4908 | 0 | 107.1632097 | 107163.2097 | | 1828609.129 | | | |
| South Coast | 2023 | MCY | Aggregate | Aggregate | Gasoline | 237586.076 | 475172.1521 | 0 | 36.88140998 | 36881.40998 | 36881.40998 | 1522726.619 | 1522726.619 | **41.29** | **MCY** |
| South Coast | 2023 | MDV | Aggregate | Aggregate | Gasoline | 1559902.035 | 7210563.701 | 0 | 3188.051046 | 3188051.046 | 3230287.568 | 60070040.07 | 61764195.73 | **19.12** | **MDV** |
| South Coast | 2023 | MDV | Aggregate | Aggregate | Diesel | 19613.50466 | 92462.53217 | 0 | 33.91368569 | 33913.68569 | | 784655.9403 | | | |
| South Coast | 2023 | MDV | Aggregate | Aggregate | Electricity | 12017.75416 | 61732.39119 | 171855.0799 | 0 | 0 | | 445125.2375 | | | |
| South Coast | 2023 | MDV | Aggregate | Aggregate | Plug-in Hybrid | 10053.44096 | 41570.97836 | 70940.44124 | 8.322835871 | 8322.835871 | | 464374.4805 | | | |
| South Coast | 2023 | MH | Aggregate | Aggregate | Gasoline | 30468.55432 | 3048.074174 | 0 | 59.14587153 | 59145.87153 | 70446.99764 | 287687.7216 | 401829.5371 | **5.70** | **MH** |
| South Coast | 2023 | MH | Aggregate | Aggregate | Diesel | 11533.11741 | 1153.311741 | 0 | 11.30112611 | 11301.12611 | | 114141.8155 | | | |
| South Coast | 2023 | MHDT | Aggregate | Aggregate | Gasoline | 25436.77287 | 508938.9517 | 0 | 266.1846594 | 266184.6594 | 808347.4856 | 1361855.942 | 6189907.424 | **7.66** | **MHDT** |
| South Coast | 2023 | MHDT | Aggregate | Aggregate | Diesel | 112753.1691 | 1384256.954 | 0 | 542.1628262 | 542162.8262 | | 4826755.64 | | | |
| South Coast | 2023 | MHDT | Aggregate | Aggregate | Electricity | 60.14211345 | 769.7741807 | 1354.591964 | 0 | 0 | | 1295.841104 | | | |
| South Coast | 2023 | MHDT | Aggregate | Aggregate | Natural Gas | 1405.746156 | 12603.45034 | 0 | 8.268140472 | 8268.140472 | | 68507.0989 | | | |
| South Coast | 2023 | OBUS | Aggregate | Aggregate | Gasoline | 5457.340752 | 109190.4738 | 0 | 43.78040647 | 43780.40647 | 77110.24352 | 220170.8028 | 453397.9409 | **5.88** | **OBUS** |
| South Coast | 2023 | OBUS | Aggregate | Aggregate | Diesel | 2949.128306 | 37294.91051 | 0 | 33.32983706 | 33329.83706 | | 233227.1381 | | | |
| South Coast | 2023 | OBUS | Aggregate | Aggregate | Natural Gas | 467.0036657 | 4156.332625 | 0 | 3.280062265 | 3280.062265 | | 28665.48863 | | | |
| South Coast | 2023 | SBUS | Aggregate | Aggregate | Gasoline | 2711.533402 | 10846.13361 | 0 | 13.42826072 | 13428.26072 | 22892.86276 | 119164.9071 | 188479.341 | **8.23** | **SBUS** |
| South Coast | 2023 | SBUS | Aggregate | Aggregate | Diesel | 3377.128927 | 48900.82686 | 0 | 9.464602039 | 9464.602039 | | 69271.73995 | | | |
| South Coast | 2023 | SBUS | Aggregate | Aggregate | Electricity | 3.674682915 | 53.20940862 | 49.36713892 | 0 | 0 | | 42.69400814 | | | |
| South Coast | 2023 | SBUS | Aggregate | Aggregate | Natural Gas | 2976.329163 | 43097.24627 | 0 | 17.80624767 | 17806.24767 | | 74753.64709 | | | |
| South Coast | 2023 | UBUS | Aggregate | Aggregate | Gasoline | 894.3697717 | 3577.479087 | 0 | 14.17067148 | 14170.67148 | 204710.9133 | 96960.55907 | 694841.5831 | **3.39** | **UBUS** |
| South Coast | 2023 | UBUS | Aggregate | Aggregate | Diesel | 14.61165815 | 58.44663261 | 0 | 0.262644403 | 262.644403 | | 1749.021883 | | | |
| South Coast | 2023 | UBUS | Aggregate | Aggregate | Electricity | 58.03212573 | 232.1285029 | 5326.224873 | 0 | 0 | | 2539.586791 | | | |
| South Coast | 2023 | UBUS | Aggregate | Aggregate | Natural Gas | 4957.576963 | 19830.30785 | 0 | 190.2775974 | 190277.5974 | | 593592.4153 | | | |

Source: EMFAC2021 (v1.0.1) Emissions Inventory
Region Type: Air Basin
Region: South Coast
Calendar Year: 2025
Season: Annual
Vehicle Classification: EMFAC2007 Categories
Units: miles/day for CVMT and EVMT, trips/day for Trips, kWh/day for Energy Consumption, tons/day for Emissions, 1000 gallons/day for Fuel Consumption

| Region | Calendar Year | Vehicle Category | Model Year | Speed | Fuel | Population | Trips | Energy Consumption | Fuel Consumption | Fuel Consumption | Total Fuel Consumptior | Total VMT | Total VMT | Miles Per Gallon | Vehicle Class |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| South Coast | 2025 | HHDT | Aggregate | Aggregate | Gasoline | 54.83401411 | 1097.118954 | 0 | 0.915660885 | 915.6608849 | 2033428.223 | 3783.739566 | 12499201.56 | **6.15** | **HHDT** |
| South Coast | 2025 | HHDT | Aggregate | Aggregate | Diesel | 95337.36817 | 1459640.636 | 0 | 1919.938673 | 1919938.673 | | 11745346.31 | | | |
| South Coast | 2025 | HHDT | Aggregate | Aggregate | Electricity | 647.565363 | 8586.113967 | 125035.0292 | 0 | 0 | | 69780.1703 | | | |
| South Coast | 2025 | HHDT | Aggregate | Aggregate | Natural Gas | 10701.05249 | 68656.35135 | 0 | 112.5738892 | 112573.8892 | | 680291.3416 | | | |
| South Coast | 2025 | LDA | Aggregate | Aggregate | Gasoline | 5244723.652 | 24385315.28 | 0 | 7108.358927 | 7108358.927 | 7245907.135 | 210339700.5 | 233546247.7 | **32.23** | **LDA** |
| South Coast | 2025 | LDA | Aggregate | Aggregate | Diesel | 13504.15254 | 56096.65324 | 0 | 9.832104986 | 9832.104986 | | 408222.3366 | | | |
| South Coast | 2025 | LDA | Aggregate | Aggregate | Electricity | 314906.6469 | 1568075.372 | 5911352.826 | 0 | 0 | | 15311111.74 | | | |
| South Coast | 2025 | LDA | Aggregate | Aggregate | Plug-in Hybrid | 159860.278 | 661022.2496 | 1174382.35 | 127.7161032 | 127716.1032 | | 7487213.196 | | | |
| South Coast | 2025 | LDT1 | Aggregate | Aggregate | Gasoline | 483367.514 | 2127610.282 | 0 | 708.9359688 | 708935.9688 | 709884.4736 | 17503198.77 | 17626287.18 | **24.83** | **LDT1** |
| South Coast | 2025 | LDT1 | Aggregate | Aggregate | Diesel | 161.5260868 | 453.3891137 | 0 | 0.127085477 | 127.0854768 | | 2967.035899 | | | |
| South Coast | 2025 | LDT1 | Aggregate | Aggregate | Electricity | 1505.26458 | 7236.189381 | 25889.93818 | 0 | 0 | | 67058.04036 | | | |
| South Coast | 2025 | LDT1 | Aggregate | Aggregate | Plug-in Hybrid | 1033.948372 | 4275.376518 | 9086.363765 | 0.821419376 | 821.4193759 | | 53063.32883 | | | |
| South Coast | 2025 | LDT2 | Aggregate | Aggregate | Gasoline | 2528171.942 | 11891190.15 | 0 | 4341.426391 | 4341426.391 | 4373117.135 | 104543301.5 | 106927231 | **24.45** | **LDT2** |
| South Coast | 2025 | LDT2 | Aggregate | Aggregate | Diesel | 8518.978579 | 40955.39339 | 0 | 11.53683826 | 11536.83826 | | 366939.3838 | | | |
| South Coast | 2025 | LDT2 | Aggregate | Aggregate | Electricity | 21565.05505 | 109850.7805 | 300027.449 | 0 | 0 | | 777107.023 | | | |
| South Coast | 2025 | LDT2 | Aggregate | Aggregate | Plug-in Hybrid | 25221.81395 | 104292.2007 | 204751.9727 | 20.15390552 | 20153.90552 | | 1239883.058 | | | |
| South Coast | 2025 | LHDT1 | Aggregate | Aggregate | Gasoline | 199655.4178 | 2974568.238 | 0 | 565.7929114 | 565792.9114 | 785253.6339 | 7899242.311 | 12579982.86 | **16.02** | **LHDT1** |
| South Coast | 2025 | LHDT1 | Aggregate | Aggregate | Diesel | 107539.0383 | 1352705.817 | 0 | 219.4607225 | 219460.7225 | | 4531936.528 | | | |
| South Coast | 2025 | LHDT1 | Aggregate | Aggregate | Electricity | 2131.529069 | 29802.51665 | 83294.25907 | 0 | 0 | | 148804.02 | | | |
| South Coast | 2025 | LHDT2 | Aggregate | Aggregate | Gasoline | 30849.1838 | 459606.8733 | 0 | 93.96299335 | 93962.99335 | 208962.5987 | 1145449.689 | 3183322.084 | **15.23** | **LHDT2** |
| South Coast | 2025 | LHDT2 | Aggregate | Aggregate | Diesel | 48016.98656 | 603993.2855 | 0 | 114.9996053 | 114999.6053 | | 2001431.485 | | | |
| South Coast | 2025 | LHDT2 | Aggregate | Aggregate | Electricity | 549.452873 | 7286.296511 | 20413.74678 | 0 | 0 | | 36440.90994 | | | |
| South Coast | 2025 | MCY | Aggregate | Aggregate | Gasoline | 246317.3152 | 492634.6304 | 0 | 37.82728892 | 37827.28892 | 37827.28892 | 1575969.655 | 1575969.655 | **41.66** | **MCY** |
| South Coast | 2025 | MDV | Aggregate | Aggregate | Gasoline | 1582911.671 | 7327873.919 | 0 | 3124.528435 | 3124528.435 | 3169334.086 | 61244218.19 | 63579746.09 | **20.06** | **MDV** |
| South Coast | 2025 | MDV | Aggregate | Aggregate | Diesel | 19966.30161 | 93386.67778 | 0 | 32.96063764 | 32960.63764 | | 783550.3632 | | | |
| South Coast | 2025 | MDV | Aggregate | Aggregate | Electricity | 23405.95686 | 119202.2123 | 325389.6809 | 0 | 0 | | 842798.2408 | | | |
| South Coast | 2025 | MDV | Aggregate | Aggregate | Plug-in Hybrid | 15515.87163 | 64158.1292 | 115605.1765 | 11.8450132 | 11845.0132 | | 709179.3041 | | | |
| South Coast | 2025 | MH | Aggregate | Aggregate | Gasoline | 28222.75742 | 2823.404652 | 0 | 55.89330175 | 55893.30175 | 67478.95091 | 271714.048 | 388622.5468 | **5.76** | **MH** |
| South Coast | 2025 | MH | Aggregate | Aggregate | Diesel | 11853.97154 | 1185.397154 | 0 | 11.58564916 | 11585.64916 | | 116908.4988 | | | |
| South Coast | 2025 | MHDT | Aggregate | Aggregate | Gasoline | 24266.37368 | 485521.6046 | 0 | 246.6220886 | 246622.0886 | 803911.5702 | 1285729.87 | 6330495.207 | **7.87** | **MHDT** |
| South Coast | 2025 | MHDT | Aggregate | Aggregate | Diesel | 117076.634 | 1440705.231 | 0 | 548.3413637 | 548341.3637 | | 4914316.485 | | | |
| South Coast | 2025 | MHDT | Aggregate | Aggregate | Electricity | 1030.710845 | 13697.48889 | 58527.95377 | 0 | 0 | | 55891.50984 | | | |
| South Coast | 2025 | MHDT | Aggregate | Aggregate | Natural Gas | 1586.964447 | 14102.34275 | 0 | 8.94811801 | 8948.11801 | | 74557.34189 | | | |
| South Coast | 2025 | OBUS | Aggregate | Aggregate | Gasoline | 5130.782804 | 102656.7023 | 0 | 38.98709136 | 38987.09136 | 75404.10956 | 199581.2481 | 465625.8692 | **6.18** | **OBUS** |
| South Coast | 2025 | OBUS | Aggregate | Aggregate | Diesel | 3078.572652 | 39272.27543 | 0 | 33.03961652 | 33039.61652 | | 233905.0145 | | | |
| South Coast | 2025 | OBUS | Aggregate | Aggregate | Electricity | 29.09533983 | 582.1395594 | 2258.641236 | 0 | 0 | | 2147.933443 | | | |
| South Coast | 2025 | OBUS | Aggregate | Aggregate | Natural Gas | 505.1478218 | 4495.815614 | 0 | 3.377401677 | 3377.401677 | | 29991.67319 | | | |
| South Coast | 2025 | SBUS | Aggregate | Aggregate | Gasoline | 2812.998756 | 11251.99503 | 0 | 13.81627409 | 13816.27409 | 41147.02398 | 123623.802 | 268314.9981 | **6.52** | **SBUS** |
| South Coast | 2025 | SBUS | Aggregate | Aggregate | Diesel | 3181.542446 | 46068.73461 | 0 | 8.734797087 | 8734.797087 | | 64276.54474 | | | |
| South Coast | 2025 | SBUS | Aggregate | Aggregate | Electricity | 47.38132065 | 537.5923668 | 1681.228052 | 0 | 0 | | 1453.97051 | | | |
| South Coast | 2025 | SBUS | Aggregate | Aggregate | Natural Gas | 3209.535885 | 46474.07961 | 0 | 18.59595281 | 18595.95281 | | 78960.68088 | | | |
| South Coast | 2025 | UBUS | Aggregate | Aggregate | Gasoline | 892.063682 | 3568.254728 | 0 | 13.80114714 | 13801.14714 | 198998.2045 | 96751.77026 | 697627.2588 | **3.51** | **UBUS** |
| South Coast | 2025 | UBUS | Aggregate | Aggregate | Diesel | 11.19759793 | 44.79039173 | 0 | 0.207460052 | 207.4600516 | | 1417.05095 | | | |
| South Coast | 2025 | UBUS | Aggregate | Aggregate | Electricity | 163.9010308 | 655.6041234 | 34521.6162 | 0 | 0 | | 16501.94536 | | | |
| South Coast | 2025 | UBUS | Aggregate | Aggregate | Natural Gas | 4881.393278 | 19525.57311 | 0 | 184.9895973 | 184989.5973 | | 582956.4922 | | | |