

CABRILLO AT FIRST MIXED-USE RESIDENTIAL AIR QUALITY, GLOBAL CLIMATE CHANGE, HRA, AND ENERGY IMPACT ANALYSIS

City of Santa Ana

January 21, 2022



Traffic Engineering • Transportation Planning • Parking • Noise & Vibration
Air Quality • Global Climate Change • Health Risk Assessment

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TABLE OF CONTENTS

EXECUTIVE SUMMARY	V
1. INTRODUCTION.....	1
Purpose and Objectives	1
Project Location	1
Project Description.....	1
Phasing and Timing	1
Sensitive Receptors in Project Vicinity	2
2. AIR QUALITY ANALYSIS	5
Existing Air Quality Conditions.....	5
Local Air Quality	5
Pollutants	8
Other Pollutants of Concern	10
Regulatory Setting	10
Federal – United States Environmental Protection Agency	11
State – California Air Resources Board	11
Regional	12
Local – City of Santa Ana	17
Monitored Air Quality.....	21
Ozone	21
Carbon Monoxide	21
Nitrogen Dioxide	21
Particulate Matter	21
Air Quality Standards.....	24
Significance Thresholds	24
Regional Air Quality	25
Local Air Quality	25
Toxic Air Contaminants.....	25
Odor Impacts.....	26
Short-Term Construction Emissions.....	28
Methodology	28
Construction-Related Regional Impacts	29
Construction-Related Local Impacts	29
Construction-Related Human Health Impacts.....	30
Construction-Related Toxic Air Contaminant Impacts	30
Construction-Related Odor Impacts.....	30
Long-Term Operational Emissions.....	35
Operations-Related Regional Air Quality Impacts.....	35
Operations-Related Local Air Quality Impacts.....	36
Operations-Related Human Health Impacts	37
Operations-Related Odor Impacts	37
Cumulative Air Quality Impacts	39
Project Specific Impacts.....	39
Air Quality Compliance	39
3. DIESEL EMISSIONS HEALTH RISK ASSESSMENT	41
Estimate of Emissions Factors	42
Receptor Network.....	42
Dispersion Modeling.....	43
Model Selection.....	43

General Model Assumptions.....	43
Meteorological Data	43
Estimation of Health Risks.....	43
Cancer Risks	43
Non-Cancer Risks.....	45
4. GLOBAL CLIMATE CHANGE ANALYSIS.....	57
Existing Greenhouse Gas Environment.....	57
Water Vapor.....	57
Carbon Dioxide (CO ₂).....	57
Methane (CH ₄).....	58
Nitrous Oxide (N ₂ O)	58
Chlorofluorocarbons (CFC).....	58
Hydrofluorocarbons (HFC).....	58
Perfluorocarbons (PFC).....	58
Sulfur Hexafluoride (SF ₆)	59
Aerosols.....	59
Global Warming Potential	59
Greenhouse Gas Standards and Regulation	61
International	61
Federal.....	61
State of California	64
Regional – South Coast Air Quality Management District.....	74
Local – City of Santa Ana	76
Significance Thresholds.....	76
Appendix G of State CEQA Guidelines	76
Thresholds of Significance for this Project	77
Methodology	77
Project Greenhouse Gas Emissions.....	78
Consistency With Applicable Greenhouse Gas Reduction Plans and Policies.....	80
Cumulative Greenhouse Gas Impacts.....	82
5. ENERGY ANALYSIS.....	83
Existing Conditions.....	83
Overview	83
Electricity	84
Natural Gas.....	84
Transportation Energy Resources	85
Regulatory Background.....	85
Federal Regulations	85
State Regulations.....	86
Project Energy Demands and Energy Efficiency Measures	91
Evaluation Criteria.....	91
Methodology	91
Construction Energy Demands	91
Operational Energy Demands	93
Renewable Energy and Energy Efficiency Plan Consistency	94
Conclusions.....	95
6. EMISSIONS REDUCTION MEASURES.....	105
Construction Measures	105
Operational Measures	105
Metro Mixed Use Overlay District MMRP.....	105
7. REFERENCES.....	106

APPENDICES

Appendix A Glossary

Appendix B CalEEMod Model Daily Emissions Printouts

Appendix C AERMOD Model Printouts

Appendix D CalEEMod Model Annual Emissions Printouts and EMFAC Data

Appendix E Metro East Mixed-Use Overlay District MMRP Measures

LIST OF TABLES

Table 1.	Local Monthly Climate Data	7
Table 2.	State and Federal Criteria Pollutant Standards.....	19
Table 3.	South Coast Air Basin Attainment Status	20
Table 4.	Air Quality Monitoring Summary	23
Table 5.	SCAQMD Air Quality Significance Thresholds.....	27
Table 6.	Construction-Related Regional Pollutant Emissions.....	32
Table 7.	Maximum Number of Acres Disturbed Per Day	33
Table 8.	Local Construction Emissions at the Nearest Receptors	34
Table 9.	Regional Operational Pollutant Emissions	38
Table 10.	DPM Emissions Factors	46
Table 11.	Summary of Emission Configurations.....	47
Table 12.	General Modeling Assumptions – AERMOD Model.....	48
Table 13.	Carcinogenic Risks and Non-Carcinogenic 3rd Trimester Exposure Scenario (0.25 Years)	49
Table 14.	Carcinogenic Risks and Non-Carcinogenic Infant Exposure Scenario (2 Year)	50
Table 15.	Carcinogenic Risks and Non-Carcinogenic Child Exposure Scenario (14 Year)	51
Table 16.	Carcinogenic Risks and Non-Carcinogenic Adult Exposure Scenario (14 Year).....	52
Table 17.	Cumulative Carcinogenic Risk 30.25 Year Exposure Scenario	53
Table 18.	Global Warming Potentials and Atmospheric Lifetimes	60
Table 19.	Project-Related Greenhouse Gas Emissions	79
Table 20.	Consistency with Santa Ana Climate Action Plan Measures	81
Table 21.	Total Electricity System Power (California 2020)	96
Table 22.	SCE 2020 Power Content Mix.....	97
Table 23.	Project Construction Power Cost and Electricity Usage	98
Table 24.	Construction Equipment Fuel Consumption Estimates.....	99
Table 25.	Construction Worker Fuel Consumption Estimates.....	100
Table 26.	Construction Vendor Fuel Consumption Estimates (MHD & HHD Trucks).....	101
Table 27.	Construction Hauling Fuel Consumption Estimates (HHD Trucks)	102

Table 28.	Estimated Vehicle Operations Fuel Consumption	103
Table 29.	Project Annual Operational Energy Demand Summary	104

LIST OF FIGURES

Figure 1.	Project Location Map	3
Figure 2.	Site Plan.....	4
Figure 3.	AERMOD Model Source and Receptor Placement	54
Figure 4.	Wind Rose: John Wayne Airport.....	55
Figure 5.	Modeled Study Area Highest Cancer Risk from Annual DPM Emissions.....	56

EXECUTIVE SUMMARY

The purpose of this air quality, global climate change, health risk assessment and energy impact analysis is to provide an assessment of the impacts resulting from development of the proposed Cabrillo at First Mixed-Use Residential project and to identify measures that may be necessary to reduce potentially significant impacts.

Construction-Source Emissions

Project construction-source emissions would not exceed applicable regional thresholds of significance established by the South Coast Air Quality Management District (SCAQMD). For localized emissions, the project will not exceed applicable Localized Significance Thresholds (LSTs) established by the SCAQMD.

Project construction-source emissions would not conflict with the Basin Air Quality Management Plan (AQMP). 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 contribute to violation of the California Ambient Air Quality Standards (CAAQS) or National Ambient Air Quality Standards (NAAQS).

Given the temporary and short-term construction schedule, the project would not result in a long-term (i.e., lifetime or 30-year) exposure to TACs 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. Therefore, impacts from TACs during construction would be less than significant.

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.

Operational-Source Emissions

Project operational-sourced emissions would not exceed applicable regional thresholds of significance established by the SCAQMD. Project operational-source emissions would not result in or cause a significant localized air quality or toxic air contaminant (TAC) impacts as discussed in the Operations-Related Local Air Quality Impacts section of this report. Additionally, project-related trips will not cause or result in CO concentrations exceeding applicable state and/or federal standards (CO "hotspots").

The Diesel Emissions Health Risk Assessment conducted for this project showed that the cancer risk from freeway-related DPM emissions would exceed the SCAQMD MICR threshold of 10 in a million at all of the proposed residential uses on-site. However, with incorporation of mitigation measure 1 (see Section 6 of this report), which requires the installation of MERV 13 filtration within all the homes, the cancer risk from freeway-related DPM concentrations would be reduced to less than significant levels. Therefore, with mitigation, emissions exposure during the operation of the project would therefore not adversely affect sensitive receptors within the vicinity of the project.

Project operational-source emissions would not conflict with the Basin Air Quality Management Plan (AQMP). 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 odor impacts. Potential operational-source odor impacts are therefore considered less than significant.

Greenhouse Gases

Project-related GHG emissions would not exceed the SCAQMD draft screening threshold of 3,000 MTCO₂e per year for all land uses.

Furthermore, the project's GHG emissions would not exceed the SCAQMD screening threshold (based on EO S-3-05). The project would not conflict with the goals of AB-32, SB-32, or the City of Santa Ana CAP; 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.

Energy

For new development such as that proposed by the Cabrillo at First Mixed-Use Residential 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 provide for, and 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 mixed-use residential 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. Impacts are considered to be less than significant.

1. INTRODUCTION

This section describes the purpose of this air quality, global climate change, health risk assessment, and energy impact analysis, project location, proposed development, and study area. Figure 1 shows the project location map and Figure 2 illustrates the project site plan.

PURPOSE AND OBJECTIVES

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
- analysis of the construction related air quality and greenhouse gas emissions
- analysis of the operations related air quality and greenhouse gas emissions
- discussion of the health risk impacts
- 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 mitigation measures

The City of Santa Ana is the lead agency for this air quality and greenhouse gas 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.

PROJECT LOCATION

The 1.40-acre project site is located at the southwest corner of the intersection of First Street and Cabrillo Park Drive in the City of Santa Ana, California. The project site is located within the Metro East Mixed-Use Overlay District (MEMU). It is understood that the project will be subject to the measures outlined in the 2018 Mitigation Monitoring and Reporting Program (MMRP) for the Metro East Mixed-Use Overlay District Expansion and Elan Development Projects (see Section 6, Emissions Reduction Measures). A vicinity map showing the project location is provided on Figure 1.

PROJECT DESCRIPTION

The proposed project involves construction of a mixed-use residential project consisting of 35 townhome dwelling units, including six live/work units. Vehicular access is proposed via one right turn in/out only driveway at First Street. Figure 2 illustrates the proposed site plan.

PHASING AND TIMING

The proposed project is anticipated to be operational in 2023. The project is anticipated to be built in one phase with project construction starting no sooner than the mid-May 2022 and being completed by mid-August 2023. 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

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, emission 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.

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 include the existing multi-family residential uses located approximately 155 feet (~47 meters) northeast (across First Street) and the school use located as close as approximately 450 feet (~137 meters) east of the project site boundaries. Other air quality sensitive land uses are located further from the project site and would experience lower impacts.

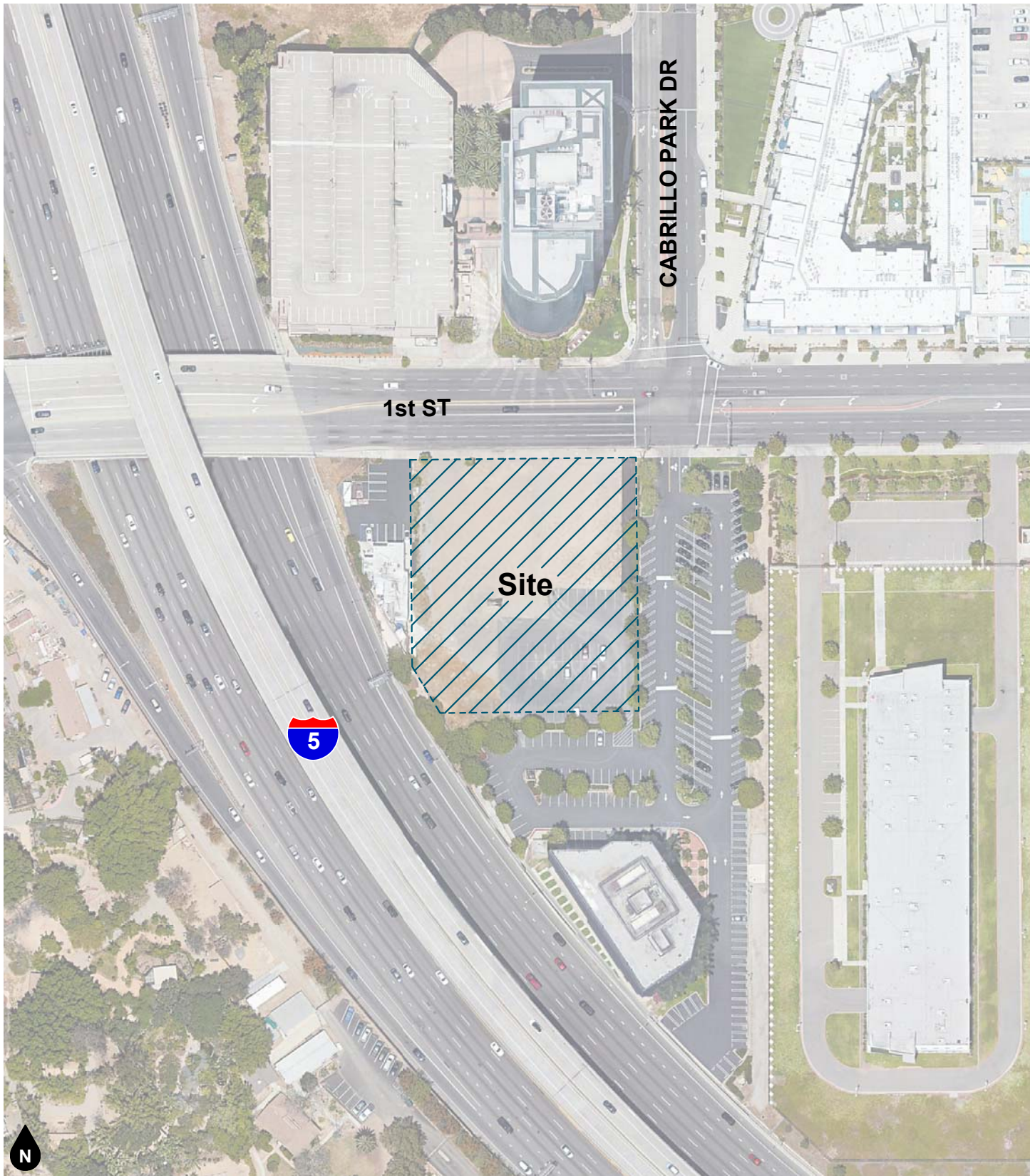


Figure 1
Project Location Map

2. AIR QUALITY ANALYSIS

EXISTING AIR QUALITY CONDITIONS

Local Air Quality

The proposed project site is located in the northern portion of Orange County, in the City of Santa Ana. The City of Orange is located within the South Coast Air Basin (Basin), which is surrounded by mountains trapping the air and its pollutants in the valleys or basins below. 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 City of Orange is located in the Central Orange County portion of the Basin.

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 City of Santa Ana annual average about 10.94 miles per hour (mph) (USA.com 2021).

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 City is approximately 14.25 inches (USA.com 2021).

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 City of Anaheim, the closest monitoring station to the project site, are shown below in Table 1. 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	69.7	69.9	72.2	74.6	77.1	80.2	85.2	86.9	85.8	81.3	73	70.2
Avg. Min. Temperature	47.3	48.4	50.4	52.9	57.3	60.6	64	64.4	62.2	57.8	50.2	47.4
Avg. Total Precipitation (in.)	3.39	3.34	2.07	0.82	0.35	0.16	0.03	0.00	0.09	0.66	1.09	2.26

Source: <https://wrcc.dri.edu/cgi-bin/cliMAIN.pl?ca0192>

Data from the Anaheim, CA station (040192).

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 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.

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.

Nitrogen Dioxides

Nitrogen Oxides (NO_x) is the generic term for a group of highly reactive gases which contain nitrogen and oxygen. While most NO_x are colorless and odorless, concentrations of nitrogen dioxide (NO₂) can often be seen as a reddish-brown layer over many urban areas. NO_x form when fuel is burned at high temperatures, as in a combustion process. The primary manmade sources of NO_x are motor vehicles, electric utilities, and other industrial, commercial, and residential sources that burn fuel. NO_x reacts with other pollutants to form, ground-level ozone, nitrate particles, acid aerosols, as well as NO₂, which cause respiratory problems. NO_x and the pollutants formed from NO_x can be transported over long distances, following the patterns of prevailing winds. Therefore, controlling NO_x is often most effective if done from a regional perspective, rather than focusing on the nearest sources.

Ozone

Ozone (O₃) is not usually emitted directly into the air but at ground-level is created by a chemical reaction between NO_x 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 NO_x 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 NO_x and VOC are ozone precursors, the health effects associated with ozone are also indirect health effects associated with significant levels of NO_x and VOC emissions.

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.

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 dissolve 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.

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.

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 (PM_{2.5}) 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.

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.

Other Pollutants of Concern

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, 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 PM_{2.5} 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.

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 San Bernardino 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 Mountains, approximately 80 miles southeast of the project site. Due to the distance to the nearest natural occurrences of asbestos, the project site is not likely to contain asbestos.

REGULATORY SETTING

The proposed 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.

Federal – United States Environmental Protection Agency

The United States Environmental Protection Agency (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 National Ambient Air Quality Standards (NAAQS) pollutants were identified using medical evidence and are shown below in Table 2.

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.

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 State Implementation Plan (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 State Implementation Plan (SIP).

As indicated below in Table 3, the Basin has been designated by the EPA as a non-attainment area for ozone (O₃) and suspended particulates (PM₁₀ and PM_{2.5}). Currently, the Basin is in attainment with the ambient air quality standards for carbon monoxide (CO), lead, sulfur dioxide (SO₂), suspended particulate matter (PM-2.5), and nitrogen dioxide (NO₂).

State – California Air Resources Board

The California Air Resources Board (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 State Implementation Plan (SIP). The California Ambient Air Quality Standards (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 barbecue lighter fluid), and various types of commercial equipment. Furthermore, the motor vehicle emission standards established by CARB include compliance with the Safer Affordable Fuel-Efficient Vehicles (SAFE) Rule, issued by NHTSA and EPA in March 2020 (published on April 30, 2020 and effective after June 29, 2020). The SAFE Rule sets fuel economy and carbon dioxide standards that increase 1.5 percent in stringency each year from model years 2021 through 2026, and apply to both passenger cars and light trucks. CARB. It also sets fuel specifications to further reduce vehicular emissions.

The South Coast Air Basin has been designated by the CARB as a nonattainment area for ozone, PM₁₀ and PM_{2.5}. Currently, the South Coast Air Basin is in attainment with the ambient air quality standards for CO, lead, SO₂, NO₂, 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/m³ and established an annual average standard for PM2.5 of 12 µg/m³. 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 PM2.5 Standards. The plan projected attainment for the 8-hour Ozone standard by 2024 and the PM2.5 standard by 2015.

On December 12, 2008 the CARB adopted Resolution 08-43, which limits NO_x, PM10 and PM2.5 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.

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.

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.

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. 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.

Air Quality Management Plan

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.

South Coast AQMD has initiated the development of the 2022 AQMP to address the attainment of the 2015 8-hour ozone standard (70 ppb) for South Coast Air Basin and Coachella Valley. To support the development of mobile source strategies for the 2022 AQMP, South Coast AQMD, in conjunction with California Air Resources Board, has established Mobile Source Working Groups which are open to all interested parties.

SCAQMD Rules and Regulations

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 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 PM₁₀ 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.
- Reduce traffic speeds on all unpaved roads to 15 miles per hour (mph) or less.
- Suspension of all grading activities when wind speeds (including instantaneous wind gusts) exceed 25 mph.
- Bumper strips or similar best management practices shall be provided where vehicles enter and exit the construction site onto paved roads or wash off trucks and any equipment leaving the site each trip.
- Replanting disturbed areas as soon as practical.
- During all construction activities, construction contractors shall sweep on-site and off-site streets if silt is carried to adjacent public thoroughfares, to reduce the amount of particulate matter on public streets. All sweepers shall be compliant with SCAQMD Rule 1186.1, Less Polluting Sweepers.

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 1303

Governs the permitting of re-located or new major emission sources, requiring Best Available Control Measures and setting significance limits for PM₁₀ among other pollutants.

SCAQMD Rule 1401

New Source Review of Toxic Air Contaminants, specifies limits for maximum individual cancer risk, cancer burden, and non-cancer acute and chronic hazard index from new permit units, relocations, or modifications to existing permit units, which emit toxic air contaminants.

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.

SCAQMD Rule 2305

The Warehouse Actions and Investments to Reduce Emissions (WAIRE) Program aims to reduce nitrogen oxide and diesel emissions associated with warehouses, help meet federal standards and improve public health. The WAIRE Program is an indirect source rule that regulates warehouse facilities to reduce emissions from the goods movement industry. Owners and operators of warehouses that have 100,000 square feet or more of indoor floor space in a single building must comply with the WAIRE Program. WAIRE is a menu-based point system in which warehouse operators are required to earn a specific number of points every year. The yearly number of points required is based on the number of trucks trips made to and from the warehouse each year, with larger trucks such as tractors or tractor-trailers multiplied by 2.5. Warehouse operators may be exempt from parts of the rule if they operate less than 50,000 square feet of warehousing activities, if the number of points required is less than 10, or if the WAIRE menu action chosen under performs due to circumstances beyond the operator's control, such as a manufacturer defect. SCAQMD [Rule 316](#) establishes fees to fund Rule 2305 compliance activities.

Air Quality Guidance Documents

SCAQMD CEQA Handbook

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 proposed 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 website². The SCAQMD CEQA Handbook and supplemental information is used in this analysis.

Southern California Association of Governments

The 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. SCAG is the Federally designated MPO for the majority of the southern California region and is the largest MPO in the nation. With respect to air quality planning, SCAG has prepared the Regional Transportation Plan and Regional Transportation Improvement Plan (RTIP), which addresses regional development and growth forecasts. These plans form the basis for the land use and transportation components of the AQMP, which are utilized in the preparation of air quality forecasts and in the consistency analysis included in the AQMP. The Regional Transportation Plan, Regional Transportation Improvement Plan, and AQMP are based on projections originating within the City and County General Plans.

On April 7, 2016, SCAG's Regional Council adopted the 2016-2040 Regional Transportation Plan/ Sustainable Communities Strategy (2016 RTP/SCS or Plan). The Plan is a long-range visioning plan that balances future mobility and housing needs with economic, environmental and public health goals. The Plan charts a course for closely integrating land use and transportation – so that the region can grow smartly and sustainably. It outlines more than \$556.5 billion in transportation system investments through 2040. The Plan 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. In June 2016, SCAG received its conformity determination from the Federal Highway Administration (FHWA) and the Federal Transit Administration (FTA) indicating that all air quality conformity requirements for the 2016 RTP/SCS and associated 2015 FTIP Consistency Amendment through Amendment 15-12 have been met.

On May 7, 2020, SCAG's Regional Council adopted Connect SoCal (2020 - 2045 Regional Transportation Plan/Sustainable Communities Strategy) for federal transportation conformity purposes only. In light of the COVID-19 pandemic, the Regional Council will consider approval of Connect SoCal in its entirety and for all other purposes within 120 days from May 7, 2020. Connect SoCal is a long-range visioning plan that builds

² <http://www.aqmd.gov/home/regulations/ceqa/air-quality-analysis-handbook>.

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.

Local – City of Santa Ana

Local jurisdictions, such as the City of Santa Ana, 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. 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 Conservation Element of the current City of Santa Ana General Plan establishes goals, objectives, policies, and programs to improve air quality in the City. Applicable principles and actions include:

Goal 3 Preserve and enhance the aesthetic and environmental quality of the community for the enjoyment of all residents.

Objectives

1.1 *Reduce air pollution emissions to achieve national ambient air quality standards.*

Policies

- Support local and regional land use and transportation plans that increase mass transit usage and reduce vehicle trips.
- Enforce emission standards contained in local ordinances.

Programs

- Assign development approval priorities to proposals which minimize vehicular trips and other pollution sources.
- Incorporate particulate and other emission standards into the building permit process and zoning ordinance.

The City of Santa Ana is currently in the process of updating their general plan. The Santa Ana General Plan Conservation Element Public Review Draft is available as of August 2021. Below are the applicable goals and policies that relate to air quality in the draft General Plan.

Goal CN-1 Air Quality and Climate. Protect air resources, improve regional and local air quality, and minimize the impacts of climate change.

Policy CN-1.4 Development Standards. Support new development that meets or exceeds standards for energy-efficient building design and site planning.

Policy CN-1.5 Sensitive Receptor Decisions. Consider potential impacts of stationary and nonstationary emission sources on existing and proposed sensitive uses and opportunities to minimize

health and safety risks. Develop and adopt new regulations on the siting of facilities that might significantly increase pollution near sensitive receptors within environmental justice area boundaries.

- Policy CN-1.6* New and Infill Residential Development. Promote development that is mixed use, pedestrian friendly, transit oriented, and clustered around activity centers.
- Policy CN-1.7* Housing and Employment Opportunities. Improve the city's jobs/housing balance ratio by supporting development that provides housing and employment opportunities to enable people to live and work in Santa Ana.
- Policy CN-1.8* Promote Alternative Transportation. Promote use of alternate modes of transportation in the City of Santa Ana, including pedestrian, bicycling, public transportation, car sharing programs, and emerging technologies.
- Policy CN-1.12* Sustainable Infrastructure. Encourage the use of low or zero emission vehicles, bicycles, nonmotorized vehicles, and car-sharing programs by supporting new and existing development that includes sustainable infrastructure and strategies such as vehicle charging stations, drop-off areas for ride-sharing services, secure bicycle parking, and transportation demand management programs.
- Policy CN-1.14* Transportation Demand Management. Require and incentivize projects to incorporate transportation demand management techniques.
- Policy CN-1.17* Indoor Recreation Encourage new development to provide indoor recreation space when located in areas with high levels of localized air pollution or if site is adjacent to freeways or heavy industrial uses.

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 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 9.0 ppm/8-hour	35.0 ppm/1-hour 9.0 ppm/8-hour	(a) Aggravation of angina pectoris and other aspects of coronary heart disease; (b) Decreased exercise tolerance in persons with peripheral vascular disease and lung disease; (c) Impairment of central nervous system functions; and (d) Possible increased risk to fetuses.
Nitrogen Dioxide (NO ₂)	0.18 ppm/1-hour 0.03 ppm/annual	100 ppb/1-hour 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 0.04 ppm/24-hour	75 ppb/1-hour 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 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 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: <https://ww2.arb.ca.gov/sites/default/files/2020-07/aaqs2.pdf>

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 (Moderate)

Source: (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>.

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 2016 Air Quality Management Plan prepared by SCAQMD (March 2017) indicate that collectively, mobile sources account for 60 percent of the VOC, 90 percent of the NO_x emissions, 95 percent of the CO emissions and 34 percent of directly emitted PM_{2.5}, with another 13 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 Central Orange County Air Monitoring Area (Area 17). The nearest air monitoring station to the project site is the –Anaheim – Pampas Lane Monitoring Station (Anaheim Station). The Anaheim Station is located approximately 8.18 miles northwest of the project site at 1630 W. Pampas Lane, Anaheim. However, it should be noted that due to the air monitoring stations distances 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. Table 4 presents the monitored pollutant levels from the Redlands Station.

Table 4 summarizes 2018 through 2020 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 ozone standards.

Ozone

During the 2018 to 2020 monitoring period, the State 1-hour concentration standard for ozone was exceeded between one and six days each year at the Anaheim Station. The State 8-hour ozone standard has been exceeded between one and 16 days each year over the past three years at the Anaheim Station. The Federal 8-hour ozone standard was exceeded between one and 15 days each year over the past three years at the Anaheim 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 NO₂, 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.

Carbon Monoxide

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

Nitrogen Dioxide

The Anaheim Station did not record an exceedance of the State or Federal NO₂ standards for the last three years.

Particulate Matter

The State 24-hour concentration standards for PM₁₀ were exceeded between two and five days each year over the last three years at the Anaheim Station. Over the past three years, the Anaheim Station did not record an exceedance of the Federal 24-hour standards for PM₁₀.

Over the last three years, the Federal 24-hour standard for PM_{2.5} was exceeded between four and 12 days each year over the last three years at the Anaheim Station.

According to the EPA, some people are much more sensitive than others to breathing fine particles (PM10 and PM2.5). 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 PM10 and PM2.5. 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.

Table 4
Air Quality Monitoring Summary

Pollutant (Standard) ¹		Year		
		2018	2019	2020
Ozone:	Maximum 1-Hour Concentration (ppm)	0.112	0.096	0.142
	Days > CAAQS (0.09 ppm)	1	1	6
	Maximum 8-Hour Concentration (ppm)	0.071	0.082	0.098
	Days > NAAQS (0.070 ppm)	1	1	15
	Days > CAAQS (0.070 ppm)	1	1	16
Carbon Monoxide:	Maximum 8-Hour Concentration (ppm)	*	*	*
	Days > CAAQS (9 ppm)	0	0	0
	Days > NAAQS (9 ppm)	0	0	0
Nitrogen Dioxide:	Maximum 1-Hour Concentration (ppm)	0.066	0.059	0.071
	Days > CAAQS (0.18 ppm)	0	0	0
Inhalable Particulates (PM10):	Maximum 24-Hour Concentration (µg/m ³)	94.6	127.6	74.8
	Days > NAAQS (150 µg/m3)	0	0	0
	Days > CAAQS (50 µg/m3)	2	4	5
	Annual Average (µg/m3)	17.9	24.6	30.8
Ultra-Fine Particulates (PM2.5); ²	Maximum 24-Hour Concentration (µg/m3)	68.0	37.1	64.8
	Days > NAAQS (35 µg/m3)	7	4	12
	Annual Average (µg/m3)	11.4	9.3	12.2

Notes:

Source: <http://www.arb.ca.gov/adam/topfour/topfour1.php>. Data from the Anaheim-Pampas Lane Monitoring Station, unless otherwise noted.

(1) CAAQS = California Ambient Air Quality Standard; NAAQS = National Ambient Air Quality Standard; ppm = parts per million

* Means there was insufficient data available to determine value.

AIR QUALITY STANDARDS

Significance Thresholds

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.³ 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.

The SCAQMD is in the process of developing an Air Quality Analysis Guidance Handbook to replace the CEQA Air Quality Handbook. In the interim, supplemental guidance has been adopted by the SCAQMD. The

³ 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 residential land use projects such as the Project. As a result, lead emissions are not further evaluated herein.

potential air quality impacts of the project are, therefore, evaluated according to numeric indicators developed by the SCAQMD in the CEQA Air Quality Handbook and supplemental guidance from the SCAQMD.⁴

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 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.

Local Air Quality

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 Significant 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), June 2003, which details the methodology to analyze local air emission impacts. The Localized Significant Threshold Methodology found that the primary emissions of concern are NO₂, CO, PM₁₀, and PM_{2.5}.

The significance thresholds for the local emissions of NO₂ 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 shows the ambient air quality standards for NO₂, CO, and PM₁₀ and PM_{2.5}.

Toxic Air Contaminants

According to the SCAQMD CEQA Handbook, any project that has the potential to expose the public to toxic air contaminants in excess of the following thresholds would be considered to have a significant air quality impact:

- If the Maximum Incremental Cancer Risk is 10 in one million or greater; or
- Toxic air contaminants from the proposed project would result in a Hazard Index increase of 1 or greater.

In order to determine if the proposed project may have a significant impact related to hazardous air pollutants (HAP), the Health Risk Assessment Guidance for analyzing Cancer Risks from Mobile Source Diesel Idling Emissions for CEQA Air Quality Analysis, (Diesel Analysis), prepared by SCAQMD, August 2003, recommends that if the proposed project is anticipated to create hazardous air pollutants through stationary sources or regular operations of diesel trucks on the project site, then the proximity of the nearest receptors to the source of the hazardous air pollutants and the toxicity of the hazardous air pollutants should be analyzed through a comprehensive facility-wide health risk assessment (HRA).

⁴ 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 residential land use projects such as the Project. As a result, lead emissions are not further evaluated herein.

The proposed project involves the development of the site with residential uses; however, the entire project site is located within 500 feet of the Interstate 5 Freeway. Therefore, the potential for freeway-related health risks associated with the proposed project is examined in Section 3 of this report.

Odor Impacts

The SCAQMD CEQA Handbook states that an odor impact would occur if the proposed 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 proposed project results in a violation of Rule 402 with regards to odor impacts, then the proposed project would create a significant odor impact.

Table 5
SCAQMD Air Quality Significance Thresholds

Mass Daily Thresholds		
Pollutant	Construction (lbs/day)	Operation (lbs/day)
NOx	100	55
VOC	75	55
PM10	150	150
PM2.5	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 Cancer Burden > 0.5 excess cancer cases (in areas ≥ 1 in 1 million) 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	
NO2 -1-hour average	0.18 ppm (338 µg/m^3)	
PM10 -24-hour average		
Construction	10.4 µg/m^3	
Operations	2.5 ug/m^3	
PM2.5 -24-hour average		
Construction	10.4 µg/m^3	
Operations	2.5 µg/m^3	
SO2		
1-hour average	0.25 ppm	
24-hour average	0.04 ppm	
CO		
1-hour average	20 ppm (23,000 µg/m^3)	
8-hour average	9 ppm (10,000 µg/m^3)	
Lead		
30-day average	1.5 µg/m^3	
Rolling 3-month average	0.15 µg/m^3	
Quarterly average	1.5 µg/m^3	

Source: <http://www.aqmd.gov/docs/default-source/ceqa/handbook/scaqmd-air-quality-significance-thresholds.pdf>

SHORT-TERM CONSTRUCTION EMISSIONS

Construction activities associated with the proposed 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 proposed project were obtained from the project applicant. The construction activities for the proposed project are anticipated to include: demolition of an approximately 19,175 square foot existing asphalt parking lot and driveway; grading of approximately 1.4 acres; construction of 35 multi-family residential dwelling units totaling approximately 73,500 square feet and approximately 13,889 square feet of open space; paving of approximately 25 percent of the site or approximately 0.35 acres (includes 11 guest/open parking spaces and on-site driveways); and application of architectural coatings. See Appendix B for more details.

The proposed project is anticipated to start construction no sooner than mid-May 2022 and being completed by mid-August 2023. The project is anticipated to be operational in 2023.

Methodology

The following provides a discussion of the methodology used to calculate regional construction air emissions and an analysis of the proposed 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 2020.4.0) 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 and is recommended by the SCAQMD.⁵

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 EMFAC2017 computer program to calculate the emission rates specific for the southwestern portion of Riverside County for construction-related employee vehicle trips and the OFFROAD2011 computer program to calculate emission rates for heavy truck operations. EMFAC2017 and OFFROAD2011 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 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 B.

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 South Coast Air Quality Management District, California Emissions Estimator Model, <http://www.aqmd.gov/caleemod/>.

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 1.4 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 proposed project.

Per SCAQMD Rule 1113 as amended on June 3, 2011, the architectural coatings that would be applied after January 1, 2014 will be limited to an average of 50 grams per liter or less of VOCs for building coatings and 100 grams per liter or less of VOCs for traffic coatings.

The phases of the construction activities which have been analyzed below for each phase are: (1) demolition, (2) grading, (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 B.

Construction-Related Regional Impacts

The construction-related criteria pollutant emissions for each phase are shown below in Table 6. Table 6 shows 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 proposed project.

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 proposed 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.

Local Air Quality Impacts from Construction

The SCAQMD has published a "Fact Sheet for Applying CalEEMod to Localized Significance Thresholds" (South Coast Air Quality Management District 2011b). CalEEMod calculates construction emissions based on the number of equipment hours and the maximum daily disturbance activity possible for each piece of equipment. In order to compare CalEEMod reported emissions against the localized significance threshold lookup tables, the CEQA document should contain the following parameters:

- (1) The off-road equipment list (including type of equipment, horsepower, and hours of operation) assumed for the day of construction activity with maximum emissions.
- (2) The maximum number of acres disturbed on the peak day.
- (3) Any emission control devices added onto off-road equipment.
- (4) Specific dust suppression techniques used on the day of construction activity with maximum emissions.

The CalEEMod output in Appendix B show the equipment used for this analysis.

As shown in Table 7, the maximum number of acres disturbed in a day would be 2 acres during demolition and grading. 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, NO_x, PM₁₀, and PM_{2.5} from the proposed project could result in a significant impact to the local air quality. The emission thresholds were calculated based on the Central Orange County source receptor area (SRA) 17 and a disturbance value of two acres per day. 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 existing multi-family residential uses located approximately 155 feet (~47 meters) northeast and the school use located as close as approximately 450 feet (~137 meters) east of the project site; therefore, to be conservative, the SCAQMD Look-up Tables for 25 meters were used. Table 8 shows the on-site emissions from the CalEEMod model for the different construction phases and the LST emissions thresholds.

The data provided in Table 8 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 proposed project.

Construction-Related Human Health Impacts

Regarding health effects related to criteria pollutant emissions, the applicable significance thresholds are established for regional compliance with the state and federal ambient air quality standards, which are intended to protect public health from both acute and long-term health impacts, depending on the potential effects of the pollutant. Because regional and local emissions of criteria pollutants during construction of the project would be below the applicable thresholds, it would not contribute to long-term health impacts related to nonattainment of the ambient air quality standards. Therefore, significant adverse acute health impacts as a result of project construction are not anticipated.

Construction-Related Toxic Air 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 proposed project. According to the Office of Environmental Health Hazard Assessment (OEHHHA)⁶ and the SCAQMD *Health Risk Assessment Guidance for Analyzing Cancer Risks from Mobile Source Diesel Idling Emissions for CEQA Air Quality Analysis* (August 2003),⁷ 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 15 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 and the nearest sensitive receptors to the project site are located approximately 155 feet (~47 meters) northeast and 450 feet (~137 meters) east of the project site.

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. The project would also comply with the requirements of SCAQMD Rule 1403 if asbestos is found during the renovation and construction activities. Therefore, impacts from TACs during construction would be less than significant.

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

⁶ 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/crn/2015guidancemanual.pdf>.

⁷ 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>.

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 proposed 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.

Table 6
Construction-Related Regional Pollutant Emissions

Activity		Pollutant Emissions (pounds/day)					
		ROG	NOx	CO	SO ₂	PM10	PM2.5
Demolition	On-Site ¹	1.69	16.62	13.96	0.02	0.88	0.79
	Off-Site ²	0.04	0.11	0.45	0.00	0.16	0.04
	Subtotal	1.73	16.73	14.41	0.03	1.03	0.83
Grading	On-Site ¹	1.54	16.98	9.22	0.02	3.50	2.02
	Off-Site ²	0.03	0.02	0.33	0.00	0.11	0.03
	Subtotal	1.57	17.01	9.55	0.02	3.62	2.05
Building Construction	On-Site ¹	1.65	12.50	12.73	0.02	0.59	0.57
	Off-Site ²	0.14	0.50	1.36	0.01	0.48	0.13
	Subtotal	1.78	13.00	14.09	0.03	1.07	0.70
Paving	On-Site ¹	0.71	6.24	8.80	0.01	0.31	0.28
	Off-Site ²	0.04	0.03	0.40	0.00	0.15	0.04
	Subtotal	0.75	6.26	9.20	0.01	0.45	0.32
Architectural Coating	On-Site ¹	33.62	1.30	1.81	0.00	0.07	0.07
	Off-Site ²	0.02	0.01	0.21	0.00	0.08	0.02
	Subtotal	33.64	1.32	2.03	0.00	0.15	0.09
Total for overlapping phases ³		36.18	20.58	25.31	0.05	1.67	1.12
SCAQMD Thresholds		75	100	550	150	150	55
Exceeds Thresholds?		No	No	No	No	No	No

Notes:

Source: CalEEMod Version 2020.4.0

- (1) On-site emissions from equipment operated on-site that is not operated on public roads. On-site grading and demolition PM-10 and PM-2.5 emissions show mitigated values for fugitive dust for compliance with SCAQMD Rule 403.
- (2) Off-site emissions from equipment operated on public roads.
- (3) Construction, painting and paving phases may overlap.

Table 7
Maximum Number of Acres Disturbed Per Day

Activity	Equipment	Number	Acres/8hr-day	Total Acres
Demolition	Rubber Tired Dozers	1	0.5	0.5
	Crawler Tractors ¹	3	0.5	1.5
Total for phase		-	-	2
Grading	Rubber Tired Dozers	1	0.5	0.5
	Graders	1	0.5	0.5
	Crawler Tractors ¹	2	0.5	1
Total for phase		-	-	2

Notes:

Source: South Coast AQMD, Fact Sheet for Applying CalEEMod to Localized Significance Thresholds, 2011b.

(1) Tractor/loader/backhoe is a suitable surrogate for a crawler tractor per SCAQMD staff.

Table 8
Local Construction Emissions at the Nearest Receptors

Activity	On-Site Pollutant Emissions (pounds/day)			
	NOx	CO	PM10	PM2.5
Site Preparation	16.62	13.96	0.88	0.79
Grading	16.98	9.22	3.50	2.02
Building Construction	12.50	12.73	0.59	0.57
Paving	6.24	8.80	0.31	0.28
Architectural Coating	1.30	1.81	0.07	0.07
SCAQMD Thresholds ¹	115	715	6	4
Exceeds Threshold?	No	No	No	No

Notes:

Source: Calculated from CalEEMod and SCAQMD's Mass Rate Look-up Tables for 2 acres at a distance of 25 m, to be conservative, in SRA 17 Central Orange County.

- (1) The nearest sensitive receptors are the existing multi-family residential uses located approximately 155 feet (~47 meters) northeast and the school use located as close as approximately 450 feet (~137 meters) east of the project site; therefore, to be conservative, the 25 meter threshold was used.

Note: The project will disturb up to a maximum of 2 acres a day during demolition and grading (see Table 7).

LONG-TERM OPERATIONAL EMISSIONS

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

Operations-Related Regional Air Quality Impacts

The potential operations-related air emissions have been analyzed below for the criteria pollutants and cumulative impacts.

Operations-Related Criteria Pollutants Analysis

The operations-related criteria air quality impacts created by the proposed project have been analyzed through the use of the CalEEMod model. The operating emissions were based on the year 2023, which is the anticipated opening year for the proposed project. The operations daily emissions printouts from the CalEEMod model are provided in Appendix B. The CalEEMod analyzes operational emissions from area sources, energy usage, and mobile sources, which are discussed below.

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 vehicular trips (trip generation rate) from the Cabrillo at Frist Mixed-Use Residential Trip Generation & Vehicle Miles Traveled Assessment (TIA) prepared by Ganddini Group, Inc. (January, 2022) into the CalEEMod Model. The Trip Generation Analysis found that the proposed project would create approximately 236 vehicle trips per day with a weekday trip generation rate of 6.74 trips per dwelling unit per day. The Institute of Transportation Engineers (ITE) Trip Generation Manual (11th Edition, 2021) is now available; however, CalEEMod utilizes the 10th Edition of the ITE Trip Generation Manual. Therefore, in order to be consistent with the Trip Generation Analysis, the Saturday trip generation rate was changed to 4.55 trips per dwelling unit per day and the Sunday trip generation rate was changed to 3.86 trips per dwelling unit per day per the 11th Edition of the ITE Trip Generation Manual. The program then applies the emission factors for each trip which is provided by the EMFAC2017 model to determine the vehicular traffic pollutant emissions.

Area Sources

Per the CAPCOA Appendix A Calculation Details for CalEEMod, 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.

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.

Project Impacts

The worst-case summer or winter criteria pollutant emissions created from the proposed project's long-term operations have been calculated and are shown below in Table 9. The results show that none of the SCAQMD

regional thresholds would be exceeded. Therefore, a less than significant regional air quality impact would occur from operation of the proposed project.

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 proposed 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.

Local CO Emission Impacts from Project-Generated 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 proposed 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 County Metropolitan Transportation Authority 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 TIA showed that the proposed project would generate a maximum of approximately 236 daily vehicle trips. The *Traffic Impact Study for the Santa Ana Metro East Overlay Expansion Project For the City of Santa Ana* (KOA Engineering, 2018) showed that for the Future Year (2025) with Project scenario, the road segment of Grand Avenue south of 4th Street with the highest traffic volume had an average daily traffic (ADT) volume of 56,580. 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. Therefore, as the project only generates 236 daily vehicle trips, the intersection volumes in the project vicinity would fall far short of 100,000 vehicles per day, 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 proposed project.

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 Air Basin. Multi-family residential uses are located approximately 155 feet (~47 meters) northeast and a school use is located as close as approximately 450 feet (~137 meters) east of the project site.

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 proposed project consists of the development of the site with mixed-use residential uses and does not include such uses. Therefore, due the lack of stationary source emissions, no long-term localized significance threshold analysis is warranted.

Operations-Related Human Health Impacts

Regarding health effects related to criteria pollutant emissions, the applicable significance thresholds are established for regional compliance with the state and federal ambient air quality standards, which are intended to protect public health from both acute and long-term health impacts, depending on the potential effects of the pollutant. Because regional and local emissions of criteria pollutants during operation of the project would be below the applicable thresholds, it would not contribute to long-term health impacts related to nonattainment of the ambient air quality standards. Therefore, significant adverse acute health impacts as a result of project operation are not anticipated.

Operations-Related Odor Impacts

Potential sources that may emit odors during the on-going operations of the proposed 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 proposed project.

Table 9
Regional Operational Pollutant Emissions

Activity	Pollutant Emissions (pounds/day)					
	ROG	NOx	CO	SO2	PM10	PM2.5
Area Sources ¹	1.74	0.56	3.11	0.00	0.06	0.06
Energy Usage ²	0.01	0.11	0.05	0.00	0.01	0.01
Mobile Sources ³	0.66	0.74	6.78	0.02	1.71	0.46
Total Emissions	2.42	1.40	9.94	0.02	1.78	0.53
SCAQMD Thresholds	55	55	550	150	150	55
Exceeds Threshold?	No	No	No	No	No	No

Notes:

Source: CalEEMod Version 2020.4.0; the higher of either summer or winter emissions.

(1) Area sources consist of emissions from consumer products, architectural coatings, and landscaping equipment.

(2) Energy usage consists of emissions from generation of electricity and on-site natural gas usage.

(3) Mobile sources consist of emissions from vehicles and road dust.

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;⁸ and (2) that a project's consistency with the current AQMP be used to determine its potential cumulative impacts.

Project Specific Impacts

The project area is out of attainment for ozone, PM₁₀, and PM_{2.5}. 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 cell 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.

Project operations would generate emissions of NO_x, ROG, CO, PM₁₀, 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.

Air Quality Compliance

The California Environmental Quality Act (CEQA) requires a discussion of any inconsistencies between a proposed project and applicable General Plans and Regional Plans (CEQA Guidelines Section 15125). The regional plan that applies to the proposed project includes the SCAQMD Air Quality Management Plan (AQMP). Therefore, this section discusses any potential inconsistencies of the proposed 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 proposed project would interfere with the region's ability to comply with Federal and State air quality standards. If the decision-makers determine that the proposed project is inconsistent, the lead agency may consider project modifications or inclusion of mitigation to eliminate the inconsistency.

⁸ 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>.

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 proposed 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 2016 or increments based on the year of project buildout and phase.

Both of these criteria are evaluated in the following sections.

Criteria 1 – Increase in the Frequency or Severity of Violations

Based on the air quality modeling analysis contained in this Air 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 proposed 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.

Criteria 2 – Exceed Assumptions in the AQMP?

Consistency with the AQMP assumptions is determined by performing an analysis of the proposed project with the assumptions in the AQMP. The emphasis of this criterion is to ensure that the analyses conducted for the proposed 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 Redlands Land Use Plan defines the assumptions that are represented in the AQMP.

The project site is currently designated as District Center (DC) in the City of Santa Ana General Plan. As stated in the City's General Plan Land Use Element, the DC land use designation is a mixed-use designation that allows residential uses at a density of up to 90 units per acre. The project proposes to develop the site with a mixed-use residential project consisting of 35 townhome dwelling units, including six live/work units with a gross density of 25 DU/AC. Therefore, the proposed project is consistent with the City's land use designation. The proposed 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.

Based on the above, the proposed project will not result in an inconsistency with the SCAQMD AQMP. Therefore, a less than significant impact will occur.

3. DIESEL EMISSIONS HEALTH RISK ASSESSMENT

The proposed project would be exposed to toxic air contaminant emissions from diesel truck emissions from nearby freeway DPM sources. As stated previously, in the *California Building Industry Association v. Bay Area Air Quality Management District* (2015) 62 Cal. 4th 369 (CBIA) case the California Supreme Court determined that CEQA does not generally require an impact analysis of the existing environmental conditions on the future residents of a proposed project and generally only requires an analysis of the proposed project's impact on the environment. However, the CBIA case also stated that when a proposed project brings development and people into an area already subject to specific hazards and the new development/people exacerbate the existing hazards, then CEQA requires an analysis of the hazards and the proposed project's effect in terms of increasing the risks related to those hazards. In regards to air quality hazards, TACs are defined as substances that may cause or contribute to an increase in deaths or in serious illness, or that may pose a present or potential hazard to human health. As such, if a proposed project would not exacerbate pre-existing hazards (e.g., TAC health risks) then an analysis of those hazards and the proposed project's effect on increasing those hazards is not required. However, as the project is a mixed-use/residential project and will not be a source of toxic air contaminants, and the existing conditions on the project site does not contain any operational land uses that emit toxic air contaminants, the following health risk assessment was performed for informational and disclosure purposes only.

SCAQMD methodology states that health effects from carcinogenic air toxics are usually described in terms of individual cancer risk. "Individual Cancer Risk" is the likelihood that a person exposed to concentrations of toxic air contaminants over a 30-year lifetime will contract cancer, based on the use of revised Office of Environmental Health Hazard Assessment (OEHHA) risk-assessment methodology⁹.

A health risk assessment requires the completion and interaction of four general steps:

- (1) Quantify project-generated TAC emissions.
- (2) Identify nearby ground-level receptor locations that may be affected by the emissions (including any special sensitive receptor locations such as residences, schools, hospitals, convalescent homes, and daycare centers).
- (3) Perform air dispersion modeling analyses to estimate ambient pollutant concentrations at each receptor location using project TAC emissions and representative meteorological data to define the transport and dispersion of those emissions in the atmosphere.
- (4) Characterize and compare the calculated health risks with the applicable health risk significance thresholds.

The ARB Air Quality and Land Use Handbook (ARB Handbook) provides an advisory recommendation to avoid the locating of new sensitive land uses within 500 feet of a freeway, urban roads with 100,000 vehicles per day, or rural roads with 50,000 vehicles per day. The proposed residential uses are to be located approximately 23 feet of the Interstate 5 freeway. The California Department of Transportation vehicular counts show 2020 AADT numbers of 301,600 (ahead AADT) at the segment of Tustin, Junction Route 55, Costa Mesa Freeway with a total of 21,112 (seven percent) of those vehicles being trucks.

According to the SCAQMD's MATES-V study, the project area has an estimated multi-pathway cancer risk of 462 in one million and an inhalation cancer risk of 434 in one million. In comparison the average multi-pathway cancer risk for the South Coast Air Basin portion of Orange County is 390 in one million and the inhalation

⁹ In February 2015, the Office of Environmental Health Hazard Assessment updated their "Air Toxics Hot Spots Program, Risk Assessments Guidelines, Guidance Manual for Preparation of Health Risk Assessments; however, the updated OEHHA guidance states in the page footers "do not cite or quote." SCAQMD staff have incorporated the updates into their methodology for SCAQMD's Rules 1401, 1401.1, 1402, and 212, and have updated their HRA Guidance for permitting; however they are still in the process of updating the guidance for CEQA analyses (via working group sessions); however, to be conservative, the new OEHHA guidance was used to assess HRA impacts in this analysis.

cancer risk is 365 in a million. This increased cancer risk at the project site is largely due to the proximity to the Interstate 5 freeway.

To determine the potential health risk from freeway emissions sources to the future residents of the project site, a health risk estimate was performed.

ESTIMATE OF EMISSIONS FACTORS

The DPM emission factors for the various vehicle types were derived from the CARB EMFAC2021 mobile source emission model for the South Coast Air Basin. PM 2.5 exhaust emissions are used as a surrogate for DPM. The 1-year exposure used opening year (2023) emissions factors and reflects exposure during third trimester, 2-year factors (for infant exposure) reflect years 2024 and 2025, the first 14-year average factors are used for child exposure during years 2-16) reflect emissions during the subsequent 14 years of operation (2026 to 2039), and the second 14 years of exposure (years 2040-2053¹⁰) were used for assessment of adult exposure during years 16 to 30. The four different sets of emissions factors used in this assessment are detailed in Table 10. It should be noted that the DPM emissions on both the gram per mile and gram per idle hour bases have declined beyond 2022 for all vehicle classes and in particular the heavy-heavy-duty truck class (the 4+ axle “big rig” trucks). This is due to the CARB emissions’ requirements on heavy-duty trucks that call for either the replacement of older trucks with cleaner trucks or the installation of diesel particulate matter filters on the truck fleet.

Emission Source Characterization

Each of the emission source types described above also requires geometrical and emission release specifications for use in the air dispersion model. As the majority of the freeway-related diesel emissions are sourced from big rig-type trucks, an average truck height of 13.5 feet and average truck width of 8.5 feet were entered into the haul road calculator in AERMOD in order to calculate the plume height and release height for the line sources. Table 11 provides a summary of the assumptions used to configure the various emission sources. The following definitions are used to characterize the emission source geometrical configurations referred to in Table 11:

Line source: A series of volume sources along a path, for example, vehicular volumes along a roadway (shown as blue lines on Figure 3).

Figure 3 provides the location of the receptors (shown by orange triangles) and emission source locations, shown by the blue line along each direction of the freeway (as the emissions are calculated for both the northbound and southbound lanes of the freeway). The residential area is outlined in pink.

RECEPTOR NETWORK

The assessment requires that a network of receptors be specified where the impacts can be computed at the various locations. Receptors were located at the closest proposed sensitive receptor locations to the Interstate 5 Freeway (as detailed above). To ensure all impacts were evaluated, a receptor was also located in the recreation area on the project site. In addition, the identified sensitive receptor locations were supplemented by the specification of a modeling grid that extended around the proposed project to identify other potential locations of impact. The locations of the receptors are shown as orange triangles on Figure 3 and labeled 1 through 12. The recreation area is labeled as rec area_13.

¹⁰ EMFAC2021 only estimates emissions factors out to the year 2050; therefore, for years beyond 2050, the values for 2050 are used.

DISPERSION MODELING

The next step in the assessment process utilizes the emissions inventory along with a mathematical air dispersion model and representative meteorological data to calculate impacts at the various receptor locations. The dispersion model used in this assessment is described below.

Model Selection

The assessment of air quality and health risk impacts from pollutant emissions from the freeway applied the USEPA AERMOD Model, which is the air dispersion model accepted by the SCAQMD for performing air quality impact analyses. AERMOD predicts pollutant concentrations from point, area, volume, line, and flare sources with variable emissions in terrain from flat to complex with the inclusion of building downwash effects from buildings on pollutant dispersion. It captures the essential atmospheric physical processes and provides reasonable estimates over a wide range of meteorological conditions and modeling scenarios. AERMOD View Version 10.2.1, EPA version No. 21112, was utilized for this analysis.

General Model Assumptions

A summary of Emission Configurations is shown in Table 11. The basic options used in the dispersion modeling are summarized in Table 12.

Meteorological Data

Meteorological data (processed with the ADJ_U option) from the Air District's John Wayne Airport monitoring site was selected for this modeling application. Five full years of sequential meteorological data was collected at the site from January 1, 2012 to December 31, 2016 by the SCAQMD. The SCAQMD processed the data for input to the model. The data was obtained from SCAQMD at: <https://www.aqmd.gov/home/air-quality/air-quality-data-studies/meteorological-data/data-for-aermod> (see Figure 4).

ESTIMATION OF HEALTH RISKS

Health risks from diesel particulate matter are twofold. First, diesel particulate matter is a carcinogen according to the State of California. Second, long-term chronic exposure to diesel particulate matter can cause health effects to the respiratory system. Each of these health risks is discussed below.

Cancer Risks

According to the *Risk Assessment Guidelines: Guidance Manual for Preparation of Health Risk Assessments*, released by the Office of Environmental Health Hazard Assessment (OEHHA) in February 2015 and formally adopted in March 2015, the residential inhalation dose for cancer risk assessment should be calculated using the following formula:

$$[\text{Dose-air (mg)/(Kg-day)}] * \text{Cancer Potency} * [1 \times 10^{-6}] = \text{Potential Cancer Risk}$$

Where:

Cancer Potency Factor = 1.1

$$\text{Dose-inh} = (\text{C-air} * \text{DBR} * \text{A} * \text{EF} * \text{ED} * \text{ASF} * \text{FAH} * 10^{-6}) / \text{AT}$$

Where:

Cair [Concentration in air ($\mu\text{g}/\text{m}^3$)] = (Calculated by AERMOD Model)

DBR [Daily breathing rate (L/kg body weight – day)] = 261 for adults, 572 for children, and 1,090 for infants, and 361 for 3rd trimester per SCAQMD Permit Application Package "N" Table 4.1 D guidance.

A [Inhalation absorption factor] = 1
 EF [Exposure frequency (days/year)] = 350
 ED [Exposure duration (years)] = 30 for adults (for an individual who is an adult at opening year), 14 for children (from 2-16 years), 14 for adults (from 16-30 years), 2 for infants, and 1 for 3rd Trimester
 ASF [Age sensitivity factor] = 10 for 3rd trimester to 2 years of age, 3 for 2 to 16 years of age, and 1 for 16 to 30 years of age
 FAH [Fraction of time spent at home] = 1 for 3rd trimester to 2 years of age, 1 for 2 to 16 years of age, and 0.73 for 16 to 30 years of age
 10⁶ [Micrograms to milligrams conversion]
 AT [Average time period over which exposure is averaged in days] = 25,550

There currently is no SCAQMD TAC threshold for “existing” cancer risk to sensitive receptors. The SCAQMD TAC threshold of 10 in one million is defined as the “maximum incremental cancer risk” (MICR). As the project does not involve the construction of sources that would significantly contribute to “incremental cancer risk,” the application of the 10 in one million threshold is not well applied in this case. Other air quality districts have refined methodology and thresholds for evaluation of the health risks posed by heavily traveled roadways and freeways to adjacent receptors. For example, the Bay Area Air Quality Management District has a “Roadway Screening Analysis” procedure and thresholds based on annual average daily traffic (AADT) and distance from the source. The San Luis Obispo Air Pollution Control District has a requirement that new land use projects that will place sensitive receptors (e.g., residential units) in close proximity to existing toxics sources (e.g., freeway) must not exceed the CEQA health risk threshold of 89 in a million.

The AERMOD model run results are shown in Appendix C. Figure 5 illustrates the cancer risk to the most affected age-group, infants (0-2 years).

Table 13 show the cancer risk for the unborn child during the 3rd trimester, Table 14 shows the cancer risk to infants (0-2 years), Table 15 shows the cancer risk to children ages 2 to 16 years and Table 16 shows the cancer risk as that child becomes an adult (years 16-30). The highest cancer risk corresponds to infants 0-2 years (see Table 14). As shown in Table 14, all the infant receptors within the project site are exposed to cancer risks in excess of SCAQMD MICR threshold of 10 in a million, with the highest cancer risk at units closest to the 5 freeway, with a maximum cancer risk of 38.46 in one million at receptor 2. The same holds true for child (2-16 years) cancer risk, every child receptor within the project site is exposed to a cancer risk in excess of 10 in a million; with a maximum risk of 32.57 in one million at receptor 2. Therefore, infants and children will be exposed to cancer risks in excess of 10 in a million from freeway-related DPM sources.

The assessment of cancer-related health risk to proposed sensitive receptors is based on the following most-conservative scenario: An unborn child in its 3rd trimester is potentially exposed to DPM emissions (via exposure of the mother) during the opening year. That child is born opening year and then remains at home for the entire first two years of life. From age 2 to 16, the child remains at home 100 percent of the time. From age 16 to 30, the child continues to live at home, growing into an adult that spends 73 percent of its time at home and lives there until age 30.

Based on the above, ultra-conservative assumptions, the 30.25-year, cumulative carcinogenic health risk (3rd trimester [-0.25 to 0 years] + infant [0-2 years] + child [2-16 years] + adult [16-30 years]) to an individual born during the opening year of the project, and located in the project vicinity for the entire 30-year duration, is a maximum of 75.77 in a million at receptor location 2, as shown in Table 17. Furthermore, as shown in Table 17, every receptor on-site would be exposed to a 30.25-year, cumulative carcinogenic health risk in excess of the SCAQMD MICR threshold of 10 in a million, with the lowest risk (31.72 in a million) being at receptor locations furthest from the I-5 freeway. Therefore, the on-going operations of the proposed project could result in a significant impact due to the cancer risk from diesel emissions to the proposed project.

As the cancer risk exceeds the SCAQMD MICR threshold of 10 in a million, mitigation is required. Mitigation requiring minimum efficiency reporting value (MERV) 13 filters would remove a substantial amount of particulates, including DPM. MERV 13 filters have a particle size removal efficiency rating of greater than 90

percent for particulates 1.0 micron to 10 microns in size and a rating of 75 percent for particles 0.3 to 1.0 micron in size.¹¹ A MERV 13 filter creates more resistance to airflow because the filter media becomes denser as efficiency increases. The MERV filters do not remove gaseous pollutants; however. See Mitigation Measure 1 in Section 6 of this report for details. Therefore, indoor (interior) exposure to DPM (of particles greater than 1.0 micron) and consequently cancer risk a most-affected receptor (closest to the I-5 freeway) would be reduced by 90 percent, to 7.58 in one million; less than the 10 in one million SCAQMD threshold. Outdoor levels, such as those experienced at the recreation area on-site, would still present a risk level exceeding the SCAQMD MICR threshold of 10 in one million.

Non-Cancer Risks

The relationship for non-cancer health effects is given by the equation:

$$HIDPM = CDPM/RELDPM$$

Where,

HIDPM	=	Hazard Index; an expression of the potential for non-cancer health effects.
CDPM	=	Annual average diesel particulate matter concentration in $\mu\text{g}/\text{m}^3$.
RELDPM	=	Reference Exposure Level (REL) for diesel particulate matter; the diesel particulate matter concentration at which no adverse health effects are anticipated.

The non-carcinogenic hazards to adult, child and infant receptors are also detailed in Tables 13 through 16 column (j). The RELDPM is $5 \mu\text{g}/\text{m}^3$. The Office of Environmental Health Hazard Assessment as protective for the respiratory system has established this concentration. Using the maximum DPM concentration from years 2023-2053, the resulting Hazard Index is:

$$HIDPM = 0.12136/5 = 0.0243$$

The criterion for significance is a Hazard Index increase of 1.0 or greater. Therefore, the on-going operation of the proposed project would not result in a significant impact due to the non-cancer risk from freeway-related diesel emissions.

¹¹ Source: <https://www.iso-aire.com/blog/what-are-the-differences-between-a-merv-13-and-a-hepa-filter>

Table 10
DPM Vehicular Emission Factors¹

Vehicle Type	MPH assumed for vehicle type	1-year (2023) Average DPM Exhaust Emissions Factor(g/mi)
Light Duty Auto (LDA)	70	0.032103165
Light Duty Truck 1 (LDT1)	70	0.276471063
Light Duty Truck 2 (LDT2)	70	0.005854775
Medium Duty Truck (MDV)	60	0.007292192
Light-Heavy Duty Truck 1 (LHDT1)	60	0.016449082
Light-Heavy Duty Truck 2 (LHDT2)	60	0.016170405
Medium-Heavy Duty Truck (MHDT)	55	0.013060
Heavy-Heavy Duty Truck (HHDT)	55	0.021506

Vehicle Type	MPH assumed for vehicle type	2-year (2024-2025) Average DPM Exhaust Emissions Factor(g/mi)
Light Duty Auto (LDA)	70	0.026824286
Light Duty Truck 1 (LDT1)	70	0.274504243
Light Duty Truck 2 (LDT2)	70	0.004311092
Medium Duty Truck (MDV)	60	0.006380956
Light-Heavy Duty Truck 1 (LHDT1)	60	0.014224915
Light-Heavy Duty Truck 2 (LHDT2)	60	0.014348385
Medium-Heavy Duty Truck (MHDT)	55	0.011189
Heavy-Heavy Duty Truck (HHDT)	55	0.021102

Vehicle Type	MPH assumed for vehicle type	1st 14-year (2026-2039) Average DPM Exhaust Emissions Factor(g/mi)
Light Duty Auto (LDA)	70	0.007178506
Light Duty Truck 1 (LDT1)	70	0.081950439
Light Duty Truck 2 (LDT2)	70	0.003255776
Medium Duty Truck (MDV)	60	0.002511334
Light-Heavy Duty Truck 1 (LHDT1)	60	0.010165765
Light-Heavy Duty Truck 2 (LHDT2)	60	0.011369246
Medium-Heavy Duty Truck (MHDT)	55	0.006363
Heavy-Heavy Duty Truck (HHDT)	55	0.019983

Vehicle Type	MPH assumed for vehicle type	2nd 14-year (2040-2053) Average DPM Exhaust Emissions Factor(g/mi)
Light Duty Auto (LDA)	70	0.000942857
Light Duty Truck 1 (LDT1)	70	0.003231599
Light Duty Truck 2 (LDT2)	70	0.003182419
Medium Duty Truck (MDV)	60	0.000793301
Light-Heavy Duty Truck 1 (LHDT1)	60	0.008634644
Light-Heavy Duty Truck 2 (LHDT2)	60	0.010567758
Medium-Heavy Duty Truck (MHDT)	55	0.004181
Heavy-Heavy Duty Truck (HHDT)	55	0.018980

Source: EMFAC2021 for South Coast.

Table 11
Summary of Emission Configurations

Emission Source Type	Geometric Configuration	Relevant Assumptions
Off-Site Diesel Traffic	Line Sources	Plume height: 6.987 meters (13.5 feet)
		Plume width: 8.59 meters (8.5 feet)
		Vehicle speed: See Table 10
		Length of the line source (5 Freeway segment west of project site)
		Vehicle types: see Table 10
		Emission factor: CARB EMFAC2021

Table 12
General Modeling Assumptions - AERMOD Model

Feature	Option Selected
Zone	11 North
Terrain processing	AERMAP NED GEOTIFF (30 m)
Emission source configuration	See Table 11
Regulatory dispersion options	Default
Land use	Urban ¹
Coordinate system	UTM
Receptor height	0 meters above ground ¹
Meteorological data	SCAQMD John Wayne Airport

Notes:

- (1) Per SCAQMD AERMOD guidance methodology, available at <http://www.aqmd.gov/home/library/air-quality-data-studies/meteorological-data/modeling-guidance>

Table 13
Carcinogenic Risks and Non-Carcinogenic Hazards
3rd Trimester Exposure Scenario (0.25-Years)

Receptor ID (a)	Maximum Concentration		Weight Fraction (d)	Contaminant (e)	Carcinogenic Hazards		Noncarcinogenic Hazards		
	(ug/m3)	(mg/m3)			CPF (mg/kg/day)	RISK (per million)	REL (ug/m3)	RfD (mg/kg/day)	Index
	(b)	(c)			(f)	(g)	(h)	(i)	(j)
1	0.11275	1.1E-04	1.00E+00	DPM	1.1E+00	1.53	5.0E+00	1.4E-03	0.0226
2	0.12136	1.2E-04	1.00E+00	DPM	1.1E+00	1.65	5.0E+00	1.4E-03	0.0243
3	0.07675	7.7E-05	1.00E+00	DPM	1.1E+00	1.04	5.0E+00	1.4E-03	0.0154
4	0.07013	7.0E-05	1.00E+00	DPM	1.1E+00	0.95	5.0E+00	1.4E-03	0.0140
5	0.06411	6.4E-05	1.00E+00	DPM	1.1E+00	0.87	5.0E+00	1.4E-03	0.0128
6	0.08346	8.3E-05	1.00E+00	DPM	1.1E+00	1.13	5.0E+00	1.4E-03	0.0167
7	0.08307	8.3E-05	1.00E+00	DPM	1.1E+00	1.13	5.0E+00	1.4E-03	0.0166
8	0.05081	5.1E-05	1.00E+00	DPM	1.1E+00	0.69	5.0E+00	1.4E-03	0.0102
9	0.06024	6.0E-05	1.00E+00	DPM	1.1E+00	0.82	5.0E+00	1.4E-03	0.0120
10	0.067	6.7E-05	1.00E+00	DPM	1.1E+00	0.91	5.0E+00	1.4E-03	0.0134
11	0.05491	5.5E-05	1.00E+00	DPM	1.1E+00	0.75	5.0E+00	1.4E-03	0.0110
12	0.07394	7.4E-05	1.00E+00	DPM	1.1E+00	1.01	5.0E+00	1.4E-03	0.0148
rec area_13	0.07212	7.2E-05	1.00E+00	DPM	1.1E+00	0.98	5.0E+00	1.4E-03	0.0144

Notes:

Exposure factors used to calculate TAC intake:

Exposure Frequency (days/year)	350
Exposure Duration (years)	0.25
Daily Breathing Rate	361
Age Sensitivity Factor	10
Fraction of Time At Home (FAH)	1
Averaging Time _(cancer) (days)	25550
Averaging Time _(non-cancer) (days)	91.25

E = 10^X, i.e. E-02 = 10⁻²

Table 14
Carcinogenic Risks and Non-Carcinogenic Hazards
Infant Exposure Scenario (2-Year)

Receptor ID (a)	Maximum Concentration		Weight Fraction (d)	Contaminant (e)	Carcinogenic Hazards		Noncarcinogenic Hazards		
	(ug/m3)	(mg/m3)			CPF (mg/kg/day)	RISK (per million)	REL (ug/m3)	RfD (mg/kg/day)	Index
	(b)	(c)			(f)	(g)	(h)	(i)	(j)
1	0.10879	1.1E-04	1.00E+00	DPM	1.1E+00	35.74	5.0E+00	1.4E-03	0.0218
2	0.11709	1.2E-04	1.00E+00	DPM	1.1E+00	38.46	5.0E+00	1.4E-03	0.0234
3	0.070406	7.0E-05	1.00E+00	DPM	1.1E+00	23.13	5.0E+00	1.4E-03	0.0141
4	0.06767	6.8E-05	1.00E+00	DPM	1.1E+00	22.23	5.0E+00	1.4E-03	0.0135
5	0.06186	6.2E-05	1.00E+00	DPM	1.1E+00	20.32	5.0E+00	1.4E-03	0.0124
6	0.08053	8.1E-05	1.00E+00	DPM	1.1E+00	26.45	5.0E+00	1.4E-03	0.0161
7	0.08015	8.0E-05	1.00E+00	DPM	1.1E+00	26.33	5.0E+00	1.4E-03	0.0160
8	0.04902	4.9E-05	1.00E+00	DPM	1.1E+00	16.10	5.0E+00	1.4E-03	0.0098
9	0.05812	5.8E-05	1.00E+00	DPM	1.1E+00	19.09	5.0E+00	1.4E-03	0.0116
10	0.06465	6.5E-05	1.00E+00	DPM	1.1E+00	21.24	5.0E+00	1.4E-03	0.0129
11	0.05298	5.3E-05	1.00E+00	DPM	1.1E+00	17.40	5.0E+00	1.4E-03	0.0106
12	0.07134	7.1E-05	1.00E+00	DPM	1.1E+00	23.43	5.0E+00	1.4E-03	0.0143
rec area_13	0.06959	7.0E-05	1.00E+00	DPM	1.1E+00	22.86	5.0E+00	1.4E-03	0.0139

Notes:

Exposure factors used to calculate TAC intake:

Exposure Frequency (days/year)	350
Exposure Duration (years)	2
Daily Breathing Rate	1090
Age Sensitivity Factor	10
Fraction of Time At Home (FAH)	1
Averaging Time _(cancer) (days)	25550
Averaging Time _(non-cancer) (days)	730

E = 10^X, i.e. E-02 = 10⁻²

Table 15
Carcinogenic Risks and Non-Carcinogenic Hazards
Child Exposure Scenario (14-Year)

Receptor ID (a)	Maximum Concentration		Weight Fraction (d)	Contaminant (e)	Carcinogenic Hazards		Noncarcinogenic Hazards		
	(ug/m3) (b)	(mg/m3) (c)			CPF (mg/kg/day) (f)	RISK (per million) (g)	REL (ug/m3) (h)	RfD (mg/kg/day) (i)	Index (j)
1	0.08358	2.7E-03	1.00E+00	DPM	1.1E+00	30.26	5.0E+00	1.4E-03	0.0167
2	0.08996	2.5E-03	1.00E+00	DPM	1.1E+00	32.57	5.0E+00	1.4E-03	0.0180
3	0.05689	2.5E-03	1.00E+00	DPM	1.1E+00	20.59	5.0E+00	1.4E-03	0.0114
4	0.05199	2.5E-03	1.00E+00	DPM	1.1E+00	18.82	5.0E+00	1.4E-03	0.0104
5	0.04752	2.5E-03	1.00E+00	DPM	1.1E+00	17.20	5.0E+00	1.4E-03	0.0095
6	0.06187	2.5E-03	1.00E+00	DPM	1.1E+00	22.40	5.0E+00	1.4E-03	0.0124
7	0.06158	2.5E-03	1.00E+00	DPM	1.1E+00	22.29	5.0E+00	1.4E-03	0.0123
8	0.03766	2.5E-03	1.00E+00	DPM	1.1E+00	13.63	5.0E+00	1.4E-03	0.0075
9	0.04465	2.5E-03	1.00E+00	DPM	1.1E+00	16.16	5.0E+00	1.4E-03	0.0089
10	0.04967	2.5E-03	1.00E+00	DPM	1.1E+00	17.98	5.0E+00	1.4E-03	0.0099
11	0.0407	2.5E-03	1.00E+00	DPM	1.1E+00	14.73	5.0E+00	1.4E-03	0.0081
12	0.05481	2.5E-03	1.00E+00	DPM	1.1E+00	19.84	5.0E+00	1.4E-03	0.0110
rec area_13	0.05346	5.3E-05	1.00E+00	DPM	1.1E+00	19.35	5.0E+00	1.4E-03	0.0107

Notes:

Exposure factors used to calculate TAC intake:

Exposure Frequency (days/year)	350
Exposure Duration (years)	14
Daily Breathing Rate	572
Age Sensitivity Factor	3
Fraction of Time At Home (FAH)	1
Averaging Time _(cancer) (days)	25550
Averaging Time _(non-cancer) (days)	5110

E= 10^X, i.e. E-02 = 10⁻²

Table 16
Carcinogenic Risks and Non-Carcinogenic Hazards
Adult Exposure Scenario (14-Year)

Receptor ID (a)	Maximum Concentration		Weight Fraction (d)	Contaminant (e)	Carcinogenic Hazards		Noncarcinogenic Hazards		
	(ug/m3)	(mg/m3)			CPF (mg/kg/day)	RISK (per million)	REL (ug/m3)	RfD (mg/kg/day)	Index
	(b)	(c)			(f)	(g)	(h)	(i)	(j)
1	0.07136	7.1E-05	1.00E+00	DPM	1.1E+00	2.87	5.0E+00	1.4E-03	0.0143
2	0.07681	7.7E-05	1.00E+00	DPM	1.1E+00	3.09	5.0E+00	1.4E-03	0.0154
3	0.04858	4.9E-05	1.00E+00	DPM	1.1E+00	1.95	5.0E+00	1.4E-03	0.0097
4	0.04439	4.4E-05	1.00E+00	DPM	1.1E+00	1.78	5.0E+00	1.4E-03	0.0089
5	0.04058	4.1E-05	1.00E+00	DPM	1.1E+00	1.63	5.0E+00	1.4E-03	0.0081
6	0.05283	5.3E-05	1.00E+00	DPM	1.1E+00	2.12	5.0E+00	1.4E-03	0.0106
7	0.05258	5.3E-05	1.00E+00	DPM	1.1E+00	2.11	5.0E+00	1.4E-03	0.0105
8	0.03216	3.2E-05	1.00E+00	DPM	1.1E+00	1.29	5.0E+00	1.4E-03	0.0064
9	0.03813	3.8E-05	1.00E+00	DPM	1.1E+00	1.53	5.0E+00	1.4E-03	0.0076
10	0.04241	4.2E-05	1.00E+00	DPM	1.1E+00	1.70	5.0E+00	1.4E-03	0.0085
11	0.03475	3.5E-05	1.00E+00	DPM	1.1E+00	1.40	5.0E+00	1.4E-03	0.0070
12	0.0468	4.7E-05	1.00E+00	DPM	1.1E+00	1.88	5.0E+00	1.4E-03	0.0094
rec area_13	0.04565	4.6E-05	1.00E+00	DPM	1.1E+00	1.83	5.0E+00	1.4E-03	0.0091

Notes:

Exposure factors used to calculate TAC intake

Exposure Frequency (days/year)	350
Exposure Duration (years)	14
Daily Breathing Rate	261
Age Sensitivity Factor	1
Fraction of Time At Home (FAH)	0.73
Averaging Time _(cancer) (days)	25550
Averaging Time _(non-cancer) (days)	5110

E = 10^X, i.e. E-02 = 10⁻²

Table 17
Cumulative Carcinogenic Risk
30.25-Year Exposure Scenario

Receptor ID	Cumulative RISK (per million)
1	70.39
2	75.77
3	46.72
4	43.79
5	40.03
6	52.11
7	51.86
8	31.72
9	37.61
10	41.83
11	34.28
12	46.16
rec area_13	45.03

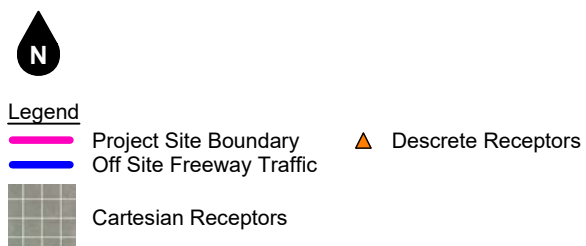
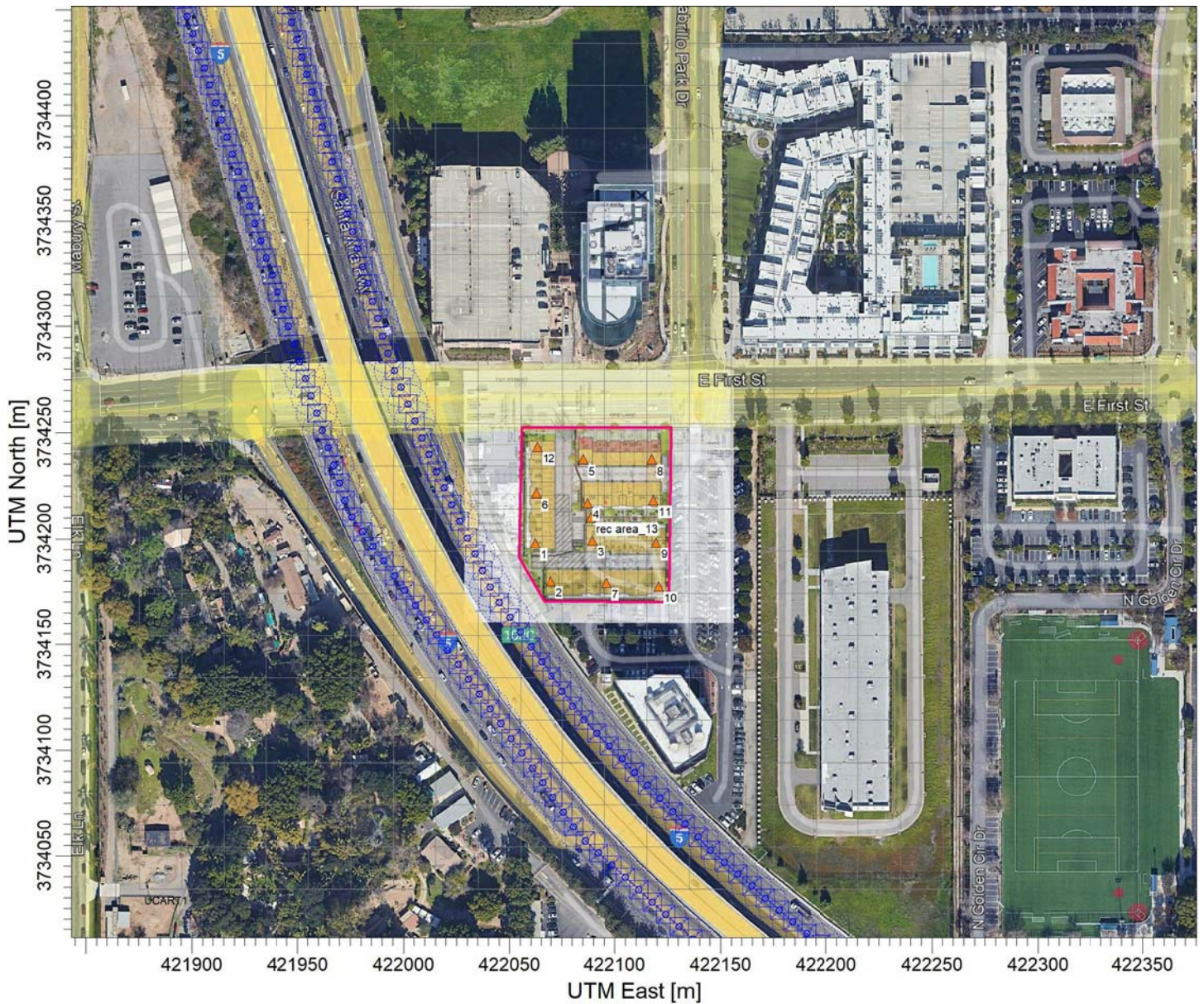


Figure 3
AERMOD Model Source and Receptor Placement

Cabrillo at First Mixed-Use Residential
Air Quality, Global Climate Change, HRA, and Energy Impact Analysis
19386

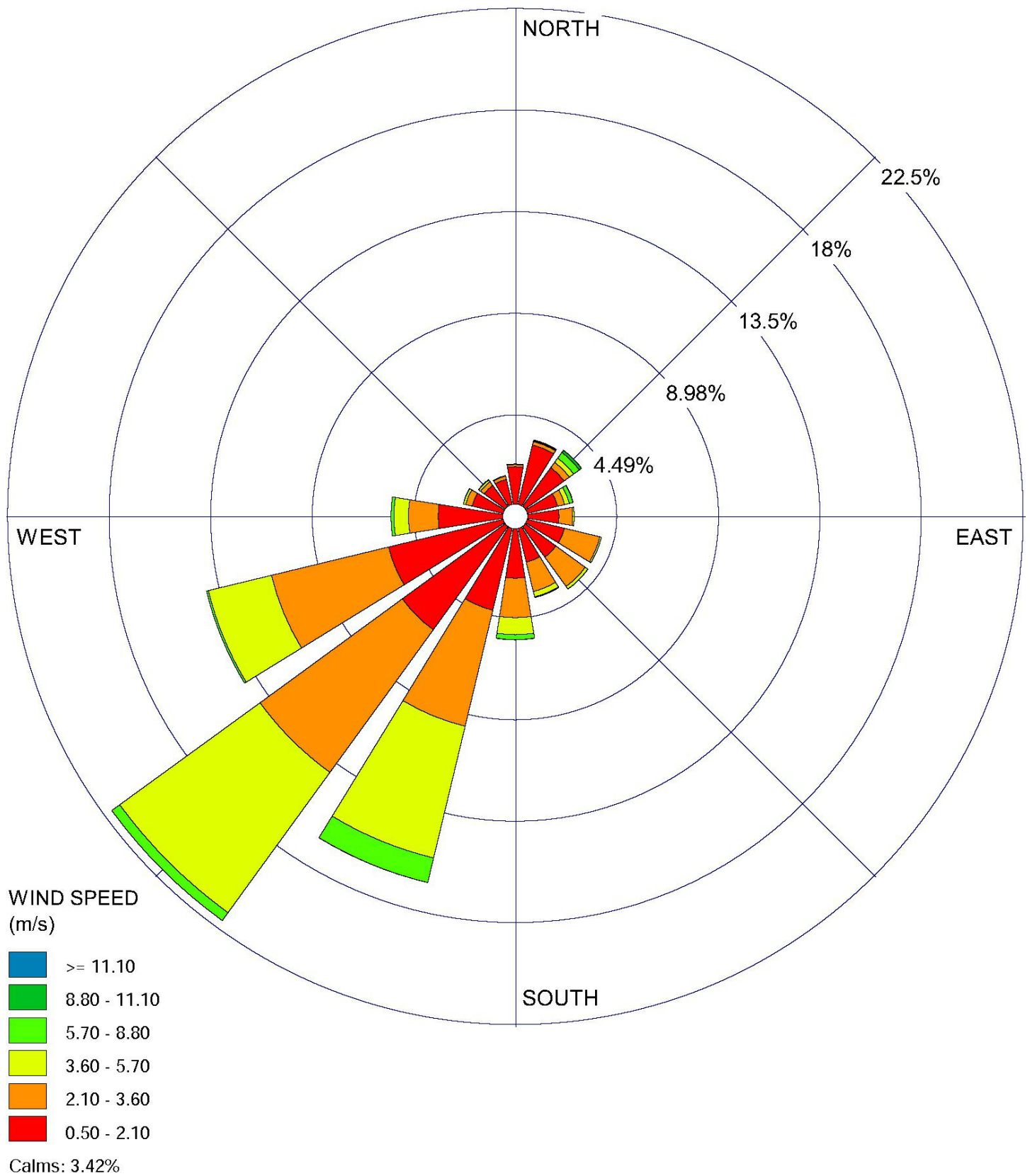


Figure 4
Wind Rose, John Wayne Airport



4. GLOBAL CLIMATE CHANGE ANALYSIS

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 (CO₂), methane (CH₄), ozone, water vapor, nitrous oxide (N₂O), 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 CO₂ and nitrous oxide (NO_x) are byproducts of fossil fuel combustion. Methane, a potent greenhouse gas, results from off-gassing associated with agricultural practices and landfills. Sinks of CO₂, where CO₂ 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.

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).

Carbon Dioxide (CO₂)

The natural production and absorption of CO₂ 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. CO₂ 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 CO₂ 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 CO₂ 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.

Methane (CH₄)

CH₄ is an extremely effective absorber of radiation, although its atmospheric concentration is less than that of CO₂. Its lifetime in the atmosphere is brief (10 to 12 years), compared to some other GHGs (such as CO₂, N₂O, and Chlorofluorocarbons (CFCs)). CH₄ has both natural and anthropogenic sources. It is released as part of the biological processes in low oxygen environments, such as in swamplands or in rice production (at the roots of the plants). Over the last 50 years, human activities such as growing rice, raising cattle, using natural gas, and mining coal have added to the atmospheric concentration of methane. Other anthropogenic sources include fossil-fuel combustion and biomass burning.

Nitrous Oxide (N₂O)

Concentrations of N₂O 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). N₂O 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).

Chlorofluorocarbons (CFC)

CFCs are gases formed synthetically by replacing all hydrogen atoms in methane or ethane (C₂H₆) with chlorine and/or fluorine atoms. CFCs are nontoxic, nonflammable, insoluble, and chemically unreactive in the troposphere (the level of air at the Earth's surface). CFCs have no natural source, but were first synthesized in 1928. It was used for refrigerants, aerosol propellants, and cleaning solvents. Due to the discovery that they are able to destroy stratospheric ozone, a global effort to halt their production was undertaken and in 1989 the European Community agreed to ban CFCs by 2000 and subsequent treaties banned CFCs worldwide by 2010. This effort was extremely successful, and the levels of the major CFCs are now remaining level or declining. However, their long atmospheric lifetimes mean that some of the CFCs will remain in the atmosphere for over 100 years.

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 (CHF₃), HFC-134a (CF₃CH₂F), and HFC-152a (CH₃CHF₂). 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.

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 are able to destroy the compounds. Because of this, PFCs have very long lifetimes, between 10,000 and 50,000 years. Two common PFCs are tetrafluoromethane (CF₄) and hexafluoroethane (C₂F₆). Concentrations of CF₄ in the atmosphere are over 70 ppt. The two main sources of PFCs are primary aluminum production and semiconductor manufacturing.

Sulfur Hexafluoride (SF₆)

SF₆ is an inorganic, odorless, colorless, nontoxic, nonflammable gas. SF₆ has the highest global warming potential of any gas evaluated; 23,900 times that of CO₂. Concentrations in the 1990s were 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.

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.

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 of time, relative to the emissions of 1 ton of carbon dioxide (CO₂). The larger the GWP, the more that a given gas warms the Earth compared to CO₂ 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 18. As shown in Table 18, the global warming potential of GHGs ranges from 1 to 22,800.

Table 18
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:

Source: <http://www3.epa.gov/climatechange/ghgemissions/gases.html>

- (1) Compared to the same quantity of CO₂ 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.

GREENHOUSE GAS STANDARDS AND REGULATION

International

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.

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.

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 CO₂ 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.

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 (CO₂, CH₄, N₂O, HFCs, PFCs, and SF₆) 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.

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.¹²

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)¹³ 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.¹⁴ 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 CO₂ standards applicable in model year 2020 for model years 2021 through 2026. The estimated CAFE and CO₂ standards for model year 2020 are 43.7 mpg and 204 grams of CO₂ per mile for passenger cars and 31.3 mpg and 284 grams of CO₂ 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 CO₂-equivalent emission improvements associated with air conditioning refrigerants and leakage (and, optionally, offsets for nitrous oxide and methane emissions) after model year 2020.¹⁵

On May 12, 2021, the National Highway Traffic Safety Administration (NHTSA) published a [notice of proposed rulemaking](#) in the Federal Register, proposing to repeal "The Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule Part One: One National Program," published Sept. 27, 2019 (SAFE I Rule), in which NHTSA codified regulatory text and made additional pronouncements regarding the preemption of state and local laws related to fuel economy standards. Specifically, this document proposes to fully repeal the regulatory text and appendices promulgated in the SAFE I Rule. In addition, this document proposes to repeal and withdraw the interpretative statements made by the Agency in the SAFE I Rule preamble, including those

¹² 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.

¹³ 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.

¹⁴ 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>.

¹⁵ 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>.

regarding the preemption of particular state Greenhouse Gas (GHG) Emissions standards or Zero Emissions Vehicle (ZEV) mandates. As such, this document proposes to establish a clean slate with respect to NHTSA's regulations and interpretations concerning preemption under the Energy Policy and Conservation Act (EPCA).¹⁶

State of California

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.

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.

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 CO₂ 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. After adopting these initial greenhouse gas standards for passenger vehicles, CARB adopted continuing standards for future model years.

¹⁶ <https://www.federalregister.gov/documents/2021/05/12/2021-08758/corporate-average-fuel-economy-cafe-preemption>

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.

Assembly Bill 32 (California Health and Safety Code, Division 25.5 – 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.

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.

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.

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 is 509.4 MMTCO₂e.

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.”¹⁷ 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. 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.

¹⁷ 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 2017 Scoping Plan also evaluates reductions of smog-causing pollutants through California's climate programs.

SB 32, Pavley. California Global Warming Solutions Act of 2006

- (5) 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.
- (2) 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.

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 CARB approved the proposed regulation to implement the low carbon fuel standard and began implementation on January 1, 2011. The low carbon fuel standard is anticipated to reduce GHG emissions by about 16 MMT per year by 2020. CARB approved some amendments to the LCFS in December 2011, which were implemented on January 1, 2013. In September 2015, the Board approved the re-adoption of the LCFS, which became effective on January 1, 2016, to address procedural deficiencies in the way the original regulation was adopted. In 2018, the Board approved amendments to the regulation, which included strengthening and smoothing the carbon intensity benchmarks through 2030 in-line with California's 2030 GHG emission reduction target enacted through SB 32, adding new crediting opportunities to promote zero emission vehicle adoption, alternative jet fuel, carbon capture and sequestration, and advanced technologies to achieve deep decarbonization in the transportation sector.

The LCFS is designed to encourage the use of cleaner low-carbon transportation fuels in California, encourage the production of those fuels, and therefore, reduce GHG emissions and decrease petroleum dependence in the transportation sector. 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.

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.

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.

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 MPO's 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.

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.

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.

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.

The Energy Commission adopted 2008 Standards on April 23, 2008, and Building Standards Commission approved them for publication on September 11, 2008. These updates became effective on August 1, 2009. CalEEMod modeling defaults to 2008 standards. 2013 Standards were approved and have been effective since July 1, 2014. 2016 Standards were adopted January 1, 2017. 2019 standards were published July 1, 2019 and became effective January 1, 2020. All buildings for which an application for a building permit is submitted on or after January 1, 2020 must follow the 2019 standards. The 2016 residential standards were estimated to be approximately 28 percent more efficient than the 2013 standards, whereas 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.

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/ft² (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 in regard to 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.

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

On January 12, 2010, the State Building Standards Commission unanimously adopted updates to the California Green Building Standards Code, which went into effect on January 1, 2011.

2016 CALGreen Code: The 2016 residential standards were estimated to be approximately 28 percent more efficient than the 2013 standards. Energy efficient buildings require less electricity; therefore, increased energy efficiency reduces fossil fuel consumption and decreases greenhouse gas emissions. During the 2016-2017 fiscal year, the Department of Housing and Community Development (HCD) updated CALGreen through the 2015 Triennial Code Adoption Cycle.

HCD also increased the required construction waste reduction from 50 percent to 65 percent of the total building site waste. This increase aids in meeting CalRecycle's statewide solid waste recycling goal of 75 percent for 2020 as stated in Chapter 476, Statutes of 2011 (AB 341). HCD adopted new regulations requiring recycling areas for multifamily projects of five or more dwelling units. This regulation requires developers to provide readily accessible areas adequate in size to accommodate containers for depositing, storage and collection of non-hazardous materials (including organic waste) for recycling. This requirement assists businesses that were required as of April 1, 2016, to meet the requirements of Chapter 727, Statutes of 2014 (AB 1826).

HCD adopted new regulations to require information on photovoltaic systems and electric vehicle chargers to be included in operation and maintenance manuals. Currently, CALGreen section 4.410.1 Item 2(a) requires operation and maintenance instructions for equipment and appliances. Photovoltaic systems and electric vehicle chargers are systems that play an important role in many households in California, and their importance is increasing every day. HCD incorporated these two terms in the existing language in order to provide clarity to code users as to additional systems requiring operation and maintenance instructions.

HCD updated the reference to Clean Air Standards of the United States Environmental Protection Agency applicable to woodstoves and pellet stoves. HCD also adopted a new requirement for woodstoves and pellet stoves to have a permanent label indicating they are certified to meet the emission limits. This requirement provides clarity to the code user and is consistent with the United States Environmental Protection Agency's New Source Performance Standards. HCD updated the list of standards which can be used for verification of compliance for exterior grade composite wood products. This list now includes four standards from the Canadian Standards Association (CSA): CSA O121, CSA O151, CSA O153 and CSA O325. HCD updated heating and air-conditioning system design references to the ANSI/ACCA 2 Manual J, ANSI/ACCA 1 Manual D, and ANSI/ACCA 3 Manual S to the most recent versions approved by ANSI. HCD adopted a new elective measure for hot water recirculation systems for water conservation. The United States Department of Energy estimates that 3,600 to 12,000 gallons of water per year can be saved by the typical household (with four points of hot water use) if a hot water recirculation system is installed.

2019 CALGreen Code: During the 2019-2020 fiscal year, 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 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 regard 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 regard 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 regard to the outdoor potable water use in landscape areas for public schools and community colleges.

HCD updated Section 5.504.5.3 in regard 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.

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.

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.

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.

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.

SBX1 2

Signed into law in April 2011, SBX1 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.

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

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 2016 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 2016 update required 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

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).

CALGreen Code establishes mandatory measures for new residential and non-residential 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 2019 to include new mandatory measures for residential and nonresidential uses; the new measures took effect on January 1, 2020.

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).

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.

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 based on the fact that staff estimates that these GHG emissions would account for slightly less than one percent of future 2050 statewide GHG emissions target (85 MMTCO₂e/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.

SCAQMD Working Group

Since neither the CARB nor the OPR has developed GHG emissions threshold, the SCAQMD formed a Working Group to develop significance thresholds related to GHG emissions. At the September 28, 2010 Working Group meeting, the SCAQMD released its most current version of the draft GHG emissions thresholds, which recommends a tiered approach that provides a quantitative annual threshold of 10,000 MTCO₂e for industrial uses.

In order to assist local agencies with direction on GHG emissions, the SCAQMD organized a working group and adopted Rules 2700, 2701, 2702, and 3002 which are described below.

SCAQMD Rules 2700 and 2701

The SCAQMD adopted Rules 2700 and 2701 on December 5, 2008, which establishes the administrative structure for a voluntary program designed to quantify GHG emission reductions. Rule 2700 establishes definitions for the various terms used in Regulation XXVII – Global Climate Change. Rule 2701 provides specific protocols for private parties to follow to generate certified GHG emission reductions for projects

within the district. Approved protocols include forest projects, urban tree planting, and manure management. The SCAQMD is currently developing additional protocols for other reduction measures. For a GHG emission reduction project to qualify, it must be verified and certified by the SCAQMD Executive Officer, who has 60 days to approve or deny the Plan to reduce GHG emissions. Upon approval of the Plan, the Executive Officer issues required to issue a certified receipt of the GHG emission reductions within 90 days.

SCAQMD Rule 2702

The SCAQMD adopted Rule 2702 on February 6, 2009, which establishes a voluntary air quality investment program from which SCAQMD can collect funds from parties that desire certified GHG emission reductions, pool those funds, and use them to purchase or fund GHG emission reduction projects within two years, unless extended by the Governing Board. Priority will be given to projects that result in co-benefit emission reductions of GHG emissions and criteria or toxic air pollutants within environmental justice areas. Further, this voluntary program may compete with the cap-and-trade program identified for implementation in CARB's Scoping Plan, or a federal cap and trade program.

SCAQMD Rule 3002

The SCAQMD amended Rule 3002 on November 5, 2010 to include facilities that emit greater than 100,000 tons per year of CO_{2e} are required to apply for a Title V permit by July 1, 2011. A Title V permit is for facilities that are considered major sources of emissions.

Local – City of Santa Ana

City of Santa Ana Climate Action Plan

The City adopted the City of Santa Ana Climate Action Plan (CAP) in December 2015. The CAP represents the City of Santa Ana's commitment to improving quality of life by reducing carbon pollution and energy use, both from its own operations and from the community as a whole. In 2014, the City Council adopted emissions reduction goals for the CAP. For community-wide emissions, the reduction goal is 15 percent below the baseline year 2008 by 2020, and 30 percent below the baseline year 2008 by 2035. For municipal operations emissions the reduction goal is 30 percent by 2020 and 40 percent by 2035. The CAP includes measures to reduce emissions under five sectors: transportation and land use, energy, solid waste, water and wastewater. The measures provided in the CAP are projected to accomplish the goals of a 15 percent reduction in community-wide emissions by 2020 and nearly reach 30 percent reduction by 2035. It is anticipated that new policy and technology options for reducing emissions will become available before 2035; the CAP will be updated periodically to meet the 2035 goal. The CAP measures affecting municipal operations are projected to accomplish goals of 30 percent reduction by 2020 and 40 percent reduction by 2035.

SIGNIFICANCE THRESHOLDS

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 emissions²⁰.

Thresholds of Significance for this Project

As the City of Santa Ana has not adopted a numerical GHG emissions threshold, to determine whether the project's GHG emissions are significant, this analysis uses the SCAQMD draft screening threshold of 3,000 MTCO₂e per year for all land uses.

METHODOLOGY

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.

CalEEMod Version 2020.4.0 was used to calculate the GHG emissions from the proposed project. The CalEEMod Annual Output for year 2023 is available in Appendix C. Each source of GHG emissions is described in greater detail below.

Area Sources

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

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.

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 vehicular trips from the Trip Generation Analysis into the CalEEMod Model. The program then applies the emission factors for each trip which is provided by the EMFAC2017 model to determine the vehicular traffic pollutant emissions. See Section 2 for details.

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. AB 341 requires that 75 percent of waste be diverted from landfills by 2020, reductions for this are shown in the mitigated CalEEMod output values. No other changes were made to the default waste parameters.

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. Per CalGreen standards,

²⁰ 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.

indoor water use is required to be reduced by 20 percent. Reductions for this are shown in the mitigated CalEEMod output values. No other changes were made to the default water usage parameters.

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 and in the manner detailed above in Section 2.

PROJECT GREENHOUSE GAS EMISSIONS

The GHG emissions have been calculated based on the parameters described above. A summary of the results is shown below in Table 19 and the CalEEMod Model run for the proposed project is provided in Appendix C. Table 19 shows that the total for the proposed project's emissions (without credit for any reductions from sustainable design and/or regulatory requirements) would be 327.88 MTCO₂e per year. According to the thresholds of significance established above, a cumulative global climate change impact would occur if the GHG emissions created from the on-going operations of the proposed project would exceed the SCAQMD draft threshold of 3,000 MTCO₂e per year for all land uses. Therefore, the project's emissions do not exceed the SCAQMD 3,000 MTCO₂e/year draft emissions threshold.

The operation of the proposed project would not create a significant cumulative impact to global climate change. No mitigation is required.

Table 19
Project-Related Greenhouse Gas Emissions

Category	Greenhouse Gas Emissions (Metric Tons/Year)					
	Bio-CO ₂	NonBio-CO ₂	CO ₂	CH ₄	N ₂ O	CO ₂ e
Area Sources ¹	0.00	8.15	8.15	0.00	0.00	8.21
Energy Usage ²	0.00	49.10	49.10	0.00	0.00	49.37
Mobile Sources ³	0.00	235.70	235.70	0.01	0.01	238.98
Waste ⁴	3.27	0.00	3.27	0.19	0.00	8.10
Water ⁵	0.72	8.10	8.82	0.08	0.00	11.24
Construction ⁶	0.00	11.89	11.89	0.00	0.00	11.98
Total Emissions	3.99	312.94	316.93	0.29	0.01	327.88
SCAQMD Draft Threshold for All Land Uses						3,000
Exceeds Threshold?						No

Notes:

Source: CalEEMod Version 2020.4.0 for Opening Year 2023.

- (1) Area sources consist of GHG emissions from consumer products, architectural coatings, and landscape equipment.
- (2) Energy usage consist of GHG emissions from electricity and natural gas usage.
- (3) Mobile sources consist of GHG emissions from vehicles.
- (4) Solid waste includes the CO₂ and CH₄ emissions created from the solid waste placed in landfills.
- (5) Water includes GHG emissions from electricity used for transport of water and processing of wastewater.
- (6) Construction GHG emissions CO₂e based on a 30-year amortization rate.

CONSISTENCY WITH APPLICABLE GREENHOUSE GAS REDUCTION PLANS AND POLICIES

The proposed project would have the potential to conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases. As stated previously, the applicable plan for the proposed project is the City of Santa Ana CAP; therefore, the project and its GHG emissions have been compared to the goals of the City of Santa Ana CAP.

As stated previously, the SCAQMD's tier 3 thresholds used Executive Order S-3-05 goal as the basis for deriving the screening level. The California Governor issued Executive Order S-3-05, GHG Emission, in June 2005, which established the following reduction targets:

- 2010: Reduce greenhouse gas emissions to 2000 levels
- 2020: Reduce greenhouse gas emissions to 1990 levels
- 2050: Reduce greenhouse gas emissions to 80 percent below 1990 levels.

In 2006, the California State Legislature adopted 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 was phased in starting in 2012.

Therefore, as the project's emissions meet the threshold for compliance with Executive Order S-3-05, the project's emissions also comply with the goals of AB 32 and the City of Santa Ana CAP. Additionally, as the project meets the current interim emissions targets/thresholds established by SCAQMD, the project would also be on track to meet the reduction target of 40 percent below 1990 levels by 2030 mandated by SB-32. Furthermore, all of the post 2020 reductions in GHG emissions are addressed via regulatory requirements at the State level and the project will be required to comply with these regulations as they come into effect.

As shown in Table 20, the project is consistent with the applicable measures of the City of Santa Ana CAP. At a total level of 327.88 MTCO₂e per year, the project's GHG emissions do not exceed the SCAQMD draft threshold of 3,000 MTCO₂e per year for all land uses and is in compliance with the reduction goals of the City of Santa Ana CAP, AB-32 and SB-32. Furthermore, the project will comply with applicable Green Building Standards and City of Santa Ana's policies regarding sustainability (as dictated by the City's CAP and General Plan). Impacts are considered to be less than significant.

Table 20
Consistency with Santa Ana Climate Action Plan Measures

City of Santa Ana CAP Measure	Project Compliance With Measures
Transportation and Land Use Measures	
<i>Development of Local Retail Service Nodes.</i> Development that provides a mix of housing, commercial space, services, and job opportunities close to public transportation reduces dependency on cars and time spent in traffic and more closely links residents to jobs and services.	No Conflict. The proposed project includes a mixed-use residential project consisting of residential dwelling units and live/work units. The project is located adjacent to/in close proximity to existing commercial/retail, recreational, and institutional uses, and is in close proximity to existing OCTA bus routes (within 0.02-mile).
<i>Local Residential Nodes near Retail and Employment.</i> Locate new residential development within retail and employment corridors to create a more optimal mix of land uses, which will be conducive to the increase use of transit.	No Conflict. The project is a mixed-use residential project consisting of residential dwelling units and live/work units adjacent to/in close proximity to existing commercial uses and other employment centers (e.g., offices, schools, etc.).
<i>Local Employment Nodes near Residential and Retail Areas.</i> Develop higher levels of mixed-use development, including employment, retail, and housing, to lower vehicle miletraveled (VMT) compared with areas where only one of these uses predominates.	No Conflict. The proposed project consists of an infill development consisting of a mixed-use residential project with residential dwelling units and live/work units adjacent to existing employment and retail uses. As such, the project would help reduce VMT compared with areas where only one of these uses predominates.
<i>End-of-Trip Facilities in New Projects.</i> End-of-trip facilities can include bike lockers, showers, and changing rooms, which can be used by cyclists and encourage cycling use.	No Conflict. The project consists mainly of residential uses with work space/live-work use.
<i>Design Guidelines for External Bike/Pedestrian/Transit Connectivity.</i> The City plans to create guidelines that will mandate minimum levels of connectivity between various locations and the external transportation network.	No Conflict. The project would connect to the existing bicycle, pedestrian, and transit infrastructure in the area.
Community Measures	
<i>Property Assessed Clean Energy (PACE) Financing for Commercial and Residential Properties.</i> PACE financing is available for energy and water saving measures as well as renewable energy generation. Energy efficiency projects financed through the program include air conditioning and heating systems, lighting upgrades, cool roofing materials, and solar installations.	No Conflict. The California Green Building Standards Code (proposed Part 11, Title 24) was adopted as part of the California Building Standards Code in the CCR. Part 11 establishes voluntary standards, that are mandatory in the 2019 edition of the Code, on planning and design for sustainable site development, energy efficiency (in excess of the California Energy Code requirements), water conservation, material conservation, and internal air contaminants. Therefore, the project includes energy efficient features in compliance with the 2019 Title 24 Energy Efficiency Standards. If applicable, the project applicant can obtain financial assistance to implement these features through programs such as PACE.
<i>Southern California Edison (SCE) Small and Medium Business Direct Install.</i> Energy efficiency contractors help small business identify ways to save electricity.	No Conflict. The project includes energy efficient features in compliance with the 2019 Title 24 Energy Efficiency Standards. Programs, such as SCE Direct Install, can assist the applicant with implementing these measures.
<i>Solar Photovoltaic Systems—New Private Installs.</i> The City is offering solar incentives that include permit fee waivers, free plan check services, and free building inspections for solar photovoltaic systems.	No Conflict. The project is required to comply with the 2019 Title 24 Building Code which went into effect on January 1, 2020. Meeting the Title 24 standards could require the use of solar. The solar incentives offered by the City could be used to assist the applicant with solar photovoltaic installations.
<i>Title 24 Energy Efficiency Standards.</i> Minimum energy efficiency for new construction in California effective January 1, 2020.	No Conflict. The project would be required to be developed and operated in compliance with the 2019 Title 24 Energy Efficiency Standards that went into effect on January 1, 2020.
Solid Waste, Water, and Wastewater Measures	
<i>AB 341.</i> Adopted by the state in 2011 and requires businesses that generate 4 cubic yards or more of commercial solid waste per week and multi-family residential dwellings of five units or more to recycle.	No Conflict. The state is currently developing a regulation to reduce methane emissions from municipal solid waste landfills. The project will be required to comply with City programs, such as any City recycling and waste reduction programs, which comply with the 75 percent reduction required by 2020 per AB 341.

Source: City of Santa Ana, Santa Ana Climate Action Plan, December 2015.

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.”²¹ 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),²² 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 emissions.

As discussed in the Consistency With Applicable Greenhouse Gas Reduction Plans and Policies section above, the project is consistent with the goals and objectives of the City of Santa Ana CAP.

Thus, given the project’s consistency with the City’s CAP and SCAQMD’s 3,000 MTCO₂e per year threshold for all land uses, 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.

²¹ Source: 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).

²² 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.”

5. ENERGY ANALYSIS

EXISTING CONDITIONS

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

Overview

California's estimated annual energy use as of 2020 included:

- Approximately 272,576 gigawatt hours of electricity;²³
- Approximately 2,074,302 million cubic feet of natural gas per year;²⁴ and
- Approximately 23.2 billion gallons of transportation fuel (for the year 2015).²⁵

As of 2019, 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 39.4 percent transportation;
- Approximately 23.1 percent industrial;
- Approximately 18.7 percent residential; and
- Approximately 18.8 percent commercial.²⁶

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 21.

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:

- California was the seventh-largest producer of crude oil among the 50 states in 2019, and, as of January 2020, it ranked third in oil refining capacity.
- California is the largest consumer of both jet fuel and motor gasoline among the 50 states and accounted for 17% of the nation's jet fuel consumption and 11% of motor gasoline consumption in 2019. The state is the second-largest consumer of all petroleum products combined, accounting for 10% of the U.S. total.
- California's total energy consumption is the second-highest in the nation, but, in 2018, the State's per capita energy consumption ranked the fourth-lowest, due in part to its mild climate and its energy efficiency programs.
- In 2019, California ranked first in the nation as a producer of electricity from solar, geothermal, and biomass energy and second in the nation in conventional hydroelectric power generation.

²³ California Energy Commission. Energy Almanac. Total Electric Generation. [Online] 2021.

<https://www.energy.ca.gov/data-reports/energy-almanac/california-electricity-data/2020-total-system-electric-generation>.

²⁴ Natural Gas Consumption by End Use. U.S. Energy Information Administration. [Online] October 18, 2021.

https://www.eia.gov/dnav/ng/ng_cons_sum_dcu_SCA_a.htm.

²⁵ California Energy Commission. Revised Transportation Energy Demand Forecast 2018-2030. [Online] April 19, 2018. <https://www.energy.ca.gov/assessments/>

²⁶ U.S. Energy Information Administration. California Energy Consumption by End-Use Sector.

California State Profile and Energy Estimates.[Online] October 18, 2021 <https://www.eia.gov/state/?sid=CA#tabs-2>

- In 2019, California was the fourth-largest electricity producer in the nation, but the state was also the nation's largest importer of electricity and received about 28% of its electricity supply from generating facilities outside of California, including imports from Mexico.²⁷

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 proposed 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, and transportation fuel for vehicle trips associated with the proposed project.

Electricity

Electricity would be provided to the project by Southern California Edison (SCE). SCE provides electric power to more than 15 million persons, within a service area encompassing approximately 50,000 square miles.²⁸ SCE derives electricity from varied energy resources including: fossil fuels, hydroelectric generators, nuclear power plants, geothermal power plants, solar power generation, and wind farms. SCE also purchases from independent power producers and utilities, including out-of-state suppliers.²⁹

Table 22 identifies SCE's specific proportional shares of electricity sources in 2020. As shown in Table 22, the 2020 SCE Power Mix has renewable energy at 33 percent of the overall energy resources, of which biomass and waste is at 3 percent, geothermal is at 5 percent, eligible hydroelectric is at 1 percent, solar energy is at 13 percent, and wind power is at 11 percent; other energy sources include large hydroelectric at 12 percent, natural gas at 37 percent, nuclear at 9 percent and unspecified sources at 5 percent.

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.³⁰

²⁷ State Profile and Energy Estimates. Independent Statistics and Analysis. [Online] [Cited: January 16, 2020]. <http://www.eia.gov/state/?sid=CA#tabs2>.

²⁸ <https://www.sce.com/about-us/who-we-are/leadership/our-service-territory>

²⁹ California Energy Commission. Utility Energy Supply plans from 2015. https://www.energy.ca.gov/almanac/electricity_data/supply_forms.html

³⁰ California Public Utilities Commission. Natural Gas and California. http://www.cpuc.ca.gov/natural_gas/

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).^{31,32} 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.³³ 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.³⁴

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.

Federal Regulations

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.³⁵

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 CO₂ standards applicable in model year 2020 for model years 2021 through 2026. The estimated CAFE and CO₂ standards for model year 2020 are 43.7 mpg and 204 grams of CO₂ per mile for passenger cars and 31.3 mpg and 284 grams of CO₂ per mile for light trucks, projecting an overall industry average of 37 mpg, as compared to 46.7 mpg under the standards issued in 2012.³⁶

³¹ CARB. California Greenhouse Gas Emissions Inventory – 2020 Edition. <https://www.arb.ca.gov/cc/inventory/data/data.htm>

³² CARB. 2016 SIP Emission Projection Data. https://www.arb.ca.gov/app/emsmv/2017/emseic1_query.php?F_DIV=-4&F_YR=2012&F_SEASON=A&SP=SIP105ADJ&F_AREA=CA

³³ 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

³⁴ <https://www.eia.gov/tools/faqs/faq.php?id=23&t=10>

³⁵ <https://www.nhtsa.gov/lawsregulations/corporate-average-fuel-economy>.

³⁶ 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.epa.gov/regulations-emissions-vehicles-and-engines/safer-affordable-fuel-efficient-safe-vehicles-final-rule>.

Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA)

The Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA) promoted the development of intermodal 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.

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.

State Regulations

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 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 2019 Integrated Energy Policy Report (2019 IEPR) was adopted February 20, 2020, and continues to work towards improving electricity, natural gas, and transportation fuel energy use in California. The 2019 IEPR focuses on a variety of topics such as decarbonizing buildings, integrating renewables, energy efficiency, energy equity, integrating renewable energy, updates on Southern California electricity reliability, climate adaptation activities for the energy sector, natural gas assessment, transportation energy demand forecast, and the California Energy Demand Forecast.³⁷

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.

³⁷ California Energy Commission. Final 2019 Integrated Energy Policy Report. February 20, 2020. <https://www.energy.ca.gov/data-reports/reports/integrated-energy-policy-report/2019-integrated-energy-policy-report>

California Building Standards Code (Title 24)

The California Building Standards Code Title 24 was previously discussed in Section 4 of this report.

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 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 regard 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 2016 residential standards were estimated to be approximately 28 percent more efficient than the 2013 standards, whereas 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.

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 4 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 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 regard 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 regard 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 regard to the outdoor potable water use in landscape areas for public schools and community colleges.

HCD updated Section 5.504.5.3 in regard 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.

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.

Senate Bill 350

As previously discussed in Section 4 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.

Assembly Bill 32

As discussed in Section 4 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.

Assembly Bill 1493/Pavley Regulations

As discussed in Section 4 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 CO₂ 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.

Executive Order S-1-07/Low Carbon Fuel Standard

As discussed in Section 4 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.

California Air Resources Board

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.³⁸

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.

Regulation to Reduce Emissions of Diesel Particulate Matter, Oxides of Nitrogen, and other Criteria Pollutants, from 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 (NOX) 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.

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 4 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 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 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.

³⁸ California Air Resources Board, California's Advanced Clean Cars Program, January 18, 2017. www.arb.ca.gov/msprog/acc/acc.htm.

PROJECT ENERGY DEMANDS AND ENERGY EFFICIENCY MEASURES

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.

Methodology

Information from the CalEEMod 2020.4.0 Daily and Annual Outputs contained in Appendix B and D, utilized for air quality and greenhouse gas analyses in Sections 2 and 4 of this report, were also utilized for this analysis. The CalEEMod outputs detail project related construction equipment, transportation energy demands, and facility energy demands.

Construction Energy Demands

The construction schedule is anticipated to occur between the beginning of mid-May 2022 and mid-August 2023 and be completed in one phase. Staging of construction vehicles and equipment will occur on-site. The approximately 15 month schedule is relatively short and the project site is approximately 1.4 acres.

Construction Equipment Electricity Usage Estimates

As stated previously, Electrical service will be provided by Southern California Edison. 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 proposed project. Based on the 2017 National Construction Estimator, Richard Pray (2017),³⁹ the typical power cost per 1,000 square feet of building construction per month is estimated to be \$2.32. The project plans to develop the site with 35 townhome dwelling units, including six live/work units totaling approximately 73,500 square feet. Based on Table 23, the total power cost of the on-site electricity usage during the construction of the proposed project is estimated to be approximately \$2,557.80. Furthermore, as of May 14, 2021, SCE's general service rate schedule (GS-1) is approximately \$0.11 per kWh of electricity.⁴⁰ As shown in Table 23, the total electricity usage from project construction related activities is estimated to be approximately 23,253 kWh.

³⁹ Pray, Richard. 2017 National Construction Estimator. Carlsbad : Craftsman Book Company, 2017.

⁴⁰ Southern California Edison (SCE). Rates & Pricing Choices: General Service/Industrial Rates. https://library.sce.com/content/dam/sce-doclib/public/regulatory/tariff/electric/schedules/general-service-&-industrial-rates/ELECTRIC_SCHEDULES_GS-1.pdf

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 approximately 15 months
- All construction equipment was assumed to run on diesel fuel
- Typical daily use of 8 hours, with some equipment operating from ~6-7 hours
- Aggregate fuel consumption rate for all equipment was estimated at 18.5 hp-hr/gallon (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 2 and 4 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 24 shows the results of the analysis of construction equipment.

As presented in Table 24, project construction activities would consume an estimated 29,799 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.

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 50 percent/25 percent/25 percent, respectively, along area roadways.⁴¹ With respect to estimated VMT, the construction worker trips would generate an estimated 156,864 VMT. Data regarding project related construction worker trips were based on CalEEMod 2020.4.0 model defaults.

Vehicle fuel efficiencies for construction workers were estimated in the air quality and greenhouse gas analyses (Sections 2 and 4 of this report) using information generated using CARB's 2021 EMFAC model (see Appendix D for details). An aggregate fuel efficiency of 26.38 miles per gallon (mpg) was used to calculate vehicle miles traveled for construction worker trips. Table 25 shows that an estimated 5,946 gallons of fuel would be consumed for construction worker trips.

Construction Vendor/Hauling Fuel Estimates

Tables 26 and 27 show the estimated fuel consumption for vendor and hauling during building construction and architectural coating. With respect to estimated VMT, the vendor and hauling trips would generate an estimated 23,787 VMT. Data regarding project related construction worker trips were based on CalEEMod 2020.4.0 model defaults.

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 or hauling debris from the site during grading would use medium to heavy duty vehicles with an average fuel

⁴¹ CalEEMod User's Guide (May 2021) states that the CalEEMod default fleet mix for worker trips includes light duty autos and light duty trucks, LDA, LDT1, LDT2, at a mix of 50%/25%/25%, respectively.

consumption of 7.59 mpg for medium heavy-duty trucks and 5.87 for heavy heavy-duty trucks (see Appendix D for details).⁴² Tables 26 and 27 show that an estimated 3,687 gallons of fuel would be consumed for vendor and hauling trips.

Construction Energy Efficiency/Conservation Measures

Construction equipment used over the approximately 15-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 County building officials, and/or in response to citizen complaints.

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).

Transportation Fuel Consumption

Using the CalEEMod output from the air quality and greenhouse gas analyses (Sections 2 and 4 of this report), it is assumed that an average trip for autos and light trucks was assumed to be 14.7 miles and 3- 4-axle trucks were assumed to travel an average of 8.7 miles.⁴³ The project includes the development of the site with residential uses; therefore, in order to present a worst-case scenario, it was assumed that vehicles would operate 365 days per year. Table 28 shows the estimated annual fuel consumption for all classes of vehicles from autos to heavy-heavy trucks.⁴⁴

The proposed project would generate 236 trips per day. The vehicle fleet mix was used from the CalEEMod output. Table 28 shows that an estimated 49,826 gallons of fuel would be consumed per year for the operation of the proposed project.

⁴² CalEEMod User's Guide (May 2021) states that the CalEEMod default fleet mix for vendor trips includes medium-heavy duty and heavy-heavy duty trucks, MHDT and HHDT, at a mix of 50%/50%.

⁴³ CalEEMod default distance for H-W (home-work) or C-W (commercial-work) is 14.7 miles; 8.7 miles for H-O (home-other) or C-O (commercial-other).

⁴⁴ Average fuel economy based on aggregate mileage calculated in EMFAC 2021 for opening year (2023). See Appendix C for EMFAC output.

Trip generation and VMT generated by the proposed project are consistent with other similar residential uses of similar scale and configuration as reflected respectively in the Institute of Transportation Engineers (ITE) Trip Generation Manual (20th Edition, 2017). That is, the proposed 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.^{45,46} Therefore, the increase in fuel consumption from the proposed project is insignificant in comparison to the State's demand. Therefore, project transportation energy consumption would not be considered inefficient, wasteful, or otherwise unnecessary.

Facility Energy Demands (Electricity and Natural Gas)

Building operation and site maintenance (including landscape maintenance) would result in the consumption of electricity (provided by Southern California Edison) 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 2 and 4 of this report) and are provided in Table 29.

As shown in Table 29, the estimated electricity demand for the proposed project is approximately 146,065 kWh per year. In 2020, the residential sector of the County of Orange consumed approximately 7,765 million kWh of electricity.⁴⁷ In addition, the estimated natural gas consumption for the proposed project is approximately 434,670 kBtu per year. In 2020, the residential sector of the County of Orange consumed approximately 387 million therms of gas.⁴⁸ Therefore, the increase in both electricity and natural gas demand from the proposed project is insignificant compared to the County's 2020 residential sector demand.

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, 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.).

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

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 Southern California Edison 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

⁴⁵ <https://www.energy.ca.gov/data-reports/energy-almanac/transportation-energy/california-gasoline-data-facts-and-statistics>

⁴⁶ <https://www.energy.ca.gov/data-reports/energy-almanac/transportation-energy/diesel-fuel-data-facts-and-statistics>

⁴⁷ California Energy Commission, Electricity Consumption by County. <https://ecdms.energy.ca.gov/elecbycounty.aspx>

⁴⁸ California Energy Commission, Gas Consumption by County. <http://ecdms.energy.ca.gov/gasbycounty.aspx>

for reporting and certifying GHG emission reductions from mobile sources. However, the vehicles associated with the proposed project would be required to comply with federal and state fuel efficiency standards.

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 4 above, the proposed project would be consistent with the applicable goals of the City of Santa Ana CAP.

CONCLUSIONS

As supported by the preceding analyses, project construction and operations would not result in the inefficient, wasteful or unnecessary consumption of energy. The proposed project does not include any 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 and is a residential project that is not proposing any additional features that would require a larger energy demand than other residential projects of similar scale and configuration. The project land uses are consistent with the General Plan designations, and therefore, the energy demands of the project are anticipated to 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 conservation goals within 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.

Table 21
Total Electricity System Power (California 2020)

Fuel Type	California In-State Generation (GWh)	Percent of California In-State Generation	Northwest Imports (GWh)	Southwest Imports (GWh)	Total Imports (GWh)	Percent of Imports	Total California Energy Mix (GWh)	Total California Power Mix
Coal	317	0.17%	194	6,963	7,157	8.76%	7,474	2.74%
Natural Gas	92,298	48.35%	70	8,654	8,724	10.68%	101,022	37.06%
Nuclear	16,280	8.53%	672	8,481	9,154	11.21%	25,434	9.33%
Oil	30	0.02%	-	-	0	0.00%	30	0.01%
Other (Petroleum Coke/Waste Heat)	384	0.20%	125	9	134	0.16%	518	0.19%
Large Hydro	17,938	9.40%	14,078	1,259	15,337	18.78%	33,275	12.21%
Unspecified Sources of Power	-	0.00%	12,870	1,745	14,615	17.90%	14,615	5.36%
Renewables	63,665	33.35%	13,184	13,359	26,543	32.50%	90,208	33.09%
Biomass	5,680	2.97%	975	25	1,000	1.22%	6,679	2.45%
Geothermal	11,345	5.94%	166	1,825	1,991	2.44%	13,336	4.89%
Somall Hydro	3,476	1.82%	320	2	322	0.39%	3,798	1.39%
Solar	29,456	15.43%	284	6,312	6,596	8.08%	36,052	13.23%
Wind	13,708	7.18%	11,438	5,197	16,635	20.37%	30,343	11.13%
Total	190,913	100%	41,193	40,471	81,663	100%	272,576	100%

Notes:

- (1) Source: California Energy Commission. 2020 Total System electric Generation. <https://www.energy.ca.gov/data-reports/energy-almanac/california-electricity-data/2020-total-system-electric-generation>

Table 22
SCE 2020 Power Content Mix

Energy Resources	2020 SCE Power Mix
Eligible Renewable	33%
Biomass & Biowaste	3%
Geothermal	5%
Eligible Hydroelectric	1%
Solar	13%
Wind	11%
Coal	3%
Large Hydroelectric	12%
Natural Gas	37%
Nuclear	9%
Other	0%
Unspecified Sources of power*	5%
Total	100%

Notes:

(1) https://www.sce.com/sites/default/files/inline-files/SCE_2020PowerContentLabel.pdf

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

Table 23
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
\$2.32	73.500	15	\$2,557.80

Cost per kWh	Total Project Construction Electricity Usage (kWh)
\$0.11	23,253

*Assumes the project will be under the GS-1 General Service rate under SCE.

Table 24
Construction Equipment Fuel Consumption Estimates

Phase	Number of Days	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor	HP hrs/day	Total Fuel Consumption (gal diesel fuel) ¹
Demolition	27	Concrete/Industrial Saws	1	8	81	0.73	473	690
	27	Rubber Tired Dozers	1	8	247	0.4	790	1,154
	27	Tractors/Loaders/Backhoes	3	8	97	0.37	861	1,257
Grading	5	Graders	1	8	187	0.41	613	166
	5	Rubber Tired Dozers	1	8	247	0.4	790	214
	5	Tractors/Loaders/Backhoes	2	7	97	0.37	502	136
Building Construction	270	Cranes	1	6	231	0.29	402	5,866
	270	Forklifts	1	6	89	0.2	107	1,559
	270	Generator Sets	1	8	84	0.74	497	7,258
	270	Tractors/Loaders/Backhoes	1	6	97	0.37	215	3,143
	270	Welders	3	8	46	0.45	497	7,251
Paving	14	Cement and Mortar Mixers	1	6	9	0.56	30	23
	14	Pavers	1	6	130	0.42	328	248
	14	Paving Equipment	1	8	132	0.36	380	288
	14	Rollers	1	7	80	0.38	213	161
	14	Tractors/Loaders/Backhoes	1	8	97	0.37	287	217
Architectural Coating	14	Air Compressors	1	6	78	0.48	225	170
CONSTRUCTION FUEL DEMAND (gallons of diesel fuel)								29,799

Notes:

- (1) Using Carl Moyer Guidelines Table D-21 Fuel consumption rate factors (bhp-hr/gal) for engines less than 750 hp.
(Source: https://www.arb.ca.gov/msprog/moyer/guidelines/2017gl/2017_gl_appendix_d.pdf)

Table 25
Construction Worker Fuel Consumption Estimates

Phase	Number of Days	Worker Trips/Day	Trip Length (miles)	Vehicle Miles Traveled	Average Vehicle Fuel Economy (mpg)	Estimated Fuel Consumption (gallons)
Demolition	27	13	14.7	5,160	26.38	196
Grading	5	10	14.7	735	26.38	28
Building Construction	270	37	14.7	146,853	26.38	5,567
Paving	14	13	14.7	2,675	26.38	101
Architectural Coating	14	7	14.7	1,441	26.38	55
Total Construction Worker Fuel Consumption						5,946

Notes:

- (1) Assumptions for the worker trip length and vehicle miles traveled are consistent with CalEEMod 2020.4.0 defaults.
- (2) CalEEMod worker vehicle class is based on an LD_Mix, which, per CalEEMod User's Guide (May 2021), includes LDA, LDT1, and LDT2 at a mix of 50%/25%/25%, respectively.

Table 26
Construction Vendor Fuel Consumption Estimates (MHD & HHD Trucks)

Phase	Number of Days	Vendor Trips/Day	Trip Length (miles)	Vehicle Miles Traveled	Average Vehicle Fuel Economy (mpg)	Estimated Fuel Consumption (gallons)
Demolition	27	0	6.9	0	6.73	0
Grading	5	0	6.9	0	6.73	0
Building Construction	270	9	6.9	16,767	6.73	2,491
Paving	14	0	6.9	0	6.73	0
Architectural Coating	14	0	6.9	0	6.73	0
Total Construction Vendor Fuel Consumption						2,491

Notes:

- (1) Assumptions for the vendor trip length and vehicle miles traveled are consistent with CalEEMod 2020.4.0 defaults.
- (2) CalEEMod vendor vehicle class is based on an HDT_Mix, which, per CalEEMod User's Guide (May 2021), includes HHDT and MHDT at a mix of 50%/50%.

Table 27
Construction Hauling Fuel Consumption Estimates (HHD Trucks)

Phase	Number of Days	Total Hauling Trips	Trip Length (miles)	Vehicle Miles Traveled	Average Vehicle Fuel Economy (mpg)	Estimated Fuel Consumption (gallons)
Demolition	27	13	20	7,020	5.87	1,196
Grading	5	0	20	0	5.87	0
Building Construction	270	0	20	0	5.87	0
Paving	14	0	20	0	5.87	0
Architectural Coating	14	0	20	0	5.87	0
Total Construction Hauling Fuel Consumption						1,196

Notes:

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

Table 28
Estimated Vehicle Operations Fuel Consumption

Vehicle Type	Vehicle Mix	Number of Vehicles	Average Trip (miles) ¹	Daily VMT	Average Fuel Economy (mpg)	Total Gallons per Day	Total Annual Fuel Consumption (gallons)
Light Auto	Automobile	129	14.7	1,896	29.76	63.72	23,258
Light Truck	Automobile	14	14.7	206	28.21	7.30	2,663
Light Truck	Automobile	44	14.7	647	23.05	28.06	10,242
Medium Truck	Automobile	31	14.7	456	19.28	23.64	8,627
Light Heavy Truck	2-Axle Truck	6	14.7	88	14.37	6.14	2,240
Light Heavy Truck 10,000 lbs +	2-Axle Truck	2	14.7	29	17.53	1.68	612
Medium Heavy Truck	3-Axle Truck	4	8.7	35	7.69	4.53	1,652
Heavy Heavy Truck	4-Axle Truck	1	8.7	9	5.97	1.46	532
Total		236	--	3,366	18.23	136.51	--
Total Annual Fuel Consumption							49,826

Notes:

(1) Based on the size of the site and relative location, trips were assumed to be local rather than regional.

Table 29
Project Annual Operational Energy Demand Summary

Natural Gas Demand	kBTU/year ¹
Apartments Low Rise	434,670
Total	434,670

Electricity Demand	kWh/year
Apartments Low Rise	140,729
Parking Lot	5,336
Total	146,065

Notes:

(1) Taken from the CalEEMod 2020.4.0 annual output (Appendix C of this report).

6. EMISSIONS REDUCTION MEASURES

CONSTRUCTION MEASURES

Adherence to SCAQMD Rule 403 is required.

No construction mitigation is required.

OPERATIONAL MEASURES

Mitigation Measure 1. All residential dwelling units within the project's boundaries shall be required to install high efficiency Minimum Efficiency Reporting Value (MERV) filters of MERV 13 or better as indicated by the American Society of Heating Refrigerating and Air Conditioning Engineers (ASHRAE) Standard 52.2, in the intake of ventilation systems. Heating, air conditioning and ventilation (HVAC) systems shall be installed with a fan unit power designed to force air through the MERV 13 filter. To ensure long-term maintenance and replacement of the MERV 13 filters, the following shall occur: i) The developer shall provide notification/disclosure to all future residents of the project site of the potential health risk from the I-5 freeway, ii) the property owner shall inform residents of increased risk of exposure to diesel particulates from the freeway when windows/doors are open and when outside at the recreation area.

METRO MIXED USE OVERLAY DISTRICT MMRP

As stated previously, the project site is located within the Metro East Mixed-Use Overlay District (MEMU). The 2018 Mitigation Monitoring and Reporting Program (MMRP) for the Metro East Mixed-Use Overlay District Expansion and Elan Development Projects identified mitigation measures that are to be included in the design, construction, and operation of the MEMU. The air quality and greenhouse gas related measures included in the MMRP have been provided in Appendix E. The project is required to comply with the MMRP measures.

7. REFERENCES

California Air Pollution Control Officers Association

2009 Health Risk Assessments for Proposed Land Use Projects

California Air Resources Board

2008 Resolution 08-43

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

2008 ARB Recommended Interim Risk Management Policy for Inhalation-Based Residential Cancer Risk – Frequently Asked Questions

2008 Climate Change Scoping Plan, a framework for change.

2011 Supplement to the AB 32 Scoping Plan Functional Equivalent Document

2013 Almanac of Emissions and Air Quality.
Source: <https://www.arb.ca.gov/aqd/almanac/almanac13/almanac13.htm>

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.

2021 Historical Air Quality, Top 4 Summary

City of Santa Ana

1982 City of Santa Ana General Plan Conservation Element. September 20.

2015 City of Santa Ana Climate Action Plan. December.

2018 Mitigation Monitoring and Reporting Program for the Metro East Mixed-Use Overlay District Expansion and Elan Development Projects. August.

2021 Santa Ana General Plan Conservation Element Public Review Draft. August 6.

Ganddini Group, Inc.

2022 Cabrillo at First Mixed-Use Residential Project Trip Generation & Vehicle Miles Traveled Assessment. January 22.

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

KOA Corporation Planning and Engineering

2018 Traffic Impact Study for the Santa Ana Metro East Overlay Expansion Project for the City of Santa Ana. January.

Office of Environmental Health Hazard Assessment

2015 Air Toxics Hot Spots Program Risk Assessment Guidelines

South Coast Air Quality Management District

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

2021 MATES-V Multiple Air Toxics Exposure Study in the South Coast AQMD Final Report. August.

2021 Historical Data by Year. 2013, 2014 and 2015 Air Quality Data Tables.
Source: <http://www.aqmd.gov/home/library/air-quality-data-studies/historical-data-by-year>

Southern California Association of Governments

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 Glossary

Appendix B CalEEMod Model Daily Emissions Printouts

Appendix C AERMOD Model Printouts

Appendix D CalEEMod Model Annual Emissions Printouts and EMFAC Data

Appendix E Metro East Mixed-Use Overlay District MMRP Measures

APPENDIX A

GLOSSARY

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 ₂ e	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 ₂ e	Metric tons of carbon dioxide equivalent
MMTCO ₂ e	Million metric tons of carbon dioxide equivalent
MPO	Metropolitan Planning Organization
NAAQS	National Ambient Air Quality Standards
NO _x	Nitrogen Oxides
NO ₂	Nitrogen dioxide
N ₂ O	Nitrous oxide
O ₃	Ozone
OPR	Governor's Office of Planning and Research
PFCs	Perfluorocarbons
PM	Particle matter
PM ₁₀	Particles that are less than 10 micrometers in diameter
PM _{2.5}	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
SANBAG	San Bernardino Association of Governments
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
SO _x	Sulfur Oxides
TAC	Toxic air contaminants
VOC	Volatile organic compounds

APPENDIX B

CALEEMOD MODEL DAILY EMISSIONS PRINTOUTS

19386 Cabrillo at First Mixed-Use Residential - Orange County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**19386 Cabrillo at First Mixed-Use Residential****Orange County, Summer****1.0 Project Characteristics****1.1 Land Usage**

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Apartments Low Rise	35.00	Dwelling Unit	0.73	73,500.00	100
Other Non-Asphalt Surfaces	13.89	1000sqft	0.32	13,889.00	0
Parking Lot	11.00	Space	0.35	15,246.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	30
Climate Zone	8			Operational Year	2023
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	390.98	CH4 Intensity (lb/MWhr)	0.033	N2O Intensity (lb/MWhr)	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - 1.4 ac w/ 35 MF DU (bldgs total ~73,500 sf), 13,889 sf of open space, & parking lot w/ 11 open/guest parking spaces (77 total spaces, however 66 are garages). Assumed ~25% site (~0.35 acres) paving of parking & on-site driveways.

Construction Phase - Construction anticipated to begin 5/12/2022 & be completed by 8/16/2023.

Grading - Site anticipated to balance.

Demolition - ~19,175 sf parking lot paving to be removed (19,175sf x 0.3in = 5,752.5cu ftx 45lbs/cf2 = 258,862.5lbs = ~129.4 tons).

Vehicle Trips - Per Project Trip Gen, 6.74 trips/DU/day weekday. ITE Trip Generation Manual 11th Edition utilized for Saturday (4.55 trips/DU/day) & Sunday (3.86 trips/DU/day) trip gen rates.

Woodstoves - SCAQMD Rule 445 prohibits the installation of wood burning devices in new developments.

Sequestration - 72 new trees to be planted.

Construction Off-road Equipment Mitigation -

19386 Cabrillo at First Mixed-Use Residential - Orange County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Mobile Land Use Mitigation - Site is ~0.02 miles west & south of OCTA Rte 64 stop 1st-Cabrillo Park & ~1.81 miles SE of downtown portion of Santa Ana. Sidewalks provided on/connecting off-site. 35 DU/1.4 ac = 25 DU/acre.

Water Mitigation - 20% indoor water reduction per CalGreen Standards. Water-efficient irrigation systems.

Waste Mitigation - AB 341 requires each jurisdiction in CA to divert at least 75% of their waste away from landfills by 2020.

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	10.00	14.00
tblConstructionPhase	NumDays	200.00	270.00
tblConstructionPhase	NumDays	20.00	27.00
tblConstructionPhase	NumDays	4.00	5.00
tblConstructionPhase	NumDays	10.00	14.00
tblConstructionPhase	PhaseEndDate	4/20/2023	8/16/2023
tblConstructionPhase	PhaseEndDate	3/23/2023	7/9/2023
tblConstructionPhase	PhaseEndDate	6/8/2022	6/17/2022
tblConstructionPhase	PhaseEndDate	6/16/2022	6/24/2022
tblConstructionPhase	PhaseEndDate	4/6/2023	7/27/2023
tblConstructionPhase	PhaseStartDate	4/7/2023	7/28/2023
tblConstructionPhase	PhaseStartDate	6/17/2022	6/25/2022
tblConstructionPhase	PhaseStartDate	6/11/2022	6/18/2022
tblConstructionPhase	PhaseStartDate	3/24/2023	7/10/2023
tblFireplaces	NumberGas	29.75	31.50
tblFireplaces	NumberWood	1.75	0.00
tblLandUse	LandUseSquareFeet	35,000.00	73,500.00
tblLandUse	LandUseSquareFeet	4,400.00	15,246.00
tblLandUse	LotAcreage	2.19	0.73
tblLandUse	LotAcreage	0.10	0.35
tblSequestration	NumberOfNewTrees	0.00	72.00
tblVehicleTrips	ST_TR	8.14	4.55
tblVehicleTrips	SU_TR	6.28 Apx-6	3.86

19386 Cabrillo at First Mixed-Use Residential - Orange County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

tblVehicleTrips	WD_TR	7.32	6.74
tblWoodstoves	NumberCatalytic	1.75	0.00
tblWoodstoves	NumberNoncatalytic	1.75	0.00

2.0 Emissions Summary

19386 Cabrillo at First Mixed-Use Residential - Orange County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**2.1 Overall Construction (Maximum Daily Emission)****Unmitigated Construction**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2022	1.7750	17.0038	14.4094	0.0274	7.1944	0.8393	7.9373	3.4544	0.7841	4.1378	0.0000	2,554.864 2	2,554.864 2	0.6477	0.0349	2,574.470 8
2023	33.6408	12.0925	13.8748	0.0272	0.4711	0.5182	0.9894	0.1262	0.5003	0.6266	0.0000	2,536.657 0	2,536.657 0	0.4141	0.0331	2,555.482 5
Maximum	33.6408	17.0038	14.4094	0.0274	7.1944	0.8393	7.9373	3.4544	0.7841	4.1378	0.0000	2,554.864 2	2,554.864 2	0.6477	0.0349	2,574.470 8

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2022	1.7750	17.0038	14.4094	0.0274	2.8740	0.8393	3.6169	1.3653	0.7841	2.0488	0.0000	2,554.864 2	2,554.864 2	0.6477	0.0349	2,574.470 8
2023	33.6408	12.0925	13.8748	0.0272	0.4711	0.5182	0.9894	0.1262	0.5003	0.6266	0.0000	2,536.657 0	2,536.657 0	0.4141	0.0331	2,555.482 5
Maximum	33.6408	17.0038	14.4094	0.0274	2.8740	0.8393	3.6169	1.3653	0.7841	2.0488	0.0000	2,554.864 2	2,554.864 2	0.6477	0.0349	2,574.470 8

19386 Cabrillo at First Mixed-Use Residential - Orange County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	56.36	0.00	48.40	58.34	0.00	43.85	0.00	0.00	0.00	0.00	0.00	0.00

19386 Cabrillo at First Mixed-Use Residential - Orange County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**2.2 Overall Operational****Unmitigated Operational**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	1.7422	0.5559	3.1131	3.4900e-003		0.0582	0.0582		0.0582	0.0582	0.0000	672.2636	672.2636	0.0178	0.0122	676.3530
Energy	0.0128	0.1098	0.0467	7.0000e-004		8.8700e-003	8.8700e-003		8.8700e-003	8.8700e-003		140.1031	140.1031	2.6900e-003	2.5700e-003	140.9357
Mobile	0.6615	0.6867	6.7846	0.0160	1.6985	0.0107	1.7092	0.4527	9.9800e-003	0.4627		1,647.4631	1,647.4631	0.0941	0.0635	1,668.7422
Total	2.4166	1.3523	9.9444	0.0202	1.6985	0.0779	1.7764	0.4527	0.0771	0.5298	0.0000	2,459.8298	2,459.8298	0.1146	0.0783	2,486.0308

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	1.7422	0.5559	3.1131	3.4900e-003		0.0582	0.0582		0.0582	0.0582	0.0000	672.2636	672.2636	0.0178	0.0122	676.3530
Energy	0.0128	0.1098	0.0467	7.0000e-004		8.8700e-003	8.8700e-003		8.8700e-003	8.8700e-003		140.1031	140.1031	2.6900e-003	2.5700e-003	140.9357
Mobile	0.5007	0.4211	4.0393	8.4800e-003	0.8828	6.0200e-003	0.8889	0.2353	5.5900e-003	0.2409		871.9864	871.9864	0.0613	0.0394	885.2454
Total	2.2557	1.0867	7.1991	0.0127	0.8828	0.0731	0.9560	0.2353	0.0727	0.3080	0.0000	1,684.3531	1,684.3531	0.0818	0.0542	1,702.5340

19386 Cabrillo at First Mixed-Use Residential - Orange County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	6.66	19.64	27.61	37.31	48.02	6.06	46.18	48.02	5.69	41.86	0.00	31.53	31.53	28.59	30.85	31.52

3.0 Construction Detail**Construction Phase**

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	5/12/2022	6/17/2022	5	27	
2	Grading	Grading	6/18/2022	6/24/2022	5	5	
3	Building Construction	Building Construction	6/25/2022	7/9/2023	5	270	
4	Paving	Paving	7/10/2023	7/27/2023	5	14	
5	Architectural Coating	Architectural Coating	7/28/2023	8/16/2023	5	14	

Acres of Grading (Site Preparation Phase): 0**Acres of Grading (Grading Phase): 5****Acres of Paving: 0.67****Residential Indoor: 148,838; Residential Outdoor: 49,613; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 1,748 (Architectural Coating – sqft)****OffRoad Equipment**

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Paving	Cement and Mortar Mixers	1	6.00	9	0.56
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Building Construction	Cranes	1	6.00	231	0.29
Building Construction	Forklifts	1	6.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74

19386 Cabrillo at First Mixed-Use Residential - Orange County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Grading	Graders	1	8.00	187	0.41
Paving	Pavers	1	6.00	130	0.42
Paving	Paving Equipment	1	8.00	132	0.36
Paving	Rollers	1	7.00	80	0.38
Demolition	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Building Construction	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Demolition	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Grading	Tractors/Loaders/Backhoes	2	7.00	97	0.37
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Building Construction	Welders	3	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	5	13.00	0.00	13.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	4	10.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	7	37.00	9.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	5	13.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	7.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

19386 Cabrillo at First Mixed-Use Residential - Orange County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**3.2 Demolition - 2022****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.1026	0.0000	0.1026	0.0155	0.0000	0.0155			0.0000			0.0000
Off-Road	1.6889	16.6217	13.9605	0.0241		0.8379	0.8379		0.7829	0.7829		2,323.4168	2,323.4168	0.5921		2,338.2191
Total	1.6889	16.6217	13.9605	0.0241	0.1026	0.8379	0.9405	0.0155	0.7829	0.7984		2,323.4168	2,323.4168	0.5921		2,338.2191

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	1.9500e-003	0.0750	0.0211	2.9000e-004	8.4000e-003	5.7000e-004	8.9600e-003	2.3000e-003	5.4000e-004	2.8400e-003		32.5528	32.5528	3.1000e-003	5.2100e-003	34.1841
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0391	0.0263	0.4278	1.2700e-003	0.1453	7.8000e-004	0.1461	0.0385	7.2000e-004	0.0393		128.8404	128.8404	3.0100e-003	2.8800e-003	129.7729
Total	0.0411	0.1012	0.4489	1.5600e-003	0.1537	1.3500e-003	0.1551	0.0408	1.2600e-003	0.0421		161.3932	161.3932	6.1100e-003	8.0900e-003	163.9570

19386 Cabrillo at First Mixed-Use Residential - Orange County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**3.2 Demolition - 2022****Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0400	0.0000	0.0400	6.0600e-003	0.0000	6.0600e-003			0.0000			0.0000
Off-Road	1.6889	16.6217	13.9605	0.0241		0.8379	0.8379		0.7829	0.7829	0.0000	2,323.4168	2,323.4168	0.5921		2,338.2191
Total	1.6889	16.6217	13.9605	0.0241	0.0400	0.8379	0.8779	6.0600e-003	0.7829	0.7889	0.0000	2,323.4168	2,323.4168	0.5921		2,338.2191

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	1.9500e-003	0.0750	0.0211	2.9000e-004	8.4000e-003	5.7000e-004	8.9600e-003	2.3000e-003	5.4000e-004	2.8400e-003		32.5528	32.5528	3.1000e-003	5.2100e-003	34.1841
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0391	0.0263	0.4278	1.2700e-003	0.1453	7.8000e-004	0.1461	0.0385	7.2000e-004	0.0393		128.8404	128.8404	3.0100e-003	2.8800e-003	129.7729
Total	0.0411	0.1012	0.4489	1.5600e-003	0.1537	1.3500e-003	0.1551	0.0408	1.2600e-003	0.0421		161.3932	161.3932	6.1100e-003	8.0900e-003	163.9570

19386 Cabrillo at First Mixed-Use Residential - Orange County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**3.3 Grading - 2022****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					7.0826	0.0000	7.0826	3.4247	0.0000	3.4247			0.0000			0.0000
Off-Road	1.5403	16.9836	9.2202	0.0206		0.7423	0.7423		0.6829	0.6829		1,995.4825	1,995.4825	0.6454		2,011.6169
Total	1.5403	16.9836	9.2202	0.0206	7.0826	0.7423	7.8249	3.4247	0.6829	4.1076		1,995.4825	1,995.4825	0.6454		2,011.6169

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0301	0.0202	0.3291	9.7000e-004	0.1118	6.0000e-004	0.1124	0.0296	5.6000e-004	0.0302		99.1080	99.1080	2.3200e-003	2.2100e-003	99.8253
Total	0.0301	0.0202	0.3291	9.7000e-004	0.1118	6.0000e-004	0.1124	0.0296	5.6000e-004	0.0302		99.1080	99.1080	2.3200e-003	2.2100e-003	99.8253

19386 Cabrillo at First Mixed-Use Residential - Orange County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**3.3 Grading - 2022****Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.7622	0.0000	2.7622	1.3357	0.0000	1.3357			0.0000			0.0000
Off-Road	1.5403	16.9836	9.2202	0.0206		0.7423	0.7423		0.6829	0.6829	0.0000	1,995.4825	1,995.4825	0.6454		2,011.6169
Total	1.5403	16.9836	9.2202	0.0206	2.7622	0.7423	3.5045	1.3357	0.6829	2.0186	0.0000	1,995.4825	1,995.4825	0.6454		2,011.6169

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0301	0.0202	0.3291	9.7000e-004	0.1118	6.0000e-004	0.1124	0.0296	5.6000e-004	0.0302		99.1080	99.1080	2.3200e-003	2.2100e-003	99.8253
Total	0.0301	0.0202	0.3291	9.7000e-004	0.1118	6.0000e-004	0.1124	0.0296	5.6000e-004	0.0302		99.1080	99.1080	2.3200e-003	2.2100e-003	99.8253

19386 Cabrillo at First Mixed-Use Residential - Orange County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**3.4 Building Construction - 2022****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.6487	12.5031	12.7264	0.0221		0.5889	0.5889		0.5689	0.5689		2,001.5429	2,001.5429	0.3486		2,010.2581
Total	1.6487	12.5031	12.7264	0.0221		0.5889	0.5889		0.5689	0.5689		2,001.5429	2,001.5429	0.3486		2,010.2581

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0150	0.4038	0.1434	1.7000e-003	0.0576	3.9300e-003	0.0615	0.0166	3.7600e-003	0.0203		186.6218	186.6218	0.0107	0.0267	194.8590
Worker	0.1113	0.0748	1.2176	3.6000e-003	0.4136	2.2300e-003	0.4158	0.1097	2.0500e-003	0.1117		366.6995	366.6995	8.5700e-003	8.1900e-003	369.3537
Total	0.1263	0.4786	1.3610	5.3000e-003	0.4711	6.1600e-003	0.4773	0.1262	5.8100e-003	0.1321		553.3213	553.3213	0.0193	0.0349	564.2127

19386 Cabrillo at First Mixed-Use Residential - Orange County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**3.4 Building Construction - 2022****Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.6487	12.5031	12.7264	0.0221		0.5889	0.5889		0.5689	0.5689	0.0000	2,001.5429	2,001.5429	0.3486		2,010.2581
Total	1.6487	12.5031	12.7264	0.0221		0.5889	0.5889		0.5689	0.5689	0.0000	2,001.5429	2,001.5429	0.3486		2,010.2581

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0150	0.4038	0.1434	1.7000e-003	0.0576	3.9300e-003	0.0615	0.0166	3.7600e-003	0.0203		186.6218	186.6218	0.0107	0.0267	194.8590
Worker	0.1113	0.0748	1.2176	3.6000e-003	0.4136	2.2300e-003	0.4158	0.1097	2.0500e-003	0.1117		366.6995	366.6995	8.5700e-003	8.1900e-003	369.3537
Total	0.1263	0.4786	1.3610	5.3000e-003	0.4711	6.1600e-003	0.4773	0.1262	5.8100e-003	0.1321		553.3213	553.3213	0.0193	0.0349	564.2127

19386 Cabrillo at First Mixed-Use Residential - Orange County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**3.4 Building Construction - 2023****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.5233	11.7104	12.6111	0.0221		0.5145	0.5145		0.4968	0.4968		2,001.7877	2,001.7877	0.3399		2,010.2858
Total	1.5233	11.7104	12.6111	0.0221		0.5145	0.5145		0.4968	0.4968		2,001.7877	2,001.7877	0.3399		2,010.2858

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	9.0900e-003	0.3154	0.1308	1.6200e-003	0.0576	1.6200e-003	0.0592	0.0166	1.5500e-003	0.0181		177.7044	177.7044	0.0106	0.0255	185.5671
Worker	0.1043	0.0667	1.1330	3.4900e-003	0.4136	2.1100e-003	0.4157	0.1097	1.9500e-003	0.1116		357.1649	357.1649	7.7500e-003	7.6200e-003	359.6296
Total	0.1134	0.3821	1.2637	5.1100e-003	0.4711	3.7300e-003	0.4749	0.1262	3.5000e-003	0.1297		534.8693	534.8693	0.0183	0.0331	545.1967

19386 Cabrillo at First Mixed-Use Residential - Orange County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**3.4 Building Construction - 2023****Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.5233	11.7104	12.6111	0.0221		0.5145	0.5145		0.4968	0.4968	0.0000	2,001.7877	2,001.7877	0.3399		2,010.2858
Total	1.5233	11.7104	12.6111	0.0221		0.5145	0.5145		0.4968	0.4968	0.0000	2,001.7877	2,001.7877	0.3399		2,010.2858

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	9.0900e-003	0.3154	0.1308	1.6200e-003	0.0576	1.6200e-003	0.0592	0.0166	1.5500e-003	0.0181		177.7044	177.7044	0.0106	0.0255	185.5671
Worker	0.1043	0.0667	1.1330	3.4900e-003	0.4136	2.1100e-003	0.4157	0.1097	1.9500e-003	0.1116		357.1649	357.1649	7.7500e-003	7.6200e-003	359.6296
Total	0.1134	0.3821	1.2637	5.1100e-003	0.4711	3.7300e-003	0.4749	0.1262	3.5000e-003	0.1297		534.8693	534.8693	0.0183	0.0331	545.1967

19386 Cabrillo at First Mixed-Use Residential - Orange County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**3.5 Paving - 2023****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.6446	6.2357	8.8024	0.0136		0.3084	0.3084		0.2846	0.2846		1,297.6880	1,297.6880	0.4114		1,307.9725
Paving	0.0655					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	0.7101	6.2357	8.8024	0.0136		0.3084	0.3084		0.2846	0.2846		1,297.6880	1,297.6880	0.4114		1,307.9725

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0366	0.0234	0.3981	1.2300e-003	0.1453	7.4000e-004	0.1461	0.0385	6.8000e-004	0.0392		125.4904	125.4904	2.7200e-003	2.6800e-003	126.3564
Total	0.0366	0.0234	0.3981	1.2300e-003	0.1453	7.4000e-004	0.1461	0.0385	6.8000e-004	0.0392		125.4904	125.4904	2.7200e-003	2.6800e-003	126.3564

19386 Cabrillo at First Mixed-Use Residential - Orange County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**3.5 Paving - 2023****Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.6446	6.2357	8.8024	0.0136		0.3084	0.3084		0.2846	0.2846	0.0000	1,297.688 0	1,297.688 0	0.4114		1,307.972 5
Paving	0.0655					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	0.7101	6.2357	8.8024	0.0136		0.3084	0.3084		0.2846	0.2846	0.0000	1,297.688 0	1,297.688 0	0.4114		1,307.972 5

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0366	0.0234	0.3981	1.2300e-003	0.1453	7.4000e-004	0.1461	0.0385	6.8000e-004	0.0392		125.4904	125.4904	2.7200e-003	2.6800e-003	126.3564
Total	0.0366	0.0234	0.3981	1.2300e-003	0.1453	7.4000e-004	0.1461	0.0385	6.8000e-004	0.0392		125.4904	125.4904	2.7200e-003	2.6800e-003	126.3564

19386 Cabrillo at First Mixed-Use Residential - Orange County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**3.6 Architectural Coating - 2023****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	33.4294					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1917	1.3030	1.8111	2.9700e-003		0.0708	0.0708		0.0708	0.0708		281.4481	281.4481	0.0168		281.8690
Total	33.6211	1.3030	1.8111	2.9700e-003		0.0708	0.0708		0.0708	0.0708		281.4481	281.4481	0.0168		281.8690

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0197	0.0126	0.2143	6.6000e-004	0.0782	4.0000e-004	0.0786	0.0208	3.7000e-004	0.0211		67.5717	67.5717	1.4700e-003	1.4400e-003	68.0380
Total	0.0197	0.0126	0.2143	6.6000e-004	0.0782	4.0000e-004	0.0786	0.0208	3.7000e-004	0.0211		67.5717	67.5717	1.4700e-003	1.4400e-003	68.0380

19386 Cabrillo at First Mixed-Use Residential - Orange County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**3.6 Architectural Coating - 2023****Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	33.4294					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1917	1.3030	1.8111	2.9700e-003		0.0708	0.0708		0.0708	0.0708	0.0000	281.4481	281.4481	0.0168		281.8690
Total	33.6211	1.3030	1.8111	2.9700e-003		0.0708	0.0708		0.0708	0.0708	0.0000	281.4481	281.4481	0.0168		281.8690

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0197	0.0126	0.2143	6.6000e-004	0.0782	4.0000e-004	0.0786	0.0208	3.7000e-004	0.0211		67.5717	67.5717	1.4700e-003	1.4400e-003	68.0380
Total	0.0197	0.0126	0.2143	6.6000e-004	0.0782	4.0000e-004	0.0786	0.0208	3.7000e-004	0.0211		67.5717	67.5717	1.4700e-003	1.4400e-003	68.0380

19386 Cabrillo at First Mixed-Use Residential - Orange County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**4.0 Operational Detail - Mobile****4.1 Mitigation Measures Mobile**

Increase Density

Improve Destination Accessibility

Increase Transit Accessibility

Improve Pedestrian Network

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.5007	0.4211	4.0393	8.4800e-003	0.8828	6.0200e-003	0.8889	0.2353	5.5900e-003	0.2409		871.9864	871.9864	0.0613	0.0394	885.2454
Unmitigated	0.6615	0.6867	6.7846	0.0160	1.6985	0.0107	1.7092	0.4527	9.9800e-003	0.4627		1,647.463 ₁	1,647.463 ₁	0.0941	0.0635	1,668.742 ₂

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Low Rise	235.90	159.25	135.10	719,481	373,964
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Total	235.90	159.25	135.10	719,481	373,964

4.3 Trip Type Information

19386 Cabrillo at First Mixed-Use Residential - Orange County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Low Rise	14.70	5.90	8.70	40.20	19.20	40.60	86	11	3
Other Non-Asphalt Surfaces	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
Parking Lot	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Low Rise	0.544795	0.058861	0.186903	0.129401	0.024381	0.006522	0.014242	0.004855	0.000656	0.000385	0.024332	0.000723	0.003942
Other Non-Asphalt Surfaces	0.544795	0.058861	0.186903	0.129401	0.024381	0.006522	0.014242	0.004855	0.000656	0.000385	0.024332	0.000723	0.003942
Parking Lot	0.544795	0.058861	0.186903	0.129401	0.024381	0.006522	0.014242	0.004855	0.000656	0.000385	0.024332	0.000723	0.003942

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0128	0.1098	0.0467	7.0000e-004		8.8700e-003	8.8700e-003		8.8700e-003	8.8700e-003		140.1031	140.1031	2.6900e-003	2.5700e-003	140.9357
NaturalGas Unmitigated	0.0128	0.1098	0.0467	7.0000e-004		8.8700e-003	8.8700e-003		8.8700e-003	8.8700e-003		140.1031	140.1031	2.6900e-003	2.5700e-003	140.9357

19386 Cabrillo at First Mixed-Use Residential - Orange County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**5.2 Energy by Land Use - NaturalGas****Unmitigated**

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Low Rise	1190.88	0.0128	0.1098	0.0467	7.0000e-004		8.8700e-003	8.8700e-003		8.8700e-003	8.8700e-003		140.1031	140.1031	2.6900e-003	2.5700e-003	140.9357
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.0128	0.1098	0.0467	7.0000e-004		8.8700e-003	8.8700e-003		8.8700e-003	8.8700e-003		140.1031	140.1031	2.6900e-003	2.5700e-003	140.9357

19386 Cabrillo at First Mixed-Use Residential - Orange County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**5.2 Energy by Land Use - NaturalGas****Mitigated**

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Low Rise	1.19088	0.0128	0.1098	0.0467	7.0000e-004		8.8700e-003	8.8700e-003		8.8700e-003	8.8700e-003		140.1031	140.1031	2.6900e-003	2.5700e-003	140.9357
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.0128	0.1098	0.0467	7.0000e-004		8.8700e-003	8.8700e-003		8.8700e-003	8.8700e-003		140.1031	140.1031	2.6900e-003	2.5700e-003	140.9357

6.0 Area Detail**6.1 Mitigation Measures Area**

19386 Cabrillo at First Mixed-Use Residential - Orange County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	1.7422	0.5559	3.1131	3.4900e-003		0.0582	0.0582		0.0582	0.0582	0.0000	672.2636	672.2636	0.0178	0.0122	676.3530
Unmitigated	1.7422	0.5559	3.1131	3.4900e-003		0.0582	0.0582		0.0582	0.0582	0.0000	672.2636	672.2636	0.0178	0.0122	676.3530

6.2 Area by SubCategory**Unmitigated**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.1282					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	1.4656					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0612	0.5225	0.2224	3.3400e-003		0.0423	0.0423		0.0423	0.0423	0.0000	667.0588	667.0588	0.0128	0.0122	671.0228
Landscaping	0.0873	0.0333	2.8907	1.5000e-004		0.0160	0.0160		0.0160	0.0160		5.2048	5.2048	5.0100e-003		5.3301
Total	1.7422	0.5559	3.1131	3.4900e-003		0.0582	0.0582		0.0582	0.0582	0.0000	672.2636	672.2636	0.0178	0.0122	676.3530

19386 Cabrillo at First Mixed-Use Residential - Orange County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**6.2 Area by SubCategory****Mitigated**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.1282					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	1.4656					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0612	0.5225	0.2224	3.3400e-003		0.0423	0.0423		0.0423	0.0423	0.0000	667.0588	667.0588	0.0128	0.0122	671.0228
Landscaping	0.0873	0.0333	2.8907	1.5000e-004		0.0160	0.0160		0.0160	0.0160		5.2048	5.2048	5.0100e-003		5.3301
Total	1.7422	0.5559	3.1131	3.4900e-003		0.0582	0.0582		0.0582	0.0582	0.0000	672.2636	672.2636	0.0178	0.0122	676.3530

7.0 Water Detail**7.1 Mitigation Measures Water**

Apply Water Conservation Strategy

Use Water Efficient Irrigation System

19386 Cabrillo at First Mixed-Use Residential - Orange County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**8.0 Waste Detail**

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
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10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type
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Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type
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User Defined Equipment

Equipment Type	Number
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11.0 Vegetation

19386 Cabrillo at First Mixed-Use Residential - Orange County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**19386 Cabrillo at First Mixed-Use Residential****Orange County, Winter****1.0 Project Characteristics****1.1 Land Usage**

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Apartments Low Rise	35.00	Dwelling Unit	0.73	73,500.00	100
Other Non-Asphalt Surfaces	13.89	1000sqft	0.32	13,889.00	0
Parking Lot	11.00	Space	0.35	15,246.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	30
Climate Zone	8			Operational Year	2023
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	390.98	CH4 Intensity (lb/MWhr)	0.033	N2O Intensity (lb/MWhr)	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - 1.4 ac w/ 35 MF DU (bldgs total ~73,500 sf), 13,889 sf of open space, & parking lot w/ 11 open/guest parking spaces (77 total spaces, however 66 are garages). Assumed ~25% site (~0.35 acres) paving of parking & on-site driveways.

Construction Phase - Construction anticipated to begin 5/12/2022 & be completed by 8/16/2023.

Grading - Site anticipated to balance.

Demolition - ~19,175 sf parking lot paving to be removed (19,175sf x 0.3in = 5,752.5cu ftx 45lbs/cf2 = 258,862.5lbs = ~129.4 tons).

Vehicle Trips - Per Project Trip Gen, 6.74 trips/DU/day weekday. ITE Trip Generation Manual 11th Edition utilized for Saturday (4.55 trips/DU/day) & Sunday (3.86 trips/DU/day) trip gen rates.

Woodstoves - SCAQMD Rule 445 prohibits the installation of wood burning devices in new developments.

Sequestration - 72 new trees to be planted.

Construction Off-road Equipment Mitigation -

19386 Cabrillo at First Mixed-Use Residential - Orange County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Mobile Land Use Mitigation - Site is ~0.02 miles west & south of OCTA Rte 64 stop 1st-Cabrillo Park & ~1.81 miles SE of downtown portion of Santa Ana. Sidewalks provided on/connecting off-site. 35 DU/1.4 ac = 25 DU/acre.

Water Mitigation - 20% indoor water reduction per CalGreen Standards. Water-efficient irrigation systems.

Waste Mitigation - AB 341 requires each jurisdiction in CA to divert at least 75% of their waste away from landfills by 2020.

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	10.00	14.00
tblConstructionPhase	NumDays	200.00	270.00
tblConstructionPhase	NumDays	20.00	27.00
tblConstructionPhase	NumDays	4.00	5.00
tblConstructionPhase	NumDays	10.00	14.00
tblConstructionPhase	PhaseEndDate	4/20/2023	8/16/2023
tblConstructionPhase	PhaseEndDate	3/23/2023	7/9/2023
tblConstructionPhase	PhaseEndDate	6/8/2022	6/17/2022
tblConstructionPhase	PhaseEndDate	6/16/2022	6/24/2022
tblConstructionPhase	PhaseEndDate	4/6/2023	7/27/2023
tblConstructionPhase	PhaseStartDate	4/7/2023	7/28/2023
tblConstructionPhase	PhaseStartDate	6/17/2022	6/25/2022
tblConstructionPhase	PhaseStartDate	6/11/2022	6/18/2022
tblConstructionPhase	PhaseStartDate	3/24/2023	7/10/2023
tblFireplaces	NumberGas	29.75	31.50
tblFireplaces	NumberWood	1.75	0.00
tblLandUse	LandUseSquareFeet	35,000.00	73,500.00
tblLandUse	LandUseSquareFeet	4,400.00	15,246.00
tblLandUse	LotAcreage	2.19	0.73
tblLandUse	LotAcreage	0.10	0.35
tblSequestration	NumberOfNewTrees	0.00	72.00
tblVehicleTrips	ST_TR	8.14	4.55
tblVehicleTrips	SU_TR	6.28 Apx-33	3.86

19386 Cabrillo at First Mixed-Use Residential - Orange County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

tblVehicleTrips	WD_TR	7.32	6.74
tblWoodstoves	NumberCatalytic	1.75	0.00
tblWoodstoves	NumberNoncatalytic	1.75	0.00

2.0 Emissions Summary

19386 Cabrillo at First Mixed-Use Residential - Orange County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**2.1 Overall Construction (Maximum Daily Emission)****Unmitigated Construction**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2022	1.7847	17.0058	14.3800	0.0272	7.1944	0.8393	7.9373	3.4544	0.7842	4.1378	0.0000	2,537.341 3	2,537.341 3	0.6478	0.0355	2,557.117 1
2023	33.6427	12.1131	13.8014	0.0270	0.4711	0.5182	0.9894	0.1262	0.5003	0.6266	0.0000	2,519.841 4	2,519.841 4	0.4142	0.0337	2,538.833 2
Maximum	33.6427	17.0058	14.3800	0.0272	7.1944	0.8393	7.9373	3.4544	0.7842	4.1378	0.0000	2,537.341 3	2,537.341 3	0.6478	0.0355	2,557.117 1

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2022	1.7847	17.0058	14.3800	0.0272	2.8740	0.8393	3.6169	1.3653	0.7842	2.0488	0.0000	2,537.341 3	2,537.341 3	0.6478	0.0355	2,557.117 1
2023	33.6427	12.1131	13.8014	0.0270	0.4711	0.5182	0.9894	0.1262	0.5003	0.6266	0.0000	2,519.841 4	2,519.841 4	0.4142	0.0337	2,538.833 2
Maximum	33.6427	17.0058	14.3800	0.0272	2.8740	0.8393	3.6169	1.3653	0.7842	2.0488	0.0000	2,537.341 3	2,537.341 3	0.6478	0.0355	2,557.117 1

19386 Cabrillo at First Mixed-Use Residential - Orange County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	56.36	0.00	48.40	58.34	0.00	43.85	0.00	0.00	0.00	0.00	0.00	0.00

19386 Cabrillo at First Mixed-Use Residential - Orange County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**2.2 Overall Operational****Unmitigated Operational**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	1.7422	0.5559	3.1131	3.4900e-003		0.0582	0.0582		0.0582	0.0582	0.0000	672.2636	672.2636	0.0178	0.0122	676.3530
Energy	0.0128	0.1098	0.0467	7.0000e-004		8.8700e-003	8.8700e-003		8.8700e-003	8.8700e-003		140.1031	140.1031	2.6900e-003	2.5700e-003	140.9357
Mobile	0.6578	0.7378	6.6882	0.0154	1.6985	0.0107	1.7093	0.4527	9.9800e-003	0.4627		1,584.2547	1,584.2547	0.0971	0.0662	1,606.4103
Total	2.4129	1.4034	9.8480	0.0196	1.6985	0.0779	1.7764	0.4527	0.0771	0.5298	0.0000	2,396.6214	2,396.6214	0.1176	0.0810	2,423.6990

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	1.7422	0.5559	3.1131	3.4900e-003		0.0582	0.0582		0.0582	0.0582	0.0000	672.2636	672.2636	0.0178	0.0122	676.3530
Energy	0.0128	0.1098	0.0467	7.0000e-004		8.8700e-003	8.8700e-003		8.8700e-003	8.8700e-003		140.1031	140.1031	2.6900e-003	2.5700e-003	140.9357
Mobile	0.4950	0.4526	4.0821	8.1600e-003	0.8828	6.0300e-003	0.8889	0.2353	5.6000e-003	0.2409		839.3347	839.3347	0.0644	0.0411	853.2003
Total	2.2501	1.1182	7.2419	0.0124	0.8828	0.0731	0.9560	0.2353	0.0727	0.3080	0.0000	1,651.7014	1,651.7014	0.0849	0.0559	1,670.4889

19386 Cabrillo at First Mixed-Use Residential - Orange County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	6.75	20.32	26.46	36.96	48.02	6.05	46.18	48.02	5.68	41.86	0.00	31.08	31.08	27.79	30.96	31.08

3.0 Construction Detail**Construction Phase**

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	5/12/2022	6/17/2022	5	27	
2	Grading	Grading	6/18/2022	6/24/2022	5	5	
3	Building Construction	Building Construction	6/25/2022	7/9/2023	5	270	
4	Paving	Paving	7/10/2023	7/27/2023	5	14	
5	Architectural Coating	Architectural Coating	7/28/2023	8/16/2023	5	14	

Acres of Grading (Site Preparation Phase): 0**Acres of Grading (Grading Phase): 5****Acres of Paving: 0.67****Residential Indoor: 148,838; Residential Outdoor: 49,613; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 1,748 (Architectural Coating – sqft)****OffRoad Equipment**

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Paving	Cement and Mortar Mixers	1	6.00	9	0.56
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Building Construction	Cranes	1	6.00	231	0.29
Building Construction	Forklifts	1	6.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74

19386 Cabrillo at First Mixed-Use Residential - Orange County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Grading	Graders	1	8.00	187	0.41
Paving	Pavers	1	6.00	130	0.42
Paving	Paving Equipment	1	8.00	132	0.36
Paving	Rollers	1	7.00	80	0.38
Demolition	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Building Construction	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Demolition	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Grading	Tractors/Loaders/Backhoes	2	7.00	97	0.37
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Building Construction	Welders	3	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	5	13.00	0.00	13.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	4	10.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	7	37.00	9.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	5	13.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	7.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

19386 Cabrillo at First Mixed-Use Residential - Orange County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**3.2 Demolition - 2022****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.1026	0.0000	0.1026	0.0155	0.0000	0.0155			0.0000			0.0000
Off-Road	1.6889	16.6217	13.9605	0.0241		0.8379	0.8379		0.7829	0.7829		2,323.4168	2,323.4168	0.5921		2,338.2191
Total	1.6889	16.6217	13.9605	0.0241	0.1026	0.8379	0.9405	0.0155	0.7829	0.7984		2,323.4168	2,323.4168	0.5921		2,338.2191

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	1.9000e-003	0.0779	0.0214	2.9000e-004	8.4000e-003	5.7000e-004	8.9700e-003	2.3000e-003	5.4000e-004	2.8400e-003		32.5605	32.5605	3.1000e-003	5.2200e-003	34.1921
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0426	0.0289	0.3981	1.2100e-003	0.1453	7.8000e-004	0.1461	0.0385	7.2000e-004	0.0393		122.6631	122.6631	3.0800e-003	3.0600e-003	123.6524
Total	0.0445	0.1068	0.4195	1.5000e-003	0.1537	1.3500e-003	0.1551	0.0408	1.2600e-003	0.0421		155.2236	155.2236	6.1800e-003	8.2800e-003	157.8446

19386 Cabrillo at First Mixed-Use Residential - Orange County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**3.2 Demolition - 2022****Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0400	0.0000	0.0400	6.0600e-003	0.0000	6.0600e-003			0.0000			0.0000
Off-Road	1.6889	16.6217	13.9605	0.0241		0.8379	0.8379		0.7829	0.7829	0.0000	2,323.4168	2,323.4168	0.5921		2,338.2191
Total	1.6889	16.6217	13.9605	0.0241	0.0400	0.8379	0.8779	6.0600e-003	0.7829	0.7889	0.0000	2,323.4168	2,323.4168	0.5921		2,338.2191

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	1.9000e-003	0.0779	0.0214	2.9000e-004	8.4000e-003	5.7000e-004	8.9700e-003	2.3000e-003	5.4000e-004	2.8400e-003		32.5605	32.5605	3.1000e-003	5.2200e-003	34.1921
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0426	0.0289	0.3981	1.2100e-003	0.1453	7.8000e-004	0.1461	0.0385	7.2000e-004	0.0393		122.6631	122.6631	3.0800e-003	3.0600e-003	123.6524
Total	0.0445	0.1068	0.4195	1.5000e-003	0.1537	1.3500e-003	0.1551	0.0408	1.2600e-003	0.0421		155.2236	155.2236	6.1800e-003	8.2800e-003	157.8446

19386 Cabrillo at First Mixed-Use Residential - Orange County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**3.3 Grading - 2022****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					7.0826	0.0000	7.0826	3.4247	0.0000	3.4247			0.0000			0.0000
Off-Road	1.5403	16.9836	9.2202	0.0206		0.7423	0.7423		0.6829	0.6829		1,995.4825	1,995.4825	0.6454		2,011.6169
Total	1.5403	16.9836	9.2202	0.0206	7.0826	0.7423	7.8249	3.4247	0.6829	4.1076		1,995.4825	1,995.4825	0.6454		2,011.6169

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0328	0.0222	0.3062	9.3000e-004	0.1118	6.0000e-004	0.1124	0.0296	5.6000e-004	0.0302		94.3562	94.3562	2.3700e-003	2.3600e-003	95.1173
Total	0.0328	0.0222	0.3062	9.3000e-004	0.1118	6.0000e-004	0.1124	0.0296	5.6000e-004	0.0302		94.3562	94.3562	2.3700e-003	2.3600e-003	95.1173

19386 Cabrillo at First Mixed-Use Residential - Orange County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**3.3 Grading - 2022****Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.7622	0.0000	2.7622	1.3357	0.0000	1.3357			0.0000			0.0000
Off-Road	1.5403	16.9836	9.2202	0.0206		0.7423	0.7423		0.6829	0.6829	0.0000	1,995.4825	1,995.4825	0.6454		2,011.6169
Total	1.5403	16.9836	9.2202	0.0206	2.7622	0.7423	3.5045	1.3357	0.6829	2.0186	0.0000	1,995.4825	1,995.4825	0.6454		2,011.6169

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0328	0.0222	0.3062	9.3000e-004	0.1118	6.0000e-004	0.1124	0.0296	5.6000e-004	0.0302		94.3562	94.3562	2.3700e-003	2.3600e-003	95.1173
Total	0.0328	0.0222	0.3062	9.3000e-004	0.1118	6.0000e-004	0.1124	0.0296	5.6000e-004	0.0302		94.3562	94.3562	2.3700e-003	2.3600e-003	95.1173

19386 Cabrillo at First Mixed-Use Residential - Orange County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**3.4 Building Construction - 2022****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.6487	12.5031	12.7264	0.0221		0.5889	0.5889		0.5689	0.5689		2,001.5429	2,001.5429	0.3486		2,010.2581
Total	1.6487	12.5031	12.7264	0.0221		0.5889	0.5889		0.5689	0.5689		2,001.5429	2,001.5429	0.3486		2,010.2581

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0148	0.4197	0.1485	1.7000e-003	0.0576	3.9400e-003	0.0615	0.0166	3.7700e-003	0.0203		186.6804	186.6804	0.0107	0.0268	194.9252
Worker	0.1213	0.0822	1.1331	3.4300e-003	0.4136	2.2300e-003	0.4158	0.1097	2.0500e-003	0.1117		349.1181	349.1181	8.7600e-003	8.7100e-003	351.9338
Total	0.1360	0.5018	1.2816	5.1300e-003	0.4711	6.1700e-003	0.4773	0.1262	5.8200e-003	0.1321		535.7984	535.7984	0.0194	0.0355	546.8591

19386 Cabrillo at First Mixed-Use Residential - Orange County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**3.4 Building Construction - 2022****Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.6487	12.5031	12.7264	0.0221		0.5889	0.5889		0.5689	0.5689	0.0000	2,001.5429	2,001.5429	0.3486		2,010.2581
Total	1.6487	12.5031	12.7264	0.0221		0.5889	0.5889		0.5689	0.5689	0.0000	2,001.5429	2,001.5429	0.3486		2,010.2581

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0148	0.4197	0.1485	1.7000e-003	0.0576	3.9400e-003	0.0615	0.0166	3.7700e-003	0.0203		186.6804	186.6804	0.0107	0.0268	194.9252
Worker	0.1213	0.0822	1.1331	3.4300e-003	0.4136	2.2300e-003	0.4158	0.1097	2.0500e-003	0.1117		349.1181	349.1181	8.7600e-003	8.7100e-003	351.9338
Total	0.1360	0.5018	1.2816	5.1300e-003	0.4711	6.1700e-003	0.4773	0.1262	5.8200e-003	0.1321		535.7984	535.7984	0.0194	0.0355	546.8591

19386 Cabrillo at First Mixed-Use Residential - Orange County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**3.4 Building Construction - 2023****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.5233	11.7104	12.6111	0.0221		0.5145	0.5145		0.4968	0.4968		2,001.7877	2,001.7877	0.3399		2,010.2858
Total	1.5233	11.7104	12.6111	0.0221		0.5145	0.5145		0.4968	0.4968		2,001.7877	2,001.7877	0.3399		2,010.2858

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	8.7700e-003	0.3295	0.1350	1.6200e-003	0.0576	1.6300e-003	0.0592	0.0166	1.5600e-003	0.0181		177.9658	177.9658	0.0105	0.0256	185.8450
Worker	0.1139	0.0732	1.0554	3.3200e-003	0.4136	2.1100e-003	0.4157	0.1097	1.9500e-003	0.1116		340.0879	340.0879	7.9400e-003	8.1100e-003	342.7024
Total	0.1227	0.4027	1.1904	4.9400e-003	0.4711	3.7400e-003	0.4749	0.1262	3.5100e-003	0.1298		518.0537	518.0537	0.0185	0.0337	528.5475

19386 Cabrillo at First Mixed-Use Residential - Orange County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**3.4 Building Construction - 2023****Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.5233	11.7104	12.6111	0.0221		0.5145	0.5145		0.4968	0.4968	0.0000	2,001.7877	2,001.7877	0.3399		2,010.2858
Total	1.5233	11.7104	12.6111	0.0221		0.5145	0.5145		0.4968	0.4968	0.0000	2,001.7877	2,001.7877	0.3399		2,010.2858

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	8.7700e-003	0.3295	0.1350	1.6200e-003	0.0576	1.6300e-003	0.0592	0.0166	1.5600e-003	0.0181		177.9658	177.9658	0.0105	0.0256	185.8450
Worker	0.1139	0.0732	1.0554	3.3200e-003	0.4136	2.1100e-003	0.4157	0.1097	1.9500e-003	0.1116		340.0879	340.0879	7.9400e-003	8.1100e-003	342.7024
Total	0.1227	0.4027	1.1904	4.9400e-003	0.4711	3.7400e-003	0.4749	0.1262	3.5100e-003	0.1298		518.0537	518.0537	0.0185	0.0337	528.5475

19386 Cabrillo at First Mixed-Use Residential - Orange County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**3.5 Paving - 2023****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.6446	6.2357	8.8024	0.0136		0.3084	0.3084		0.2846	0.2846		1,297.688 0	1,297.688 0	0.4114		1,307.972 5
Paving	0.0655					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	0.7101	6.2357	8.8024	0.0136		0.3084	0.3084		0.2846	0.2846		1,297.688 0	1,297.688 0	0.4114		1,307.972 5

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0400	0.0257	0.3708	1.1700e-003	0.1453	7.4000e-004	0.1461	0.0385	6.8000e-004	0.0392		119.4903	119.4903	2.7900e-003	2.8500e-003	120.4090
Total	0.0400	0.0257	0.3708	1.1700e-003	0.1453	7.4000e-004	0.1461	0.0385	6.8000e-004	0.0392		119.4903	119.4903	2.7900e-003	2.8500e-003	120.4090

19386 Cabrillo at First Mixed-Use Residential - Orange County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**3.5 Paving - 2023****Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.6446	6.2357	8.8024	0.0136		0.3084	0.3084		0.2846	0.2846	0.0000	1,297.688 0	1,297.688 0	0.4114		1,307.972 5
Paving	0.0655					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	0.7101	6.2357	8.8024	0.0136		0.3084	0.3084		0.2846	0.2846	0.0000	1,297.688 0	1,297.688 0	0.4114		1,307.972 5

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0400	0.0257	0.3708	1.1700e-003	0.1453	7.4000e-004	0.1461	0.0385	6.8000e-004	0.0392		119.4903	119.4903	2.7900e-003	2.8500e-003	120.4090
Total	0.0400	0.0257	0.3708	1.1700e-003	0.1453	7.4000e-004	0.1461	0.0385	6.8000e-004	0.0392		119.4903	119.4903	2.7900e-003	2.8500e-003	120.4090

19386 Cabrillo at First Mixed-Use Residential - Orange County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**3.6 Architectural Coating - 2023****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	33.4294					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1917	1.3030	1.8111	2.9700e-003		0.0708	0.0708		0.0708	0.0708		281.4481	281.4481	0.0168		281.8690
Total	33.6211	1.3030	1.8111	2.9700e-003		0.0708	0.0708		0.0708	0.0708		281.4481	281.4481	0.0168		281.8690

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0216	0.0139	0.1997	6.3000e-004	0.0782	4.0000e-004	0.0786	0.0208	3.7000e-004	0.0211		64.3410	64.3410	1.5000e-003	1.5300e-003	64.8356
Total	0.0216	0.0139	0.1997	6.3000e-004	0.0782	4.0000e-004	0.0786	0.0208	3.7000e-004	0.0211		64.3410	64.3410	1.5000e-003	1.5300e-003	64.8356

19386 Cabrillo at First Mixed-Use Residential - Orange County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**3.6 Architectural Coating - 2023****Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	33.4294					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1917	1.3030	1.8111	2.9700e-003		0.0708	0.0708		0.0708	0.0708	0.0000	281.4481	281.4481	0.0168		281.8690
Total	33.6211	1.3030	1.8111	2.9700e-003		0.0708	0.0708		0.0708	0.0708	0.0000	281.4481	281.4481	0.0168		281.8690

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0216	0.0139	0.1997	6.3000e-004	0.0782	4.0000e-004	0.0786	0.0208	3.7000e-004	0.0211		64.3410	64.3410	1.5000e-003	1.5300e-003	64.8356
Total	0.0216	0.0139	0.1997	6.3000e-004	0.0782	4.0000e-004	0.0786	0.0208	3.7000e-004	0.0211		64.3410	64.3410	1.5000e-003	1.5300e-003	64.8356

19386 Cabrillo at First Mixed-Use Residential - Orange County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**4.0 Operational Detail - Mobile****4.1 Mitigation Measures Mobile**

Increase Density

Improve Destination Accessibility

Increase Transit Accessibility

Improve Pedestrian Network

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.4950	0.4526	4.0821	8.1600e-003	0.8828	6.0300e-003	0.8889	0.2353	5.6000e-003	0.2409		839.3347	839.3347	0.0644	0.0411	853.2003
Unmitigated	0.6578	0.7378	6.6882	0.0154	1.6985	0.0107	1.7093	0.4527	9.9800e-003	0.4627		1,584.2547	1,584.2547	0.0971	0.0662	1,606.4103

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Low Rise	235.90	159.25	135.10	719,481	373,964
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Total	235.90	159.25	135.10	719,481	373,964

4.3 Trip Type Information

19386 Cabrillo at First Mixed-Use Residential - Orange County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Low Rise	14.70	5.90	8.70	40.20	19.20	40.60	86	11	3
Other Non-Asphalt Surfaces	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
Parking Lot	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Low Rise	0.544795	0.058861	0.186903	0.129401	0.024381	0.006522	0.014242	0.004855	0.000656	0.000385	0.024332	0.000723	0.003942
Other Non-Asphalt Surfaces	0.544795	0.058861	0.186903	0.129401	0.024381	0.006522	0.014242	0.004855	0.000656	0.000385	0.024332	0.000723	0.003942
Parking Lot	0.544795	0.058861	0.186903	0.129401	0.024381	0.006522	0.014242	0.004855	0.000656	0.000385	0.024332	0.000723	0.003942

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0128	0.1098	0.0467	7.0000e-004		8.8700e-003	8.8700e-003		8.8700e-003	8.8700e-003		140.1031	140.1031	2.6900e-003	2.5700e-003	140.9357
NaturalGas Unmitigated	0.0128	0.1098	0.0467	7.0000e-004		8.8700e-003	8.8700e-003		8.8700e-003	8.8700e-003		140.1031	140.1031	2.6900e-003	2.5700e-003	140.9357

19386 Cabrillo at First Mixed-Use Residential - Orange County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**5.2 Energy by Land Use - NaturalGas****Unmitigated**

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Low Rise	1190.88	0.0128	0.1098	0.0467	7.0000e-004		8.8700e-003	8.8700e-003		8.8700e-003	8.8700e-003		140.1031	140.1031	2.6900e-003	2.5700e-003	140.9357
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.0128	0.1098	0.0467	7.0000e-004		8.8700e-003	8.8700e-003		8.8700e-003	8.8700e-003		140.1031	140.1031	2.6900e-003	2.5700e-003	140.9357

19386 Cabrillo at First Mixed-Use Residential - Orange County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**5.2 Energy by Land Use - NaturalGas****Mitigated**

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Low Rise	1.19088	0.0128	0.1098	0.0467	7.0000e-004		8.8700e-003	8.8700e-003		8.8700e-003	8.8700e-003		140.1031	140.1031	2.6900e-003	2.5700e-003	140.9357
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.0128	0.1098	0.0467	7.0000e-004		8.8700e-003	8.8700e-003		8.8700e-003	8.8700e-003		140.1031	140.1031	2.6900e-003	2.5700e-003	140.9357

6.0 Area Detail**6.1 Mitigation Measures Area**

19386 Cabrillo at First Mixed-Use Residential - Orange County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	1.7422	0.5559	3.1131	3.4900e-003		0.0582	0.0582		0.0582	0.0582	0.0000	672.2636	672.2636	0.0178	0.0122	676.3530
Unmitigated	1.7422	0.5559	3.1131	3.4900e-003		0.0582	0.0582		0.0582	0.0582	0.0000	672.2636	672.2636	0.0178	0.0122	676.3530

6.2 Area by SubCategory**Unmitigated**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.1282					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	1.4656					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0612	0.5225	0.2224	3.3400e-003		0.0423	0.0423		0.0423	0.0423	0.0000	667.0588	667.0588	0.0128	0.0122	671.0228
Landscaping	0.0873	0.0333	2.8907	1.5000e-004		0.0160	0.0160		0.0160	0.0160		5.2048	5.2048	5.0100e-003		5.3301
Total	1.7422	0.5559	3.1131	3.4900e-003		0.0582	0.0582		0.0582	0.0582	0.0000	672.2636	672.2636	0.0178	0.0122	676.3530

19386 Cabrillo at First Mixed-Use Residential - Orange County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**6.2 Area by SubCategory****Mitigated**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.1282					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	1.4656					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0612	0.5225	0.2224	3.3400e-003		0.0423	0.0423		0.0423	0.0423	0.0000	667.0588	667.0588	0.0128	0.0122	671.0228
Landscaping	0.0873	0.0333	2.8907	1.5000e-004		0.0160	0.0160		0.0160	0.0160		5.2048	5.2048	5.0100e-003		5.3301
Total	1.7422	0.5559	3.1131	3.4900e-003		0.0582	0.0582		0.0582	0.0582	0.0000	672.2636	672.2636	0.0178	0.0122	676.3530

7.0 Water Detail**7.1 Mitigation Measures Water**

Apply Water Conservation Strategy

Use Water Efficient Irrigation System

19386 Cabrillo at First Mixed-Use Residential - Orange County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**8.0 Waste Detail**

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
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10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type
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Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type
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User Defined Equipment

Equipment Type	Number
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11.0 Vegetation

APPENDIX C

AERMOD MODEL PRINTOUTS

19386 Cabrillo at First Mixed Use

Estimation of DPM Emissions Along the 5 Freeway

Cal Trans Vehicle Traffic - 2020

Segment	Ahead AADT	Total Trucks	LDA/LDT/MDT	% LDA/LDT/MDT	% Trucks	2 axle	2 axle % Trucks	3 axle	3 axle % Trucks	4+ axle	4+ Axle % Trucks
Tustin, Jct. Route 55, Costa Mesa Freeway	301600	21112	280488	93.0%	7.0%	9342	44.2%	2065	9.8%	9705	46.0%

Diesel Vehicle Distribution

Vehicle Mix
 2 axle trucks = LHDT1 and LHDT2
 3 axle trucks = MHDT
 4+ axle trucks = HHDT

Adjusted Fleet Mix

	SCAB CalEEMod Fleet Mix	Adjusted Fleet Mix	Daily Trips
LDA	54.48	59.2%	166103
LDT1	5.89	6.4%	17946
LDT2	18.69	20.3%	56985
MDV	12.94	14.1%	39453
Total	92.00	100.0%	280488
LHD1	2.44	78.9%	7371
LHD2	0.65	21.1%	1971
Total	3.09	100.0%	9342
MHDT			2065
HHDT			9705
Total - All Vehicles			301600

Diesel Vehicle Distribution (from URBEMIS: 2023 in SCAQMD)

	% Diesel	Daily Diesel Vehicles
LDA	0.0%	0
LDT1	1.4%	251
LDT2	0.0%	0
MDV	0.0%	0
LHDT1	17.6%	1297
LHDT2	40.0%	788
MHDT	80.0%	1652
HHDT	100.0%	9705

Vehicle Speed/1-year Average DPM Emission Factor (2023) from EMFAC2021 for South Coast AB

	Speed (mph)	Emission Factor (g/mi)
LDA	70	0.032103165
LDT1	70	0.276471063
LDT2	70	0.005854775
MDV	60	0.007292192
LHDT1	60	0.016449082
LHDT2	60	0.016170405
MHDT	55	0.013060
HHDT	55	0.021506

Vehicle Emissions

$$\text{Vehicle Emissions} = \text{Emission Factor (g/mi)} \times \text{Mile/Trip} \times \text{Trip/Day}$$

Length of Roadway Segment	592.6 meters or 0.368 miles
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Assumption: over an annual period, traffic is assumed to be uniformly distributed during the day

	Daily Emissions (g/day)	Hourly Emissions (g/sec)			
LDA	0.0	0.00E+00			
LDT1	25.6	2.96E-04			
LDT2	0.0	0.00E+00			
MDV	0.0	0.00E+00			
LHDT1	7.9	9.09E-05			
LHDT2	4.7	5.43E-05			
MHDT	7.9	9.19E-05			
HHDT	76.8	8.89E-04			
			NB	SB	
Total	122.9	1.42E-03		7.11E-04	7.11E-04

19386 Cabrillo at First Mixed Use

Estimation of DPM Emissions Along the 5 Freeway

Cal Trans Vehicle Traffic - 2020

Segment	Ahead AADT	Total Trucks	LDA/LDT/MDT	% LDA/LDT/MDT	% Trucks	2 axle	2 axle % Trucks	3 axle	3 axle % Trucks	4+ axle	4+ Axle % Trucks
Tustin, Jct. Route 55, Costa Mesa Freeway	301600	21112	280488	93.0%	7.0%	9342	44.2%	2065	9.8%	9705	46.0%

Diesel Vehicle Distribution

Vehicle Mix
 2 axle trucks = LHDT1 and LHDT2
 3 axle trucks = MHDT
 4+ axle trucks = HHDT

Adjusted Fleet Mix

	SCAB CalEEMod Fleet Mix	Adjusted Fleet Mix	Daily Trips
LDA	54.48	59.2%	166098
LDT1	5.89	6.4%	17957
LDT2	18.69	20.3%	56982
MDV	12.94	14.1%	39451
Total	92	100.0%	280488
LHD1	2.44	78.9%	7372
LHD2	0.652	21.1%	1970
Total	3.092	100.0%	9342
MHDT			2065
HHDT			9705
Total - All Vehicles			301600

Diesel Vehicle Distribution (from URBEMIS: 2023 in SCAQMD)

	% Diesel	Daily Diesel Vehicles
LDA	0.0%	0
LDT1	1.4%	251
LDT2	0.0%	0
MDV	0.0%	0
LHDT1	17.6%	1297
LHDT2	40.0%	788
MHDT	80.0%	1652
HHDT	100.0%	9705

Vehicle Speed/1-year Average DPM Emission Factor (2024-25) from EMFAC2021 for South Coast AB

	Speed (mph)	Emission Factor (g/mi)
LDA	70	0.026824286
LDT1	70	0.274504243
LDT2	70	0.004311092
MDV	60	0.006380956
LHDT1	60	0.014224915
LHDT2	60	0.014348385
MHDT	55	0.011189
HHDT	55	0.021102

Vehicle Emissions

Vehicle Emissions = Emission Factor (g/mi) x Mile/Trip x Trip/Day

Length of Roadway Segment 592.6 meters or
0.368 miles

Assumption: over an annual period, traffic is assumed to be uniformly distributed during the day

	Daily Emissions (g/day)	Hourly Emissions (g/sec)			
LDA	0.0	0.00E+00			
LDT1	25.4	2.94E-04			
LDT2	0.0	0.00E+00			
MDV	0.0	0.00E+00			
LHDT1	6.8	7.86E-05			
LHDT2	4.2	4.82E-05			
MHDT	6.8	7.88E-05			
HHDT	75.4	8.73E-04			
			NB	SB	
Total	118.6	1.37E-03		6.86E-04	6.86E-04

19386 Cabrillo at First Mixed Use

Estimation of DPM Emissions Along the 5 Freeway

Cal Trans Vehicle Traffic - 2020

Segment	Ahead AADT	Total Trucks	LDA/LDT/MDT	% LDA/LDT/MDT	% Trucks	2 axle	2 axle % Trucks	3 axle	3 axle % Trucks	4+ axle	4+ Axle % Trucks
Tustin, Jct. Route 55, Costa Mesa Freeway	301600	21112	280488	93.0%	7.0%	9342	44.2%	2065	9.8%	9705	46.0%

Diesel Vehicle Distribution

Vehicle Mix
 2 axle trucks = LHDT1 and LHDT2
 3 axle trucks = MHDT
 4+ axle trucks = HHDT

Adjusted Fleet Mix

	SCAB CalEEMod Fleet Mix	Adjusted Fleet Mix	Daily Trips
LDA	54.48	59.2%	166098
LDT1	5.89	6.4%	17957
LDT2	18.69	20.3%	56982
MDV	12.94	14.1%	39451
Total	92	100.0%	280488
LHD1	2.44	78.9%	7372
LHD2	0.652	21.1%	1970
Total	3.092	100.0%	9342
MHDT			2065
HHDT			9705
Total - All Vehicles			301600

Diesel Vehicle Distribution (from URBEMIS: 2023 in SCAQMD)

	% Diesel	Daily Diesel Vehicles
LDA	0.0%	0
LDT1	1.4%	251
LDT2	0.0%	0
MDV	0.0%	0
LHDT1	17.6%	1297
LHDT2	40.0%	788
MHDT	80.0%	1652
HHDT	100.0%	9705

Vehicle Speed/1-year Average DPM Emission Factor (2026-2039) from EMFAC2021 for South Coast AB

	Speed (mph)	Emission Factor (g/mi)
LDA	70	0.007178506
LDT1	70	0.081950439
LDT2	70	0.003255776
MDV	60	0.002511334
LHDT1	60	0.010165765
LHDT2	60	0.011369246
MHDT	55	0.006363
HHDT	55	0.019983

Vehicle Emissions

$$\text{Vehicle Emissions} = \text{Emission Factor (g/mi)} \times \text{Mile/Trip} \times \text{Trip/Day}$$

Length of Roadway Segment	592.6 meters or 0.368 miles
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Assumption: over an annual period, traffic is assumed to be uniformly distributed during the day

	Daily Emissions (g/day)	Hourly Emissions (g/sec)			
LDA	0.0	0.00E+00			
LDT1	7.6	8.78E-05			
LDT2	0.0	0.00E+00			
MDV	0.0	0.00E+00			
LHDT1	4.9	5.62E-05			
LHDT2	3.3	3.82E-05			
MHDT	3.9	4.48E-05			
HHDT	71.4	8.26E-04			
			NB	SB	
Total	91.0	1.05E-03		5.27E-04	5.27E-04

19386 Cabrillo at First Mixed Use

Estimation of DPM Emissions Along the 5 Freeway

Cal Trans Vehicle Traffic - 2020

Segment	Back AADT	Total Trucks	LDA/LDT/MDT	% LDA/LDT/MDT	% Trucks	2 axle	2 axle % Trucks	3 axle	3 axle % Trucks	4+ axle	4+ Axle % Trucks
Tustin, Jct. Route 55, Costa Mesa Freeway	301600	21112	280488	93.0%	7.0%	9342	44.2%	2065	9.8%	9705	46.0%

Diesel Vehicle Distribution

Vehicle Mix
 2 axle trucks = LHDT1 and LHDT2
 3 axle trucks = MHDT
 4+ axle trucks = HHDT

Adjusted Fleet Mix

	SCAB CalEEMod Fleet Mix	Adjusted Fleet Mix	Daily Trips
LDA	54.48	59.2%	166098
LDT1	5.89	6.4%	17957
LDT2	18.69	20.3%	56982
MDV	12.94	14.1%	39451
Total	92	100.0%	280488
LHD1	2.44	78.9%	7372
LHD2	0.652	21.1%	1970
Total	3.092	100.0%	9342
MHDT			2065
HHDT			9705
Total - All Vehicles			301600

Diesel Vehicle Distribution (from URBEMIS: 2023 in SCAQMD)

	% Diesel	Daily Diesel Vehicles
LDA	0.0%	0
LDT1	1.4%	251
LDT2	0.0%	0
MDV	0.0%	0
LHDT1	17.6%	1297
LHDT2	40.0%	788
MHDT	80.0%	1652
HHDT	100.0%	9705

Vehicle Speed/1-year Average DPM Emission Factor (2040-2053) from EMFAC2021 for South Coast AB

	Speed (mph)	Emission Factor (g/mi)
LDA	70	0.000942857
LDT1	70	0.003231599
LDT2	70	0.003182419
MDV	60	0.000793301
LHDT1	60	0.008634644
LHDT2	60	0.010567758
MHDT	55	0.004181
HHDT	55	0.018980

Vehicle Emissions

Vehicle Emissions = Emission Factor (g/mi) x Mile/Trip x Trip/Day

Length of Roadway Segment 592.6 meters or
0.368 miles

Assumption: over an annual period, traffic is assumed to be uniformly distributed during the day

	Daily Emissions (g/day)	Hourly Emissions (g/sec)			
LDA	0.0	0.00E+00			
LDT1	0.3	3.46E-06			
LDT2	0.0	0.00E+00			
MDV	0.0	0.00E+00			
LHDT1	4.1	4.77E-05			
LHDT2	3.1	3.55E-05			
MHDT	2.5	2.94E-05			
HHDT	67.8	7.85E-04			
			NB	SB	
Total	77.8	9.01E-04		4.50E-04	4.50E-04

```

** Lakes Environmental AERMOD MPI
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*****
**
** AERMOD Input Produced by:
** AERMOD View Ver. 10.2.1
** Lakes Environmental Software Inc.
** Date: 1/21/2022
** File: C:\Lakes\AERMOD View\19386 Cabrillo at First OY\19386 Cabrillo at First OY.ADI
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*****
**
**
*****
** AERMOD Control Pathway
*****
**
**
CO STARTING
  TITLEONE 19386 Cabrillo at First Mixed Use Freeway HRA
  TITLETWO DPM emissions from I-5 freeway OY 2022
  MODELOPT DFAULT CONC
  AVERTIME PERIOD
  URBANOPT 3010232 Orange_County
  POLLUTID DPM
  RUNORNOT RUN
  ERRORFIL "19386 Cabrillo at First OY.err"
CO FINISHED
**
*****
** AERMOD Source Pathway
*****
**
**
SO STARTING
** Source Location **
** Source ID - Type - X Coord. - Y Coord. **
** -----
** Line Source Represented by Adjacent Volume Sources
** LINE VOLUME Source ID = SLINE1
** DESCRSRC 5 fwy NB
** PREFIX
** Length of Side = 8.59
** Configuration = Adjacent
** Emission Rate = 0.000711
** Elevated
** Vertical Dimension = 6.99
** SZINIT = 1.62
** Nodes = 8
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** 421993.204, 3734285.421, 33.32, 3.49, 4.00

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 ** 422042.633, 3734173.275, 35.06, 3.49, 4.00
 ** 422082.495, 3734117.469, 36.07, 3.49, 4.00
 ** 422145.743, 3734052.095, 39.00, 3.49, 4.00
 ** 422191.451, 3734012.233, 39.21, 3.49, 4.00
 ** 422250.979, 3733972.371, 40.42, 3.49, 4.00

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 LOCATION L0000141 VOLUME 421949.734 3734435.930 35.12
 LOCATION L0000142 VOLUME 421952.117 3734427.678 34.97
 LOCATION L0000143 VOLUME 421954.501 3734419.425 35.00
 LOCATION L0000144 VOLUME 421956.885 3734411.172 35.06
 LOCATION L0000145 VOLUME 421959.268 3734402.919 35.04
 LOCATION L0000146 VOLUME 421961.652 3734394.667 34.95
 LOCATION L0000147 VOLUME 421964.035 3734386.414 34.77
 LOCATION L0000148 VOLUME 421966.419 3734378.161 34.47
 LOCATION L0000149 VOLUME 421968.802 3734369.909 34.10
 LOCATION L0000150 VOLUME 421971.186 3734361.656 34.00
 LOCATION L0000151 VOLUME 421973.569 3734353.403 33.88
 LOCATION L0000152 VOLUME 421975.953 3734345.151 33.77
 LOCATION L0000153 VOLUME 421978.336 3734336.898 33.66
 LOCATION L0000154 VOLUME 421980.720 3734328.645 33.68
 LOCATION L0000155 VOLUME 421983.104 3734320.393 33.53
 LOCATION L0000156 VOLUME 421985.487 3734312.140 33.22
 LOCATION L0000157 VOLUME 421987.871 3734303.887 33.06
 LOCATION L0000158 VOLUME 421990.254 3734295.635 33.08
 LOCATION L0000159 VOLUME 421992.638 3734287.382 33.11
 LOCATION L0000160 VOLUME 421995.686 3734279.361 33.13
 LOCATION L0000161 VOLUME 421998.943 3734271.412 33.11
 LOCATION L0000162 VOLUME 422002.199 3734263.463 33.05
 LOCATION L0000163 VOLUME 422005.455 3734255.514 33.17
 LOCATION L0000164 VOLUME 422008.711 3734247.565 32.87
 LOCATION L0000165 VOLUME 422012.040 3734239.648 32.96
 LOCATION L0000166 VOLUME 422015.635 3734231.846 33.08
 LOCATION L0000167 VOLUME 422019.231 3734224.045 33.21
 LOCATION L0000168 VOLUME 422022.827 3734216.244 33.34
 LOCATION L0000169 VOLUME 422026.423 3734208.443 33.52
 LOCATION L0000170 VOLUME 422030.019 3734200.642 34.06
 LOCATION L0000171 VOLUME 422033.615 3734192.841 34.71
 LOCATION L0000172 VOLUME 422037.211 3734185.039 34.88
 LOCATION L0000173 VOLUME 422040.806 3734177.238 35.15
 LOCATION L0000174 VOLUME 422045.090 3734169.836 35.26
 LOCATION L0000175 VOLUME 422050.082 3734162.846 35.18
 LOCATION L0000176 VOLUME 422055.075 3734155.856 35.23
 LOCATION L0000177 VOLUME 422060.068 3734148.866 36.34
 LOCATION L0000178 VOLUME 422065.061 3734141.876 36.93
 LOCATION L0000179 VOLUME 422070.054 3734134.886 36.92
 LOCATION L0000180 VOLUME 422075.047 3734127.896 36.30
 LOCATION L0000181 VOLUME 422080.039 3734120.907 35.83
 LOCATION L0000182 VOLUME 422085.530 3734114.331 36.87

LOCATION	L0000183	VOLUME	422091.503	3734108.158	37.42
LOCATION	L0000184	VOLUME	422097.476	3734101.984	37.43
LOCATION	L0000185	VOLUME	422103.449	3734095.811	36.88
LOCATION	L0000186	VOLUME	422109.422	3734089.637	37.24
LOCATION	L0000187	VOLUME	422115.394	3734083.463	38.04
LOCATION	L0000188	VOLUME	422121.367	3734077.290	38.39
LOCATION	L0000189	VOLUME	422127.340	3734071.116	38.28
LOCATION	L0000190	VOLUME	422133.313	3734064.943	38.00
LOCATION	L0000191	VOLUME	422139.286	3734058.769	38.34
LOCATION	L0000192	VOLUME	422145.259	3734052.595	38.84
LOCATION	L0000193	VOLUME	422151.692	3734046.907	39.08
LOCATION	L0000194	VOLUME	422158.166	3734041.261	38.95
LOCATION	L0000195	VOLUME	422164.640	3734035.615	38.58
LOCATION	L0000196	VOLUME	422171.114	3734029.969	38.19
LOCATION	L0000197	VOLUME	422177.588	3734024.323	38.39
LOCATION	L0000198	VOLUME	422184.062	3734018.677	38.72
LOCATION	L0000199	VOLUME	422190.536	3734013.031	39.10
LOCATION	L0000200	VOLUME	422197.579	3734008.129	39.29
LOCATION	L0000201	VOLUME	422204.717	3734003.350	39.31
LOCATION	L0000202	VOLUME	422211.854	3733998.570	39.33
LOCATION	L0000203	VOLUME	422218.992	3733993.791	39.62
LOCATION	L0000204	VOLUME	422226.129	3733989.011	39.86
LOCATION	L0000205	VOLUME	422233.267	3733984.231	40.03
LOCATION	L0000206	VOLUME	422240.404	3733979.452	40.14
LOCATION	L0000207	VOLUME	422247.542	3733974.672	40.25

** End of LINE VOLUME Source ID = SLINE1

** -----

** Line Source Represented by Adjacent Volume Sources

** LINE VOLUME Source ID = SLINE2

** DESCRSRC 5 fwy SB

** PREFIX

** Length of Side = 8.59

** Configuration = Adjacent

** Emission Rate = 0.000711

** Elevated

** Vertical Dimension = 6.99

** SZINIT = 1.62

** Nodes = 5

** 421893.815, 3734459.219, 36.96, 3.49, 4.00

** 421974.602, 3734212.075, 35.53, 3.49, 4.00

** 422084.090, 3734059.004, 38.51, 3.49, 4.00

** 422156.904, 3733992.036, 39.89, 3.49, 4.00

** 422190.389, 3733967.587, 40.85, 3.49, 4.00

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LOCATION	L0000208	VOLUME	421895.149	3734455.137	36.83
LOCATION	L0000209	VOLUME	421897.818	3734446.972	36.07
LOCATION	L0000210	VOLUME	421900.487	3734438.807	35.32
LOCATION	L0000211	VOLUME	421903.156	3734430.642	35.27
LOCATION	L0000212	VOLUME	421905.825	3734422.478	36.16
LOCATION	L0000213	VOLUME	421908.494	3734414.313	36.78
LOCATION	L0000214	VOLUME	421911.163	3734406.148	37.15

LOCATION	L0000215	VOLUME	421913.832	3734397.983	37.17
LOCATION	L0000216	VOLUME	421916.501	3734389.818	36.91
LOCATION	L0000217	VOLUME	421919.170	3734381.653	36.47
LOCATION	L0000218	VOLUME	421921.839	3734373.488	35.87
LOCATION	L0000219	VOLUME	421924.507	3734365.324	35.24
LOCATION	L0000220	VOLUME	421927.176	3734357.159	34.78
LOCATION	L0000221	VOLUME	421929.845	3734348.994	34.92
LOCATION	L0000222	VOLUME	421932.514	3734340.829	35.00
LOCATION	L0000223	VOLUME	421935.183	3734332.664	35.64
LOCATION	L0000224	VOLUME	421937.852	3734324.499	36.09
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LOCATION	L0000226	VOLUME	421943.190	3734308.170	36.23
LOCATION	L0000227	VOLUME	421945.859	3734300.005	36.02
LOCATION	L0000228	VOLUME	421948.528	3734291.840	35.77
LOCATION	L0000229	VOLUME	421951.197	3734283.675	35.48
LOCATION	L0000230	VOLUME	421953.866	3734275.510	35.60
LOCATION	L0000231	VOLUME	421956.535	3734267.345	36.00
LOCATION	L0000232	VOLUME	421959.204	3734259.180	36.27
LOCATION	L0000233	VOLUME	421961.873	3734251.016	36.43
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LOCATION	L0000237	VOLUME	421972.548	3734218.356	36.03
LOCATION	L0000238	VOLUME	421975.754	3734210.463	36.02
LOCATION	L0000239	VOLUME	421980.752	3734203.476	36.25
LOCATION	L0000240	VOLUME	421985.749	3734196.490	36.46
LOCATION	L0000241	VOLUME	421990.747	3734189.503	36.47
LOCATION	L0000242	VOLUME	421995.744	3734182.516	36.27
LOCATION	L0000243	VOLUME	422000.742	3734175.530	35.96
LOCATION	L0000244	VOLUME	422005.739	3734168.543	35.93
LOCATION	L0000245	VOLUME	422010.736	3734161.556	36.08
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LOCATION	L0000249	VOLUME	422030.726	3734133.609	36.65
LOCATION	L0000250	VOLUME	422035.723	3734126.623	36.80
LOCATION	L0000251	VOLUME	422040.721	3734119.636	37.04
LOCATION	L0000252	VOLUME	422045.718	3734112.649	37.24
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LOCATION	L0000254	VOLUME	422055.713	3734098.676	37.41
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LOCATION	L0000258	VOLUME	422075.703	3734070.729	38.21
LOCATION	L0000259	VOLUME	422080.700	3734063.743	38.37
LOCATION	L0000260	VOLUME	422086.124	3734057.133	38.48
LOCATION	L0000261	VOLUME	422092.447	3734051.318	38.56
LOCATION	L0000262	VOLUME	422098.769	3734045.503	38.72
LOCATION	L0000263	VOLUME	422105.092	3734039.688	38.92
LOCATION	L0000264	VOLUME	422111.414	3734033.873	39.07
LOCATION	L0000265	VOLUME	422117.737	3734028.058	39.17

LOCATION	L0000266	VOLUME	422124.060	3734022.243	39.31
LOCATION	L0000267	VOLUME	422130.382	3734016.429	39.59
LOCATION	L0000268	VOLUME	422136.705	3734010.614	39.74
LOCATION	L0000269	VOLUME	422143.027	3734004.799	39.90
LOCATION	L0000270	VOLUME	422149.350	3733998.984	40.03
LOCATION	L0000271	VOLUME	422155.672	3733993.169	39.81
LOCATION	L0000272	VOLUME	422162.490	3733987.957	39.83
LOCATION	L0000273	VOLUME	422169.428	3733982.892	40.05
LOCATION	L0000274	VOLUME	422176.365	3733977.826	40.45
LOCATION	L0000275	VOLUME	422183.303	3733972.761	40.88
LOCATION	L0000276	VOLUME	422190.240	3733967.695	41.00

** End of LINE VOLUME Source ID = SLINE2

** Source Parameters **

** LINE VOLUME Source ID = SLINE1

SRCPARAM	L0000139	0.0000103043	3.49	4.00	1.62
SRCPARAM	L0000140	0.0000103043	3.49	4.00	1.62
SRCPARAM	L0000141	0.0000103043	3.49	4.00	1.62
SRCPARAM	L0000142	0.0000103043	3.49	4.00	1.62
SRCPARAM	L0000143	0.0000103043	3.49	4.00	1.62
SRCPARAM	L0000144	0.0000103043	3.49	4.00	1.62
SRCPARAM	L0000145	0.0000103043	3.49	4.00	1.62
SRCPARAM	L0000146	0.0000103043	3.49	4.00	1.62
SRCPARAM	L0000147	0.0000103043	3.49	4.00	1.62
SRCPARAM	L0000148	0.0000103043	3.49	4.00	1.62
SRCPARAM	L0000149	0.0000103043	3.49	4.00	1.62
SRCPARAM	L0000150	0.0000103043	3.49	4.00	1.62
SRCPARAM	L0000151	0.0000103043	3.49	4.00	1.62
SRCPARAM	L0000152	0.0000103043	3.49	4.00	1.62
SRCPARAM	L0000153	0.0000103043	3.49	4.00	1.62
SRCPARAM	L0000154	0.0000103043	3.49	4.00	1.62
SRCPARAM	L0000155	0.0000103043	3.49	4.00	1.62
SRCPARAM	L0000156	0.0000103043	3.49	4.00	1.62
SRCPARAM	L0000157	0.0000103043	3.49	4.00	1.62
SRCPARAM	L0000158	0.0000103043	3.49	4.00	1.62
SRCPARAM	L0000159	0.0000103043	3.49	4.00	1.62
SRCPARAM	L0000160	0.0000103043	3.49	4.00	1.62
SRCPARAM	L0000161	0.0000103043	3.49	4.00	1.62
SRCPARAM	L0000162	0.0000103043	3.49	4.00	1.62
SRCPARAM	L0000163	0.0000103043	3.49	4.00	1.62
SRCPARAM	L0000164	0.0000103043	3.49	4.00	1.62
SRCPARAM	L0000165	0.0000103043	3.49	4.00	1.62
SRCPARAM	L0000166	0.0000103043	3.49	4.00	1.62
SRCPARAM	L0000167	0.0000103043	3.49	4.00	1.62
SRCPARAM	L0000168	0.0000103043	3.49	4.00	1.62
SRCPARAM	L0000169	0.0000103043	3.49	4.00	1.62
SRCPARAM	L0000170	0.0000103043	3.49	4.00	1.62
SRCPARAM	L0000171	0.0000103043	3.49	4.00	1.62
SRCPARAM	L0000172	0.0000103043	3.49	4.00	1.62
SRCPARAM	L0000173	0.0000103043	3.49	4.00	1.62
SRCPARAM	L0000174	0.0000103043	3.49	4.00	1.62
SRCPARAM	L0000175	0.0000103043	3.49	4.00	1.62

SRCPARAM	L0000176	0.0000103043	3.49	4.00	1.62
SRCPARAM	L0000177	0.0000103043	3.49	4.00	1.62
SRCPARAM	L0000178	0.0000103043	3.49	4.00	1.62
SRCPARAM	L0000179	0.0000103043	3.49	4.00	1.62
SRCPARAM	L0000180	0.0000103043	3.49	4.00	1.62
SRCPARAM	L0000181	0.0000103043	3.49	4.00	1.62
SRCPARAM	L0000182	0.0000103043	3.49	4.00	1.62
SRCPARAM	L0000183	0.0000103043	3.49	4.00	1.62
SRCPARAM	L0000184	0.0000103043	3.49	4.00	1.62
SRCPARAM	L0000185	0.0000103043	3.49	4.00	1.62
SRCPARAM	L0000186	0.0000103043	3.49	4.00	1.62
SRCPARAM	L0000187	0.0000103043	3.49	4.00	1.62
SRCPARAM	L0000188	0.0000103043	3.49	4.00	1.62
SRCPARAM	L0000189	0.0000103043	3.49	4.00	1.62
SRCPARAM	L0000190	0.0000103043	3.49	4.00	1.62
SRCPARAM	L0000191	0.0000103043	3.49	4.00	1.62
SRCPARAM	L0000192	0.0000103043	3.49	4.00	1.62
SRCPARAM	L0000193	0.0000103043	3.49	4.00	1.62
SRCPARAM	L0000194	0.0000103043	3.49	4.00	1.62
SRCPARAM	L0000195	0.0000103043	3.49	4.00	1.62
SRCPARAM	L0000196	0.0000103043	3.49	4.00	1.62
SRCPARAM	L0000197	0.0000103043	3.49	4.00	1.62
SRCPARAM	L0000198	0.0000103043	3.49	4.00	1.62
SRCPARAM	L0000199	0.0000103043	3.49	4.00	1.62
SRCPARAM	L0000200	0.0000103043	3.49	4.00	1.62
SRCPARAM	L0000201	0.0000103043	3.49	4.00	1.62
SRCPARAM	L0000202	0.0000103043	3.49	4.00	1.62
SRCPARAM	L0000203	0.0000103043	3.49	4.00	1.62
SRCPARAM	L0000204	0.0000103043	3.49	4.00	1.62
SRCPARAM	L0000205	0.0000103043	3.49	4.00	1.62
SRCPARAM	L0000206	0.0000103043	3.49	4.00	1.62
SRCPARAM	L0000207	0.0000103043	3.49	4.00	1.62
** -----					
** LINE VOLUME Source ID = SLINE2					
SRCPARAM	L0000208	0.0000103043	3.49	4.00	1.62
SRCPARAM	L0000209	0.0000103043	3.49	4.00	1.62
SRCPARAM	L0000210	0.0000103043	3.49	4.00	1.62
SRCPARAM	L0000211	0.0000103043	3.49	4.00	1.62
SRCPARAM	L0000212	0.0000103043	3.49	4.00	1.62
SRCPARAM	L0000213	0.0000103043	3.49	4.00	1.62
SRCPARAM	L0000214	0.0000103043	3.49	4.00	1.62
SRCPARAM	L0000215	0.0000103043	3.49	4.00	1.62
SRCPARAM	L0000216	0.0000103043	3.49	4.00	1.62
SRCPARAM	L0000217	0.0000103043	3.49	4.00	1.62
SRCPARAM	L0000218	0.0000103043	3.49	4.00	1.62
SRCPARAM	L0000219	0.0000103043	3.49	4.00	1.62
SRCPARAM	L0000220	0.0000103043	3.49	4.00	1.62
SRCPARAM	L0000221	0.0000103043	3.49	4.00	1.62
SRCPARAM	L0000222	0.0000103043	3.49	4.00	1.62
SRCPARAM	L0000223	0.0000103043	3.49	4.00	1.62
SRCPARAM	L0000224	0.0000103043	3.49	4.00	1.62

[illegible]

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SRCPARAM L0000276      0.0000103043      3.49      4.00      1.62
** -----
  URBANSRC ALL
  SRCGROUP ALL
SO FINISHED
**
*****
** AERMOD Receptor Pathway
*****
**
**
RE STARTING
  INCLUDED "19386 Cabrillo at First OY.rou"
RE FINISHED
**
*****
** AERMOD Meteorology Pathway
*****
**
**
ME STARTING
  SURFFILE "E:\New MET data\KSNA_V9_ADJU\KSNA_v9.SFC"
  PROFFILE "E:\New MET data\KSNA_V9_ADJU\KSNA_v9.PFL"
  SURFDATA 93184 2012
  UAIRDATA 3190 2012
  PROFBASE 17.0 METERS
ME FINISHED
**
*****
** AERMOD Output Pathway
*****
**
**
OU STARTING
** Auto-Generated Plotfiles
  PLOTFILE PERIOD ALL "19386 Cabrillo at First OY.AD\PE00GALL.PLT" 31
  SUMMFILE "19386 Cabrillo at First OY.sum"
OU FINISHED

*** Message Summary For AERMOD Model Setup ***

----- Summary of Total Messages -----

A Total of          0 Fatal Error Message(s)
A Total of          2 Warning Message(s)
A Total of          0 Informational Message(s)

***** FATAL ERROR MESSAGES *****
      *** NONE ***

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***** WARNING MESSAGES *****
ME W186      383      MEOPEN: THRESH_1MIN 1-min ASOS wind speed threshold used      0.50
ME W187      383      MEOPEN: ADJ_U* Option for Stable Low Winds used in AERMET

*****
*** SETUP Finishes Successfully ***
*****

*** AERMOD - VERSION 21112 ***      *** 19386 Cabrillo at First Mixed Use Freeway HRA      ***      01/21/22
*** AERMET - VERSION 16216 ***      *** DPM emissions from I-5 freeway OY 2022      ***      17:27:25
                                           PAGE      1

*** MODELOPTs:      RegDFAULT CONC ELEV URBAN ADJ_U*

***      MODEL SETUP OPTIONS SUMMARY      ***
-----
**Model Is Setup For Calculation of Average CONCentration Values.

-- DEPOSITION LOGIC --
**NO GAS DEPOSITION Data Provided.
**NO PARTICLE DEPOSITION Data Provided.
**Model Uses NO DRY DEPLETION. DRYDPLT = F
**Model Uses NO WET DEPLETION. WETDPLT = F

**Model Uses URBAN Dispersion Algorithm for the SBL for 138 Source(s),
for Total of 1 Urban Area(s):
Urban Population = 3010232.0 ; Urban Roughness Length = 1.000 m

**Model Uses Regulatory DEFAULT Options:
1. Stack-tip Downwash.
2. Model Accounts for ELEVated Terrain Effects.
3. Use Calms Processing Routine.
4. Use Missing Data Processing Routine.
5. No Exponential Decay.
6. Urban Roughness Length of 1.0 Meter Assumed.

**Other Options Specified:
ADJ_U* - Use ADJ_U* option for SBL in AERMET
CCVR_Sub - Meteorological data includes CCVR substitutions
TEMP_Sub - Meteorological data includes TEMP substitutions

**Model Assumes No FLAGPOLE Receptor Heights.

**The User Specified a Pollutant Type of: DPM

**Model Calculates PERIOD Averages Only

**This Run Includes: 138 Source(s); 1 Source Group(s); and 454 Receptor(s)

```

with: 0 POINT(s), including
 0 POINTCAP(s) and 0 POINTHOR(s)
 and: 138 VOLUME source(s)
 and: 0 AREA type source(s)
 and: 0 LINE source(s)
 and: 0 RLINE/RLINEXT source(s)
 and: 0 OPENPIT source(s)
 and: 0 BUOYANT LINE source(s) with a total of 0 line(s)

**Model Set To Continue RUNNING After the Setup Testing.

**The AERMET Input Meteorological Data Version Date: 16216

**Output Options Selected:

Model Outputs Tables of PERIOD Averages by Receptor
 Model Outputs External File(s) of High Values for Plotting (PLOTFILE Keyword)
 Model Outputs Separate Summary File of High Ranked Values (SUMMFILE Keyword)

**NOTE: The Following Flags May Appear Following CONC Values: c for Calm Hours
 m for Missing Hours
 b for Both Calm and Missing Hours

**Misc. Inputs: Base Elev. for Pot. Temp. Profile (m MSL) = 17.00 ; Decay Coef. = 0.000 ; Rot. Angle = 0.0
 Emission Units = GRAMS/SEC ; Emission Rate Unit Factor = 0.10000E+07
 Output Units = MICROGRAMS/M**3

**Approximate Storage Requirements of Model = 3.6 MB of RAM.

**Input Runstream File: aermod.inp

**Output Print File: aermod.out

**Detailed Error/Message File: 19386 Cabrillo at First OY.err

**File for Summary of Results: 19386 Cabrillo at First OY.sum

*** AERMOD - VERSION 21112 *** *** 19386 Cabrillo at First Mixed Use Freeway HRA *** 01/21/22

*** AERMET - VERSION 16216 *** *** DPM emissions from I-5 freeway OY 2022 *** 17:27:25

PAGE 2

*** MODELOPTs: RegDFault CONC ELEV URBAN ADJ_U*

*** VOLUME SOURCE DATA ***

SOURCE ID	NUMBER PART. CATS.	EMISSION RATE (GRAMS/SEC)	X (METERS)	Y (METERS)	BASE ELEV. (METERS)	RELEASE HEIGHT (METERS)	INIT. SY (METERS)	INIT. SZ (METERS)	URBAN SOURCE	EMISSION RATE SCALAR VARY BY
L0000139	0	0.10304E-04	421945.0	3734452.4	35.4	3.49	4.00	1.62	YES	
L0000140	0	0.10304E-04	421947.3	3734444.2	35.3	3.49	4.00	1.62	YES	

L0000141	0	0.10304E-04	421949.7	3734435.9	35.1	3.49	4.00	1.62	YES
L0000142	0	0.10304E-04	421952.1	3734427.7	35.0	3.49	4.00	1.62	YES
L0000143	0	0.10304E-04	421954.5	3734419.4	35.0	3.49	4.00	1.62	YES
L0000144	0	0.10304E-04	421956.9	3734411.2	35.1	3.49	4.00	1.62	YES
L0000145	0	0.10304E-04	421959.3	3734402.9	35.0	3.49	4.00	1.62	YES
L0000146	0	0.10304E-04	421961.7	3734394.7	34.9	3.49	4.00	1.62	YES
L0000147	0	0.10304E-04	421964.0	3734386.4	34.8	3.49	4.00	1.62	YES
L0000148	0	0.10304E-04	421966.4	3734378.2	34.5	3.49	4.00	1.62	YES
L0000149	0	0.10304E-04	421968.8	3734369.9	34.1	3.49	4.00	1.62	YES
L0000150	0	0.10304E-04	421971.2	3734361.7	34.0	3.49	4.00	1.62	YES
L0000151	0	0.10304E-04	421973.6	3734353.4	33.9	3.49	4.00	1.62	YES
L0000152	0	0.10304E-04	421976.0	3734345.2	33.8	3.49	4.00	1.62	YES
L0000153	0	0.10304E-04	421978.3	3734336.9	33.7	3.49	4.00	1.62	YES
L0000154	0	0.10304E-04	421980.7	3734328.6	33.7	3.49	4.00	1.62	YES
L0000155	0	0.10304E-04	421983.1	3734320.4	33.5	3.49	4.00	1.62	YES
L0000156	0	0.10304E-04	421985.5	3734312.1	33.2	3.49	4.00	1.62	YES
L0000157	0	0.10304E-04	421987.9	3734303.9	33.1	3.49	4.00	1.62	YES
L0000158	0	0.10304E-04	421990.3	3734295.6	33.1	3.49	4.00	1.62	YES
L0000159	0	0.10304E-04	421992.6	3734287.4	33.1	3.49	4.00	1.62	YES
L0000160	0	0.10304E-04	421995.7	3734279.4	33.1	3.49	4.00	1.62	YES
L0000161	0	0.10304E-04	421998.9	3734271.4	33.1	3.49	4.00	1.62	YES
L0000162	0	0.10304E-04	422002.2	3734263.5	33.0	3.49	4.00	1.62	YES
L0000163	0	0.10304E-04	422005.5	3734255.5	33.2	3.49	4.00	1.62	YES
L0000164	0	0.10304E-04	422008.7	3734247.6	32.9	3.49	4.00	1.62	YES
L0000165	0	0.10304E-04	422012.0	3734239.6	33.0	3.49	4.00	1.62	YES
L0000166	0	0.10304E-04	422015.6	3734231.8	33.1	3.49	4.00	1.62	YES
L0000167	0	0.10304E-04	422019.2	3734224.0	33.2	3.49	4.00	1.62	YES
L0000168	0	0.10304E-04	422022.8	3734216.2	33.3	3.49	4.00	1.62	YES
L0000169	0	0.10304E-04	422026.4	3734208.4	33.5	3.49	4.00	1.62	YES
L0000170	0	0.10304E-04	422030.0	3734200.6	34.1	3.49	4.00	1.62	YES
L0000171	0	0.10304E-04	422033.6	3734192.8	34.7	3.49	4.00	1.62	YES
L0000172	0	0.10304E-04	422037.2	3734185.0	34.9	3.49	4.00	1.62	YES
L0000173	0	0.10304E-04	422040.8	3734177.2	35.1	3.49	4.00	1.62	YES
L0000174	0	0.10304E-04	422045.1	3734169.8	35.3	3.49	4.00	1.62	YES
L0000175	0	0.10304E-04	422050.1	3734162.8	35.2	3.49	4.00	1.62	YES
L0000176	0	0.10304E-04	422055.1	3734155.9	35.2	3.49	4.00	1.62	YES
L0000177	0	0.10304E-04	422060.1	3734148.9	36.3	3.49	4.00	1.62	YES
L0000178	0	0.10304E-04	422065.1	3734141.9	36.9	3.49	4.00	1.62	YES

*** AERMOD - VERSION 21112 *** *** 19386 Cabrillo at First Mixed Use Freeway HRA
 *** AERMET - VERSION 16216 *** *** DPM emissions from I-5 freeway OY 2022

*** 01/21/22
 *** 17:27:25
 PAGE 3

*** MODELOPTs: RegDFAULT CONC ELEV URBAN ADJ_U*

*** VOLUME SOURCE DATA ***

SOURCE ID	NUMBER PART. CATS.	EMISSION RATE (GRAMS/SEC)	X (METERS)	Y (METERS)	BASE ELEV. (METERS)	RELEASE HEIGHT (METERS)	INIT. SY (METERS)	INIT. SZ (METERS)	URBAN SOURCE	EMISSION RATE SCALAR VARY BY

L0000179	0	0.10304E-04	422070.1	3734134.9	36.9	3.49	4.00	1.62	YES
L0000180	0	0.10304E-04	422075.0	3734127.9	36.3	3.49	4.00	1.62	YES
L0000181	0	0.10304E-04	422080.0	3734120.9	35.8	3.49	4.00	1.62	YES
L0000182	0	0.10304E-04	422085.5	3734114.3	36.9	3.49	4.00	1.62	YES
L0000183	0	0.10304E-04	422091.5	3734108.2	37.4	3.49	4.00	1.62	YES
L0000184	0	0.10304E-04	422097.5	3734102.0	37.4	3.49	4.00	1.62	YES
L0000185	0	0.10304E-04	422103.4	3734095.8	36.9	3.49	4.00	1.62	YES
L0000186	0	0.10304E-04	422109.4	3734089.6	37.2	3.49	4.00	1.62	YES
L0000187	0	0.10304E-04	422115.4	3734083.5	38.0	3.49	4.00	1.62	YES
L0000188	0	0.10304E-04	422121.4	3734077.3	38.4	3.49	4.00	1.62	YES
L0000189	0	0.10304E-04	422127.3	3734071.1	38.3	3.49	4.00	1.62	YES
L0000190	0	0.10304E-04	422133.3	3734064.9	38.0	3.49	4.00	1.62	YES
L0000191	0	0.10304E-04	422139.3	3734058.8	38.3	3.49	4.00	1.62	YES
L0000192	0	0.10304E-04	422145.3	3734052.6	38.8	3.49	4.00	1.62	YES
L0000193	0	0.10304E-04	422151.7	3734046.9	39.1	3.49	4.00	1.62	YES
L0000194	0	0.10304E-04	422158.2	3734041.3	38.9	3.49	4.00	1.62	YES
L0000195	0	0.10304E-04	422164.6	3734035.6	38.6	3.49	4.00	1.62	YES
L0000196	0	0.10304E-04	422171.1	3734030.0	38.2	3.49	4.00	1.62	YES
L0000197	0	0.10304E-04	422177.6	3734024.3	38.4	3.49	4.00	1.62	YES
L0000198	0	0.10304E-04	422184.1	3734018.7	38.7	3.49	4.00	1.62	YES
L0000199	0	0.10304E-04	422190.5	3734013.0	39.1	3.49	4.00	1.62	YES
L0000200	0	0.10304E-04	422197.6	3734008.1	39.3	3.49	4.00	1.62	YES
L0000201	0	0.10304E-04	422204.7	3734003.3	39.3	3.49	4.00	1.62	YES
L0000202	0	0.10304E-04	422211.9	3733998.6	39.3	3.49	4.00	1.62	YES
L0000203	0	0.10304E-04	422219.0	3733993.8	39.6	3.49	4.00	1.62	YES
L0000204	0	0.10304E-04	422226.1	3733989.0	39.9	3.49	4.00	1.62	YES
L0000205	0	0.10304E-04	422233.3	3733984.2	40.0	3.49	4.00	1.62	YES
L0000206	0	0.10304E-04	422240.4	3733979.5	40.1	3.49	4.00	1.62	YES
L0000207	0	0.10304E-04	422247.5	3733974.7	40.2	3.49	4.00	1.62	YES
L0000208	0	0.10304E-04	421895.1	3734455.1	36.8	3.49	4.00	1.62	YES
L0000209	0	0.10304E-04	421897.8	3734447.0	36.1	3.49	4.00	1.62	YES
L0000210	0	0.10304E-04	421900.5	3734438.8	35.3	3.49	4.00	1.62	YES
L0000211	0	0.10304E-04	421903.2	3734430.6	35.3	3.49	4.00	1.62	YES
L0000212	0	0.10304E-04	421905.8	3734422.5	36.2	3.49	4.00	1.62	YES
L0000213	0	0.10304E-04	421908.5	3734414.3	36.8	3.49	4.00	1.62	YES
L0000214	0	0.10304E-04	421911.2	3734406.1	37.1	3.49	4.00	1.62	YES
L0000215	0	0.10304E-04	421913.8	3734398.0	37.2	3.49	4.00	1.62	YES
L0000216	0	0.10304E-04	421916.5	3734389.8	36.9	3.49	4.00	1.62	YES
L0000217	0	0.10304E-04	421919.2	3734381.7	36.5	3.49	4.00	1.62	YES
L0000218	0	0.10304E-04	421921.8	3734373.5	35.9	3.49	4.00	1.62	YES

*** AERMOD - VERSION 21112 *** *** 19386 Cabrillo at First Mixed Use Freeway HRA
 *** AERMET - VERSION 16216 *** *** DPM emissions from I-5 freeway OY 2022

 01/21/22
 17:27:25
 PAGE 4

*** MODELOPTs: RegDFAULT CONC ELEV URBAN ADJ_U*

*** VOLUME SOURCE DATA ***

NUMBER	EMISSION RATE	BASE	RELEASE	INIT.	INIT.	URBAN	EMISSION RATE
--------	---------------	------	---------	-------	-------	-------	---------------

SOURCE ID	PART. CATS.	(GRAMS/SEC)	X (METERS)	Y (METERS)	ELEV. (METERS)	HEIGHT (METERS)	SY (METERS)	SZ (METERS)	SOURCE	SCALAR VARY BY
L0000219	0	0.10304E-04	421924.5	3734365.3	35.2	3.49	4.00	1.62	YES	
L0000220	0	0.10304E-04	421927.2	3734357.2	34.8	3.49	4.00	1.62	YES	
L0000221	0	0.10304E-04	421929.8	3734349.0	34.9	3.49	4.00	1.62	YES	
L0000222	0	0.10304E-04	421932.5	3734340.8	35.0	3.49	4.00	1.62	YES	
L0000223	0	0.10304E-04	421935.2	3734332.7	35.6	3.49	4.00	1.62	YES	
L0000224	0	0.10304E-04	421937.9	3734324.5	36.1	3.49	4.00	1.62	YES	
L0000225	0	0.10304E-04	421940.5	3734316.3	36.3	3.49	4.00	1.62	YES	
L0000226	0	0.10304E-04	421943.2	3734308.2	36.2	3.49	4.00	1.62	YES	
L0000227	0	0.10304E-04	421945.9	3734300.0	36.0	3.49	4.00	1.62	YES	
L0000228	0	0.10304E-04	421948.5	3734291.8	35.8	3.49	4.00	1.62	YES	
L0000229	0	0.10304E-04	421951.2	3734283.7	35.5	3.49	4.00	1.62	YES	
L0000230	0	0.10304E-04	421953.9	3734275.5	35.6	3.49	4.00	1.62	YES	
L0000231	0	0.10304E-04	421956.5	3734267.3	36.0	3.49	4.00	1.62	YES	
L0000232	0	0.10304E-04	421959.2	3734259.2	36.3	3.49	4.00	1.62	YES	
L0000233	0	0.10304E-04	421961.9	3734251.0	36.4	3.49	4.00	1.62	YES	
L0000234	0	0.10304E-04	421964.5	3734242.9	36.5	3.49	4.00	1.62	YES	
L0000235	0	0.10304E-04	421967.2	3734234.7	36.4	3.49	4.00	1.62	YES	
L0000236	0	0.10304E-04	421969.9	3734226.5	36.3	3.49	4.00	1.62	YES	
L0000237	0	0.10304E-04	421972.5	3734218.4	36.0	3.49	4.00	1.62	YES	
L0000238	0	0.10304E-04	421975.8	3734210.5	36.0	3.49	4.00	1.62	YES	
L0000239	0	0.10304E-04	421980.8	3734203.5	36.2	3.49	4.00	1.62	YES	
L0000240	0	0.10304E-04	421985.7	3734196.5	36.5	3.49	4.00	1.62	YES	
L0000241	0	0.10304E-04	421990.7	3734189.5	36.5	3.49	4.00	1.62	YES	
L0000242	0	0.10304E-04	421995.7	3734182.5	36.3	3.49	4.00	1.62	YES	
L0000243	0	0.10304E-04	422000.7	3734175.5	36.0	3.49	4.00	1.62	YES	
L0000244	0	0.10304E-04	422005.7	3734168.5	35.9	3.49	4.00	1.62	YES	
L0000245	0	0.10304E-04	422010.7	3734161.6	36.1	3.49	4.00	1.62	YES	
L0000246	0	0.10304E-04	422015.7	3734154.6	36.2	3.49	4.00	1.62	YES	
L0000247	0	0.10304E-04	422020.7	3734147.6	36.5	3.49	4.00	1.62	YES	
L0000248	0	0.10304E-04	422025.7	3734140.6	36.6	3.49	4.00	1.62	YES	
L0000249	0	0.10304E-04	422030.7	3734133.6	36.6	3.49	4.00	1.62	YES	
L0000250	0	0.10304E-04	422035.7	3734126.6	36.8	3.49	4.00	1.62	YES	
L0000251	0	0.10304E-04	422040.7	3734119.6	37.0	3.49	4.00	1.62	YES	
L0000252	0	0.10304E-04	422045.7	3734112.6	37.2	3.49	4.00	1.62	YES	
L0000253	0	0.10304E-04	422050.7	3734105.7	37.3	3.49	4.00	1.62	YES	
L0000254	0	0.10304E-04	422055.7	3734098.7	37.4	3.49	4.00	1.62	YES	
L0000255	0	0.10304E-04	422060.7	3734091.7	37.6	3.49	4.00	1.62	YES	
L0000256	0	0.10304E-04	422065.7	3734084.7	37.8	3.49	4.00	1.62	YES	
L0000257	0	0.10304E-04	422070.7	3734077.7	38.0	3.49	4.00	1.62	YES	
L0000258	0	0.10304E-04	422075.7	3734070.7	38.2	3.49	4.00	1.62	YES	

*** AERMOD - VERSION 21112 *** *** 19386 Cabrillo at First Mixed Use Freeway HRA
 *** AERMET - VERSION 16216 *** *** DPM emissions from I-5 freeway OY 2022

*** 01/21/22
 *** 17:27:25
 PAGE 5

*** MODELOPTs: RegDFAULT CONC ELEV URBAN ADJ_U*

*** VOLUME SOURCE DATA ***

SOURCE ID	NUMBER PART. CATS.	EMISSION RATE (GRAMS/SEC)	X (METERS)	Y (METERS)	BASE ELEV. (METERS)	RELEASE HEIGHT (METERS)	INIT. SY (METERS)	INIT. SZ (METERS)	URBAN SOURCE	EMISSION RATE SCALAR VARY BY
L0000259	0	0.10304E-04	422080.7	3734063.7	38.4	3.49	4.00	1.62	YES	
L0000260	0	0.10304E-04	422086.1	3734057.1	38.5	3.49	4.00	1.62	YES	
L0000261	0	0.10304E-04	422092.4	3734051.3	38.6	3.49	4.00	1.62	YES	
L0000262	0	0.10304E-04	422098.8	3734045.5	38.7	3.49	4.00	1.62	YES	
L0000263	0	0.10304E-04	422105.1	3734039.7	38.9	3.49	4.00	1.62	YES	
L0000264	0	0.10304E-04	422111.4	3734033.9	39.1	3.49	4.00	1.62	YES	
L0000265	0	0.10304E-04	422117.7	3734028.1	39.2	3.49	4.00	1.62	YES	
L0000266	0	0.10304E-04	422124.1	3734022.2	39.3	3.49	4.00	1.62	YES	
L0000267	0	0.10304E-04	422130.4	3734016.4	39.6	3.49	4.00	1.62	YES	
L0000268	0	0.10304E-04	422136.7	3734010.6	39.7	3.49	4.00	1.62	YES	
L0000269	0	0.10304E-04	422143.0	3734004.8	39.9	3.49	4.00	1.62	YES	
L0000270	0	0.10304E-04	422149.3	3733999.0	40.0	3.49	4.00	1.62	YES	
L0000271	0	0.10304E-04	422155.7	3733993.2	39.8	3.49	4.00	1.62	YES	
L0000272	0	0.10304E-04	422162.5	3733988.0	39.8	3.49	4.00	1.62	YES	
L0000273	0	0.10304E-04	422169.4	3733982.9	40.0	3.49	4.00	1.62	YES	
L0000274	0	0.10304E-04	422176.4	3733977.8	40.4	3.49	4.00	1.62	YES	
L0000275	0	0.10304E-04	422183.3	3733972.8	40.9	3.49	4.00	1.62	YES	
L0000276	0	0.10304E-04	422190.2	3733967.7	41.0	3.49	4.00	1.62	YES	

*** AERMOD - VERSION 21112 *** *** 19386 Cabrillo at First Mixed Use Freeway HRA

*** AERMET - VERSION 16216 *** *** DPM emissions from I-5 freeway OY 2022

01/21/22

17:27:25

PAGE 6

*** MODELOPTs: RegDFAULT CONC ELEV URBAN ADJ_U*

*** SOURCE IDs DEFINING SOURCE GROUPS ***

SRCGROUP ID	SOURCE IDs
ALL	L0000139 , L0000140 , L0000141 , L0000142 , L0000143 , L0000144 , L0000145 , L0000146 ,
	L0000147 , L0000148 , L0000149 , L0000150 , L0000151 , L0000152 , L0000153 , L0000154 ,
	L0000155 , L0000156 , L0000157 , L0000158 , L0000159 , L0000160 , L0000161 , L0000162 ,
	L0000163 , L0000164 , L0000165 , L0000166 , L0000167 , L0000168 , L0000169 , L0000170 ,
	L0000171 , L0000172 , L0000173 , L0000174 , L0000175 , L0000176 , L0000177 , L0000178 ,
	L0000179 , L0000180 , L0000181 , L0000182 , L0000183 , L0000184 , L0000185 , L0000186 ,
	L0000187 , L0000188 , L0000189 , L0000190 , L0000191 , L0000192 , L0000193 , L0000194 ,

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L0000195 , L0000196 , L0000197 , L0000198 , L0000199 , L0000200 , L0000201 , L0000202 ,
L0000203 , L0000204 , L0000205 , L0000206 , L0000207 , L0000208 , L0000209 , L0000210 ,
L0000211 , L0000212 , L0000213 , L0000214 , L0000215 , L0000216 , L0000217 , L0000218 ,
L0000219 , L0000220 , L0000221 , L0000222 , L0000223 , L0000224 , L0000225 , L0000226 ,
L0000227 , L0000228 , L0000229 , L0000230 , L0000231 , L0000232 , L0000233 , L0000234 ,
L0000235 , L0000236 , L0000237 , L0000238 , L0000239 , L0000240 , L0000241 , L0000242 ,
L0000243 , L0000244 , L0000245 , L0000246 , L0000247 , L0000248 , L0000249 , L0000250 ,
L0000251 , L0000252 , L0000253 , L0000254 , L0000255 , L0000256 , L0000257 , L0000258 ,
L0000259 , L0000260 , L0000261 , L0000262 , L0000263 , L0000264 , L0000265 , L0000266 ,
L0000267 , L0000268 , L0000269 , L0000270 , L0000271 , L0000272 , L0000273 , L0000274 ,
L0000275 , L0000276 ,

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*** AERMOD - VERSION 21112 *** *** 19386 Cabrillo at First Mixed Use Freeway HRA
*** AERMET - VERSION 16216 *** *** DPM emissions from I-5 freeway OY 2022

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*** 01/21/22
*** 17:27:25
PAGE 7

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*** MODELOPTs: RegDFAULT CONC ELEV URBAN ADJ_U*

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*** SOURCE IDs DEFINED AS URBAN SOURCES ***

URBAN ID	URBAN POP	SOURCE IDs
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L0000146	3010232.	L0000139 , L0000140 , L0000141 , L0000142 , L0000143 , L0000144 , L0000145 ,
	L0000147	, L0000148 , L0000149 , L0000150 , L0000151 , L0000152 , L0000153 , L0000154 ,
	L0000155	, L0000156 , L0000157 , L0000158 , L0000159 , L0000160 , L0000161 , L0000162 ,
	L0000163	, L0000164 , L0000165 , L0000166 , L0000167 , L0000168 , L0000169 , L0000170 ,
	L0000171	, L0000172 , L0000173 , L0000174 , L0000175 , L0000176 , L0000177 , L0000178 ,
	L0000179	, L0000180 , L0000181 , L0000182 , L0000183 , L0000184 , L0000185 , L0000186 ,
	L0000187	, L0000188 , L0000189 , L0000190 , L0000191 , L0000192 , L0000193 , L0000194 ,
	L0000195	, L0000196 , L0000197 , L0000198 , L0000199 , L0000200 , L0000201 , L0000202 ,

L0000203	,	L0000204	,	L0000205	,	L0000206	,	L0000207	,	L0000208	,	L0000209	,	L0000210	,
L0000211	,	L0000212	,	L0000213	,	L0000214	,	L0000215	,	L0000216	,	L0000217	,	L0000218	,
L0000219	,	L0000220	,	L0000221	,	L0000222	,	L0000223	,	L0000224	,	L0000225	,	L0000226	,
L0000227	,	L0000228	,	L0000229	,	L0000230	,	L0000231	,	L0000232	,	L0000233	,	L0000234	,
L0000235	,	L0000236	,	L0000237	,	L0000238	,	L0000239	,	L0000240	,	L0000241	,	L0000242	,
L0000243	,	L0000244	,	L0000245	,	L0000246	,	L0000247	,	L0000248	,	L0000249	,	L0000250	,
L0000251	,	L0000252	,	L0000253	,	L0000254	,	L0000255	,	L0000256	,	L0000257	,	L0000258	,
L0000259	,	L0000260	,	L0000261	,	L0000262	,	L0000263	,	L0000264	,	L0000265	,	L0000266	,
L0000267	,	L0000268	,	L0000269	,	L0000270	,	L0000271	,	L0000272	,	L0000273	,	L0000274	,
L0000275	,	L0000276	,												

*** AERMOD - VERSION 21112 ***	*** 19386 Cabrillo at First Mixed Use Freeway HRA	***	01/21/22
*** AERMET - VERSION 16216 ***	*** DPM emissions from I-5 freeway OY 2022	***	17:27:25
			PAGE 8

*** MODELOPTs: RegDFAULT CONC ELEV URBAN ADJ_U*

*** GRIDDED RECEPTOR NETWORK SUMMARY ***

*** NETWORK ID: UCART1 ; NETWORK TYPE: GRIDCART ***

*** X-COORDINATES OF GRID ***
(METERS)

421875.2, 421895.2, 421915.2, 421935.2, 421955.2, 421975.2, 421995.2, 422015.2, 422035.2, 422055.2,
422075.2, 422095.2, 422115.2, 422135.2, 422155.2, 422175.2, 422195.2, 422215.2, 422235.2, 422255.2,
422275.2,

*** Y-COORDINATES OF GRID ***
(METERS)

3734034.2, 3734054.2, 3734074.2, 3734094.2, 3734114.2, 3734134.2, 3734154.2, 3734174.2, 3734194.2, 3734214.2,
3734234.2, 3734254.2, 3734274.2, 3734294.2, 3734314.2, 3734334.2, 3734354.2, 3734374.2, 3734394.2, 3734414.2,
3734434.2,

*** AERMOD - VERSION 21112 ***	*** 19386 Cabrillo at First Mixed Use Freeway HRA	***	01/21/22
*** AERMET - VERSION 16216 ***	*** DPM emissions from I-5 freeway OY 2022	***	17:27:25
			PAGE 9

*** MODELOPTs: RegDFAULT CONC ELEV URBAN ADJ_U*

*** NETWORK ID: UCART1 ; NETWORK TYPE: GRIDCART ***

* ELEVATION HEIGHTS IN METERS *

Y-COORD (METERS)	421875.19	421895.19	421915.19	X-COORD (METERS)		421975.19	421995.19	422015.19	422035.19
3734434.21	42.10	36.80	35.10	35.10	35.30	38.20	41.30	42.90	42.90
3734414.21	42.00	38.60	36.10	34.90	35.00	36.80	40.60	42.60	42.70
3734394.21	41.80	40.30	37.00	34.60	34.70	35.50	39.20	41.50	42.20
3734374.21	41.50	41.60	37.70	34.50	34.40	34.20	36.20	38.90	41.40
3734354.21	41.40	41.70	38.00	34.70	34.30	33.90	35.40	37.70	40.10
3734334.21	41.30	41.50	38.50	35.50	34.20	33.70	34.70	36.70	39.10
3734314.21	41.10	41.30	40.00	37.40	34.20	33.50	33.20	35.70	39.60
3734294.21	40.80	40.90	40.80	38.60	34.70	33.60	32.90	36.10	40.40
3734274.21	40.60	40.70	41.10	39.50	35.60	33.90	33.20	36.30	40.50
3734254.21	40.40	40.60	41.00	40.00	37.20	34.40	33.40	33.60	35.90
3734234.21	40.20	40.40	40.70	40.30	38.60	35.00	33.90	33.00	34.70
3734214.21	40.00	40.20	40.30	40.40	39.80	35.80	34.60	33.70	35.20
3734194.21	40.00	40.10	40.20	40.40	40.10	37.70	35.70	34.50	34.90
3734174.21	39.90	39.90	40.10	40.20	40.10	39.20	36.70	35.40	35.10
3734154.21	39.70	39.70	39.90	40.00	40.10	40.20	37.70	36.30	35.60
3734134.21	39.90	39.60	39.70	39.80	39.90	40.00	39.20	37.80	36.50
3734114.21	40.00	39.70	39.50	39.60	39.70	39.90	39.90	38.90	37.70
3734094.21	40.00	39.80	39.50	39.50	39.70	39.70	39.70	39.70	39.10
3734074.21	39.60	39.50	39.40	39.30	39.40	39.60	39.70	39.70	39.40
3734054.21	39.20	39.20	39.20	39.10	39.10	39.50	39.60	39.60	39.50
3734034.21	39.00	38.90	38.80	38.70	38.80	39.30	39.30	39.40	39.40

*** AERMOD - VERSION 21112 *** *** 19386 Cabrillo at First Mixed Use Freeway HRA
 *** AERMET - VERSION 16216 *** *** DPM emissions from I-5 freeway OY 2022

*** 01/21/22
 *** 17:27:25
 PAGE 10

*** MODELOPTs: RegDFault CONC ELEV URBAN ADJ_U*

*** NETWORK ID: UCART1 ; NETWORK TYPE: GRIDCART ***

* ELEVATION HEIGHTS IN METERS *

Y-COORD (METERS)	422055.19	422075.19	422095.19	X-COORD (METERS)		422155.19	422175.19	422195.19	422215.19
3734434.21	42.80	42.70	42.60	42.40	42.10	42.30	42.30	42.30	42.20
3734414.21	42.60	42.50	42.40	42.30	42.00	42.20	42.20	42.20	42.10
3734394.21	42.50	42.50	42.40	42.10	41.90	42.30	42.30	42.20	42.20
3734374.21	42.50	42.80	42.50	42.10	41.80	42.20	42.30	42.20	42.20
3734354.21	41.90	42.60	42.40	41.90	41.60	42.20	42.30	42.30	42.20
3734334.21	41.40	42.20	42.10	41.60	41.40	42.10	42.20	42.20	42.10
3734314.21	41.60	41.60	41.80	41.60	41.20	41.60	41.70	41.80	41.70
3734294.21	41.30	41.30	41.30	41.30	41.10	41.30	41.40	41.40	41.50
3734274.21	41.10	41.00	41.00	41.00	41.00	41.00	41.10	41.20	41.30
3734254.21	41.20	41.00	41.00	41.00	41.20	41.10	41.10	41.10	41.30

3734234.21	41.40	41.10	40.90	41.00	41.10	41.00	40.80	41.00	41.20
3734214.21	41.20	41.00	40.90	40.90	40.90	40.80	40.40	40.60	41.00
3734194.21	37.60	40.10	40.80	40.80	40.80	40.70	40.30	40.40	40.70
3734174.21	35.70	39.80	40.80	40.90	40.90	40.60	40.20	40.30	40.50
3734154.21	35.20	39.90	40.90	41.00	41.10	40.60	40.10	40.30	40.60
3734134.21	36.00	37.20	39.50	40.90	41.00	40.50	40.10	40.30	40.60
3734114.21	36.70	36.20	38.10	40.00	40.80	40.40	40.10	40.30	40.50
3734094.21	37.60	37.20	36.80	38.30	40.60	40.30	40.00	40.30	40.50
3734074.21	38.70	38.10	37.60	37.90	39.00	40.10	40.10	40.10	40.00
3734054.21	39.30	38.80	38.40	38.10	38.10	39.60	39.70	39.70	39.70
3734034.21	39.30	39.10	39.10	39.00	38.70	38.60	38.40	39.10	39.70

*** AERMOD - VERSION 21112 ***	*** 19386 Cabrillo at First Mixed Use Freeway HRA	***	01/21/22
*** AERMET - VERSION 16216 ***	*** DPM emissions from I-5 freeway OY 2022	***	17:27:25
			PAGE 11

*** MODELOPTs: RegDFAULT CONC ELEV URBAN ADJ_U*

*** NETWORK ID: UCART1 ; NETWORK TYPE: GRIDCART ***

* ELEVATION HEIGHTS IN METERS *

Y-COORD (METERS)	422235.19	422255.19	422275.19
3734434.21	42.10	42.30	42.50
3734414.21	42.00	42.20	42.50
3734394.21	42.00	42.30	42.40
3734374.21	42.00	42.20	42.30
3734354.21	42.00	42.10	42.20
3734334.21	41.90	42.00	42.20
3734314.21	41.70	41.80	42.00
3734294.21	41.50	41.60	41.70
3734274.21	41.30	41.30	41.30
3734254.21	41.40	41.40	41.30
3734234.21	41.20	41.20	41.30
3734214.21	40.80	40.90	41.20
3734194.21	40.50	40.70	40.80
3734174.21	40.30	40.60	40.60
3734154.21	40.40	40.50	40.60
3734134.21	40.30	40.50	40.60
3734114.21	40.30	40.40	40.50
3734094.21	40.30	40.20	40.30
3734074.21	40.00	40.20	40.30
3734054.21	39.70	40.00	40.20
3734034.21	39.60	39.40	39.90

*** AERMOD - VERSION 21112 ***	*** 19386 Cabrillo at First Mixed Use Freeway HRA	***	01/21/22
*** AERMET - VERSION 16216 ***	*** DPM emissions from I-5 freeway OY 2022	***	17:27:25
			PAGE 12

*** MODELOPTs: RegDFAULT CONC ELEV URBAN ADJ_U*

*** NETWORK ID: UCART1 ; NETWORK TYPE: GRIDCART ***

* HILL HEIGHT SCALES IN METERS *

Y-COORD (METERS)	421875.19	421895.19	421915.19	421935.19	421955.19	421975.19	421995.19	422015.19	422035.19
3734434.21	42.10	42.40	43.30	43.40	43.70	43.40	42.80	42.90	42.90
3734414.21	42.00	42.10	42.10	43.40	43.40	43.40	42.80	42.60	42.70
3734394.21	41.80	40.30	41.90	42.80	43.40	43.40	42.50	41.50	42.20
3734374.21	41.50	41.60	41.80	42.50	42.80	42.90	42.80	42.50	41.40
3734354.21	41.40	41.70	41.80	41.80	42.50	42.80	42.60	42.60	40.10
3734334.21	41.30	41.50	41.70	41.80	41.80	42.60	42.60	42.60	41.30
3734314.21	41.10	41.30	40.00	41.50	41.70	41.70	42.70	41.60	39.60
3734294.21	40.80	40.90	40.80	41.50	41.50	41.50	42.70	41.60	40.40
3734274.21	40.60	40.70	41.10	41.50	41.50	41.50	41.60	41.60	41.40
3734254.21	40.40	40.60	41.00	41.20	41.50	41.50	41.60	41.60	41.60
3734234.21	40.20	40.40	40.70	40.30	40.60	41.20	41.60	41.60	41.60
3734214.21	40.00	40.20	40.30	40.40	40.60	40.60	41.60	41.60	41.60
3734194.21	40.00	40.10	40.20	40.40	40.10	40.50	40.50	41.60	41.60
3734174.21	39.90	39.90	40.10	40.20	40.10	39.20	40.20	41.60	41.60
3734154.21	39.70	39.70	39.90	40.00	40.10	40.20	40.20	40.20	40.90
3734134.21	39.90	39.60	39.70	39.80	39.90	40.00	39.20	40.00	40.00
3734114.21	40.00	39.70	39.50	39.60	39.70	39.90	39.90	38.90	37.70
3734094.21	40.00	39.80	39.50	39.50	39.70	39.70	39.70	39.70	39.10
3734074.21	39.60	39.50	39.40	39.30	39.40	39.60	39.70	39.70	39.40
3734054.21	39.20	39.20	39.20	39.10	39.10	39.50	39.60	39.60	39.50
3734034.21	39.00	38.90	38.80	38.70	38.80	39.30	39.30	39.40	39.40

*** AERMOD - VERSION 21112 *** 19386 Cabrillo at First Mixed Use Freeway HRA

*** AERMET - VERSION 16216 *** DPM emissions from I-5 freeway OY 2022

*** 01/21/22

*** 17:27:25

PAGE 13

*** MODELOPTs: RegDFAULT CONC ELEV URBAN ADJ_U*

*** NETWORK ID: UCART1 ; NETWORK TYPE: GRIDCART ***

* HILL HEIGHT SCALES IN METERS *

Y-COORD (METERS)	422055.19	422075.19	422095.19	422115.19	422135.19	422155.19	422175.19	422195.19	422215.19
3734434.21	42.80	42.70	42.60	42.40	42.10	42.30	42.30	42.30	42.20
3734414.21	42.60	42.50	42.40	42.30	42.00	42.20	42.20	42.20	42.10
3734394.21	42.50	42.50	42.40	42.10	41.90	42.30	42.30	42.20	42.20
3734374.21	42.50	42.80	42.50	42.10	41.80	42.20	42.30	42.20	42.20
3734354.21	41.90	42.60	42.40	41.90	41.60	42.20	42.30	42.30	42.20
3734334.21	41.40	42.20	42.10	41.60	41.40	42.10	42.20	42.20	42.10
3734314.21	41.60	41.60	41.80	41.60	41.20	41.60	41.70	41.80	41.70

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*** AERMOD - VERSION 21112 ***      *** 19386 Cabrillo at First Mixed Use Freeway HRA      ***      01/21/22
*** AERMET - VERSION 16216 ***      *** DPM emissions from I-5 freeway OY 2022      ***      17:27:25
                                           PAGE 14

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* HILL HEIGHT SCALES IN METERS *

*** AERMOD - VERSION 21112 *** *** 19386 Cabrillo at First Mixed Use Freeway HRA *** 01/21/22

*** AERMET - VERSION 16216 *** *** DPM emissions from I-5 freeway OY 2022

*** 17:27:25
PAGE 15

*** MODELOPTs: RegDFAULT CONC ELEV URBAN ADJ_U*

*** DISCRETE CARTESIAN RECEPTORS ***
(X-COORD, Y-COORD, ZELEV, ZHILL, ZFLAG)
(METERS)

(422062.1, 3734197.9,	39.0,	41.6,	0.0);	(422069.8, 3734180.0,	38.7,	40.6,	0.0);
(422089.6, 3734199.3,	40.8,	40.8,	0.0);	(422087.3, 3734217.0,	40.9,	40.9,	0.0);
(422085.2, 3734237.4,	41.0,	41.0,	0.0);	(422062.6, 3734221.7,	41.3,	41.3,	0.0);
(422096.1, 3734179.2,	40.8,	40.8,	0.0);	(422117.4, 3734237.3,	41.0,	41.0,	0.0);
(422119.4, 3734198.2,	40.8,	40.8,	0.0);	(422120.9, 3734177.5,	40.9,	40.9,	0.0);
(422118.2, 3734218.3,	40.9,	40.9,	0.0);	(422063.1, 3734243.3,	41.2,	41.2,	0.0);
(422088.9, 3734210.1,	40.8,	40.8,	0.0);				

*** AERMOD - VERSION 21112 *** *** 19386 Cabrillo at First Mixed Use Freeway HRA

*** 01/21/22

*** AERMET - VERSION 16216 *** *** DPM emissions from I-5 freeway OY 2022

*** 17:27:25
PAGE 16

*** MODELOPTs: RegDFAULT CONC ELEV URBAN ADJ_U*

* SOURCE-RECEPTOR COMBINATIONS FOR WHICH CALCULATIONS MAY NOT BE PERFORMED *
LESS THAN 1.0 METER; WITHIN OPENPIT; OR BEYOND 80KM FOR FASTAREA/FASTALL

SOURCE ID	- - RECEPTOR LOCATION - - XR (METERS) YR (METERS)	DISTANCE (METERS)
L0000141	421955.2 3734434.2	-2.88
L0000142	421955.2 3734434.2	-1.38
L0000143	421955.2 3734414.2	-3.34
L0000144	421955.2 3734414.2	-5.12
L0000146	421955.2 3734394.2	-2.12
L0000149	421975.2 3734374.2	-0.90
L0000150	421975.2 3734354.2	-0.15
L0000151	421975.2 3734354.2	-6.79
L0000152	421975.2 3734354.2	0.49
L0000153	421975.2 3734334.2	-4.46
L0000154	421975.2 3734334.2	-0.75
L0000158	421995.2 3734294.2	-3.46
L0000159	421995.2 3734294.2	-1.31
L0000160	421995.2 3734274.2	-3.43
L0000161	421995.2 3734274.2	-3.92
L0000164	422015.2 3734254.2	0.68
L0000165	422015.2 3734234.2	-2.32
L0000166	422015.2 3734234.2	-6.19
L0000168	422015.2 3734214.2	-0.70
L0000170	422035.2 3734194.2	-0.35
L0000171	422035.2 3734194.2	-6.51
L0000172	422035.2 3734194.2	0.79

L0000173	422035.2	3734174.2	-2.22
L0000176	422055.2	3734154.2	-6.95
L0000177	422055.2	3734154.2	-1.36
L0000179	422075.2	3734134.2	-3.42
L0000180	422075.2	3734134.2	-2.28
L0000181	422075.2	3734114.2	-0.33
L0000183	422095.2	3734114.2	-1.51
L0000184	422095.2	3734094.2	-0.50
L0000185	422095.2	3734094.2	-0.19
L0000186	422115.2	3734094.2	-1.24
L0000187	422115.2	3734074.2	0.66
L0000188	422115.2	3734074.2	-1.70
L0000189	422135.2	3734074.2	-0.16
L0000190	422135.2	3734074.2	0.86
L0000191	422135.2	3734054.2	-2.47
L0000193	422155.2	3734054.2	-0.50
L0000194	422155.2	3734034.2	-0.95
L0000195	422155.2	3734034.2	0.95

*** AERMOD - VERSION 21112 *** 19386 Cabrillo at First Mixed Use Freeway HRA

*** AERMET - VERSION 16216 *** DPM emissions from I-5 freeway OY 2022

*** 01/21/22

*** 17:27:25

PAGE 17

*** MODELOPTs: RegDFAULT CONC ELEV URBAN ADJ_U*

* SOURCE-RECEPTOR COMBINATIONS FOR WHICH CALCULATIONS MAY NOT BE PERFORMED *
LESS THAN 1.0 METER; WITHIN OPENPIT; OR BEYOND 80KM FOR FASTAREA/FASTALL

SOURCE ID	- - RECEPTOR LOCATION - - XR (METERS) YR (METERS)	DISTANCE (METERS)
L0000196	422175.2 3734034.2	-2.72
L0000210	421895.2 3734434.2	-1.59
L0000211	421895.2 3734434.2	0.13
L0000213	421915.2 3734414.2	-1.90
L0000214	421915.2 3734414.2	0.41
L0000215	421915.2 3734394.2	-4.59
L0000216	421915.2 3734394.2	-4.02
L0000217	421915.2 3734374.2	-0.16
L0000218	421915.2 3734374.2	-1.91
L0000220	421935.2 3734354.2	-0.06
L0000221	421935.2 3734354.2	-1.13
L0000222	421935.2 3734334.2	-1.46
L0000223	421935.2 3734334.2	-7.05
L0000225	421935.2 3734314.2	-2.86
L0000228	421955.2 3734294.2	-1.53
L0000230	421955.2 3734274.2	-6.74
L0000231	421955.2 3734274.2	-1.60
L0000232	421955.2 3734254.2	-2.21
L0000233	421955.2 3734254.2	-1.19

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*** AERMOT - VERSION 21112 ***      *** 19386 Cabrillo at First Mixed Use Freeway HRA      ***      01/21/22
*** AERMET - VERSION 16216 ***      *** DPM emissions from I-5 freeway OY 2022      ***      17:27:25
                                           PAGE 18

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* SOURCE-RECEPTOR COMBINATIONS FOR WHICH CALCULATIONS MAY NOT BE PERFORMED *
LESS THAN 1.0 METER; WITHIN OPENPIT; OR BEYOND 80KM FOR FASTAREA/FASTALL

*** AERMOD - VERSION 21112 *** *** 19386 Cabrillo at First Mixed Use Freeway HRA *** 01/21/22
*** AERMET - VERSION 16216 *** *** DPM emissions from I-5 freeway OY 2022 *** 17:27:25
PAGE 19

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*** METEOROLOGICAL DAYS SELECTED FOR PROCESSING ***
      (1=YES; 0=NO)
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Apx-90

NOTE: METEOROLOGICAL DATA ACTUALLY PROCESSED WILL ALSO DEPEND ON WHAT IS INCLUDED IN THE DATA FILE.

1.54, 3.09, 5.14, 8.23, 10.80,

*** UP TO THE FIRST 24 HOURS OF METEOROLOGICAL DATA ***

First 24 hours of scalar data																				
YR	MO	DY	JDY	HR	H0	U*	W*	DT/DZ	ZICNV	ZIMCH	M-O	LEN	Z0	BOWEN	ALBEDO	REF WS	WD	HT	REF TA	HT
12	01	01	1	01	-4.5	0.082	-9.000	-9.000	-999.	56.	11.0	0.12	2.65	1.00	0.87	62.	5.8	283.8	2.0	
12	01	01	1	02	-3.5	0.073	-9.000	-9.000	-999.	47.	9.9	0.12	2.65	1.00	0.77	27.	5.8	283.1	2.0	
12	01	01	1	03	-3.5	0.073	-9.000	-9.000	-999.	47.	9.9	0.12	2.65	1.00	0.77	336.	5.8	283.1	2.0	
12	01	01	1	04	-3.3	0.070	-9.000	-9.000	-999.	45.	9.7	0.12	2.65	1.00	0.74	34.	5.8	283.1	2.0	
12	01	01	1	05	-3.0	0.068	-9.000	-9.000	-999.	42.	9.4	0.12	2.65	1.00	0.70	154.	5.8	282.5	2.0	
12	01	01	1	06	-999.0	-9.000	-9.000	-9.000	-999.	-999.	-99999.0	0.12	2.65	1.00	0.00	0.	5.8	282.0	2.0	
12	01	01	1	07	-2.0	0.059	-9.000	-9.000	-999.	34.	9.0	0.12	2.65	1.00	0.55	343.	5.8	281.4	2.0	
12	01	01	1	08	-2.6	0.066	-9.000	-9.000	-999.	40.	9.7	0.12	2.65	0.53	0.69	25.	5.8	281.4	2.0	
12	01	01	1	09	21.6	0.133	0.252	0.010	27.	116.	-9.9	0.12	2.65	0.31	1.03	344.	5.8	282.5	2.0	
12	01	01	1	10	115.6	0.162	0.713	0.008	114.	156.	-3.3	0.12	2.65	0.24	1.06	233.	5.8	286.4	2.0	
12	01	01	1	11	160.9	0.126	1.129	0.005	325.	108.	-1.1	0.12	2.65	0.21	0.67	261.	5.8	291.4	2.0	
12	01	01	1	12	187.0	0.138	1.467	0.005	614.	123.	-1.3	0.12	2.65	0.20	0.75	252.	5.8	294.9	2.0	
12	01	01	1	13	186.9	0.189	1.755	0.005	1051.	197.	-3.3	0.12	2.65	0.20	1.23	280.	5.8	297.5	2.0	
12	01	01	1	14	168.3	0.247	1.857	0.005	1383.	295.	-8.1	0.12	2.65	0.21	1.86	268.	5.8	299.2	2.0	
12	01	01	1	15	115.3	0.275	1.688	0.005	1517.	346.	-16.3	0.12	2.65	0.24	2.25	248.	5.8	298.1	2.0	
12	01	01	1	16	41.5	0.262	1.211	0.005	1552.	322.	-39.2	0.12	2.65	0.33	2.32	227.	5.8	295.9	2.0	
12	01	01	1	17	-17.9	0.217	-9.000	-9.000	-999.	244.	52.0	0.12	2.65	0.60	2.18	227.	5.8	292.5	2.0	
12	01	01	1	18	-24.7	0.250	-9.000	-9.000	-999.	300.	68.7	0.12	2.65	1.00	2.50	219.	5.8	288.8	2.0	
12	01	01	1	19	-5.2	0.088	-9.000	-9.000	-999.	91.	12.0	0.12	2.65	1.00	0.94	201.	5.8	287.5	2.0	
12	01	01	1	20	-3.5	0.073	-9.000	-9.000	-999.	47.	10.0	0.12	2.65	1.00	0.77	259.	5.8	287.0	2.0	
12	01	01	1	21	-2.6	0.064	-9.000	-9.000	-999.	39.	9.1	0.12	2.65	1.00	0.65	264.	5.8	286.4	2.0	

Apx-92

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*** AERMOD - VERSION 21112 ***    *** 19386 Cabrillo at First Mixed Use Freeway HRA ***    01/21/22
*** AERMET - VERSION 16216 ***    *** DPM emissions from I-5 freeway OY 2022 ***    17:27:25
                                     PAGE 22

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*** THE PERIOD (43848 HRS) AVERAGE CONCENTRATION		VALUES FOR SOURCE GROUP: ALL				***
INCLUDING SOURCE(S):		L0000139	L0000140	L0000141	L0000142	L0000143
L0000144	, L0000145 , L0000146 , L0000147 , L0000148 , L0000149 , L0000150 , L0000151 ,					
L0000152	, L0000153 , L0000154 , L0000155 , L0000156 , L0000157 , L0000158 , L0000159 ,					
L0000160	, L0000161 , L0000162 , L0000163 , L0000164 , L0000165 , L0000166 ,					

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** CONC OF DPM          IN MICROGRAMS/M**3          **

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3734434.21	0.03948	0.03534	0.03198	0.02922	0.02686	0.02472	0.02289	0.02127	0.01981
3734414.21	0.04233	0.03766	0.03390	0.03079	0.02822	0.02588	0.02389	0.02214	0.02059
3734394.21	0.04502	0.03977	0.03569	0.03245	0.02960	0.02701	0.02489	0.02302	0.02136
3734374.21	0.04760	0.04154	0.03742	0.03404	0.03102	0.02822	0.02593	0.02393	0.02215
3734354.21	0.05147	0.04399	0.03942	0.03584	0.03257	0.02947	0.02702	0.02489	0.02298
3734334.21	0.05530	0.04699	0.04185	0.03788	0.03405	0.03088	0.02819	0.02589	0.02390
3734314.21	0.05857	0.05082	0.04456	0.03991	0.03571	0.03247	0.02955	0.02698	0.02480
3734294.21	0.06312	0.05440	0.04764	0.04221	0.03776	0.03402	0.03088	0.02815	0.02579
3734274.21	0.06865	0.05887	0.05116	0.04503	0.04005	0.03593	0.03244	0.02942	0.02687
3734254.21	0.07484	0.06407	0.05525	0.04832	0.04259	0.03811	0.03429	0.03102	0.02816
3734234.21	0.08242	0.07034	0.06033	0.05228	0.04583	0.04077	0.03650	0.03287	0.02966
3734214.21	0.09497	0.07917	0.06672	0.05722	0.04983	0.04395	0.03935	0.03513	0.03151
3734194.21	0.13742	0.09432	0.07539	0.06362	0.05474	0.04791	0.04257	0.03780	0.03367
3734174.21	0.16404	0.11526	0.08702	0.07177	0.06094	0.05292	0.04657	0.04099	0.03629
3734154.21	0.13814	0.14640	0.10337	0.08282	0.06875	0.05931	0.05172	0.04490	0.03933
3734134.21	0.16460	0.14066	0.13673	0.09969	0.08061	0.06803	0.05826	0.04985	0.04313
3734114.21	0.16237	0.15123	0.15249	0.13014	0.09836	0.08023	0.06699	0.05627	0.04797
3734094.21	0.11778	0.15948	0.13545	0.14640	0.12589	0.09801	0.07924	0.06491	0.05421
3734074.21	0.11333	0.11984	0.15224	0.13672	0.12632	0.12558	0.09704	0.07744	0.06306
3734054.21	0.08183	0.12239	0.10569	0.15087	0.14513	0.14197	0.12555	0.09623	0.07523
3734034.21	0.06185	0.08382	0.12062	0.11624	0.14979	0.13012	0.13370	0.12406	0.09366

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*** MODELOPTs:      RegDFault  CONC  ELEV  URBAN  ADJ_U*
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*** THE PERIOD (43848 HRS) AVERAGE CONCENTRATION		VALUES FOR SOURCE GROUP: ALL					***
INCLUDING SOURCE(S):		L0000139	L0000140	L0000141	L0000142	L0000143	
L0000144	, L0000145	, L0000146	, L0000147	, L0000148	, L0000149	, L0000150	, L0000151
L0000152	, L0000153	, L0000154	, L0000155	, L0000156	, L0000157	, L0000158	, L0000159

L0000160 , L0000161 , L0000162 , L0000163 , L0000164 , L0000165 , L0000166 , . . . ,

*** NETWORK ID: UCART1 ; NETWORK TYPE: GRIDCART ***

** CONC OF DPM IN MICROGRAMS/M**3 **

Y-COORD (METERS)	422235.19	422255.19	422275.19	X-COORD (METERS)
3734434.21	0.01850	0.01733	0.01629	
3734414.21	0.01918	0.01791	0.01682	
3734394.21	0.01987	0.01853	0.01731	
3734374.21	0.02057	0.01912	0.01783	
3734354.21	0.02130	0.01977	0.01836	
3734334.21	0.02204	0.02043	0.01892	
3734314.21	0.02283	0.02105	0.01953	
3734294.21	0.02367	0.02181	0.02011	
3734274.21	0.02459	0.02255	0.02072	
3734254.21	0.02572	0.02351	0.02149	
3734234.21	0.02694	0.02452	0.02233	
3734214.21	0.02848	0.02579	0.02331	
3734194.21	0.03031	0.02721	0.02450	
3734174.21	0.03242	0.02887	0.02581	
3734154.21	0.03480	0.03076	0.02723	
3734134.21	0.03776	0.03297	0.02885	
3734114.21	0.04133	0.03561	0.03070	
3734094.21	0.04582	0.03885	0.03284	
3734074.21	0.05183	0.04270	0.03520	
3734054.21	0.05971	0.04763	0.03793	
3734034.21	0.07092	0.05377	0.04086	

*** AERMOD - VERSION 21112 *** *** 19386 Cabrillo at First Mixed Use Freeway HRA *** 01/21/22

*** AERMET - VERSION 16216 *** *** DPM emissions from I-5 freeway OY 2022 *** 17:27:25

PAGE 24

*** MODELOPTs: RegDFAULT CONC ELEV URBAN ADJ_U*

*** THE PERIOD (43848 HRS) AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): L0000139 , L0000140 , L0000141 , L0000142 , L0000143 ,
L0000144 , L0000145 , L0000146 , L0000147 , L0000148 , L0000149 , L0000150 , L0000151 ,
L0000152 , L0000153 , L0000154 , L0000155 , L0000156 , L0000157 , L0000158 , L0000159 ,
L0000160 , L0000161 , L0000162 , L0000163 , L0000164 , L0000165 , L0000166 , . . . ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF DPM IN MICROGRAMS/M**3

**

X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)	Y-COORD (M)	CONC
422062.12	3734197.94	0.11275	422069.82	3734180.01	0.12136
422089.61	3734199.31	0.07675	422087.32	3734216.98	0.07013
422085.20	3734237.42	0.06411	422062.62	3734221.72	0.08346
422096.15	3734179.19	0.08307	422117.42	3734237.26	0.05081
422119.39	3734198.16	0.06024	422120.86	3734177.55	0.06700
422118.24	3734218.28	0.05491	422063.11	3734243.31	0.07394
422088.86	3734210.12	0.07212			

*** AERMOD - VERSION 21112 *** 19386 Cabrillo at First Mixed Use Freeway HRA *** 01/21/22
 *** AERMET - VERSION 16216 *** DPM emissions from I-5 freeway OY 2022 *** 17:27:25
 PAGE 25

*** MODELOPTs: RegDFAULT CONC ELEV URBAN ADJ_U*

*** THE SUMMARY OF MAXIMUM PERIOD (43848 HRS) RESULTS ***

** CONC OF DPM IN MICROGRAMS/M**3

**

GROUP ID	AVERAGE CONC	RECEPTOR (XR, YR, ZELEV, ZHILL, ZFLAG)	OF TYPE	NETWORK GRID-ID
ALL	1ST HIGHEST VALUE IS 0.16460 AT (422055.19, 3734134.21, 36.00, 40.90, 0.00)	GC	UCART1	
	2ND HIGHEST VALUE IS 0.16404 AT (422055.19, 3734174.21, 35.70, 41.60, 0.00)	GC	UCART1	
	3RD HIGHEST VALUE IS 0.16365 AT (422035.19, 3734214.21, 35.20, 41.60, 0.00)	GC	UCART1	
	4TH HIGHEST VALUE IS 0.16361 AT (422035.19, 3734154.21, 35.60, 40.90, 0.00)	GC	UCART1	
	5TH HIGHEST VALUE IS 0.16237 AT (422055.19, 3734114.21, 36.70, 36.70, 0.00)	GC	UCART1	
	6TH HIGHEST VALUE IS 0.15948 AT (422075.19, 3734094.21, 37.20, 37.20, 0.00)	GC	UCART1	
	7TH HIGHEST VALUE IS 0.15918 AT (422015.19, 3734174.21, 35.40, 41.60, 0.00)	GC	UCART1	
	8TH HIGHEST VALUE IS 0.15723 AT (421975.19, 3734314.21, 33.50, 41.70, 0.00)	GC	UCART1	
	9TH HIGHEST VALUE IS 0.15640 AT (422035.19, 3734174.21, 35.10, 41.60, 0.00)	GC	UCART1	
	10TH HIGHEST VALUE IS 0.15577 AT (421995.19, 3734254.21, 33.40, 41.60, 0.00)	GC	UCART1	

*** RECEPTOR TYPES: GC = GRIDCART
 GP = GRIDPOLR
 DC = DISCCART
 DP = DISCPOLR

*** AERMOD - VERSION 21112 *** 19386 Cabrillo at First Mixed Use Freeway HRA *** 01/21/22
 *** AERMET - VERSION 16216 *** DPM emissions from I-5 freeway OY 2022 *** 17:27:25
 PAGE 26

*** MODELOPTs: RegDFAULT CONC ELEV URBAN ADJ_U*

*** Message Summary : AERMOD Model Execution ***

----- Summary of Total Messages -----

A Total of 0 Fatal Error Message(s)
A Total of 2 Warning Message(s)
A Total of 1864 Informational Message(s)

A Total of 43848 Hours Were Processed

A Total of 1500 Calm Hours Identified

A Total of 364 Missing Hours Identified (0.83 Percent)

***** FATAL ERROR MESSAGES *****
*** NONE ***

***** WARNING MESSAGES *****
ME W186 383 MEOPEN: THRESH_1MIN 1-min ASOS wind speed threshold used 0.50
ME W187 383 MEOPEN: ADJ_U* Option for Stable Low Winds used in AERMET

*** AERMOD Finishes Successfully ***

```

** Lakes Environmental AERMOD MPI
**
*****
**
** AERMOD Input Produced by:
** AERMOD View Ver. 10.2.1
** Lakes Environmental Software Inc.
** Date: 1/21/2022
** File: C:\Lakes\AERMOD View\19386 Cabrillo at First 2 yr\19386 Cabrillo at First 2 yr.ADI
**
*****
**
**
*****
** AERMOD Control Pathway
*****
**
**
CO STARTING
  TITLEONE 19386 Cabrillo at First Mixed Use Freeway HRA
  TITLETWO DPM emissions from I-5 freeway Years 2024-25
  MODELOPT DFAULT CONC
  AVERTIME PERIOD
  URBANOPT 3010232 Orange_County
  POLLUTID DPM
  RUNORNOT RUN
  ERRORFIL "19386 Cabrillo at First 2 yr.err"
CO FINISHED
**
*****
** AERMOD Source Pathway
*****
**
**
SO STARTING
** Source Location **
** Source ID - Type - X Coord. - Y Coord. **
** -----
** Line Source Represented by Adjacent Volume Sources
** LINE VOLUME Source ID = SLINE1
** DESCRSRC 5 fwy NB
** PREFIX
** Length of Side = 8.59
** Configuration = Adjacent
** Emission Rate = 0.000686
** Elevated
** Vertical Dimension = 6.99
** SZINIT = 1.62
** Nodes = 8
** 421943.775, 3734456.562, 35.54, 3.49, 4.00
** 421993.204, 3734285.421, 33.32, 3.49, 4.00

```

** 422011.275, 3734241.307, 33.03, 3.49, 4.00
 ** 422042.633, 3734173.275, 35.06, 3.49, 4.00
 ** 422082.495, 3734117.469, 36.07, 3.49, 4.00
 ** 422145.743, 3734052.095, 39.00, 3.49, 4.00
 ** 422191.451, 3734012.233, 39.21, 3.49, 4.00
 ** 422250.979, 3733972.371, 40.42, 3.49, 4.00

** -----
 LOCATION L0000139 VOLUME 421944.967 3734452.436 35.42
 LOCATION L0000140 VOLUME 421947.350 3734444.183 35.28
 LOCATION L0000141 VOLUME 421949.734 3734435.930 35.12
 LOCATION L0000142 VOLUME 421952.117 3734427.678 34.97
 LOCATION L0000143 VOLUME 421954.501 3734419.425 35.00
 LOCATION L0000144 VOLUME 421956.885 3734411.172 35.06
 LOCATION L0000145 VOLUME 421959.268 3734402.919 35.04
 LOCATION L0000146 VOLUME 421961.652 3734394.667 34.95
 LOCATION L0000147 VOLUME 421964.035 3734386.414 34.77
 LOCATION L0000148 VOLUME 421966.419 3734378.161 34.47
 LOCATION L0000149 VOLUME 421968.802 3734369.909 34.10
 LOCATION L0000150 VOLUME 421971.186 3734361.656 34.00
 LOCATION L0000151 VOLUME 421973.569 3734353.403 33.88
 LOCATION L0000152 VOLUME 421975.953 3734345.151 33.77
 LOCATION L0000153 VOLUME 421978.336 3734336.898 33.66
 LOCATION L0000154 VOLUME 421980.720 3734328.645 33.68
 LOCATION L0000155 VOLUME 421983.104 3734320.393 33.53
 LOCATION L0000156 VOLUME 421985.487 3734312.140 33.22
 LOCATION L0000157 VOLUME 421987.871 3734303.887 33.06
 LOCATION L0000158 VOLUME 421990.254 3734295.635 33.08
 LOCATION L0000159 VOLUME 421992.638 3734287.382 33.11
 LOCATION L0000160 VOLUME 421995.686 3734279.361 33.13
 LOCATION L0000161 VOLUME 421998.943 3734271.412 33.11
 LOCATION L0000162 VOLUME 422002.199 3734263.463 33.05
 LOCATION L0000163 VOLUME 422005.455 3734255.514 33.17
 LOCATION L0000164 VOLUME 422008.711 3734247.565 32.87
 LOCATION L0000165 VOLUME 422012.040 3734239.648 32.96
 LOCATION L0000166 VOLUME 422015.635 3734231.846 33.08
 LOCATION L0000167 VOLUME 422019.231 3734224.045 33.21
 LOCATION L0000168 VOLUME 422022.827 3734216.244 33.34
 LOCATION L0000169 VOLUME 422026.423 3734208.443 33.52
 LOCATION L0000170 VOLUME 422030.019 3734200.642 34.06
 LOCATION L0000171 VOLUME 422033.615 3734192.841 34.71
 LOCATION L0000172 VOLUME 422037.211 3734185.039 34.88
 LOCATION L0000173 VOLUME 422040.806 3734177.238 35.15
 LOCATION L0000174 VOLUME 422045.090 3734169.836 35.26
 LOCATION L0000175 VOLUME 422050.082 3734162.846 35.18
 LOCATION L0000176 VOLUME 422055.075 3734155.856 35.23
 LOCATION L0000177 VOLUME 422060.068 3734148.866 36.34
 LOCATION L0000178 VOLUME 422065.061 3734141.876 36.93
 LOCATION L0000179 VOLUME 422070.054 3734134.886 36.92
 LOCATION L0000180 VOLUME 422075.047 3734127.896 36.30
 LOCATION L0000181 VOLUME 422080.039 3734120.907 35.83
 LOCATION L0000182 VOLUME 422085.530 3734114.331 36.87

LOCATION	L0000183	VOLUME	422091.503	3734108.158	37.42
LOCATION	L0000184	VOLUME	422097.476	3734101.984	37.43
LOCATION	L0000185	VOLUME	422103.449	3734095.811	36.88
LOCATION	L0000186	VOLUME	422109.422	3734089.637	37.24
LOCATION	L0000187	VOLUME	422115.394	3734083.463	38.04
LOCATION	L0000188	VOLUME	422121.367	3734077.290	38.39
LOCATION	L0000189	VOLUME	422127.340	3734071.116	38.28
LOCATION	L0000190	VOLUME	422133.313	3734064.943	38.00
LOCATION	L0000191	VOLUME	422139.286	3734058.769	38.34
LOCATION	L0000192	VOLUME	422145.259	3734052.595	38.84
LOCATION	L0000193	VOLUME	422151.692	3734046.907	39.08
LOCATION	L0000194	VOLUME	422158.166	3734041.261	38.95
LOCATION	L0000195	VOLUME	422164.640	3734035.615	38.58
LOCATION	L0000196	VOLUME	422171.114	3734029.969	38.19
LOCATION	L0000197	VOLUME	422177.588	3734024.323	38.39
LOCATION	L0000198	VOLUME	422184.062	3734018.677	38.72
LOCATION	L0000199	VOLUME	422190.536	3734013.031	39.10
LOCATION	L0000200	VOLUME	422197.579	3734008.129	39.29
LOCATION	L0000201	VOLUME	422204.717	3734003.350	39.31
LOCATION	L0000202	VOLUME	422211.854	3733998.570	39.33
LOCATION	L0000203	VOLUME	422218.992	3733993.791	39.62
LOCATION	L0000204	VOLUME	422226.129	3733989.011	39.86
LOCATION	L0000205	VOLUME	422233.267	3733984.231	40.03
LOCATION	L0000206	VOLUME	422240.404	3733979.452	40.14
LOCATION	L0000207	VOLUME	422247.542	3733974.672	40.25

** End of LINE VOLUME Source ID = SLINE1

** -----

** Line Source Represented by Adjacent Volume Sources

** LINE VOLUME Source ID = SLINE2

** DESCRSRC 5 fwy SB

** PREFIX

** Length of Side = 8.59

** Configuration = Adjacent

** Emission Rate = 0.000686

** Elevated

** Vertical Dimension = 6.99

** SZINIT = 1.62

** Nodes = 5

** 421893.815, 3734459.219, 36.96, 3.49, 4.00

** 421974.602, 3734212.075, 35.53, 3.49, 4.00

** 422084.090, 3734059.004, 38.51, 3.49, 4.00

** 422156.904, 3733992.036, 39.89, 3.49, 4.00

** 422190.389, 3733967.587, 40.85, 3.49, 4.00

** -----

LOCATION	L0000208	VOLUME	421895.149	3734455.137	36.83
LOCATION	L0000209	VOLUME	421897.818	3734446.972	36.07
LOCATION	L0000210	VOLUME	421900.487	3734438.807	35.32
LOCATION	L0000211	VOLUME	421903.156	3734430.642	35.27
LOCATION	L0000212	VOLUME	421905.825	3734422.478	36.16
LOCATION	L0000213	VOLUME	421908.494	3734414.313	36.78
LOCATION	L0000214	VOLUME	421911.163	3734406.148	37.15

LOCATION	L0000215	VOLUME	421913.832	3734397.983	37.17
LOCATION	L0000216	VOLUME	421916.501	3734389.818	36.91
LOCATION	L0000217	VOLUME	421919.170	3734381.653	36.47
LOCATION	L0000218	VOLUME	421921.839	3734373.488	35.87
LOCATION	L0000219	VOLUME	421924.507	3734365.324	35.24
LOCATION	L0000220	VOLUME	421927.176	3734357.159	34.78
LOCATION	L0000221	VOLUME	421929.845	3734348.994	34.92
LOCATION	L0000222	VOLUME	421932.514	3734340.829	35.00
LOCATION	L0000223	VOLUME	421935.183	3734332.664	35.64
LOCATION	L0000224	VOLUME	421937.852	3734324.499	36.09
LOCATION	L0000225	VOLUME	421940.521	3734316.334	36.29
LOCATION	L0000226	VOLUME	421943.190	3734308.170	36.23
LOCATION	L0000227	VOLUME	421945.859	3734300.005	36.02
LOCATION	L0000228	VOLUME	421948.528	3734291.840	35.77
LOCATION	L0000229	VOLUME	421951.197	3734283.675	35.48
LOCATION	L0000230	VOLUME	421953.866	3734275.510	35.60
LOCATION	L0000231	VOLUME	421956.535	3734267.345	36.00
LOCATION	L0000232	VOLUME	421959.204	3734259.180	36.27
LOCATION	L0000233	VOLUME	421961.873	3734251.016	36.43
LOCATION	L0000234	VOLUME	421964.542	3734242.851	36.47
LOCATION	L0000235	VOLUME	421967.211	3734234.686	36.41
LOCATION	L0000236	VOLUME	421969.879	3734226.521	36.26
LOCATION	L0000237	VOLUME	421972.548	3734218.356	36.03
LOCATION	L0000238	VOLUME	421975.754	3734210.463	36.02
LOCATION	L0000239	VOLUME	421980.752	3734203.476	36.25
LOCATION	L0000240	VOLUME	421985.749	3734196.490	36.46
LOCATION	L0000241	VOLUME	421990.747	3734189.503	36.47
LOCATION	L0000242	VOLUME	421995.744	3734182.516	36.27
LOCATION	L0000243	VOLUME	422000.742	3734175.530	35.96
LOCATION	L0000244	VOLUME	422005.739	3734168.543	35.93
LOCATION	L0000245	VOLUME	422010.736	3734161.556	36.08
LOCATION	L0000246	VOLUME	422015.734	3734154.570	36.23
LOCATION	L0000247	VOLUME	422020.731	3734147.583	36.50
LOCATION	L0000248	VOLUME	422025.729	3734140.596	36.58
LOCATION	L0000249	VOLUME	422030.726	3734133.609	36.65
LOCATION	L0000250	VOLUME	422035.723	3734126.623	36.80
LOCATION	L0000251	VOLUME	422040.721	3734119.636	37.04
LOCATION	L0000252	VOLUME	422045.718	3734112.649	37.24
LOCATION	L0000253	VOLUME	422050.716	3734105.663	37.33
LOCATION	L0000254	VOLUME	422055.713	3734098.676	37.41
LOCATION	L0000255	VOLUME	422060.711	3734091.689	37.62
LOCATION	L0000256	VOLUME	422065.708	3734084.703	37.84
LOCATION	L0000257	VOLUME	422070.705	3734077.716	38.04
LOCATION	L0000258	VOLUME	422075.703	3734070.729	38.21
LOCATION	L0000259	VOLUME	422080.700	3734063.743	38.37
LOCATION	L0000260	VOLUME	422086.124	3734057.133	38.48
LOCATION	L0000261	VOLUME	422092.447	3734051.318	38.56
LOCATION	L0000262	VOLUME	422098.769	3734045.503	38.72
LOCATION	L0000263	VOLUME	422105.092	3734039.688	38.92
LOCATION	L0000264	VOLUME	422111.414	3734033.873	39.07
LOCATION	L0000265	VOLUME	422117.737	3734028.058	39.17

LOCATION	L0000266	VOLUME	422124.060	3734022.243	39.31
LOCATION	L0000267	VOLUME	422130.382	3734016.429	39.59
LOCATION	L0000268	VOLUME	422136.705	3734010.614	39.74
LOCATION	L0000269	VOLUME	422143.027	3734004.799	39.90
LOCATION	L0000270	VOLUME	422149.350	3733998.984	40.03
LOCATION	L0000271	VOLUME	422155.672	3733993.169	39.81
LOCATION	L0000272	VOLUME	422162.490	3733987.957	39.83
LOCATION	L0000273	VOLUME	422169.428	3733982.892	40.05
LOCATION	L0000274	VOLUME	422176.365	3733977.826	40.45
LOCATION	L0000275	VOLUME	422183.303	3733972.761	40.88
LOCATION	L0000276	VOLUME	422190.240	3733967.695	41.00
** End of LINE VOLUME Source ID = SLINE2					
** Source Parameters **					
** LINE VOLUME Source ID = SLINE1					
SRCPARAM	L0000139	0.000009942	3.49	4.00	1.62
SRCPARAM	L0000140	0.000009942	3.49	4.00	1.62
SRCPARAM	L0000141	0.000009942	3.49	4.00	1.62
SRCPARAM	L0000142	0.000009942	3.49	4.00	1.62
SRCPARAM	L0000143	0.000009942	3.49	4.00	1.62
SRCPARAM	L0000144	0.000009942	3.49	4.00	1.62
SRCPARAM	L0000145	0.000009942	3.49	4.00	1.62
SRCPARAM	L0000146	0.000009942	3.49	4.00	1.62
SRCPARAM	L0000147	0.000009942	3.49	4.00	1.62
SRCPARAM	L0000148	0.000009942	3.49	4.00	1.62
SRCPARAM	L0000149	0.000009942	3.49	4.00	1.62
SRCPARAM	L0000150	0.000009942	3.49	4.00	1.62
SRCPARAM	L0000151	0.000009942	3.49	4.00	1.62
SRCPARAM	L0000152	0.000009942	3.49	4.00	1.62
SRCPARAM	L0000153	0.000009942	3.49	4.00	1.62
SRCPARAM	L0000154	0.000009942	3.49	4.00	1.62
SRCPARAM	L0000155	0.000009942	3.49	4.00	1.62
SRCPARAM	L0000156	0.000009942	3.49	4.00	1.62
SRCPARAM	L0000157	0.000009942	3.49	4.00	1.62
SRCPARAM	L0000158	0.000009942	3.49	4.00	1.62
SRCPARAM	L0000159	0.000009942	3.49	4.00	1.62
SRCPARAM	L0000160	0.000009942	3.49	4.00	1.62
SRCPARAM	L0000161	0.000009942	3.49	4.00	1.62
SRCPARAM	L0000162	0.000009942	3.49	4.00	1.62
SRCPARAM	L0000163	0.000009942	3.49	4.00	1.62
SRCPARAM	L0000164	0.000009942	3.49	4.00	1.62
SRCPARAM	L0000165	0.000009942	3.49	4.00	1.62
SRCPARAM	L0000166	0.000009942	3.49	4.00	1.62
SRCPARAM	L0000167	0.000009942	3.49	4.00	1.62
SRCPARAM	L0000168	0.000009942	3.49	4.00	1.62
SRCPARAM	L0000169	0.000009942	3.49	4.00	1.62
SRCPARAM	L0000170	0.000009942	3.49	4.00	1.62
SRCPARAM	L0000171	0.000009942	3.49	4.00	1.62
SRCPARAM	L0000172	0.000009942	3.49	4.00	1.62
SRCPARAM	L0000173	0.000009942	3.49	4.00	1.62
SRCPARAM	L0000174	0.000009942	3.49	4.00	1.62
SRCPARAM	L0000175	0.000009942	3.49	4.00	1.62

SRCPARAM	L0000176	0.000009942	3.49	4.00	1.62
SRCPARAM	L0000177	0.000009942	3.49	4.00	1.62
SRCPARAM	L0000178	0.000009942	3.49	4.00	1.62
SRCPARAM	L0000179	0.000009942	3.49	4.00	1.62
SRCPARAM	L0000180	0.000009942	3.49	4.00	1.62
SRCPARAM	L0000181	0.000009942	3.49	4.00	1.62
SRCPARAM	L0000182	0.000009942	3.49	4.00	1.62
SRCPARAM	L0000183	0.000009942	3.49	4.00	1.62
SRCPARAM	L0000184	0.000009942	3.49	4.00	1.62
SRCPARAM	L0000185	0.000009942	3.49	4.00	1.62
SRCPARAM	L0000186	0.000009942	3.49	4.00	1.62
SRCPARAM	L0000187	0.000009942	3.49	4.00	1.62
SRCPARAM	L0000188	0.000009942	3.49	4.00	1.62
SRCPARAM	L0000189	0.000009942	3.49	4.00	1.62
SRCPARAM	L0000190	0.000009942	3.49	4.00	1.62
SRCPARAM	L0000191	0.000009942	3.49	4.00	1.62
SRCPARAM	L0000192	0.000009942	3.49	4.00	1.62
SRCPARAM	L0000193	0.000009942	3.49	4.00	1.62
SRCPARAM	L0000194	0.000009942	3.49	4.00	1.62
SRCPARAM	L0000195	0.000009942	3.49	4.00	1.62
SRCPARAM	L0000196	0.000009942	3.49	4.00	1.62
SRCPARAM	L0000197	0.000009942	3.49	4.00	1.62
SRCPARAM	L0000198	0.000009942	3.49	4.00	1.62
SRCPARAM	L0000199	0.000009942	3.49	4.00	1.62
SRCPARAM	L0000200	0.000009942	3.49	4.00	1.62
SRCPARAM	L0000201	0.000009942	3.49	4.00	1.62
SRCPARAM	L0000202	0.000009942	3.49	4.00	1.62
SRCPARAM	L0000203	0.000009942	3.49	4.00	1.62
SRCPARAM	L0000204	0.000009942	3.49	4.00	1.62
SRCPARAM	L0000205	0.000009942	3.49	4.00	1.62
SRCPARAM	L0000206	0.000009942	3.49	4.00	1.62
SRCPARAM	L0000207	0.000009942	3.49	4.00	1.62
** -----					
** LINE VOLUME Source ID = SLINE2					
SRCPARAM	L0000208	0.000009942	3.49	4.00	1.62
SRCPARAM	L0000209	0.000009942	3.49	4.00	1.62
SRCPARAM	L0000210	0.000009942	3.49	4.00	1.62
SRCPARAM	L0000211	0.000009942	3.49	4.00	1.62
SRCPARAM	L0000212	0.000009942	3.49	4.00	1.62
SRCPARAM	L0000213	0.000009942	3.49	4.00	1.62
SRCPARAM	L0000214	0.000009942	3.49	4.00	1.62
SRCPARAM	L0000215	0.000009942	3.49	4.00	1.62
SRCPARAM	L0000216	0.000009942	3.49	4.00	1.62
SRCPARAM	L0000217	0.000009942	3.49	4.00	1.62
SRCPARAM	L0000218	0.000009942	3.49	4.00	1.62
SRCPARAM	L0000219	0.000009942	3.49	4.00	1.62
SRCPARAM	L0000220	0.000009942	3.49	4.00	1.62
SRCPARAM	L0000221	0.000009942	3.49	4.00	1.62
SRCPARAM	L0000222	0.000009942	3.49	4.00	1.62
SRCPARAM	L0000223	0.000009942	3.49	4.00	1.62
SRCPARAM	L0000224	0.000009942	3.49	4.00	1.62

Apx-103

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SRCPARAM L0000276      0.000009942      3.49      4.00      1.62
** -----
  URBANSRC ALL
  SRCGROUP ALL
SO FINISHED
**
*****
** AERMOD Receptor Pathway
*****
**
**
RE STARTING
  INCLUDED "19386 Cabrillo at First 2 yr.rou"
RE FINISHED
**
*****
** AERMOD Meteorology Pathway
*****
**
**
ME STARTING
  SURFFILE "E:\New MET data\KSNA_V9_ADJU\KSNA_v9.SFC"
  PROFFILE "E:\New MET data\KSNA_V9_ADJU\KSNA_v9.PFL"
  SURFDATA 93184 2012
  UAIRDATA 3190 2012
  PROFBASE 17.0 METERS
ME FINISHED
**
*****
** AERMOD Output Pathway
*****
**
**
OU STARTING
** Auto-Generated Plotfiles
  PLOTFILE PERIOD ALL "19386 CABRILLO AT FIRST 2 YR.AD\PE00GALL.PLT" 31
  SUMMFILE "19386 Cabrillo at First 2 yr.sum"
OU FINISHED

*** Message Summary For AERMOD Model Setup ***

----- Summary of Total Messages -----

A Total of          0 Fatal Error Message(s)
A Total of          2 Warning Message(s)
A Total of          0 Informational Message(s)

***** FATAL ERROR MESSAGES *****
      *** NONE ***

```

```

***** WARNING MESSAGES *****
ME W186      383      MEOPEN: THRESH_1MIN 1-min ASOS wind speed threshold used      0.50
ME W187      383      MEOPEN: ADJ_U* Option for Stable Low Winds used in AERMET

*****
*** SETUP Finishes Successfully ***
*****

*** AERMOD - VERSION 21112 ***      *** 19386 Cabrillo at First Mixed Use Freeway HRA      ***      01/21/22
*** AERMET - VERSION 16216 ***      *** DPM emissions from I-5 freeway Years 2024-25      ***      17:42:38
                                                                                                     PAGE      1

*** MODELOPTs:      RegDFAULT CONC ELEV URBAN ADJ_U*

***      MODEL SETUP OPTIONS SUMMARY      ***
-----
**Model Is Setup For Calculation of Average CONCentration Values.

-- DEPOSITION LOGIC --
**NO GAS DEPOSITION Data Provided.
**NO PARTICLE DEPOSITION Data Provided.
**Model Uses NO DRY DEPLETION. DRYDPLT = F
**Model Uses NO WET DEPLETION. WETDPLT = F

**Model Uses URBAN Dispersion Algorithm for the SBL for 138 Source(s),
for Total of 1 Urban Area(s):
Urban Population = 3010232.0 ; Urban Roughness Length = 1.000 m

**Model Uses Regulatory DEFAULT Options:
1. Stack-tip Downwash.
2. Model Accounts for ELEVated Terrain Effects.
3. Use Calms Processing Routine.
4. Use Missing Data Processing Routine.
5. No Exponential Decay.
6. Urban Roughness Length of 1.0 Meter Assumed.

**Other Options Specified:
ADJ_U* - Use ADJ_U* option for SBL in AERMET
CCVR_Sub - Meteorological data includes CCVR substitutions
TEMP_Sub - Meteorological data includes TEMP substitutions

**Model Assumes No FLAGPOLE Receptor Heights.

**The User Specified a Pollutant Type of: DPM

**Model Calculates PERIOD Averages Only

**This Run Includes: 138 Source(s); 1 Source Group(s); and 454 Receptor(s)

```

with: 0 POINT(s), including
 0 POINTCAP(s) and 0 POINTHOR(s)
 and: 138 VOLUME source(s)
 and: 0 AREA type source(s)
 and: 0 LINE source(s)
 and: 0 RLINE/RLINEXT source(s)
 and: 0 OPENPIT source(s)
 and: 0 BUOYANT LINE source(s) with a total of 0 line(s)

**Model Set To Continue RUNning After the Setup Testing.

**The AERMET Input Meteorological Data Version Date: 16216

**Output Options Selected:

Model Outputs Tables of PERIOD Averages by Receptor
 Model Outputs External File(s) of High Values for Plotting (PLOTFILE Keyword)
 Model Outputs Separate Summary File of High Ranked Values (SUMMFILE Keyword)

**NOTE: The Following Flags May Appear Following CONC Values: c for Calm Hours
 m for Missing Hours
 b for Both Calm and Missing Hours

**Misc. Inputs: Base Elev. for Pot. Temp. Profile (m MSL) = 17.00 ; Decay Coef. = 0.000 ; Rot. Angle = 0.0
 Emission Units = GRAMS/SEC ; Emission Rate Unit Factor = 0.10000E+07
 Output Units = MICROGRAMS/M**3

**Approximate Storage Requirements of Model = 3.6 MB of RAM.

**Input Runstream File: aermod.inp

**Output Print File: aermod.out

**Detailed Error/Message File: 19386 Cabrillo at First 2 yr.err

**File for Summary of Results: 19386 Cabrillo at First 2 yr.sum

*** AERMOD - VERSION 21112 *** 19386 Cabrillo at First Mixed Use Freeway HRA *** 01/21/22

*** AERMET - VERSION 16216 *** DPM emissions from I-5 freeway Years 2024-25 *** 17:42:38

PAGE 2

*** MODELOPTs: RegDFAULT CONC ELEV URBAN ADJ_U*

*** VOLUME SOURCE DATA ***

SOURCE ID	NUMBER PART. CATS.	EMISSION RATE (GRAMS/SEC)	X (METERS)	Y (METERS)	BASE ELEV. (METERS)	RELEASE HEIGHT (METERS)	INIT. SY (METERS)	INIT. SZ (METERS)	URBAN SOURCE	EMISSION RATE SCALAR VARY BY
L0000139	0	0.99420E-05	421945.0	3734452.4	35.4	3.49	4.00	1.62	YES	
L0000140	0	0.99420E-05	421947.3	3734444.2	35.3	3.49	4.00	1.62	YES	

```

*** AERMOD - VERSION 21112 ***      *** 19386 Cabrillo at First Mixed Use Freeway HRA
*** AERMET - VERSION 16216 ***      *** DPM emissions from I-5 freeway Years 2024-25

*** MODELOPTs:   ReqDFault  CONC  ELEV  URBAN  ADJ U*

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*** VOLUME SOURCE DATA ***

L0000179	0	0.99420E-05	422070.1	3734134.9	36.9	3.49	4.00	1.62	YES
L0000180	0	0.99420E-05	422075.0	3734127.9	36.3	3.49	4.00	1.62	YES
L0000181	0	0.99420E-05	422080.0	3734120.9	35.8	3.49	4.00	1.62	YES
L0000182	0	0.99420E-05	422085.5	3734114.3	36.9	3.49	4.00	1.62	YES
L0000183	0	0.99420E-05	422091.5	3734108.2	37.4	3.49	4.00	1.62	YES
L0000184	0	0.99420E-05	422097.5	3734102.0	37.4	3.49	4.00	1.62	YES
L0000185	0	0.99420E-05	422103.4	3734095.8	36.9	3.49	4.00	1.62	YES
L0000186	0	0.99420E-05	422109.4	3734089.6	37.2	3.49	4.00	1.62	YES
L0000187	0	0.99420E-05	422115.4	3734083.5	38.0	3.49	4.00	1.62	YES
L0000188	0	0.99420E-05	422121.4	3734077.3	38.4	3.49	4.00	1.62	YES
L0000189	0	0.99420E-05	422127.3	3734071.1	38.3	3.49	4.00	1.62	YES
L0000190	0	0.99420E-05	422133.3	3734064.9	38.0	3.49	4.00	1.62	YES
L0000191	0	0.99420E-05	422139.3	3734058.8	38.3	3.49	4.00	1.62	YES
L0000192	0	0.99420E-05	422145.3	3734052.6	38.8	3.49	4.00	1.62	YES
L0000193	0	0.99420E-05	422151.7	3734046.9	39.1	3.49	4.00	1.62	YES
L0000194	0	0.99420E-05	422158.2	3734041.3	38.9	3.49	4.00	1.62	YES
L0000195	0	0.99420E-05	422164.6	3734035.6	38.6	3.49	4.00	1.62	YES
L0000196	0	0.99420E-05	422171.1	3734030.0	38.2	3.49	4.00	1.62	YES
L0000197	0	0.99420E-05	422177.6	3734024.3	38.4	3.49	4.00	1.62	YES
L0000198	0	0.99420E-05	422184.1	3734018.7	38.7	3.49	4.00	1.62	YES
L0000199	0	0.99420E-05	422190.5	3734013.0	39.1	3.49	4.00	1.62	YES
L0000200	0	0.99420E-05	422197.6	3734008.1	39.3	3.49	4.00	1.62	YES
L0000201	0	0.99420E-05	422204.7	3734003.3	39.3	3.49	4.00	1.62	YES
L0000202	0	0.99420E-05	422211.9	3733998.6	39.3	3.49	4.00	1.62	YES
L0000203	0	0.99420E-05	422219.0	3733993.8	39.6	3.49	4.00	1.62	YES
L0000204	0	0.99420E-05	422226.1	3733989.0	39.9	3.49	4.00	1.62	YES
L0000205	0	0.99420E-05	422233.3	3733984.2	40.0	3.49	4.00	1.62	YES
L0000206	0	0.99420E-05	422240.4	3733979.5	40.1	3.49	4.00	1.62	YES
L0000207	0	0.99420E-05	422247.5	3733974.7	40.2	3.49	4.00	1.62	YES
L0000208	0	0.99420E-05	421895.1	3734455.1	36.8	3.49	4.00	1.62	YES
L0000209	0	0.99420E-05	421897.8	3734447.0	36.1	3.49	4.00	1.62	YES
L0000210	0	0.99420E-05	421900.5	3734438.8	35.3	3.49	4.00	1.62	YES
L0000211	0	0.99420E-05	421903.2	3734430.6	35.3	3.49	4.00	1.62	YES
L0000212	0	0.99420E-05	421905.8	3734422.5	36.2	3.49	4.00	1.62	YES
L0000213	0	0.99420E-05	421908.5	3734414.3	36.8	3.49	4.00	1.62	YES
L0000214	0	0.99420E-05	421911.2	3734406.1	37.1	3.49	4.00	1.62	YES
L0000215	0	0.99420E-05	421913.8	3734398.0	37.2	3.49	4.00	1.62	YES
L0000216	0	0.99420E-05	421916.5	3734389.8	36.9	3.49	4.00	1.62	YES
L0000217	0	0.99420E-05	421919.2	3734381.7	36.5	3.49	4.00	1.62	YES
L0000218	0	0.99420E-05	421921.8	3734373.5	35.9	3.49	4.00	1.62	YES

*** AERMOD - VERSION 21112 *** *** 19386 Cabrillo at First Mixed Use Freeway HRA
 *** AERMET - VERSION 16216 *** *** DPM emissions from I-5 freeway Years 2024-25

 01/21/22
 17:42:38
 PAGE 4

*** MODELOPTs: RegDFAULT CONC ELEV URBAN ADJ_U*

*** VOLUME SOURCE DATA ***

NUMBER	EMISSION RATE	BASE	RELEASE	INIT.	INIT.	URBAN	EMISSION RATE
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SOURCE ID	PART. CATS.	(GRAMS/SEC)	X (METERS)	Y (METERS)	ELEV. (METERS)	HEIGHT (METERS)	SY (METERS)	SZ (METERS)	SOURCE	SCALAR VARY BY
L0000219	0	0.99420E-05	421924.5	3734365.3	35.2	3.49	4.00	1.62	YES	
L0000220	0	0.99420E-05	421927.2	3734357.2	34.8	3.49	4.00	1.62	YES	
L0000221	0	0.99420E-05	421929.8	3734349.0	34.9	3.49	4.00	1.62	YES	
L0000222	0	0.99420E-05	421932.5	3734340.8	35.0	3.49	4.00	1.62	YES	
L0000223	0	0.99420E-05	421935.2	3734332.7	35.6	3.49	4.00	1.62	YES	
L0000224	0	0.99420E-05	421937.9	3734324.5	36.1	3.49	4.00	1.62	YES	
L0000225	0	0.99420E-05	421940.5	3734316.3	36.3	3.49	4.00	1.62	YES	
L0000226	0	0.99420E-05	421943.2	3734308.2	36.2	3.49	4.00	1.62	YES	
L0000227	0	0.99420E-05	421945.9	3734300.0	36.0	3.49	4.00	1.62	YES	
L0000228	0	0.99420E-05	421948.5	3734291.8	35.8	3.49	4.00	1.62	YES	
L0000229	0	0.99420E-05	421951.2	3734283.7	35.5	3.49	4.00	1.62	YES	
L0000230	0	0.99420E-05	421953.9	3734275.5	35.6	3.49	4.00	1.62	YES	
L0000231	0	0.99420E-05	421956.5	3734267.3	36.0	3.49	4.00	1.62	YES	
L0000232	0	0.99420E-05	421959.2	3734259.2	36.3	3.49	4.00	1.62	YES	
L0000233	0	0.99420E-05	421961.9	3734251.0	36.4	3.49	4.00	1.62	YES	
L0000234	0	0.99420E-05	421964.5	3734242.9	36.5	3.49	4.00	1.62	YES	
L0000235	0	0.99420E-05	421967.2	3734234.7	36.4	3.49	4.00	1.62	YES	
L0000236	0	0.99420E-05	421969.9	3734226.5	36.3	3.49	4.00	1.62	YES	
L0000237	0	0.99420E-05	421972.5	3734218.4	36.0	3.49	4.00	1.62	YES	
L0000238	0	0.99420E-05	421975.8	3734210.5	36.0	3.49	4.00	1.62	YES	
L0000239	0	0.99420E-05	421980.8	3734203.5	36.2	3.49	4.00	1.62	YES	
L0000240	0	0.99420E-05	421985.7	3734196.5	36.5	3.49	4.00	1.62	YES	
L0000241	0	0.99420E-05	421990.7	3734189.5	36.5	3.49	4.00	1.62	YES	
L0000242	0	0.99420E-05	421995.7	3734182.5	36.3	3.49	4.00	1.62	YES	
L0000243	0	0.99420E-05	422000.7	3734175.5	36.0	3.49	4.00	1.62	YES	
L0000244	0	0.99420E-05	422005.7	3734168.5	35.9	3.49	4.00	1.62	YES	
L0000245	0	0.99420E-05	422010.7	3734161.6	36.1	3.49	4.00	1.62	YES	
L0000246	0	0.99420E-05	422015.7	3734154.6	36.2	3.49	4.00	1.62	YES	
L0000247	0	0.99420E-05	422020.7	3734147.6	36.5	3.49	4.00	1.62	YES	
L0000248	0	0.99420E-05	422025.7	3734140.6	36.6	3.49	4.00	1.62	YES	
L0000249	0	0.99420E-05	422030.7	3734133.6	36.6	3.49	4.00	1.62	YES	
L0000250	0	0.99420E-05	422035.7	3734126.6	36.8	3.49	4.00	1.62	YES	
L0000251	0	0.99420E-05	422040.7	3734119.6	37.0	3.49	4.00	1.62	YES	
L0000252	0	0.99420E-05	422045.7	3734112.6	37.2	3.49	4.00	1.62	YES	
L0000253	0	0.99420E-05	422050.7	3734105.7	37.3	3.49	4.00	1.62	YES	
L0000254	0	0.99420E-05	422055.7	3734098.7	37.4	3.49	4.00	1.62	YES	
L0000255	0	0.99420E-05	422060.7	3734091.7	37.6	3.49	4.00	1.62	YES	
L0000256	0	0.99420E-05	422065.7	3734084.7	37.8	3.49	4.00	1.62	YES	
L0000257	0	0.99420E-05	422070.7	3734077.7	38.0	3.49	4.00	1.62	YES	
L0000258	0	0.99420E-05	422075.7	3734070.7	38.2	3.49	4.00	1.62	YES	

*** AERMOD - VERSION 21112 *** *** 19386 Cabrillo at First Mixed Use Freeway HRA
*** AERMET - VERSION 16216 *** *** DPM emissions from I-5 freeway Years 2024-25

*** 01/21/22
*** 17:42:38
PAGE 5

*** MODELOPTs: RegDFAULT CONC ELEV URBAN ADJ_U*

*** VOLUME SOURCE DATA ***

SOURCE ID	NUMBER PART. CATS.	EMISSION RATE (GRAMS/SEC)	X (METERS)	Y (METERS)	BASE ELEV. (METERS)	RELEASE HEIGHT (METERS)	INIT. SY (METERS)	INIT. SZ (METERS)	URBAN SOURCE	EMISSION RATE SCALAR VARY BY
L0000259	0	0.99420E-05	422080.7	3734063.7	38.4	3.49	4.00	1.62	YES	
L0000260	0	0.99420E-05	422086.1	3734057.1	38.5	3.49	4.00	1.62	YES	
L0000261	0	0.99420E-05	422092.4	3734051.3	38.6	3.49	4.00	1.62	YES	
L0000262	0	0.99420E-05	422098.8	3734045.5	38.7	3.49	4.00	1.62	YES	
L0000263	0	0.99420E-05	422105.1	3734039.7	38.9	3.49	4.00	1.62	YES	
L0000264	0	0.99420E-05	422111.4	3734033.9	39.1	3.49	4.00	1.62	YES	
L0000265	0	0.99420E-05	422117.7	3734028.1	39.2	3.49	4.00	1.62	YES	
L0000266	0	0.99420E-05	422124.1	3734022.2	39.3	3.49	4.00	1.62	YES	
L0000267	0	0.99420E-05	422130.4	3734016.4	39.6	3.49	4.00	1.62	YES	
L0000268	0	0.99420E-05	422136.7	3734010.6	39.7	3.49	4.00	1.62	YES	
L0000269	0	0.99420E-05	422143.0	3734004.8	39.9	3.49	4.00	1.62	YES	
L0000270	0	0.99420E-05	422149.3	3733999.0	40.0	3.49	4.00	1.62	YES	
L0000271	0	0.99420E-05	422155.7	3733993.2	39.8	3.49	4.00	1.62	YES	
L0000272	0	0.99420E-05	422162.5	3733988.0	39.8	3.49	4.00	1.62	YES	
L0000273	0	0.99420E-05	422169.4	3733982.9	40.0	3.49	4.00	1.62	YES	
L0000274	0	0.99420E-05	422176.4	3733977.8	40.4	3.49	4.00	1.62	YES	
L0000275	0	0.99420E-05	422183.3	3733972.8	40.9	3.49	4.00	1.62	YES	
L0000276	0	0.99420E-05	422190.2	3733967.7	41.0	3.49	4.00	1.62	YES	

*** AERMOD - VERSION 21112 *** *** 19386 Cabrillo at First Mixed Use Freeway HRA *** 01/21/22
 *** AERMET - VERSION 16216 *** *** DPM emissions from I-5 freeway Years 2024-25 *** 17:42:38
 PAGE 6

*** MODELOPTs: RegDFAULT CONC ELEV URBAN ADJ_U*

*** SOURCE IDs DEFINING SOURCE GROUPS ***

SRCGROUP ID	SOURCE IDs
-----	-----
ALL	L0000139 , L0000140 , L0000141 , L0000142 , L0000143 , L0000144 , L0000145 , L0000146 ,
	L0000147 , L0000148 , L0000149 , L0000150 , L0000151 , L0000152 , L0000153 , L0000154 ,
	L0000155 , L0000156 , L0000157 , L0000158 , L0000159 , L0000160 , L0000161 , L0000162 ,
	L0000163 , L0000164 , L0000165 , L0000166 , L0000167 , L0000168 , L0000169 , L0000170 ,
	L0000171 , L0000172 , L0000173 , L0000174 , L0000175 , L0000176 , L0000177 , L0000178 ,
	L0000179 , L0000180 , L0000181 , L0000182 , L0000183 , L0000184 , L0000185 , L0000186 ,
	L0000187 , L0000188 , L0000189 , L0000190 , L0000191 , L0000192 , L0000193 , L0000194 ,

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L0000195 , L0000196 , L0000197 , L0000198 , L0000199 , L0000200 , L0000201 , L0000202 ,
L0000203 , L0000204 , L0000205 , L0000206 , L0000207 , L0000208 , L0000209 , L0000210 ,
L0000211 , L0000212 , L0000213 , L0000214 , L0000215 , L0000216 , L0000217 , L0000218 ,
L0000219 , L0000220 , L0000221 , L0000222 , L0000223 , L0000224 , L0000225 , L0000226 ,
L0000227 , L0000228 , L0000229 , L0000230 , L0000231 , L0000232 , L0000233 , L0000234 ,
L0000235 , L0000236 , L0000237 , L0000238 , L0000239 , L0000240 , L0000241 , L0000242 ,
L0000243 , L0000244 , L0000245 , L0000246 , L0000247 , L0000248 , L0000249 , L0000250 ,
L0000251 , L0000252 , L0000253 , L0000254 , L0000255 , L0000256 , L0000257 , L0000258 ,
L0000259 , L0000260 , L0000261 , L0000262 , L0000263 , L0000264 , L0000265 , L0000266 ,
L0000267 , L0000268 , L0000269 , L0000270 , L0000271 , L0000272 , L0000273 , L0000274 ,
L0000275 , L0000276 ,

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*** AERMOD - VERSION 21112 *** *** 19386 Cabrillo at First Mixed Use Freeway HRA *** 01/21/22
*** AERMET - VERSION 16216 *** *** DPM emissions from I-5 freeway Years 2024-25 *** 17:42:38
*** MODELOPTs: RegDFAULT CONC ELEV URBAN ADJ_U* *** PAGE 7

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*** SOURCE IDs DEFINED AS URBAN SOURCES ***

URBAN ID	URBAN POP	SOURCE IDs
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L0000146	3010232.	L0000139 , L0000140 , L0000141 , L0000142 , L0000143 , L0000144 , L0000145 ,
	,	
	L0000147	, L0000148 , L0000149 , L0000150 , L0000151 , L0000152 , L0000153 , L0000154 ,
	L0000155	, L0000156 , L0000157 , L0000158 , L0000159 , L0000160 , L0000161 , L0000162 ,
	L0000163	, L0000164 , L0000165 , L0000166 , L0000167 , L0000168 , L0000169 , L0000170 ,
	L0000171	, L0000172 , L0000173 , L0000174 , L0000175 , L0000176 , L0000177 , L0000178 ,
	L0000179	, L0000180 , L0000181 , L0000182 , L0000183 , L0000184 , L0000185 , L0000186 ,
	L0000187	, L0000188 , L0000189 , L0000190 , L0000191 , L0000192 , L0000193 , L0000194 ,
	L0000195	, L0000196 , L0000197 , L0000198 , L0000199 , L0000200 , L0000201 , L0000202 ,

L0000203	,	L0000204	,	L0000205	,	L0000206	,	L0000207	,	L0000208	,	L0000209	,	L0000210	,
L0000211	,	L0000212	,	L0000213	,	L0000214	,	L0000215	,	L0000216	,	L0000217	,	L0000218	,
L0000219	,	L0000220	,	L0000221	,	L0000222	,	L0000223	,	L0000224	,	L0000225	,	L0000226	,
L0000227	,	L0000228	,	L0000229	,	L0000230	,	L0000231	,	L0000232	,	L0000233	,	L0000234	,
L0000235	,	L0000236	,	L0000237	,	L0000238	,	L0000239	,	L0000240	,	L0000241	,	L0000242	,
L0000243	,	L0000244	,	L0000245	,	L0000246	,	L0000247	,	L0000248	,	L0000249	,	L0000250	,
L0000251	,	L0000252	,	L0000253	,	L0000254	,	L0000255	,	L0000256	,	L0000257	,	L0000258	,
L0000259	,	L0000260	,	L0000261	,	L0000262	,	L0000263	,	L0000264	,	L0000265	,	L0000266	,
L0000267	,	L0000268	,	L0000269	,	L0000270	,	L0000271	,	L0000272	,	L0000273	,	L0000274	,
L0000275	,	L0000276	,												

*** AERMOD - VERSION 21112 ***	*** 19386 Cabrillo at First Mixed Use Freeway HRA	***	01/21/22
*** AERMET - VERSION 16216 ***	*** DPM emissions from I-5 freeway Years 2024-25	***	17:42:38
			PAGE 8

*** MODELOPTs: RegDFAULT CONC ELEV URBAN ADJ_U*

*** GRIDDED RECEPTOR NETWORK SUMMARY ***

*** NETWORK ID: UCART1 ; NETWORK TYPE: GRIDCART ***

*** X-COORDINATES OF GRID ***
(METERS)

421875.2, 421895.2, 421915.2, 421935.2, 421955.2, 421975.2, 421995.2, 422015.2, 422035.2, 422055.2,
422075.2, 422095.2, 422115.2, 422135.2, 422155.2, 422175.2, 422195.2, 422215.2, 422235.2, 422255.2,
422275.2,

*** Y-COORDINATES OF GRID ***
(METERS)

3734034.2, 3734054.2, 3734074.2, 3734094.2, 3734114.2, 3734134.2, 3734154.2, 3734174.2, 3734194.2, 3734214.2,
3734234.2, 3734254.2, 3734274.2, 3734294.2, 3734314.2, 3734334.2, 3734354.2, 3734374.2, 3734394.2, 3734414.2,
3734434.2,

*** AERMOD - VERSION 21112 ***	*** 19386 Cabrillo at First Mixed Use Freeway HRA	***	01/21/22
*** AERMET - VERSION 16216 ***	*** DPM emissions from I-5 freeway Years 2024-25	***	17:42:38
			PAGE 9

*** MODELOPTs: RegDFAULT CONC ELEV URBAN ADJ_U*

*** NETWORK ID: UCART1 ; NETWORK TYPE: GRIDCART ***

* ELEVATION HEIGHTS IN METERS *

Y-COORD (METERS)	X-COORD (METERS)								
	421875.19	421895.19	421915.19	421935.19	421955.19	421975.19	421995.19	422015.19	422035.19
3734434.21	42.10	36.80	35.10	35.10	35.30	38.20	41.30	42.90	42.90
3734414.21	42.00	38.60	36.10	34.90	35.00	36.80	40.60	42.60	42.70
3734394.21	41.80	40.30	37.00	34.60	34.70	35.50	39.20	41.50	42.20
3734374.21	41.50	41.60	37.70	34.50	34.40	34.20	36.20	38.90	41.40
3734354.21	41.40	41.70	38.00	34.70	34.30	33.90	35.40	37.70	40.10
3734334.21	41.30	41.50	38.50	35.50	34.20	33.70	34.70	36.70	39.10
3734314.21	41.10	41.30	40.00	37.40	34.20	33.50	33.20	35.70	39.60
3734294.21	40.80	40.90	40.80	38.60	34.70	33.60	32.90	36.10	40.40
3734274.21	40.60	40.70	41.10	39.50	35.60	33.90	33.20	36.30	40.50
3734254.21	40.40	40.60	41.00	40.00	37.20	34.40	33.40	33.60	35.90
3734234.21	40.20	40.40	40.70	40.30	38.60	35.00	33.90	33.00	34.70
3734214.21	40.00	40.20	40.30	40.40	39.80	35.80	34.60	33.70	35.20
3734194.21	40.00	40.10	40.20	40.40	40.10	37.70	35.70	34.50	34.90
3734174.21	39.90	39.90	40.10	40.20	40.10	39.20	36.70	35.40	35.10
3734154.21	39.70	39.70	39.90	40.00	40.10	40.20	37.70	36.30	35.60
3734134.21	39.90	39.60	39.70	39.80	39.90	40.00	39.20	37.80	36.50
3734114.21	40.00	39.70	39.50	39.60	39.70	39.90	39.90	38.90	37.70
3734094.21	40.00	39.80	39.50	39.50	39.70	39.70	39.70	39.70	39.10
3734074.21	39.60	39.50	39.40	39.30	39.40	39.60	39.70	39.70	39.40
3734054.21	39.20	39.20	39.20	39.10	39.10	39.50	39.60	39.60	39.50
3734034.21	39.00	38.90	38.80	38.70	38.80	39.30	39.30	39.40	39.40

[illegible]

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*** MODELOPTs:      RegDFAULT  CONC  ELEV  URBAN  ADJ_U*
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*** NETWORK ID: UCART1 ; NETWORK TYPE: GRIDCART ***
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* ELEVATION HEIGHTS IN METERS *

Y-COORD (METERS)	X-COORD (METERS)								
	422055.19	422075.19	422095.19	422115.19	422135.19	422155.19	422175.19	422195.19	422215.19
3734434.21	42.80	42.70	42.60	42.40	42.10	42.30	42.30	42.30	42.20
3734414.21	42.60	42.50	42.40	42.30	42.00	42.20	42.20	42.20	42.10
3734394.21	42.50	42.50	42.40	42.10	41.90	42.30	42.30	42.20	42.20
3734374.21	42.50	42.80	42.50	42.10	41.80	42.20	42.30	42.20	42.20
3734354.21	41.90	42.60	42.40	41.90	41.60	42.20	42.30	42.30	42.20
3734334.21	41.40	42.20	42.10	41.60	41.40	42.10	42.20	42.20	42.10
3734314.21	41.60	41.60	41.80	41.60	41.20	41.60	41.70	41.80	41.70
3734294.21	41.30	41.30	41.30	41.30	41.10	41.30	41.40	41.40	41.50
3734274.21	41.10	41.00	41.00	41.00	41.00	41.00	41.10	41.20	41.30
3734254.21	41.20	41.00	41.00	41.00	41.20	41.10	41.10	41.10	41.30

3734234.21	41.40	41.10	40.90	41.00	41.10	41.00	40.80	41.00	41.20
3734214.21	41.20	41.00	40.90	40.90	40.90	40.80	40.40	40.60	41.00
3734194.21	37.60	40.10	40.80	40.80	40.80	40.70	40.30	40.40	40.70
3734174.21	35.70	39.80	40.80	40.90	40.90	40.60	40.20	40.30	40.50
3734154.21	35.20	39.90	40.90	41.00	41.10	40.60	40.10	40.30	40.60
3734134.21	36.00	37.20	39.50	40.90	41.00	40.50	40.10	40.30	40.60
3734114.21	36.70	36.20	38.10	40.00	40.80	40.40	40.10	40.30	40.50
3734094.21	37.60	37.20	36.80	38.30	40.60	40.30	40.00	40.30	40.50
3734074.21	38.70	38.10	37.60	37.90	39.00	40.10	40.10	40.10	40.00
3734054.21	39.30	38.80	38.40	38.10	38.10	39.60	39.70	39.70	39.70
3734034.21	39.30	39.10	39.10	39.00	38.70	38.60	38.40	39.10	39.70

*** AERMOD - VERSION 21112 ***	*** 19386 Cabrillo at First Mixed Use Freeway HRA	***	01/21/22
*** AERMET - VERSION 16216 ***	*** DPM emissions from I-5 freeway Years 2024-25	***	17:42:38
			PAGE 11

*** MODELOPTs: RegDFAULT CONC ELEV URBAN ADJ_U*

*** NETWORK ID: UCART1 ; NETWORK TYPE: GRIDCART ***

* ELEVATION HEIGHTS IN METERS *

Y-COORD (METERS)	422235.19	422255.19	422275.19
3734434.21	42.10	42.30	42.50
3734414.21	42.00	42.20	42.50
3734394.21	42.00	42.30	42.40
3734374.21	42.00	42.20	42.30
3734354.21	42.00	42.10	42.20
3734334.21	41.90	42.00	42.20
3734314.21	41.70	41.80	42.00
3734294.21	41.50	41.60	41.70
3734274.21	41.30	41.30	41.30
3734254.21	41.40	41.40	41.30
3734234.21	41.20	41.20	41.30
3734214.21	40.80	40.90	41.20
3734194.21	40.50	40.70	40.80
3734174.21	40.30	40.60	40.60
3734154.21	40.40	40.50	40.60
3734134.21	40.30	40.50	40.60
3734114.21	40.30	40.40	40.50
3734094.21	40.30	40.20	40.30
3734074.21	40.00	40.20	40.30
3734054.21	39.70	40.00	40.20
3734034.21	39.60	39.40	39.90

*** AERMOD - VERSION 21112 ***	*** 19386 Cabrillo at First Mixed Use Freeway HRA	***	01/21/22
*** AERMET - VERSION 16216 ***	*** DPM emissions from I-5 freeway Years 2024-25	***	17:42:38
			PAGE 12

*** MODELOPTs: RegDFAULT CONC ELEV URBAN ADJ_U*

*** NETWORK ID: UCART1 ; NETWORK TYPE: GRIDCART ***

* HILL HEIGHT SCALES IN METERS *

Y-COORD (METERS)	421875.19	421895.19	421915.19	421935.19	421955.19	421975.19	421995.19	422015.19	422035.19
3734434.21	42.10	42.40	43.30	43.40	43.70	43.40	42.80	42.90	42.90
3734414.21	42.00	42.10	42.10	43.40	43.40	43.40	42.80	42.60	42.70
3734394.21	41.80	40.30	41.90	42.80	43.40	43.40	42.50	41.50	42.20
3734374.21	41.50	41.60	41.80	42.50	42.80	42.90	42.80	42.50	41.40
3734354.21	41.40	41.70	41.80	41.80	42.50	42.80	42.60	42.60	40.10
3734334.21	41.30	41.50	41.70	41.80	41.80	42.60	42.60	42.60	41.30
3734314.21	41.10	41.30	40.00	41.50	41.70	41.70	42.70	41.60	39.60
3734294.21	40.80	40.90	40.80	41.50	41.50	41.50	42.70	41.60	40.40
3734274.21	40.60	40.70	41.10	41.50	41.50	41.50	41.60	41.60	41.40
3734254.21	40.40	40.60	41.00	41.20	41.50	41.50	41.60	41.60	41.60
3734234.21	40.20	40.40	40.70	40.30	40.60	41.20	41.60	41.60	41.60
3734214.21	40.00	40.20	40.30	40.40	40.60	40.60	41.60	41.60	41.60
3734194.21	40.00	40.10	40.20	40.40	40.10	40.50	40.50	41.60	41.60
3734174.21	39.90	39.90	40.10	40.20	40.10	39.20	40.20	41.60	41.60
3734154.21	39.70	39.70	39.90	40.00	40.10	40.20	40.20	40.20	40.90
3734134.21	39.90	39.60	39.70	39.80	39.90	40.00	39.20	40.00	40.00
3734114.21	40.00	39.70	39.50	39.60	39.70	39.90	39.90	38.90	37.70
3734094.21	40.00	39.80	39.50	39.50	39.70	39.70	39.70	39.70	39.10
3734074.21	39.60	39.50	39.40	39.30	39.40	39.60	39.70	39.70	39.40
3734054.21	39.20	39.20	39.20	39.10	39.10	39.50	39.60	39.60	39.50
3734034.21	39.00	38.90	38.80	38.70	38.80	39.30	39.30	39.40	39.40

*** AERMOD - VERSION 21112 *** *** 19386 Cabrillo at First Mixed Use Freeway HRA

*** AERMET - VERSION 16216 *** *** DPM emissions from I-5 freeway Years 2024-25

*** 01/21/22

*** 17:42:38

PAGE 13

*** MODELOPTs: RegDFAULT CONC ELEV URBAN ADJ_U*

*** NETWORK ID: UCART1 ; NETWORK TYPE: GRIDCART ***

* HILL HEIGHT SCALES IN METERS *

Y-COORD (METERS)	422055.19	422075.19	422095.19	422115.19	422135.19	422155.19	422175.19	422195.19	422215.19
3734434.21	42.80	42.70	42.60	42.40	42.10	42.30	42.30	42.30	42.20
3734414.21	42.60	42.50	42.40	42.30	42.00	42.20	42.20	42.20	42.10
3734394.21	42.50	42.50	42.40	42.10	41.90	42.30	42.30	42.20	42.20
3734374.21	42.50	42.80	42.50	42.10	41.80	42.20	42.30	42.20	42.20
3734354.21	41.90	42.60	42.40	41.90	41.60	42.20	42.30	42.30	42.20
3734334.21	41.40	42.20	42.10	41.60	41.40	42.10	42.20	42.20	42.10
3734314.21	41.60	41.60	41.80	41.60	41.20	41.60	41.70	41.80	41.70

[illegible]

* HILL HEIGHT SCALES IN METERS *

*** AERMOD - VERSION 21112 *** *** 19386 Cabrillo at First Mixed Use Freeway HRA *** 01/21/22

*** AERMET - VERSION 16216 *** *** DPM emissions from I-5 freeway Years 2024-25 *** 17:42:38
 PAGE 15

*** MODELOPTs: RegDFAULT CONC ELEV URBAN ADJ_U*

*** DISCRETE CARTESIAN RECEPTORS ***
 (X-COORD, Y-COORD, ZELEV, ZHILL, ZFLAG)
 (METERS)

(422062.1, 3734197.9,	39.0,	41.6,	0.0);	(422069.8, 3734180.0,	38.7,	40.6,	0.0);
(422089.6, 3734199.3,	40.8,	40.8,	0.0);	(422087.3, 3734217.0,	40.9,	40.9,	0.0);
(422085.2, 3734237.4,	41.0,	41.0,	0.0);	(422062.6, 3734221.7,	41.3,	41.3,	0.0);
(422096.1, 3734179.2,	40.8,	40.8,	0.0);	(422117.4, 3734237.3,	41.0,	41.0,	0.0);
(422119.4, 3734198.2,	40.8,	40.8,	0.0);	(422120.9, 3734177.5,	40.9,	40.9,	0.0);
(422118.2, 3734218.3,	40.9,	40.9,	0.0);	(422063.1, 3734243.3,	41.2,	41.2,	0.0);
(422088.9, 3734210.1,	40.8,	40.8,	0.0);				

*** AERMOD - VERSION 21112 *** *** 19386 Cabrillo at First Mixed Use Freeway HRA *** 01/21/22
 *** AERMET - VERSION 16216 *** *** DPM emissions from I-5 freeway Years 2024-25 *** 17:42:38
 PAGE 16

*** MODELOPTs: RegDFAULT CONC ELEV URBAN ADJ_U*

* SOURCE-RECEPTOR COMBINATIONS FOR WHICH CALCULATIONS MAY NOT BE PERFORMED *
 LESS THAN 1.0 METER; WITHIN OPENPIT; OR BEYOND 80KM FOR FASTAREA/FASTALL

SOURCE ID	- - RECEPTOR LOCATION - - XR (METERS) YR (METERS)	DISTANCE (METERS)
L0000141	421955.2 3734434.2	-2.88
L0000142	421955.2 3734434.2	-1.38
L0000143	421955.2 3734414.2	-3.34
L0000144	421955.2 3734414.2	-5.12
L0000146	421955.2 3734394.2	-2.12
L0000149	421975.2 3734374.2	-0.90
L0000150	421975.2 3734354.2	-0.15
L0000151	421975.2 3734354.2	-6.79
L0000152	421975.2 3734354.2	0.49
L0000153	421975.2 3734334.2	-4.46
L0000154	421975.2 3734334.2	-0.75
L0000158	421995.2 3734294.2	-3.46
L0000159	421995.2 3734294.2	-1.31
L0000160	421995.2 3734274.2	-3.43
L0000161	421995.2 3734274.2	-3.92
L0000164	422015.2 3734254.2	0.68
L0000165	422015.2 3734234.2	-2.32
L0000166	422015.2 3734234.2	-6.19
L0000168	422015.2 3734214.2	-0.70
L0000170	422035.2 3734194.2	-0.35
L0000171	422035.2 3734194.2	-6.51
L0000172	422035.2 3734194.2	0.79

L0000173	422035.2	3734174.2	-2.22
L0000176	422055.2	3734154.2	-6.95
L0000177	422055.2	3734154.2	-1.36
L0000179	422075.2	3734134.2	-3.42
L0000180	422075.2	3734134.2	-2.28
L0000181	422075.2	3734114.2	-0.33
L0000183	422095.2	3734114.2	-1.51
L0000184	422095.2	3734094.2	-0.50
L0000185	422095.2	3734094.2	-0.19
L0000186	422115.2	3734094.2	-1.24
L0000187	422115.2	3734074.2	0.66
L0000188	422115.2	3734074.2	-1.70
L0000189	422135.2	3734074.2	-0.16
L0000190	422135.2	3734074.2	0.86
L0000191	422135.2	3734054.2	-2.47
L0000193	422155.2	3734054.2	-0.50
L0000194	422155.2	3734034.2	-0.95
L0000195	422155.2	3734034.2	0.95

*** AERMOD - VERSION 21112 *** 19386 Cabrillo at First Mixed Use Freeway HRA

*** AERMET - VERSION 16216 *** DPM emissions from I-5 freeway Years 2024-25

*** 01/21/22

*** 17:42:38

PAGE 17

*** MODELOPTs: RegDFAULT CONC ELEV URBAN ADJ_U*

* SOURCE-RECEPTOR COMBINATIONS FOR WHICH CALCULATIONS MAY NOT BE PERFORMED *
LESS THAN 1.0 METER; WITHIN OPENPIT; OR BEYOND 80KM FOR FASTAREA/FASTALL

SOURCE ID	- - RECEPTOR LOCATION - - XR (METERS) YR (METERS)	DISTANCE (METERS)
L0000196	422175.2 3734034.2	-2.72
L0000210	421895.2 3734434.2	-1.59
L0000211	421895.2 3734434.2	0.13
L0000213	421915.2 3734414.2	-1.90
L0000214	421915.2 3734414.2	0.41
L0000215	421915.2 3734394.2	-4.59
L0000216	421915.2 3734394.2	-4.02
L0000217	421915.2 3734374.2	-0.16
L0000218	421915.2 3734374.2	-1.91
L0000220	421935.2 3734354.2	-0.06
L0000221	421935.2 3734354.2	-1.13
L0000222	421935.2 3734334.2	-1.46
L0000223	421935.2 3734334.2	-7.05
L0000225	421935.2 3734314.2	-2.86
L0000228	421955.2 3734294.2	-1.53
L0000230	421955.2 3734274.2	-6.74
L0000231	421955.2 3734274.2	-1.60
L0000232	421955.2 3734254.2	-2.21
L0000233	421955.2 3734254.2	-1.19

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*** AERMOD - VERSION 21112 ***    *** 19386 Cabrillo at First Mixed Use Freeway HRA                ***          01/21/22  
*** AERMET - VERSION 16216 ***    *** DPM emissions from I-5 freeway Years 2024-25            ***          17:42:38
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PAGE 18

* SOURCE-RECEPTOR COMBINATIONS FOR WHICH CALCULATIONS MAY NOT BE PERFORMED *
LESS THAN 1.0 METER; WITHIN OPENPIT; OR BEYOND 80KM FOR FASTAREA/FASTALL

[illegible]

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*** METEOROLOGICAL DAYS SELECTED FOR PROCESSING ***
      (1=YES; 0=NO)
```

Apx-119

NOTE: METEOROLOGICAL DATA ACTUALLY PROCESSED WILL ALSO DEPEND ON WHAT IS INCLUDED IN THE DATA FILE.

1.54, 3.09, 5.14, 8.23, 10.80,

*** UP TO THE FIRST 24 HOURS OF METEOROLOGICAL DATA ***

First 24 hours of scalar data																				
YR	MO	DY	JDY	HR	H0	U*	W*	DT/DZ	ZICNV	ZIMCH	M-O	LEN	Z0	BOWEN	ALBEDO	REF WS	WD	HT	REF TA	HT
12	01	01	1	01	-4.5	0.082	-9.000	-9.000	-999.	56.	11.0	0.12	2.65	1.00	0.87	62.	5.8	283.8	2.0	
12	01	01	1	02	-3.5	0.073	-9.000	-9.000	-999.	47.	9.9	0.12	2.65	1.00	0.77	27.	5.8	283.1	2.0	
12	01	01	1	03	-3.5	0.073	-9.000	-9.000	-999.	47.	9.9	0.12	2.65	1.00	0.77	336.	5.8	283.1	2.0	
12	01	01	1	04	-3.3	0.070	-9.000	-9.000	-999.	45.	9.7	0.12	2.65	1.00	0.74	34.	5.8	283.1	2.0	
12	01	01	1	05	-3.0	0.068	-9.000	-9.000	-999.	42.	9.4	0.12	2.65	1.00	0.70	154.	5.8	282.5	2.0	
12	01	01	1	06	-999.0	-9.000	-9.000	-9.000	-999.	-999.	-99999.0	0.12	2.65	1.00	0.00	0.	5.8	282.0	2.0	
12	01	01	1	07	-2.0	0.059	-9.000	-9.000	-999.	34.	9.0	0.12	2.65	1.00	0.55	343.	5.8	281.4	2.0	
12	01	01	1	08	-2.6	0.066	-9.000	-9.000	-999.	40.	9.7	0.12	2.65	0.53	0.69	25.	5.8	281.4	2.0	
12	01	01	1	09	21.6	0.133	0.252	0.010	27.	116.	-9.9	0.12	2.65	0.31	1.03	344.	5.8	282.5	2.0	
12	01	01	1	10	115.6	0.162	0.713	0.008	114.	156.	-3.3	0.12	2.65	0.24	1.06	233.	5.8	286.4	2.0	
12	01	01	1	11	160.9	0.126	1.129	0.005	325.	108.	-1.1	0.12	2.65	0.21	0.67	261.	5.8	291.4	2.0	
12	01	01	1	12	187.0	0.138	1.467	0.005	614.	123.	-1.3	0.12	2.65	0.20	0.75	252.	5.8	294.9	2.0	
12	01	01	1	13	186.9	0.189	1.755	0.005	1051.	197.	-3.3	0.12	2.65	0.20	1.23	280.	5.8	297.5	2.0	
12	01	01	1	14	168.3	0.247	1.857	0.005	1383.	295.	-8.1	0.12	2.65	0.21	1.86	268.	5.8	299.2	2.0	
12	01	01	1	15	115.3	0.275	1.688	0.005	1517.	346.	-16.3	0.12	2.65	0.24	2.25	248.	5.8	298.1	2.0	
12	01	01	1	16	41.5	0.262	1.211	0.005	1552.	322.	-39.2	0.12	2.65	0.33	2.32	227.	5.8	295.9	2.0	
12	01	01	1	17	-17.9	0.217	-9.000	-9.000	-999.	244.	52.0	0.12	2.65	0.60	2.18	227.	5.8	292.5	2.0	
12	01	01	1	18	-24.7	0.250	-9.000	-9.000	-999.	300.	68.7	0.12	2.65	1.00	2.50	219.	5.8	288.8	2.0	
12	01	01	1	19	-5.2	0.088	-9.000	-9.000	-999.	91.	12.0	0.12	2.65	1.00	0.94	201.	5.8	287.5	2.0	
12	01	01	1	20	-3.5	0.073	-9.000	-9.000	-999.	47.	10.0	0.12	2.65	1.00	0.77	259.	5.8	287.0	2.0	
12	01	01	1	21	-2.6	0.064	-9.000	-9.000	-999.	39.	9.1	0.12	2.65	1.00	0.65	264.	5.8	286.4	2.0	

*** AERMOD - VERSION 21112 *** 19386 Cabrillo at First Mixed Use Freeway HRA *** 01/21/22
*** AERMET - VERSION 16216 *** DPM emissions from I-5 freeway Years 2024-25 *** 17:42:38
PAGE 22

*** MODELOPTs: RegDFAULT CONC ELEV URBAN ADJ_U*

*** THE PERIOD (43848 HRS) AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): L0000139 , L0000140 , L0000141 , L0000142 , L0000143 ,
L0000144 , L0000145 , L0000146 , L0000147 , L0000148 , L0000149 , L0000150 , L0000151 ,
L0000152 , L0000153 , L0000154 , L0000155 , L0000156 , L0000157 , L0000158 , L0000159 ,
L0000160 , L0000161 , L0000162 , L0000163 , L0000164 , L0000165 , L0000166 , . . . ,

*** NETWORK ID: UCART1 ; NETWORK TYPE: GRIDCART ***

** CONC OF DPM IN MICROGRAMS/M**3 **

Y-COORD (METERS)	422055.19	422075.19	422095.19	422115.19	422135.19	422155.19	422175.19	422195.19	422215.19
3734434.21	0.03810	0.03410	0.03085	0.02819	0.02591	0.02385	0.02208	0.02052	0.01911
3734414.21	0.04084	0.03633	0.03271	0.02971	0.02723	0.02497	0.02305	0.02136	0.01987
3734394.21	0.04344	0.03837	0.03443	0.03131	0.02856	0.02606	0.02402	0.02221	0.02060
3734374.21	0.04592	0.04008	0.03610	0.03285	0.02993	0.02723	0.02502	0.02309	0.02137
3734354.21	0.04966	0.04244	0.03803	0.03458	0.03143	0.02843	0.02607	0.02401	0.02218
3734334.21	0.05335	0.04534	0.04038	0.03654	0.03285	0.02980	0.02720	0.02498	0.02306
3734314.21	0.05651	0.04903	0.04299	0.03850	0.03445	0.03133	0.02851	0.02604	0.02393
3734294.21	0.06090	0.05249	0.04596	0.04073	0.03643	0.03282	0.02979	0.02716	0.02489
3734274.21	0.06623	0.05680	0.04936	0.04345	0.03865	0.03467	0.03130	0.02839	0.02592
3734254.21	0.07221	0.06181	0.05331	0.04662	0.04109	0.03677	0.03308	0.02993	0.02717
3734234.21	0.07953	0.06787	0.05820	0.05044	0.04421	0.03934	0.03522	0.03171	0.02862
3734214.21	0.09163	0.07639	0.06437	0.05521	0.04808	0.04240	0.03797	0.03389	0.03040
3734194.21	0.13258	0.09100	0.07274	0.06138	0.05282	0.04622	0.04107	0.03647	0.03249
3734174.21	0.15827	0.11121	0.08396	0.06925	0.05880	0.05106	0.04493	0.03955	0.03501
3734154.21	0.13328	0.14125	0.09973	0.07991	0.06633	0.05722	0.04990	0.04332	0.03794
3734134.21	0.15881	0.13572	0.13192	0.09619	0.07778	0.06564	0.05622	0.04809	0.04161
3734114.21	0.15666	0.14591	0.14713	0.12556	0.09490	0.07741	0.06464	0.05429	0.04628
3734094.21	0.11364	0.15388	0.13068	0.14125	0.12146	0.09457	0.07646	0.06263	0.05230
3734074.21	0.10935	0.11563	0.14689	0.13191	0.12188	0.12117	0.09363	0.07472	0.06084
3734054.21	0.07895	0.11809	0.10198	0.14556	0.14003	0.13698	0.12114	0.09285	0.07259
3734034.21	0.05968	0.08087	0.11638	0.11215	0.14453	0.12555	0.12900	0.11970	0.09037

*** AERMOD - VERSION 21112 *** 19386 Cabrillo at First Mixed Use Freeway HRA *** 01/21/22
*** AERMET - VERSION 16216 *** DPM emissions from I-5 freeway Years 2024-25 *** 17:42:38
PAGE 23

*** MODELOPTs: RegDFAULT CONC ELEV URBAN ADJ_U*

*** THE PERIOD (43848 HRS) AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): L0000139 , L0000140 , L0000141 , L0000142 , L0000143 ,
L0000144 , L0000145 , L0000146 , L0000147 , L0000148 , L0000149 , L0000150 , L0000151 ,
L0000152 , L0000153 , L0000154 , L0000155 , L0000156 , L0000157 , L0000158 , L0000159 ,

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L0000160      , L0000161      , L0000162      , L0000163      , L0000164      , L0000165      , L0000166      , . . .      ,

*** NETWORK ID: UCART1      ; NETWORK TYPE: GRIDCART ***

** CONC OF DPM      IN MICROGRAMS/M**3      **

Y-COORD      |      X-COORD (METERS)
(METERS)      |      422235.19      422255.19      422275.19
-----|-----
3734434.21 |      0.01785      0.01672      0.01572
3734414.21 |      0.01851      0.01728      0.01623
3734394.21 |      0.01917      0.01788      0.01670
3734374.21 |      0.01985      0.01845      0.01721
3734354.21 |      0.02055      0.01908      0.01771
3734334.21 |      0.02127      0.01971      0.01826
3734314.21 |      0.02203      0.02031      0.01885
3734294.21 |      0.02284      0.02104      0.01940
3734274.21 |      0.02372      0.02176      0.01999
3734254.21 |      0.02482      0.02268      0.02073
3734234.21 |      0.02599      0.02366      0.02155
3734214.21 |      0.02748      0.02488      0.02249
3734194.21 |      0.02924      0.02626      0.02363
3734174.21 |      0.03128      0.02785      0.02490
3734154.21 |      0.03358      0.02968      0.02628
3734134.21 |      0.03643      0.03181      0.02783
3734114.21 |      0.03988      0.03436      0.02962
3734094.21 |      0.04421      0.03749      0.03168
3734074.21 |      0.05001      0.04120      0.03396
3734054.21 |      0.05761      0.04596      0.03659
3734034.21 |      0.06843      0.05188      0.03942

*** AERMOD - VERSION 21112 ***      *** 19386 Cabrillo at First Mixed Use Freeway HRA      ***      01/21/22
*** AERMET - VERSION 16216 ***      *** DPM emissions from I-5 freeway Years 2024-25      ***      17:42:38
*** MODELOPTs:      RegDFAULT CONC      ELEV      URBAN      ADJ_U*      ***      PAGE      24

*** THE PERIOD ( 43848 HRS) AVERAGE CONCENTRATION      VALUES FOR SOURCE GROUP: ALL      ***
INCLUDING SOURCE(S):      L0000139      , L0000140      , L0000141      , L0000142      , L0000143      ,
L0000144      , L0000145      , L0000146      , L0000147      , L0000148      , L0000149      , L0000150      , L0000151      ,
L0000152      , L0000153      , L0000154      , L0000155      , L0000156      , L0000157      , L0000158      , L0000159      ,
L0000160      , L0000161      , L0000162      , L0000163      , L0000164      , L0000165      , L0000166      , . . .      ,

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*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF DPM IN MICROGRAMS/M**3

**

X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)	Y-COORD (M)	CONC
422062.12	3734197.94	0.10879	422069.82	3734180.01	0.11709
422089.61	3734199.31	0.07406	422087.32	3734216.98	0.06767
422085.20	3734237.42	0.06186	422062.62	3734221.72	0.08053
422096.15	3734179.19	0.08015	422117.42	3734237.26	0.04902
422119.39	3734198.16	0.05812	422120.86	3734177.55	0.06465
422118.24	3734218.28	0.05298	422063.11	3734243.31	0.07134
422088.86	3734210.12	0.06959			

*** AERMOD - VERSION 21112 *** 19386 Cabrillo at First Mixed Use Freeway HRA *** 01/21/22
 *** AERMET - VERSION 16216 *** DPM emissions from I-5 freeway Years 2024-25 *** 17:42:38
 PAGE 25

*** MODELOPTs: RegDFAULT CONC ELEV URBAN ADJ_U*

*** THE SUMMARY OF MAXIMUM PERIOD (43848 HRS) RESULTS ***

** CONC OF DPM IN MICROGRAMS/M**3

**

GROUP ID	AVERAGE CONC	RECEPTOR (XR, YR, ZELEV, ZHILL, ZFLAG)	OF TYPE	NETWORK GRID-ID
ALL	1ST HIGHEST VALUE IS	0.15881 AT (422055.19, 3734134.21, 36.00, 40.90, 0.00)	GC	UCART1
	2ND HIGHEST VALUE IS	0.15827 AT (422055.19, 3734174.21, 35.70, 41.60, 0.00)	GC	UCART1
	3RD HIGHEST VALUE IS	0.15789 AT (422035.19, 3734214.21, 35.20, 41.60, 0.00)	GC	UCART1
	4TH HIGHEST VALUE IS	0.15786 AT (422035.19, 3734154.21, 35.60, 40.90, 0.00)	GC	UCART1
	5TH HIGHEST VALUE IS	0.15666 AT (422055.19, 3734114.21, 36.70, 36.70, 0.00)	GC	UCART1
	6TH HIGHEST VALUE IS	0.15388 AT (422075.19, 3734094.21, 37.20, 37.20, 0.00)	GC	UCART1
	7TH HIGHEST VALUE IS	0.15358 AT (422015.19, 3734174.21, 35.40, 41.60, 0.00)	GC	UCART1
	8TH HIGHEST VALUE IS	0.15170 AT (421975.19, 3734314.21, 33.50, 41.70, 0.00)	GC	UCART1
	9TH HIGHEST VALUE IS	0.15090 AT (422035.19, 3734174.21, 35.10, 41.60, 0.00)	GC	UCART1
	10TH HIGHEST VALUE IS	0.15029 AT (421995.19, 3734254.21, 33.40, 41.60, 0.00)	GC	UCART1

*** RECEPTOR TYPES: GC = GRIDCART
 GP = GRIDPOLR
 DC = DISCCART
 DP = DISCPOLR

*** AERMOD - VERSION 21112 *** 19386 Cabrillo at First Mixed Use Freeway HRA *** 01/21/22
 *** AERMET - VERSION 16216 *** DPM emissions from I-5 freeway Years 2024-25 *** 17:42:38
 PAGE 26

*** MODELOPTs: RegDFAULT CONC ELEV URBAN ADJ_U*

*** Message Summary : AERMOD Model Execution ***

----- Summary of Total Messages -----

A Total of 0 Fatal Error Message(s)
A Total of 2 Warning Message(s)
A Total of 1864 Informational Message(s)

A Total of 43848 Hours Were Processed

A Total of 1500 Calm Hours Identified

A Total of 364 Missing Hours Identified (0.83 Percent)

***** FATAL ERROR MESSAGES *****
*** NONE ***

***** WARNING MESSAGES *****
ME W186 383 MEOPEN: THRESH_1MIN 1-min ASOS wind speed threshold used 0.50
ME W187 383 MEOPEN: ADJ_U* Option for Stable Low Winds used in AERMET

*** AERMOD Finishes Successfully ***

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** Lakes Environmental AERMOD MPI
**
*****
**
** AERMOD Input Produced by:
** AERMOD View Ver. 10.2.1
** Lakes Environmental Software Inc.
** Date: 1/21/2022
** File: C:\Lakes\AERMOD View\19386 Cabrillo at First 1st 14 year\19386 Cabrillo at First 1st 14 year.ADI
**
*****
**
**
*****
** AERMOD Control Pathway
*****
**
**
CO STARTING
  TITLEONE 19386 Cabrillo at First Mixed Use Freeway HRA
  TITLETWO DPM emissions from I-5 freeway Years 2026-2039
  MODELOPT DFAULT CONC
  AVERTIME PERIOD
  URBANOPT 3010232 Orange_County
  POLLUTID DPM
  RUNORNOT RUN
  ERRORFIL "19386 Cabrillo at First 1st 14 year.err"
CO FINISHED
**
*****
** AERMOD Source Pathway
*****
**
**
SO STARTING
** Source Location **
** Source ID - Type - X Coord. - Y Coord. **
** -----
** Line Source Represented by Adjacent Volume Sources
** LINE VOLUME Source ID = SLINE1
** DESCRSRC 5 fwy NB
** PREFIX
** Length of Side = 8.59
** Configuration = Adjacent
** Emission Rate = 0.000527
** Elevated
** Vertical Dimension = 6.99
** SZINIT = 1.62
** Nodes = 8
** 421943.775, 3734456.562, 35.54, 3.49, 4.00
** 421993.204, 3734285.421, 33.32, 3.49, 4.00

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** 422011.275, 3734241.307, 33.03, 3.49, 4.00
 ** 422042.633, 3734173.275, 35.06, 3.49, 4.00
 ** 422082.495, 3734117.469, 36.07, 3.49, 4.00
 ** 422145.743, 3734052.095, 39.00, 3.49, 4.00
 ** 422191.451, 3734012.233, 39.21, 3.49, 4.00
 ** 422250.979, 3733972.371, 40.42, 3.49, 4.00

** -----
 LOCATION L0000277 VOLUME 421944.967 3734452.436 35.42
 LOCATION L0000278 VOLUME 421947.350 3734444.183 35.28
 LOCATION L0000279 VOLUME 421949.734 3734435.930 35.12
 LOCATION L0000280 VOLUME 421952.117 3734427.678 34.97
 LOCATION L0000281 VOLUME 421954.501 3734419.425 35.00
 LOCATION L0000282 VOLUME 421956.885 3734411.172 35.06
 LOCATION L0000283 VOLUME 421959.268 3734402.919 35.04
 LOCATION L0000284 VOLUME 421961.652 3734394.667 34.95
 LOCATION L0000285 VOLUME 421964.035 3734386.414 34.77
 LOCATION L0000286 VOLUME 421966.419 3734378.161 34.47
 LOCATION L0000287 VOLUME 421968.802 3734369.909 34.10
 LOCATION L0000288 VOLUME 421971.186 3734361.656 34.00
 LOCATION L0000289 VOLUME 421973.569 3734353.403 33.88
 LOCATION L0000290 VOLUME 421975.953 3734345.151 33.77
 LOCATION L0000291 VOLUME 421978.336 3734336.898 33.66
 LOCATION L0000292 VOLUME 421980.720 3734328.645 33.68
 LOCATION L0000293 VOLUME 421983.104 3734320.393 33.53
 LOCATION L0000294 VOLUME 421985.487 3734312.140 33.22
 LOCATION L0000295 VOLUME 421987.871 3734303.887 33.06
 LOCATION L0000296 VOLUME 421990.254 3734295.635 33.08
 LOCATION L0000297 VOLUME 421992.638 3734287.382 33.11
 LOCATION L0000298 VOLUME 421995.686 3734279.361 33.13
 LOCATION L0000299 VOLUME 421998.943 3734271.412 33.11
 LOCATION L0000300 VOLUME 422002.199 3734263.463 33.05
 LOCATION L0000301 VOLUME 422005.455 3734255.514 33.17
 LOCATION L0000302 VOLUME 422008.711 3734247.565 32.87
 LOCATION L0000303 VOLUME 422012.040 3734239.648 32.96
 LOCATION L0000304 VOLUME 422015.635 3734231.846 33.08
 LOCATION L0000305 VOLUME 422019.231 3734224.045 33.21
 LOCATION L0000306 VOLUME 422022.827 3734216.244 33.34
 LOCATION L0000307 VOLUME 422026.423 3734208.443 33.52
 LOCATION L0000308 VOLUME 422030.019 3734200.642 34.06
 LOCATION L0000309 VOLUME 422033.615 3734192.841 34.71
 LOCATION L0000310 VOLUME 422037.211 3734185.039 34.88
 LOCATION L0000311 VOLUME 422040.806 3734177.238 35.15
 LOCATION L0000312 VOLUME 422045.090 3734169.836 35.26
 LOCATION L0000313 VOLUME 422050.082 3734162.846 35.18
 LOCATION L0000314 VOLUME 422055.075 3734155.856 35.23
 LOCATION L0000315 VOLUME 422060.068 3734148.866 36.34
 LOCATION L0000316 VOLUME 422065.061 3734141.876 36.93
 LOCATION L0000317 VOLUME 422070.054 3734134.886 36.92
 LOCATION L0000318 VOLUME 422075.047 3734127.896 36.30
 LOCATION L0000319 VOLUME 422080.039 3734120.907 35.83
 LOCATION L0000320 VOLUME 422085.530 3734114.331 36.87

LOCATION	L0000321	VOLUME	422091.503	3734108.158	37.42
LOCATION	L0000322	VOLUME	422097.476	3734101.984	37.43
LOCATION	L0000323	VOLUME	422103.449	3734095.811	36.88
LOCATION	L0000324	VOLUME	422109.422	3734089.637	37.24
LOCATION	L0000325	VOLUME	422115.394	3734083.463	38.04
LOCATION	L0000326	VOLUME	422121.367	3734077.290	38.39
LOCATION	L0000327	VOLUME	422127.340	3734071.116	38.28
LOCATION	L0000328	VOLUME	422133.313	3734064.943	38.00
LOCATION	L0000329	VOLUME	422139.286	3734058.769	38.34
LOCATION	L0000330	VOLUME	422145.259	3734052.595	38.84
LOCATION	L0000331	VOLUME	422151.692	3734046.907	39.08
LOCATION	L0000332	VOLUME	422158.166	3734041.261	38.95
LOCATION	L0000333	VOLUME	422164.640	3734035.615	38.58
LOCATION	L0000334	VOLUME	422171.114	3734029.969	38.19
LOCATION	L0000335	VOLUME	422177.588	3734024.323	38.39
LOCATION	L0000336	VOLUME	422184.062	3734018.677	38.72
LOCATION	L0000337	VOLUME	422190.536	3734013.031	39.10
LOCATION	L0000338	VOLUME	422197.579	3734008.129	39.29
LOCATION	L0000339	VOLUME	422204.717	3734003.350	39.31
LOCATION	L0000340	VOLUME	422211.854	3733998.570	39.33
LOCATION	L0000341	VOLUME	422218.992	3733993.791	39.62
LOCATION	L0000342	VOLUME	422226.129	3733989.011	39.86
LOCATION	L0000343	VOLUME	422233.267	3733984.231	40.03
LOCATION	L0000344	VOLUME	422240.404	3733979.452	40.14
LOCATION	L0000345	VOLUME	422247.542	3733974.672	40.25

** End of LINE VOLUME Source ID = SLINE1

** -----

** Line Source Represented by Adjacent Volume Sources

** LINE VOLUME Source ID = SLINE2

** DESCRSRC 5 fwy SB

** PREFIX

** Length of Side = 8.59

** Configuration = Adjacent

** Emission Rate = 0.000527

** Elevated

** Vertical Dimension = 6.99

** SZINIT = 1.62

** Nodes = 5

** 421893.815, 3734459.219, 36.96, 3.49, 4.00

** 421974.602, 3734212.075, 35.53, 3.49, 4.00

** 422084.090, 3734059.004, 38.51, 3.49, 4.00

** 422156.904, 3733992.036, 39.89, 3.49, 4.00

** 422190.389, 3733967.587, 40.85, 3.49, 4.00

** -----

LOCATION	L0000346	VOLUME	421895.149	3734455.137	36.83
LOCATION	L0000347	VOLUME	421897.818	3734446.972	36.07
LOCATION	L0000348	VOLUME	421900.487	3734438.807	35.32
LOCATION	L0000349	VOLUME	421903.156	3734430.642	35.27
LOCATION	L0000350	VOLUME	421905.825	3734422.478	36.16
LOCATION	L0000351	VOLUME	421908.494	3734414.313	36.78
LOCATION	L0000352	VOLUME	421911.163	3734406.148	37.15

LOCATION	L0000353	VOLUME	421913.832	3734397.983	37.17
LOCATION	L0000354	VOLUME	421916.501	3734389.818	36.91
LOCATION	L0000355	VOLUME	421919.170	3734381.653	36.47
LOCATION	L0000356	VOLUME	421921.839	3734373.488	35.87
LOCATION	L0000357	VOLUME	421924.507	3734365.324	35.24
LOCATION	L0000358	VOLUME	421927.176	3734357.159	34.78
LOCATION	L0000359	VOLUME	421929.845	3734348.994	34.92
LOCATION	L0000360	VOLUME	421932.514	3734340.829	35.00
LOCATION	L0000361	VOLUME	421935.183	3734332.664	35.64
LOCATION	L0000362	VOLUME	421937.852	3734324.499	36.09
LOCATION	L0000363	VOLUME	421940.521	3734316.334	36.29
LOCATION	L0000364	VOLUME	421943.190	3734308.170	36.23
LOCATION	L0000365	VOLUME	421945.859	3734300.005	36.02
LOCATION	L0000366	VOLUME	421948.528	3734291.840	35.77
LOCATION	L0000367	VOLUME	421951.197	3734283.675	35.48
LOCATION	L0000368	VOLUME	421953.866	3734275.510	35.60
LOCATION	L0000369	VOLUME	421956.535	3734267.345	36.00
LOCATION	L0000370	VOLUME	421959.204	3734259.180	36.27
LOCATION	L0000371	VOLUME	421961.873	3734251.016	36.43
LOCATION	L0000372	VOLUME	421964.542	3734242.851	36.47
LOCATION	L0000373	VOLUME	421967.211	3734234.686	36.41
LOCATION	L0000374	VOLUME	421969.879	3734226.521	36.26
LOCATION	L0000375	VOLUME	421972.548	3734218.356	36.03
LOCATION	L0000376	VOLUME	421975.754	3734210.463	36.02
LOCATION	L0000377	VOLUME	421980.752	3734203.476	36.25
LOCATION	L0000378	VOLUME	421985.749	3734196.490	36.46
LOCATION	L0000379	VOLUME	421990.747	3734189.503	36.47
LOCATION	L0000380	VOLUME	421995.744	3734182.516	36.27
LOCATION	L0000381	VOLUME	422000.742	3734175.530	35.96
LOCATION	L0000382	VOLUME	422005.739	3734168.543	35.93
LOCATION	L0000383	VOLUME	422010.736	3734161.556	36.08
LOCATION	L0000384	VOLUME	422015.734	3734154.570	36.23
LOCATION	L0000385	VOLUME	422020.731	3734147.583	36.50
LOCATION	L0000386	VOLUME	422025.729	3734140.596	36.58
LOCATION	L0000387	VOLUME	422030.726	3734133.609	36.65
LOCATION	L0000388	VOLUME	422035.723	3734126.623	36.80
LOCATION	L0000389	VOLUME	422040.721	3734119.636	37.04
LOCATION	L0000390	VOLUME	422045.718	3734112.649	37.24
LOCATION	L0000391	VOLUME	422050.716	3734105.663	37.33
LOCATION	L0000392	VOLUME	422055.713	3734098.676	37.41
LOCATION	L0000393	VOLUME	422060.711	3734091.689	37.62
LOCATION	L0000394	VOLUME	422065.708	3734084.703	37.84
LOCATION	L0000395	VOLUME	422070.705	3734077.716	38.04
LOCATION	L0000396	VOLUME	422075.703	3734070.729	38.21
LOCATION	L0000397	VOLUME	422080.700	3734063.743	38.37
LOCATION	L0000398	VOLUME	422086.124	3734057.133	38.48
LOCATION	L0000399	VOLUME	422092.447	3734051.318	38.56
LOCATION	L0000400	VOLUME	422098.769	3734045.503	38.72
LOCATION	L0000401	VOLUME	422105.092	3734039.688	38.92
LOCATION	L0000402	VOLUME	422111.414	3734033.873	39.07
LOCATION	L0000403	VOLUME	422117.737	3734028.058	39.17

LOCATION	L0000404	VOLUME	422124.060	3734022.243	39.31
LOCATION	L0000405	VOLUME	422130.382	3734016.429	39.59
LOCATION	L0000406	VOLUME	422136.705	3734010.614	39.74
LOCATION	L0000407	VOLUME	422143.027	3734004.799	39.90
LOCATION	L0000408	VOLUME	422149.350	3733998.984	40.03
LOCATION	L0000409	VOLUME	422155.672	3733993.169	39.81
LOCATION	L0000410	VOLUME	422162.490	3733987.957	39.83
LOCATION	L0000411	VOLUME	422169.428	3733982.892	40.05
LOCATION	L0000412	VOLUME	422176.365	3733977.826	40.45
LOCATION	L0000413	VOLUME	422183.303	3733972.761	40.88
LOCATION	L0000414	VOLUME	422190.240	3733967.695	41.00
** End of LINE VOLUME Source ID = SLINE2					
** Source Parameters **					
** LINE VOLUME Source ID = SLINE1					
SRCPARAM	L0000277	0.000007638	3.49	4.00	1.62
SRCPARAM	L0000278	0.000007638	3.49	4.00	1.62
SRCPARAM	L0000279	0.000007638	3.49	4.00	1.62
SRCPARAM	L0000280	0.000007638	3.49	4.00	1.62
SRCPARAM	L0000281	0.000007638	3.49	4.00	1.62
SRCPARAM	L0000282	0.000007638	3.49	4.00	1.62
SRCPARAM	L0000283	0.000007638	3.49	4.00	1.62
SRCPARAM	L0000284	0.000007638	3.49	4.00	1.62
SRCPARAM	L0000285	0.000007638	3.49	4.00	1.62
SRCPARAM	L0000286	0.000007638	3.49	4.00	1.62
SRCPARAM	L0000287	0.000007638	3.49	4.00	1.62
SRCPARAM	L0000288	0.000007638	3.49	4.00	1.62
SRCPARAM	L0000289	0.000007638	3.49	4.00	1.62
SRCPARAM	L0000290	0.000007638	3.49	4.00	1.62
SRCPARAM	L0000291	0.000007638	3.49	4.00	1.62
SRCPARAM	L0000292	0.000007638	3.49	4.00	1.62
SRCPARAM	L0000293	0.000007638	3.49	4.00	1.62
SRCPARAM	L0000294	0.000007638	3.49	4.00	1.62
SRCPARAM	L0000295	0.000007638	3.49	4.00	1.62
SRCPARAM	L0000296	0.000007638	3.49	4.00	1.62
SRCPARAM	L0000297	0.000007638	3.49	4.00	1.62
SRCPARAM	L0000298	0.000007638	3.49	4.00	1.62
SRCPARAM	L0000299	0.000007638	3.49	4.00	1.62
SRCPARAM	L0000300	0.000007638	3.49	4.00	1.62
SRCPARAM	L0000301	0.000007638	3.49	4.00	1.62
SRCPARAM	L0000302	0.000007638	3.49	4.00	1.62
SRCPARAM	L0000303	0.000007638	3.49	4.00	1.62
SRCPARAM	L0000304	0.000007638	3.49	4.00	1.62
SRCPARAM	L0000305	0.000007638	3.49	4.00	1.62
SRCPARAM	L0000306	0.000007638	3.49	4.00	1.62
SRCPARAM	L0000307	0.000007638	3.49	4.00	1.62
SRCPARAM	L0000308	0.000007638	3.49	4.00	1.62
SRCPARAM	L0000309	0.000007638	3.49	4.00	1.62
SRCPARAM	L0000310	0.000007638	3.49	4.00	1.62
SRCPARAM	L0000311	0.000007638	3.49	4.00	1.62
SRCPARAM	L0000312	0.000007638	3.49	4.00	1.62
SRCPARAM	L0000313	0.000007638	3.49	4.00	1.62

SRCPARAM	L0000314	0.000007638	3.49	4.00	1.62
SRCPARAM	L0000315	0.000007638	3.49	4.00	1.62
SRCPARAM	L0000316	0.000007638	3.49	4.00	1.62
SRCPARAM	L0000317	0.000007638	3.49	4.00	1.62
SRCPARAM	L0000318	0.000007638	3.49	4.00	1.62
SRCPARAM	L0000319	0.000007638	3.49	4.00	1.62
SRCPARAM	L0000320	0.000007638	3.49	4.00	1.62
SRCPARAM	L0000321	0.000007638	3.49	4.00	1.62
SRCPARAM	L0000322	0.000007638	3.49	4.00	1.62
SRCPARAM	L0000323	0.000007638	3.49	4.00	1.62
SRCPARAM	L0000324	0.000007638	3.49	4.00	1.62
SRCPARAM	L0000325	0.000007638	3.49	4.00	1.62
SRCPARAM	L0000326	0.000007638	3.49	4.00	1.62
SRCPARAM	L0000327	0.000007638	3.49	4.00	1.62
SRCPARAM	L0000328	0.000007638	3.49	4.00	1.62
SRCPARAM	L0000329	0.000007638	3.49	4.00	1.62
SRCPARAM	L0000330	0.000007638	3.49	4.00	1.62
SRCPARAM	L0000331	0.000007638	3.49	4.00	1.62
SRCPARAM	L0000332	0.000007638	3.49	4.00	1.62
SRCPARAM	L0000333	0.000007638	3.49	4.00	1.62
SRCPARAM	L0000334	0.000007638	3.49	4.00	1.62
SRCPARAM	L0000335	0.000007638	3.49	4.00	1.62
SRCPARAM	L0000336	0.000007638	3.49	4.00	1.62
SRCPARAM	L0000337	0.000007638	3.49	4.00	1.62
SRCPARAM	L0000338	0.000007638	3.49	4.00	1.62
SRCPARAM	L0000339	0.000007638	3.49	4.00	1.62
SRCPARAM	L0000340	0.000007638	3.49	4.00	1.62
SRCPARAM	L0000341	0.000007638	3.49	4.00	1.62
SRCPARAM	L0000342	0.000007638	3.49	4.00	1.62
SRCPARAM	L0000343	0.000007638	3.49	4.00	1.62
SRCPARAM	L0000344	0.000007638	3.49	4.00	1.62
SRCPARAM	L0000345	0.000007638	3.49	4.00	1.62

** -----

** LINE VOLUME Source ID = SLINE2

SRCPARAM	L0000346	0.000007638	3.49	4.00	1.62
SRCPARAM	L0000347	0.000007638	3.49	4.00	1.62
SRCPARAM	L0000348	0.000007638	3.49	4.00	1.62
SRCPARAM	L0000349	0.000007638	3.49	4.00	1.62
SRCPARAM	L0000350	0.000007638	3.49	4.00	1.62
SRCPARAM	L0000351	0.000007638	3.49	4.00	1.62
SRCPARAM	L0000352	0.000007638	3.49	4.00	1.62
SRCPARAM	L0000353	0.000007638	3.49	4.00	1.62
SRCPARAM	L0000354	0.000007638	3.49	4.00	1.62
SRCPARAM	L0000355	0.000007638	3.49	4.00	1.62
SRCPARAM	L0000356	0.000007638	3.49	4.00	1.62
SRCPARAM	L0000357	0.000007638	3.49	4.00	1.62
SRCPARAM	L0000358	0.000007638	3.49	4.00	1.62
SRCPARAM	L0000359	0.000007638	3.49	4.00	1.62
SRCPARAM	L0000360	0.000007638	3.49	4.00	1.62
SRCPARAM	L0000361	0.000007638	3.49	4.00	1.62
SRCPARAM	L0000362	0.000007638	3.49	4.00	1.62

[illegible]

```

SRCPARAM L0000414      0.000007638      3.49      4.00      1.62
** -----
  URBANSRC ALL
  SRCGROUP ALL
SO FINISHED
**
*****
** AERMOD Receptor Pathway
*****
**
**
RE STARTING
  INCLUDED "19386 Cabrillo at First 1st 14 year.rou"
RE FINISHED
**
*****
** AERMOD Meteorology Pathway
*****
**
**
ME STARTING
  SURFFILE "E:\New MET data\KSNA_V9_ADJU\KSNA_v9.SFC"
  PROFFILE "E:\New MET data\KSNA_V9_ADJU\KSNA_v9.PFL"
  SURFDATA 93184 2012
  UAIRDATA 3190 2012
  PROFBASE 17.0 METERS
ME FINISHED
**
*****
** AERMOD Output Pathway
*****
**
**
OU STARTING
** Auto-Generated Plotfiles
  PLOTFILE PERIOD ALL "19386 CABRILLO AT FIRST 1ST 14 YEAR.AD\PE00GALL.PLT" 31
  SUMMFILE "19386 Cabrillo at First 1st 14 year.sum"
OU FINISHED

*** Message Summary For AERMOD Model Setup ***

----- Summary of Total Messages -----

A Total of          0 Fatal Error Message(s)
A Total of          2 Warning Message(s)
A Total of          0 Informational Message(s)

***** FATAL ERROR MESSAGES *****
      *** NONE ***

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***** WARNING MESSAGES *****
ME W186      383      MEOPEN: THRESH_1MIN 1-min ASOS wind speed threshold used      0.50
ME W187      383      MEOPEN: ADJ_U* Option for Stable Low Winds used in AERMET

*****
*** SETUP Finishes Successfully ***
*****

*** AERMOD - VERSION 21112 ***      *** 19386 Cabrillo at First Mixed Use Freeway HRA      ***      01/21/22
*** AERMET - VERSION 16216 ***      *** DPM emissions from I-5 freeway Years 2026-2039      ***      17:57:39
                                                                                                     PAGE      1

*** MODELOPTs:      RegDFAULT CONC  ELEV  URBAN  ADJ_U*

***      MODEL SETUP OPTIONS SUMMARY      ***
-----
**Model Is Setup For Calculation of Average CONCentration Values.

-- DEPOSITION LOGIC --
**NO GAS DEPOSITION Data Provided.
**NO PARTICLE DEPOSITION Data Provided.
**Model Uses NO DRY DEPLETION.  DRYDPLT  =  F
**Model Uses NO WET DEPLETION.  WETDPLT  =  F

**Model Uses URBAN Dispersion Algorithm for the SBL for   138 Source(s),
  for Total of    1 Urban Area(s):
  Urban Population =   3010232.0 ;  Urban Roughness Length =   1.000 m

**Model Uses Regulatory DEFAULT Options:
  1. Stack-tip Downwash.
  2. Model Accounts for ELEVated Terrain Effects.
  3. Use Calms Processing Routine.
  4. Use Missing Data Processing Routine.
  5. No Exponential Decay.
  6. Urban Roughness Length of 1.0 Meter Assumed.

**Other Options Specified:
  ADJ_U*   - Use ADJ_U* option for SBL in AERMET
  CCVR_Sub - Meteorological data includes CCVR substitutions
  TEMP_Sub - Meteorological data includes TEMP substitutions

**Model Assumes No FLAGPOLE Receptor Heights.

**The User Specified a Pollutant Type of:  DPM

**Model Calculates PERIOD Averages Only

**This Run Includes:      138 Source(s);      1 Source Group(s); and      454 Receptor(s)

```

with: 0 POINT(s), including
 0 POINTCAP(s) and 0 POINTHOR(s)
 and: 138 VOLUME source(s)
 and: 0 AREA type source(s)
 and: 0 LINE source(s)
 and: 0 RLINE/RLINEXT source(s)
 and: 0 OPENPIT source(s)
 and: 0 BUOYANT LINE source(s) with a total of 0 line(s)

**Model Set To Continue RUNning After the Setup Testing.

**The AERMET Input Meteorological Data Version Date: 16216

**Output Options Selected:

Model Outputs Tables of PERIOD Averages by Receptor
 Model Outputs External File(s) of High Values for Plotting (PLOTFILE Keyword)
 Model Outputs Separate Summary File of High Ranked Values (SUMMFILE Keyword)

**NOTE: The Following Flags May Appear Following CONC Values: c for Calm Hours
 m for Missing Hours
 b for Both Calm and Missing Hours

**Misc. Inputs: Base Elev. for Pot. Temp. Profile (m MSL) = 17.00 ; Decay Coef. = 0.000 ; Rot. Angle = 0.0
 Emission Units = GRAMS/SEC ; Emission Rate Unit Factor = 0.10000E+07
 Output Units = MICROGRAMS/M**3

**Approximate Storage Requirements of Model = 3.6 MB of RAM.

**Input Runstream File: aermod.inp

**Output Print File: aermod.out

**Detailed Error/Message File: 19386 Cabrillo at First 1st 14 year.err

**File for Summary of Results: 19386 Cabrillo at First 1st 14 year.sum

*** AERMOD - VERSION 21112 *** 19386 Cabrillo at First Mixed Use Freeway HRA *** 01/21/22

*** AERMET - VERSION 16216 *** DPM emissions from I-5 freeway Years 2026-2039 *** 17:57:39

PAGE 2

*** MODELOPTs: RegDFault CONC ELEV URBAN ADJ_U*

*** VOLUME SOURCE DATA ***

SOURCE ID	NUMBER PART. CATS.	EMISSION RATE (GRAMS/SEC)	X (METERS)	Y (METERS)	BASE ELEV. (METERS)	RELEASE HEIGHT (METERS)	INIT. SY (METERS)	INIT. SZ (METERS)	URBAN SOURCE	EMISSION RATE SCALAR VARY BY
L0000277	0	0.76380E-05	421945.0	3734452.4	35.4	3.49	4.00	1.62	YES	
L0000278	0	0.76380E-05	421947.3	3734444.2	35.3	3.49	4.00	1.62	YES	

L0000279	0	0.76380E-05	421949.7	3734435.9	35.1	3.49	4.00	1.62	YES
L0000280	0	0.76380E-05	421952.1	3734427.7	35.0	3.49	4.00	1.62	YES
L0000281	0	0.76380E-05	421954.5	3734419.4	35.0	3.49	4.00	1.62	YES
L0000282	0	0.76380E-05	421956.9	3734411.2	35.1	3.49	4.00	1.62	YES
L0000283	0	0.76380E-05	421959.3	3734402.9	35.0	3.49	4.00	1.62	YES
L0000284	0	0.76380E-05	421961.7	3734394.7	34.9	3.49	4.00	1.62	YES
L0000285	0	0.76380E-05	421964.0	3734386.4	34.8	3.49	4.00	1.62	YES
L0000286	0	0.76380E-05	421966.4	3734378.2	34.5	3.49	4.00	1.62	YES
L0000287	0	0.76380E-05	421968.8	3734369.9	34.1	3.49	4.00	1.62	YES
L0000288	0	0.76380E-05	421971.2	3734361.7	34.0	3.49	4.00	1.62	YES
L0000289	0	0.76380E-05	421973.6	3734353.4	33.9	3.49	4.00	1.62	YES
L0000290	0	0.76380E-05	421976.0	3734345.2	33.8	3.49	4.00	1.62	YES
L0000291	0	0.76380E-05	421978.3	3734336.9	33.7	3.49	4.00	1.62	YES
L0000292	0	0.76380E-05	421980.7	3734328.6	33.7	3.49	4.00	1.62	YES
L0000293	0	0.76380E-05	421983.1	3734320.4	33.5	3.49	4.00	1.62	YES
L0000294	0	0.76380E-05	421985.5	3734312.1	33.2	3.49	4.00	1.62	YES
L0000295	0	0.76380E-05	421987.9	3734303.9	33.1	3.49	4.00	1.62	YES
L0000296	0	0.76380E-05	421990.3	3734295.6	33.1	3.49	4.00	1.62	YES
L0000297	0	0.76380E-05	421992.6	3734287.4	33.1	3.49	4.00	1.62	YES
L0000298	0	0.76380E-05	421995.7	3734279.4	33.1	3.49	4.00	1.62	YES
L0000299	0	0.76380E-05	421998.9	3734271.4	33.1	3.49	4.00	1.62	YES
L0000300	0	0.76380E-05	422002.2	3734263.5	33.0	3.49	4.00	1.62	YES
L0000301	0	0.76380E-05	422005.5	3734255.5	33.2	3.49	4.00	1.62	YES
L0000302	0	0.76380E-05	422008.7	3734247.6	32.9	3.49	4.00	1.62	YES
L0000303	0	0.76380E-05	422012.0	3734239.6	33.0	3.49	4.00	1.62	YES
L0000304	0	0.76380E-05	422015.6	3734231.8	33.1	3.49	4.00	1.62	YES
L0000305	0	0.76380E-05	422019.2	3734224.0	33.2	3.49	4.00	1.62	YES
L0000306	0	0.76380E-05	422022.8	3734216.2	33.3	3.49	4.00	1.62	YES
L0000307	0	0.76380E-05	422026.4	3734208.4	33.5	3.49	4.00	1.62	YES
L0000308	0	0.76380E-05	422030.0	3734200.6	34.1	3.49	4.00	1.62	YES
L0000309	0	0.76380E-05	422033.6	3734192.8	34.7	3.49	4.00	1.62	YES
L0000310	0	0.76380E-05	422037.2	3734185.0	34.9	3.49	4.00	1.62	YES
L0000311	0	0.76380E-05	422040.8	3734177.2	35.1	3.49	4.00	1.62	YES
L0000312	0	0.76380E-05	422045.1	3734169.8	35.3	3.49	4.00	1.62	YES
L0000313	0	0.76380E-05	422050.1	3734162.8	35.2	3.49	4.00	1.62	YES
L0000314	0	0.76380E-05	422055.1	3734155.9	35.2	3.49	4.00	1.62	YES
L0000315	0	0.76380E-05	422060.1	3734148.9	36.3	3.49	4.00	1.62	YES
L0000316	0	0.76380E-05	422065.1	3734141.9	36.9	3.49	4.00	1.62	YES

*** AERMOD - VERSION 21112 *** *** 19386 Cabrillo at First Mixed Use Freeway HRA
 *** AERMET - VERSION 16216 *** *** DPM emissions from I-5 freeway Years 2026-2039

*** 01/21/22
 *** 17:57:39
 PAGE 3

*** MODELOPTs: RegDFAULT CONC ELEV URBAN ADJ_U*

*** VOLUME SOURCE DATA ***

SOURCE ID	NUMBER PART. CATS.	EMISSION RATE (GRAMS/SEC)	X (METERS)	Y (METERS)	BASE ELEV. (METERS)	RELEASE HEIGHT (METERS)	INIT. SY (METERS)	INIT. SZ (METERS)	URBAN SOURCE	EMISSION RATE SCALAR VARY BY

L0000317	0	0.76380E-05	422070.1	3734134.9	36.9	3.49	4.00	1.62	YES
L0000318	0	0.76380E-05	422075.0	3734127.9	36.3	3.49	4.00	1.62	YES
L0000319	0	0.76380E-05	422080.0	3734120.9	35.8	3.49	4.00	1.62	YES
L0000320	0	0.76380E-05	422085.5	3734114.3	36.9	3.49	4.00	1.62	YES
L0000321	0	0.76380E-05	422091.5	3734108.2	37.4	3.49	4.00	1.62	YES
L0000322	0	0.76380E-05	422097.5	3734102.0	37.4	3.49	4.00	1.62	YES
L0000323	0	0.76380E-05	422103.4	3734095.8	36.9	3.49	4.00	1.62	YES
L0000324	0	0.76380E-05	422109.4	3734089.6	37.2	3.49	4.00	1.62	YES
L0000325	0	0.76380E-05	422115.4	3734083.5	38.0	3.49	4.00	1.62	YES
L0000326	0	0.76380E-05	422121.4	3734077.3	38.4	3.49	4.00	1.62	YES
L0000327	0	0.76380E-05	422127.3	3734071.1	38.3	3.49	4.00	1.62	YES
L0000328	0	0.76380E-05	422133.3	3734064.9	38.0	3.49	4.00	1.62	YES
L0000329	0	0.76380E-05	422139.3	3734058.8	38.3	3.49	4.00	1.62	YES
L0000330	0	0.76380E-05	422145.3	3734052.6	38.8	3.49	4.00	1.62	YES
L0000331	0	0.76380E-05	422151.7	3734046.9	39.1	3.49	4.00	1.62	YES
L0000332	0	0.76380E-05	422158.2	3734041.3	38.9	3.49	4.00	1.62	YES
L0000333	0	0.76380E-05	422164.6	3734035.6	38.6	3.49	4.00	1.62	YES
L0000334	0	0.76380E-05	422171.1	3734030.0	38.2	3.49	4.00	1.62	YES
L0000335	0	0.76380E-05	422177.6	3734024.3	38.4	3.49	4.00	1.62	YES
L0000336	0	0.76380E-05	422184.1	3734018.7	38.7	3.49	4.00	1.62	YES
L0000337	0	0.76380E-05	422190.5	3734013.0	39.1	3.49	4.00	1.62	YES
L0000338	0	0.76380E-05	422197.6	3734008.1	39.3	3.49	4.00	1.62	YES
L0000339	0	0.76380E-05	422204.7	3734003.3	39.3	3.49	4.00	1.62	YES
L0000340	0	0.76380E-05	422211.9	3733998.6	39.3	3.49	4.00	1.62	YES
L0000341	0	0.76380E-05	422219.0	3733993.8	39.6	3.49	4.00	1.62	YES
L0000342	0	0.76380E-05	422226.1	3733989.0	39.9	3.49	4.00	1.62	YES
L0000343	0	0.76380E-05	422233.3	3733984.2	40.0	3.49	4.00	1.62	YES
L0000344	0	0.76380E-05	422240.4	3733979.5	40.1	3.49	4.00	1.62	YES
L0000345	0	0.76380E-05	422247.5	3733974.7	40.2	3.49	4.00	1.62	YES
L0000346	0	0.76380E-05	421895.1	3734455.1	36.8	3.49	4.00	1.62	YES
L0000347	0	0.76380E-05	421897.8	3734447.0	36.1	3.49	4.00	1.62	YES
L0000348	0	0.76380E-05	421900.5	3734438.8	35.3	3.49	4.00	1.62	YES
L0000349	0	0.76380E-05	421903.2	3734430.6	35.3	3.49	4.00	1.62	YES
L0000350	0	0.76380E-05	421905.8	3734422.5	36.2	3.49	4.00	1.62	YES
L0000351	0	0.76380E-05	421908.5	3734414.3	36.8	3.49	4.00	1.62	YES
L0000352	0	0.76380E-05	421911.2	3734406.1	37.1	3.49	4.00	1.62	YES
L0000353	0	0.76380E-05	421913.8	3734398.0	37.2	3.49	4.00	1.62	YES
L0000354	0	0.76380E-05	421916.5	3734389.8	36.9	3.49	4.00	1.62	YES
L0000355	0	0.76380E-05	421919.2	3734381.7	36.5	3.49	4.00	1.62	YES
L0000356	0	0.76380E-05	421921.8	3734373.5	35.9	3.49	4.00	1.62	YES

*** AERMOD - VERSION 21112 *** *** 19386 Cabrillo at First Mixed Use Freeway HRA
 *** AERMET - VERSION 16216 *** *** DPM emissions from I-5 freeway Years 2026-2039

 01/21/22
 17:57:39
 PAGE 4

*** MODELOPTs: RegDFAULT CONC ELEV URBAN ADJ_U*

*** VOLUME SOURCE DATA ***

NUMBER	EMISSION RATE	BASE	RELEASE	INIT.	INIT.	URBAN	EMISSION RATE
--------	---------------	------	---------	-------	-------	-------	---------------

SOURCE ID	PART. CATS.	(GRAMS/SEC)	X (METERS)	Y (METERS)	ELEV. (METERS)	HEIGHT (METERS)	SY (METERS)	SZ (METERS)	SOURCE	SCALAR VARY BY
L0000357	0	0.76380E-05	421924.5	3734365.3	35.2	3.49	4.00	1.62	YES	
L0000358	0	0.76380E-05	421927.2	3734357.2	34.8	3.49	4.00	1.62	YES	
L0000359	0	0.76380E-05	421929.8	3734349.0	34.9	3.49	4.00	1.62	YES	
L0000360	0	0.76380E-05	421932.5	3734340.8	35.0	3.49	4.00	1.62	YES	
L0000361	0	0.76380E-05	421935.2	3734332.7	35.6	3.49	4.00	1.62	YES	
L0000362	0	0.76380E-05	421937.9	3734324.5	36.1	3.49	4.00	1.62	YES	
L0000363	0	0.76380E-05	421940.5	3734316.3	36.3	3.49	4.00	1.62	YES	
L0000364	0	0.76380E-05	421943.2	3734308.2	36.2	3.49	4.00	1.62	YES	
L0000365	0	0.76380E-05	421945.9	3734300.0	36.0	3.49	4.00	1.62	YES	
L0000366	0	0.76380E-05	421948.5	3734291.8	35.8	3.49	4.00	1.62	YES	
L0000367	0	0.76380E-05	421951.2	3734283.7	35.5	3.49	4.00	1.62	YES	
L0000368	0	0.76380E-05	421953.9	3734275.5	35.6	3.49	4.00	1.62	YES	
L0000369	0	0.76380E-05	421956.5	3734267.3	36.0	3.49	4.00	1.62	YES	
L0000370	0	0.76380E-05	421959.2	3734259.2	36.3	3.49	4.00	1.62	YES	
L0000371	0	0.76380E-05	421961.9	3734251.0	36.4	3.49	4.00	1.62	YES	
L0000372	0	0.76380E-05	421964.5	3734242.9	36.5	3.49	4.00	1.62	YES	
L0000373	0	0.76380E-05	421967.2	3734234.7	36.4	3.49	4.00	1.62	YES	
L0000374	0	0.76380E-05	421969.9	3734226.5	36.3	3.49	4.00	1.62	YES	
L0000375	0	0.76380E-05	421972.5	3734218.4	36.0	3.49	4.00	1.62	YES	
L0000376	0	0.76380E-05	421975.8	3734210.5	36.0	3.49	4.00	1.62	YES	
L0000377	0	0.76380E-05	421980.8	3734203.5	36.2	3.49	4.00	1.62	YES	
L0000378	0	0.76380E-05	421985.7	3734196.5	36.5	3.49	4.00	1.62	YES	
L0000379	0	0.76380E-05	421990.7	3734189.5	36.5	3.49	4.00	1.62	YES	
L0000380	0	0.76380E-05	421995.7	3734182.5	36.3	3.49	4.00	1.62	YES	
L0000381	0	0.76380E-05	422000.7	3734175.5	36.0	3.49	4.00	1.62	YES	
L0000382	0	0.76380E-05	422005.7	3734168.5	35.9	3.49	4.00	1.62	YES	
L0000383	0	0.76380E-05	422010.7	3734161.6	36.1	3.49	4.00	1.62	YES	
L0000384	0	0.76380E-05	422015.7	3734154.6	36.2	3.49	4.00	1.62	YES	
L0000385	0	0.76380E-05	422020.7	3734147.6	36.5	3.49	4.00	1.62	YES	
L0000386	0	0.76380E-05	422025.7	3734140.6	36.6	3.49	4.00	1.62	YES	
L0000387	0	0.76380E-05	422030.7	3734133.6	36.6	3.49	4.00	1.62	YES	
L0000388	0	0.76380E-05	422035.7	3734126.6	36.8	3.49	4.00	1.62	YES	
L0000389	0	0.76380E-05	422040.7	3734119.6	37.0	3.49	4.00	1.62	YES	
L0000390	0	0.76380E-05	422045.7	3734112.6	37.2	3.49	4.00	1.62	YES	
L0000391	0	0.76380E-05	422050.7	3734105.7	37.3	3.49	4.00	1.62	YES	
L0000392	0	0.76380E-05	422055.7	3734098.7	37.4	3.49	4.00	1.62	YES	
L0000393	0	0.76380E-05	422060.7	3734091.7	37.6	3.49	4.00	1.62	YES	
L0000394	0	0.76380E-05	422065.7	3734084.7	37.8	3.49	4.00	1.62	YES	
L0000395	0	0.76380E-05	422070.7	3734077.7	38.0	3.49	4.00	1.62	YES	
L0000396	0	0.76380E-05	422075.7	3734070.7	38.2	3.49	4.00	1.62	YES	

*** AERMOD - VERSION 21112 *** *** 19386 Cabrillo at First Mixed Use Freeway HRA
 *** AERMET - VERSION 16216 *** *** DPM emissions from I-5 freeway Years 2026-2039
 *** MODELOPTs: RegDFAULT CONC ELEV URBAN ADJ_U*

*** 01/21/22
 *** 17:57:39
 PAGE 5

*** VOLUME SOURCE DATA ***

SOURCE ID	NUMBER PART. CATS.	EMISSION RATE (GRAMS/SEC)	X (METERS)	Y (METERS)	BASE ELEV. (METERS)	RELEASE HEIGHT (METERS)	INIT. SY (METERS)	INIT. SZ (METERS)	URBAN SOURCE	EMISSION RATE SCALAR VARY BY
L0000397	0	0.76380E-05	422080.7	3734063.7	38.4	3.49	4.00	1.62	YES	
L0000398	0	0.76380E-05	422086.1	3734057.1	38.5	3.49	4.00	1.62	YES	
L0000399	0	0.76380E-05	422092.4	3734051.3	38.6	3.49	4.00	1.62	YES	
L0000400	0	0.76380E-05	422098.8	3734045.5	38.7	3.49	4.00	1.62	YES	
L0000401	0	0.76380E-05	422105.1	3734039.7	38.9	3.49	4.00	1.62	YES	
L0000402	0	0.76380E-05	422111.4	3734033.9	39.1	3.49	4.00	1.62	YES	
L0000403	0	0.76380E-05	422117.7	3734028.1	39.2	3.49	4.00	1.62	YES	
L0000404	0	0.76380E-05	422124.1	3734022.2	39.3	3.49	4.00	1.62	YES	
L0000405	0	0.76380E-05	422130.4	3734016.4	39.6	3.49	4.00	1.62	YES	
L0000406	0	0.76380E-05	422136.7	3734010.6	39.7	3.49	4.00	1.62	YES	
L0000407	0	0.76380E-05	422143.0	3734004.8	39.9	3.49	4.00	1.62	YES	
L0000408	0	0.76380E-05	422149.3	3733999.0	40.0	3.49	4.00	1.62	YES	
L0000409	0	0.76380E-05	422155.7	3733993.2	39.8	3.49	4.00	1.62	YES	
L0000410	0	0.76380E-05	422162.5	3733988.0	39.8	3.49	4.00	1.62	YES	
L0000411	0	0.76380E-05	422169.4	3733982.9	40.0	3.49	4.00	1.62	YES	
L0000412	0	0.76380E-05	422176.4	3733977.8	40.4	3.49	4.00	1.62	YES	
L0000413	0	0.76380E-05	422183.3	3733972.8	40.9	3.49	4.00	1.62	YES	
L0000414	0	0.76380E-05	422190.2	3733967.7	41.0	3.49	4.00	1.62	YES	

*** AERMOD - VERSION 21112 *** *** 19386 Cabrillo at First Mixed Use Freeway HRA
 *** AERMET - VERSION 16216 *** *** DPM emissions from I-5 freeway Years 2026-2039

 01/21/22
 17:57:39
 PAGE 6

*** MODELOPTs: RegDFAULT CONC ELEV URBAN ADJ_U*

*** SOURCE IDs DEFINING SOURCE GROUPS ***

SRCGROUP ID	SOURCE IDs
-----	-----
ALL	L0000277 , L0000278 , L0000279 , L0000280 , L0000281 , L0000282 , L0000283 , L0000284 ,
	L0000285 , L0000286 , L0000287 , L0000288 , L0000289 , L0000290 , L0000291 , L0000292 ,
	L0000293 , L0000294 , L0000295 , L0000296 , L0000297 , L0000298 , L0000299 , L0000300 ,
	L0000301 , L0000302 , L0000303 , L0000304 , L0000305 , L0000306 , L0000307 , L0000308 ,
	L0000309 , L0000310 , L0000311 , L0000312 , L0000313 , L0000314 , L0000315 , L0000316 ,
	L0000317 , L0000318 , L0000319 , L0000320 , L0000321 , L0000322 , L0000323 , L0000324 ,
	L0000325 , L0000326 , L0000327 , L0000328 , L0000329 , L0000330 , L0000331 , L0000332 ,

L0000333 , L0000334 , L0000335 , L0000336 , L0000337 , L0000338 , L0000339 , L0000340 ,
 L0000341 , L0000342 , L0000343 , L0000344 , L0000345 , L0000346 , L0000347 , L0000348 ,
 L0000349 , L0000350 , L0000351 , L0000352 , L0000353 , L0000354 , L0000355 , L0000356 ,
 L0000357 , L0000358 , L0000359 , L0000360 , L0000361 , L0000362 , L0000363 , L0000364 ,
 L0000365 , L0000366 , L0000367 , L0000368 , L0000369 , L0000370 , L0000371 , L0000372 ,
 L0000373 , L0000374 , L0000375 , L0000376 , L0000377 , L0000378 , L0000379 , L0000380 ,
 L0000381 , L0000382 , L0000383 , L0000384 , L0000385 , L0000386 , L0000387 , L0000388 ,
 L0000389 , L0000390 , L0000391 , L0000392 , L0000393 , L0000394 , L0000395 , L0000396 ,
 L0000397 , L0000398 , L0000399 , L0000400 , L0000401 , L0000402 , L0000403 , L0000404 ,
 L0000405 , L0000406 , L0000407 , L0000408 , L0000409 , L0000410 , L0000411 , L0000412 ,
 L0000413 , L0000414 ,

*** AERMOD - VERSION 21112 *** *** 19386 Cabrillo at First Mixed Use Freeway HRA *** 01/21/22
 *** AERMET - VERSION 16216 *** *** DPM emissions from I-5 freeway Years 2026-2039 *** 17:57:39
 *** MODELOPTs: RegDFAULT CONC ELEV URBAN ADJ_U* *** PAGE 7

*** SOURCE IDs DEFINED AS URBAN SOURCES ***

URBAN ID	URBAN POP	SOURCE IDs
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L0000284	3010232.	L0000277 , L0000278 , L0000279 , L0000280 , L0000281 , L0000282 , L0000283 ,
	L0000285	, L0000286 , L0000287 , L0000288 , L0000289 , L0000290 , L0000291 , L0000292 ,
	L0000293	, L0000294 , L0000295 , L0000296 , L0000297 , L0000298 , L0000299 , L0000300 ,
	L0000301	, L0000302 , L0000303 , L0000304 , L0000305 , L0000306 , L0000307 , L0000308 ,
	L0000309	, L0000310 , L0000311 , L0000312 , L0000313 , L0000314 , L0000315 , L0000316 ,
	L0000317	, L0000318 , L0000319 , L0000320 , L0000321 , L0000322 , L0000323 , L0000324 ,
	L0000325	, L0000326 , L0000327 , L0000328 , L0000329 , L0000330 , L0000331 , L0000332 ,
	L0000333	, L0000334 , L0000335 , L0000336 , L0000337 , L0000338 , L0000339 , L0000340 ,

L0000341 , L0000342 , L0000343 , L0000344 , L0000345 , L0000346 , L0000347 , L0000348 ,
 L0000349 , L0000350 , L0000351 , L0000352 , L0000353 , L0000354 , L0000355 , L0000356 ,
 L0000357 , L0000358 , L0000359 , L0000360 , L0000361 , L0000362 , L0000363 , L0000364 ,
 L0000365 , L0000366 , L0000367 , L0000368 , L0000369 , L0000370 , L0000371 , L0000372 ,
 L0000373 , L0000374 , L0000375 , L0000376 , L0000377 , L0000378 , L0000379 , L0000380 ,
 L0000381 , L0000382 , L0000383 , L0000384 , L0000385 , L0000386 , L0000387 , L0000388 ,
 L0000389 , L0000390 , L0000391 , L0000392 , L0000393 , L0000394 , L0000395 , L0000396 ,
 L0000397 , L0000398 , L0000399 , L0000400 , L0000401 , L0000402 , L0000403 , L0000404 ,
 L0000405 , L0000406 , L0000407 , L0000408 , L0000409 , L0000410 , L0000411 , L0000412 ,
 L0000413 , L0000414 ,

*** AERMOD - VERSION 21112 *** *** 19386 Cabrillo at First Mixed Use Freeway HRA *** 01/21/22
 *** AERMET - VERSION 16216 *** *** DPM emissions from I-5 freeway Years 2026-2039 *** 17:57:39
 PAGE 8

*** MODELOPTs: RegDEFAULT CONC ELEV URBAN ADJ_U*

*** GRIDDED RECEPTOR NETWORK SUMMARY ***

*** NETWORK ID: UCART1 ; NETWORK TYPE: GRIDCART ***

*** X-COORDINATES OF GRID ***
(METERS)

421875.2, 421895.2, 421915.2, 421935.2, 421955.2, 421975.2, 421995.2, 422015.2, 422035.2, 422055.2,
 422075.2, 422095.2, 422115.2, 422135.2, 422155.2, 422175.2, 422195.2, 422215.2, 422235.2, 422255.2,
 422275.2,

*** Y-COORDINATES OF GRID ***
(METERS)

3734034.2, 3734054.2, 3734074.2, 3734094.2, 3734114.2, 3734134.2, 3734154.2, 3734174.2, 3734194.2, 3734214.2,
 3734234.2, 3734254.2, 3734274.2, 3734294.2, 3734314.2, 3734334.2, 3734354.2, 3734374.2, 3734394.2, 3734414.2,
 3734434.2,

*** AERMOD - VERSION 21112 *** *** 19386 Cabrillo at First Mixed Use Freeway HRA *** 01/21/22
 *** AERMET - VERSION 16216 *** *** DPM emissions from I-5 freeway Years 2026-2039 *** 17:57:39
 PAGE 9

*** MODELOPTs: RegDEFAULT CONC ELEV URBAN ADJ_U*

*** NETWORK ID: UCART1 ; NETWORK TYPE: GRIDCART ***

* ELEVATION HEIGHTS IN METERS *

Y-COORD (METERS)	X-COORD (METERS)								
	421875.19	421895.19	421915.19	421935.19	421955.19	421975.19	421995.19	422015.19	422035.19
3734434.21	42.10	36.80	35.10	35.10	35.30	38.20	41.30	42.90	42.90
3734414.21	42.00	38.60	36.10	34.90	35.00	36.80	40.60	42.60	42.70
3734394.21	41.80	40.30	37.00	34.60	34.70	35.50	39.20	41.50	42.20
3734374.21	41.50	41.60	37.70	34.50	34.40	34.20	36.20	38.90	41.40
3734354.21	41.40	41.70	38.00	34.70	34.30	33.90	35.40	37.70	40.10
3734334.21	41.30	41.50	38.50	35.50	34.20	33.70	34.70	36.70	39.10
3734314.21	41.10	41.30	40.00	37.40	34.20	33.50	33.20	35.70	39.60
3734294.21	40.80	40.90	40.80	38.60	34.70	33.60	32.90	36.10	40.40
3734274.21	40.60	40.70	41.10	39.50	35.60	33.90	33.20	36.30	40.50
3734254.21	40.40	40.60	41.00	40.00	37.20	34.40	33.40	33.60	35.90
3734234.21	40.20	40.40	40.70	40.30	38.60	35.00	33.90	33.00	34.70
3734214.21	40.00	40.20	40.30	40.40	39.80	35.80	34.60	33.70	35.20
3734194.21	40.00	40.10	40.20	40.40	40.10	37.70	35.70	34.50	34.90
3734174.21	39.90	39.90	40.10	40.20	40.10	39.20	36.70	35.40	35.10
3734154.21	39.70	39.70	39.90	40.00	40.10	40.20	37.70	36.30	35.60
3734134.21	39.90	39.60	39.70	39.80	39.90	40.00	39.20	37.80	36.50
3734114.21	40.00	39.70	39.50	39.60	39.70	39.90	39.90	38.90	37.70
3734094.21	40.00	39.80	39.50	39.50	39.70	39.70	39.70	39.70	39.10
3734074.21	39.60	39.50	39.40	39.30	39.40	39.60	39.70	39.70	39.40
3734054.21	39.20	39.20	39.20	39.10	39.10	39.50	39.60	39.60	39.50
3734034.21	39.00	38.90	38.80	38.70	38.80	39.30	39.30	39.40	39.40

[illegible]

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*** MODELOPTs:      RegDFAULT  CONC  ELEV  URBAN  ADJ_U*
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*** NETWORK ID: UCART1 ; NETWORK TYPE: GRIDCART ***
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* ELEVATION HEIGHTS IN METERS *

Y-COORD (METERS)	X-COORD (METERS)								
	422055.19	422075.19	422095.19	422115.19	422135.19	422155.19	422175.19	422195.19	422215.19
3734434.21	42.80	42.70	42.60	42.40	42.10	42.30	42.30	42.30	42.20
3734414.21	42.60	42.50	42.40	42.30	42.00	42.20	42.20	42.20	42.10
3734394.21	42.50	42.50	42.40	42.10	41.90	42.30	42.30	42.20	42.20
3734374.21	42.50	42.80	42.50	42.10	41.80	42.20	42.30	42.20	42.20
3734354.21	41.90	42.60	42.40	41.90	41.60	42.20	42.30	42.30	42.20
3734334.21	41.40	42.20	42.10	41.60	41.40	42.10	42.20	42.20	42.10
3734314.21	41.60	41.60	41.80	41.60	41.20	41.60	41.70	41.80	41.70
3734294.21	41.30	41.30	41.30	41.30	41.10	41.30	41.40	41.40	41.50
3734274.21	41.10	41.00	41.00	41.00	41.00	41.00	41.10	41.20	41.30
3734254.21	41.20	41.00	41.00	41.00	41.20	41.10	41.10	41.10	41.30

3734234.21	41.40	41.10	40.90	41.00	41.10	41.00	40.80	41.00	41.20
3734214.21	41.20	41.00	40.90	40.90	40.90	40.80	40.40	40.60	41.00
3734194.21	37.60	40.10	40.80	40.80	40.80	40.70	40.30	40.40	40.70
3734174.21	35.70	39.80	40.80	40.90	40.90	40.60	40.20	40.30	40.50
3734154.21	35.20	39.90	40.90	41.00	41.10	40.60	40.10	40.30	40.60
3734134.21	36.00	37.20	39.50	40.90	41.00	40.50	40.10	40.30	40.60
3734114.21	36.70	36.20	38.10	40.00	40.80	40.40	40.10	40.30	40.50
3734094.21	37.60	37.20	36.80	38.30	40.60	40.30	40.00	40.30	40.50
3734074.21	38.70	38.10	37.60	37.90	39.00	40.10	40.10	40.10	40.00
3734054.21	39.30	38.80	38.40	38.10	38.10	39.60	39.70	39.70	39.70
3734034.21	39.30	39.10	39.10	39.00	38.70	38.60	38.40	39.10	39.70

*** AERMOD - VERSION 21112 ***	*** 19386 Cabrillo at First Mixed Use Freeway HRA	***	01/21/22
*** AERMET - VERSION 16216 ***	*** DPM emissions from I-5 freeway Years 2026-2039	***	17:57:39
			PAGE 11

*** MODELOPTs: RegDFAULT CONC ELEV URBAN ADJ_U*

*** NETWORK ID: UCART1 ; NETWORK TYPE: GRIDCART ***

* ELEVATION HEIGHTS IN METERS *

Y-COORD (METERS)	422235.19	422255.19	422275.19
3734434.21	42.10	42.30	42.50
3734414.21	42.00	42.20	42.50
3734394.21	42.00	42.30	42.40
3734374.21	42.00	42.20	42.30
3734354.21	42.00	42.10	42.20
3734334.21	41.90	42.00	42.20
3734314.21	41.70	41.80	42.00
3734294.21	41.50	41.60	41.70
3734274.21	41.30	41.30	41.30
3734254.21	41.40	41.40	41.30
3734234.21	41.20	41.20	41.30
3734214.21	40.80	40.90	41.20
3734194.21	40.50	40.70	40.80
3734174.21	40.30	40.60	40.60
3734154.21	40.40	40.50	40.60
3734134.21	40.30	40.50	40.60
3734114.21	40.30	40.40	40.50
3734094.21	40.30	40.20	40.30
3734074.21	40.00	40.20	40.30
3734054.21	39.70	40.00	40.20
3734034.21	39.60	39.40	39.90

*** AERMOD - VERSION 21112 ***	*** 19386 Cabrillo at First Mixed Use Freeway HRA	***	01/21/22
*** AERMET - VERSION 16216 ***	*** DPM emissions from I-5 freeway Years 2026-2039	***	17:57:39
			PAGE 12

*** MODELOPTs: RegDFAULT CONC ELEV URBAN ADJ_U*

* HILL HEIGHT SCALES IN METERS *

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*** AERMOD - VERSION 21112 ***      *** 19386 Cabrillo at First Mixed Use Freeway HRA ***      01/21/22
*** AERMET - VERSION 16216 ***      *** DPM emissions from I-5 freeway Years 2026-2039 ***      17:57:39
                                     PAGE 13

*** MODELOPTs:      RegDFAULT  CONC  ELEV  URBAN  ADJ_U*

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* HILL HEIGHT SCALES IN METERS *

Apx-144

*** AERMOD - VERSION 21112 *** *** 19386 Cabrillo at First Mixed Use Freeway HRA *** 01/21/22
*** AERMET - VERSION 16216 *** *** DPM emissions from I-5 freeway Years 2026-2039 *** 17:57:39

PAGE 14

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*** NETWORK ID: UCART1      ; NETWORK TYPE: GRIDCART ***
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Y-COORD (METERS)	X-COORD (METERS)		
	422235.19	422255.19	422275.19

*** AERMOD - VERSION 21112 *** *** 19386 Cabrillo at First Mixed Use Freeway HRA *** 01/21/22

*** AERMET - VERSION 16216 *** *** DPM emissions from I-5 freeway Years 2026-2039

*** 17:57:39
PAGE 15

*** MODELOPTs: RegDFAULT CONC ELEV URBAN ADJ_U*

*** DISCRETE CARTESIAN RECEPTORS ***
(X-COORD, Y-COORD, ZELEV, ZHILL, ZFLAG)
(METERS)

(422062.1, 3734197.9,	39.0,	41.6,	0.0);	(422069.8, 3734180.0,	38.7,	40.6,	0.0);
(422089.6, 3734199.3,	40.8,	40.8,	0.0);	(422087.3, 3734217.0,	40.9,	40.9,	0.0);
(422085.2, 3734237.4,	41.0,	41.0,	0.0);	(422062.6, 3734221.7,	41.3,	41.3,	0.0);
(422096.1, 3734179.2,	40.8,	40.8,	0.0);	(422117.4, 3734237.3,	41.0,	41.0,	0.0);
(422119.4, 3734198.2,	40.8,	40.8,	0.0);	(422120.9, 3734177.5,	40.9,	40.9,	0.0);
(422118.2, 3734218.3,	40.9,	40.9,	0.0);	(422063.1, 3734243.3,	41.2,	41.2,	0.0);
(422088.9, 3734210.1,	40.8,	40.8,	0.0);				

*** AERMOD - VERSION 21112 *** *** 19386 Cabrillo at First Mixed Use Freeway HRA
*** AERMET - VERSION 16216 *** *** DPM emissions from I-5 freeway Years 2026-2039

*** 01/21/22
*** 17:57:39
PAGE 16

*** MODELOPTs: RegDFAULT CONC ELEV URBAN ADJ_U*

* SOURCE-RECEPTOR COMBINATIONS FOR WHICH CALCULATIONS MAY NOT BE PERFORMED *
LESS THAN 1.0 METER; WITHIN OPENPIT; OR BEYOND 80KM FOR FASTAREA/FASTALL

SOURCE ID	- - RECEPTOR LOCATION - - XR (METERS) YR (METERS)	DISTANCE (METERS)
L0000279	421955.2 3734434.2	-2.88
L0000280	421955.2 3734434.2	-1.38
L0000281	421955.2 3734414.2	-3.34
L0000282	421955.2 3734414.2	-5.12
L0000284	421955.2 3734394.2	-2.12
L0000287	421975.2 3734374.2	-0.90
L0000288	421975.2 3734354.2	-0.15
L0000289	421975.2 3734354.2	-6.79
L0000290	421975.2 3734354.2	0.49
L0000291	421975.2 3734334.2	-4.46
L0000292	421975.2 3734334.2	-0.75
L0000296	421995.2 3734294.2	-3.46
L0000297	421995.2 3734294.2	-1.31
L0000298	421995.2 3734274.2	-3.43
L0000299	421995.2 3734274.2	-3.92
L0000302	422015.2 3734254.2	0.68
L0000303	422015.2 3734234.2	-2.32
L0000304	422015.2 3734234.2	-6.19
L0000306	422015.2 3734214.2	-0.70
L0000308	422035.2 3734194.2	-0.35
L0000309	422035.2 3734194.2	-6.51
L0000310	422035.2 3734194.2	0.79

L0000311	422035.2	3734174.2	-2.22
L0000314	422055.2	3734154.2	-6.95
L0000315	422055.2	3734154.2	-1.36
L0000317	422075.2	3734134.2	-3.42
L0000318	422075.2	3734134.2	-2.28
L0000319	422075.2	3734114.2	-0.33
L0000321	422095.2	3734114.2	-1.51
L0000322	422095.2	3734094.2	-0.50
L0000323	422095.2	3734094.2	-0.19
L0000324	422115.2	3734094.2	-1.24
L0000325	422115.2	3734074.2	0.66
L0000326	422115.2	3734074.2	-1.70
L0000327	422135.2	3734074.2	-0.16
L0000328	422135.2	3734074.2	0.86
L0000329	422135.2	3734054.2	-2.47
L0000331	422155.2	3734054.2	-0.50
L0000332	422155.2	3734034.2	-0.95
L0000333	422155.2	3734034.2	0.95

*** AERMOD - VERSION 21112 *** *** 19386 Cabrillo at First Mixed Use Freeway HRA
 *** AERMET - VERSION 16216 *** *** DPM emissions from I-5 freeway Years 2026-2039
 *** MODELOPTs: RegDFAULT CONC ELEV URBAN ADJ_U*

*** 01/21/22
 *** 17:57:39
 *** PAGE 17

* SOURCE-RECEPTOR COMBINATIONS FOR WHICH CALCULATIONS MAY NOT BE PERFORMED *
 LESS THAN 1.0 METER; WITHIN OPENPIT; OR BEYOND 80KM FOR FASTAREA/FASTALL

SOURCE ID	- - RECEPTOR LOCATION - - XR (METERS) YR (METERS)	DISTANCE (METERS)
L0000334	422175.2 3734034.2	-2.72
L0000348	421895.2 3734434.2	-1.59
L0000349	421895.2 3734434.2	0.13
L0000351	421915.2 3734414.2	-1.90
L0000352	421915.2 3734414.2	0.41
L0000353	421915.2 3734394.2	-4.59
L0000354	421915.2 3734394.2	-4.02
L0000355	421915.2 3734374.2	-0.16
L0000356	421915.2 3734374.2	-1.91
L0000358	421935.2 3734354.2	-0.06
L0000359	421935.2 3734354.2	-1.13
L0000360	421935.2 3734334.2	-1.46
L0000361	421935.2 3734334.2	-7.05
L0000363	421935.2 3734314.2	-2.86
L0000366	421955.2 3734294.2	-1.53
L0000368	421955.2 3734274.2	-6.74
L0000369	421955.2 3734274.2	-1.60
L0000370	421955.2 3734254.2	-2.21
L0000371	421955.2 3734254.2	-1.19

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*** AERMOD - VERSION 21112 ***    *** 19386 Cabrillo at First Mixed Use Freeway HRA ***      01/21/22
*** AERMET - VERSION 16216 ***    *** DPM emissions from I-5 freeway Years 2026-2039 ***      17:57:39
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PAGE 18

* SOURCE-RECEPTOR COMBINATIONS FOR WHICH CALCULATIONS MAY NOT BE PERFORMED *
LESS THAN 1.0 METER; WITHIN OPENPIT; OR BEYOND 80KM FOR FASTAREA/FASTALL

*** AERMOD - VERSION 21112 *** *** 19386 Cabrillo at First Mixed Use Freeway HRA *** 01/21/22
*** AERMET - VERSION 16216 *** *** DPM emissions from I-5 freeway Years 2026-2039 *** 17:57:39
PAGE 19

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*** METEOROLOGICAL DAYS SELECTED FOR PROCESSING ***
      (1=YES; 0=NO)
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Apx-148

NOTE: METEOROLOGICAL DATA ACTUALLY PROCESSED WILL ALSO DEPEND ON WHAT IS INCLUDED IN THE DATA FILE.

1.54, 3.09, 5.14, 8.23, 10.80,

*** UP TO THE FIRST 24 HOURS OF METEOROLOGICAL DATA ***

First 24 hours of scalar data																						
YR	MO	DY	JDY	HR	H0	U*	W*	DT/DZ	ZICNV	ZIMCH	M-O	LEN	Z0	BOWEN	ALBEDO	REF	WS	WD	HT	REF	TA	HT
12	01	01	1	01	-4.5	0.082	-9.000	-9.000	-999.	56.	11.0	0.12	2.65	1.00	0.87	62.	5.8	283.8	2.0			
12	01	01	1	02	-3.5	0.073	-9.000	-9.000	-999.	47.	9.9	0.12	2.65	1.00	0.77	27.	5.8	283.1	2.0			
12	01	01	1	03	-3.5	0.073	-9.000	-9.000	-999.	47.	9.9	0.12	2.65	1.00	0.77	336.	5.8	283.1	2.0			
12	01	01	1	04	-3.3	0.070	-9.000	-9.000	-999.	45.	9.7	0.12	2.65	1.00	0.74	34.	5.8	283.1	2.0			
12	01	01	1	05	-3.0	0.068	-9.000	-9.000	-999.	42.	9.4	0.12	2.65	1.00	0.70	154.	5.8	282.5	2.0			
12	01	01	1	06	-999.0	-9.000	-9.000	-9.000	-999.	-999.	-99999.0	0.12	2.65	1.00	0.00	0.	5.8	282.0	2.0			
12	01	01	1	07	-2.0	0.059	-9.000	-9.000	-999.	34.	9.0	0.12	2.65	1.00	0.55	343.	5.8	281.4	2.0			
12	01	01	1	08	-2.6	0.066	-9.000	-9.000	-999.	40.	9.7	0.12	2.65	0.53	0.69	25.	5.8	281.4	2.0			
12	01	01	1	09	21.6	0.133	0.252	0.010	27.	116.	-9.9	0.12	2.65	0.31	1.03	344.	5.8	282.5	2.0			
12	01	01	1	10	115.6	0.162	0.713	0.008	114.	156.	-3.3	0.12	2.65	0.24	1.06	233.	5.8	286.4	2.0			
12	01	01	1	11	160.9	0.126	1.129	0.005	325.	108.	-1.1	0.12	2.65	0.21	0.67	261.	5.8	291.4	2.0			
12	01	01	1	12	187.0	0.138	1.467	0.005	614.	123.	-1.3	0.12	2.65	0.20	0.75	252.	5.8	294.9	2.0			
12	01	01	1	13	186.9	0.189	1.755	0.005	1051.	197.	-3.3	0.12	2.65	0.20	1.23	280.	5.8	297.5	2.0			
12	01	01	1	14	168.3	0.247	1.857	0.005	1383.	295.	-8.1	0.12	2.65	0.21	1.86	268.	5.8	299.2	2.0			
12	01	01	1	15	115.3	0.275	1.688	0.005	1517.	346.	-16.3	0.12	2.65	0.24	2.25	248.	5.8	298.1	2.0			
12	01	01	1	16	41.5	0.262	1.211	0.005	1552.	322.	-39.2	0.12	2.65	0.33	2.32	227.	5.8	295.9	2.0			
12	01	01	1	17	-17.9	0.217	-9.000	-9.000	-999.	244.	52.0	0.12	2.65	0.60	2.18	227.	5.8	292.5	2.0			
12	01	01	1	18	-24.7	0.250	-9.000	-9.000	-999.	300.	68.7	0.12	2.65	1.00	2.50	219.	5.8	288.8	2.0			
12	01	01	1	19	-5.2	0.088	-9.000	-9.000	-999.	91.	12.0	0.12	2.65	1.00	0.94	201.	5.8	287.5	2.0			
12	01	01	1	20	-3.5	0.073	-9.000	-9.000	-999.	47.	10.0	0.12	2.65	1.00	0.77	259.	5.8	287.0	2.0			
12	01	01	1	21	-2.6	0.064	-9.000	-9.000	-999.	39.	9.1	0.12	2.65	1.00	0.65	264.	5.8	286.4	2.0			

Apx-150

*** AERMOD - VERSION 21112 *** 19386 Cabrillo at First Mixed Use Freeway HRA *** 01/21/22
 *** AERMET - VERSION 16216 *** DPM emissions from I-5 freeway Years 2026-2039 *** 17:57:39
 PAGE 22

*** MODELOPTs: RegDFAULT CONC ELEV URBAN ADJ_U*

*** THE PERIOD (43848 HRS) AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
 INCLUDING SOURCE(S): L0000277 , L0000278 , L0000279 , L0000280 , L0000281 ,
 L0000282 , L0000283 , L0000284 , L0000285 , L0000286 , L0000287 , L0000288 , L0000289 ,
 L0000290 , L0000291 , L0000292 , L0000293 , L0000294 , L0000295 , L0000296 , L0000297 ,
 L0000298 , L0000299 , L0000300 , L0000301 , L0000302 , L0000303 , L0000304 , . . . ,

*** NETWORK ID: UCART1 ; NETWORK TYPE: GRIDCART ***

** CONC OF DPM IN MICROGRAMS/M**3 **

Y-COORD (METERS)	422055.19	422075.19	422095.19	422115.19	422135.19	422155.19	422175.19	422195.19	422215.19
3734434.21	0.02927	0.02620	0.02370	0.02166	0.01991	0.01832	0.01696	0.01576	0.01468
3734414.21	0.03138	0.02791	0.02513	0.02283	0.02092	0.01918	0.01771	0.01641	0.01526
3734394.21	0.03337	0.02948	0.02645	0.02405	0.02194	0.02002	0.01845	0.01707	0.01583
3734374.21	0.03528	0.03079	0.02774	0.02523	0.02300	0.02092	0.01922	0.01774	0.01642
3734354.21	0.03815	0.03261	0.02922	0.02657	0.02414	0.02184	0.02003	0.01845	0.01704
3734334.21	0.04099	0.03483	0.03102	0.02808	0.02524	0.02289	0.02090	0.01919	0.01771
3734314.21	0.04342	0.03767	0.03303	0.02958	0.02647	0.02407	0.02190	0.02000	0.01839
3734294.21	0.04678	0.04033	0.03531	0.03129	0.02799	0.02521	0.02289	0.02086	0.01912
3734274.21	0.05088	0.04364	0.03792	0.03338	0.02969	0.02663	0.02405	0.02181	0.01991
3734254.21	0.05548	0.04749	0.04095	0.03581	0.03157	0.02825	0.02541	0.02299	0.02087
3734234.21	0.06110	0.05214	0.04472	0.03875	0.03397	0.03022	0.02706	0.02436	0.02198
3734214.21	0.07040	0.05868	0.04946	0.04241	0.03694	0.03258	0.02917	0.02604	0.02336
3734194.21	0.10186	0.06991	0.05588	0.04716	0.04058	0.03551	0.03155	0.02802	0.02496
3734174.21	0.12159	0.08544	0.06450	0.05320	0.04517	0.03922	0.03452	0.03039	0.02690
3734154.21	0.10239	0.10852	0.07662	0.06139	0.05096	0.04396	0.03834	0.03328	0.02915
3734134.21	0.12201	0.10427	0.10135	0.07390	0.05975	0.05043	0.04319	0.03695	0.03197
3734114.21	0.12036	0.11210	0.11303	0.09646	0.07291	0.05947	0.04966	0.04171	0.03556
3734094.21	0.08731	0.11822	0.10040	0.10852	0.09331	0.07265	0.05874	0.04812	0.04018
3734074.21	0.08401	0.08883	0.11285	0.10134	0.09363	0.09309	0.07193	0.05740	0.04674
3734054.21	0.06065	0.09072	0.07834	0.11183	0.10758	0.10524	0.09307	0.07133	0.05576
3734034.21	0.04585	0.06213	0.08941	0.08616	0.11103	0.09645	0.09910	0.09196	0.06942

*** AERMOD - VERSION 21112 *** 19386 Cabrillo at First Mixed Use Freeway HRA *** 01/21/22
 *** AERMET - VERSION 16216 *** DPM emissions from I-5 freeway Years 2026-2039 *** 17:57:39
 PAGE 23

*** MODELOPTs: RegDFAULT CONC ELEV URBAN ADJ_U*

*** THE PERIOD (43848 HRS) AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
 INCLUDING SOURCE(S): L0000277 , L0000278 , L0000279 , L0000280 , L0000281 ,
 L0000282 , L0000283 , L0000284 , L0000285 , L0000286 , L0000287 , L0000288 , L0000289 ,
 L0000290 , L0000291 , L0000292 , L0000293 , L0000294 , L0000295 , L0000296 , L0000297 ,

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L0000298      , L0000299      , L0000300      , L0000301      , L0000302      , L0000303      , L0000304      , . . .      ,

*** NETWORK ID: UCART1      ; NETWORK TYPE: GRIDCART ***

** CONC OF DPM      IN MICROGRAMS/M**3      **

Y-COORD      |      X-COORD (METERS)
(METERS)      |      422235.19      422255.19      422275.19
-----|-----
3734434.21 |      0.01372      0.01285      0.01208
3734414.21 |      0.01422      0.01327      0.01247
3734394.21 |      0.01473      0.01373      0.01283
3734374.21 |      0.01525      0.01417      0.01322
3734354.21 |      0.01579      0.01465      0.01361
3734334.21 |      0.01634      0.01514      0.01403
3734314.21 |      0.01693      0.01560      0.01448
3734294.21 |      0.01755      0.01617      0.01491
3734274.21 |      0.01822      0.01672      0.01536
3734254.21 |      0.01907      0.01743      0.01593
3734234.21 |      0.01997      0.01817      0.01655
3734214.21 |      0.02111      0.01912      0.01728
3734194.21 |      0.02247      0.02017      0.01816
3734174.21 |      0.02403      0.02140      0.01913
3734154.21 |      0.02580      0.02280      0.02019
3734134.21 |      0.02799      0.02444      0.02138
3734114.21 |      0.03064      0.02640      0.02276
3734094.21 |      0.03396      0.02880      0.02434
3734074.21 |      0.03842      0.03165      0.02609
3734054.21 |      0.04426      0.03531      0.02811
3734034.21 |      0.05257      0.03986      0.03028

*** AERMOD - VERSION 21112 ***      *** 19386 Cabrillo at First Mixed Use Freeway HRA      ***      01/21/22
*** AERMET - VERSION 16216 ***      *** DPM emissions from I-5 freeway Years 2026-2039      ***      17:57:39
*** MODELOPTs:      RegDFAULT CONC      ELEV      URBAN      ADJ_U*      ***      PAGE      24

*** THE PERIOD ( 43848 HRS) AVERAGE CONCENTRATION      VALUES FOR SOURCE GROUP: ALL      ***
      INCLUDING SOURCE(S):      L0000277      , L0000278      , L0000279      , L0000280      , L0000281      ,
L0000282      , L0000283      , L0000284      , L0000285      , L0000286      , L0000287      , L0000288      , L0000289      ,
L0000290      , L0000291      , L0000292      , L0000293      , L0000294      , L0000295      , L0000296      , L0000297      ,
L0000298      , L0000299      , L0000300      , L0000301      , L0000302      , L0000303      , L0000304      , . . .      ,

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*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF DPM IN MICROGRAMS/M**3

**

X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)	Y-COORD (M)	CONC
422062.12	3734197.94	0.08358	422069.82	3734180.01	0.08996
422089.61	3734199.31	0.05689	422087.32	3734216.98	0.05199
422085.20	3734237.42	0.04752	422062.62	3734221.72	0.06187
422096.15	3734179.19	0.06158	422117.42	3734237.26	0.03766
422119.39	3734198.16	0.04465	422120.86	3734177.55	0.04967
422118.24	3734218.28	0.04070	422063.11	3734243.31	0.05481
422088.86	3734210.12	0.05346			

*** AERMOD - VERSION 21112 *** 19386 Cabrillo at First Mixed Use Freeway HRA *** 01/21/22
 *** AERMET - VERSION 16216 *** DPM emissions from I-5 freeway Years 2026-2039 *** 17:57:39
 PAGE 25

*** MODELOPTs: RegDFAULT CONC ELEV URBAN ADJ_U*

*** THE SUMMARY OF MAXIMUM PERIOD (43848 HRS) RESULTS ***

** CONC OF DPM IN MICROGRAMS/M**3

**

GROUP ID	AVERAGE CONC	RECEPTOR (XR, YR, ZELEV, ZHILL, ZFLAG)	OF TYPE	NETWORK GRID-ID
ALL	1ST HIGHEST VALUE IS	0.12201 AT (422055.19, 3734134.21, 36.00, 40.90, 0.00)	GC	UCART1
	2ND HIGHEST VALUE IS	0.12159 AT (422055.19, 3734174.21, 35.70, 41.60, 0.00)	GC	UCART1
	3RD HIGHEST VALUE IS	0.12130 AT (422035.19, 3734214.21, 35.20, 41.60, 0.00)	GC	UCART1
	4TH HIGHEST VALUE IS	0.12128 AT (422035.19, 3734154.21, 35.60, 40.90, 0.00)	GC	UCART1
	5TH HIGHEST VALUE IS	0.12036 AT (422055.19, 3734114.21, 36.70, 36.70, 0.00)	GC	UCART1
	6TH HIGHEST VALUE IS	0.11822 AT (422075.19, 3734094.21, 37.20, 37.20, 0.00)	GC	UCART1
	7TH HIGHEST VALUE IS	0.11799 AT (422015.19, 3734174.21, 35.40, 41.60, 0.00)	GC	UCART1
	8TH HIGHEST VALUE IS	0.11655 AT (421975.19, 3734314.21, 33.50, 41.70, 0.00)	GC	UCART1
	9TH HIGHEST VALUE IS	0.11593 AT (422035.19, 3734174.21, 35.10, 41.60, 0.00)	GC	UCART1
	10TH HIGHEST VALUE IS	0.11546 AT (421995.19, 3734254.21, 33.40, 41.60, 0.00)	GC	UCART1

*** RECEPTOR TYPES: GC = GRIDCART
 GP = GRIDPOLR
 DC = DISCCART
 DP = DISCPOLR

*** AERMOD - VERSION 21112 *** 19386 Cabrillo at First Mixed Use Freeway HRA *** 01/21/22
 *** AERMET - VERSION 16216 *** DPM emissions from I-5 freeway Years 2026-2039 *** 17:57:39
 PAGE 26

*** MODELOPTs: RegDFAULT CONC ELEV URBAN ADJ_U*

*** Message Summary : AERMOD Model Execution ***

----- Summary of Total Messages -----

A Total of 0 Fatal Error Message(s)
A Total of 2 Warning Message(s)
A Total of 1864 Informational Message(s)

A Total of 43848 Hours Were Processed

A Total of 1500 Calm Hours Identified

A Total of 364 Missing Hours Identified (0.83 Percent)

***** FATAL ERROR MESSAGES *****
*** NONE ***

***** WARNING MESSAGES *****
ME W186 383 MEOPEN: THRESH_1MIN 1-min ASOS wind speed threshold used 0.50
ME W187 383 MEOPEN: ADJ_U* Option for Stable Low Winds used in AERMET

*** AERMOD Finishes Successfully ***

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** Lakes Environmental AERMOD MPI
**
*****
**
** AERMOD Input Produced by:
** AERMOD View Ver. 10.2.1
** Lakes Environmental Software Inc.
** Date: 1/21/2022
** File: C:\Lakes\AERMOD View\19386 Cabrillo at First 2nd 14 year\19386 Cabrillo at First 2nd 14 year.ADI
**
*****
**
**
*****
** AERMOD Control Pathway
*****
**
**
CO STARTING
  TITLEONE 19386 Cabrillo at First Mixed Use Freeway HRA
  TITLETWO DPM emissions from I-5 freeway Years 2040-2053
  MODELOPT DFAULT CONC
  AVERTIME PERIOD
  URBANOPT 3010232 Orange_County
  POLLUTID DPM
  RUNORNOT RUN
  ERRORFIL "19386 Cabrillo at First 2nd 14 year.err"
CO FINISHED
**
*****
** AERMOD Source Pathway
*****
**
**
SO STARTING
** Source Location **
** Source ID - Type - X Coord. - Y Coord. **
** -----
** Line Source Represented by Adjacent Volume Sources
** LINE VOLUME Source ID = SLINE1
** DESCRSRC 5 fwy NB
** PREFIX
** Length of Side = 8.59
** Configuration = Adjacent
** Emission Rate = 0.00045
** Elevated
** Vertical Dimension = 6.99
** SZINIT = 1.62
** Nodes = 8
** 421943.775, 3734456.562, 35.54, 3.49, 4.00
** 421993.204, 3734285.421, 33.32, 3.49, 4.00

```

** 422011.275, 3734241.307, 33.03, 3.49, 4.00
 ** 422042.633, 3734173.275, 35.06, 3.49, 4.00
 ** 422082.495, 3734117.469, 36.07, 3.49, 4.00
 ** 422145.743, 3734052.095, 39.00, 3.49, 4.00
 ** 422191.451, 3734012.233, 39.21, 3.49, 4.00
 ** 422250.979, 3733972.371, 40.42, 3.49, 4.00

** -----
 LOCATION L0000415 VOLUME 421944.967 3734452.436 35.42
 LOCATION L0000416 VOLUME 421947.350 3734444.183 35.28
 LOCATION L0000417 VOLUME 421949.734 3734435.930 35.12
 LOCATION L0000418 VOLUME 421952.117 3734427.678 34.97
 LOCATION L0000419 VOLUME 421954.501 3734419.425 35.00
 LOCATION L0000420 VOLUME 421956.885 3734411.172 35.06
 LOCATION L0000421 VOLUME 421959.268 3734402.919 35.04
 LOCATION L0000422 VOLUME 421961.652 3734394.667 34.95
 LOCATION L0000423 VOLUME 421964.035 3734386.414 34.77
 LOCATION L0000424 VOLUME 421966.419 3734378.161 34.47
 LOCATION L0000425 VOLUME 421968.802 3734369.909 34.10
 LOCATION L0000426 VOLUME 421971.186 3734361.656 34.00
 LOCATION L0000427 VOLUME 421973.569 3734353.403 33.88
 LOCATION L0000428 VOLUME 421975.953 3734345.151 33.77
 LOCATION L0000429 VOLUME 421978.336 3734336.898 33.66
 LOCATION L0000430 VOLUME 421980.720 3734328.645 33.68
 LOCATION L0000431 VOLUME 421983.104 3734320.393 33.53
 LOCATION L0000432 VOLUME 421985.487 3734312.140 33.22
 LOCATION L0000433 VOLUME 421987.871 3734303.887 33.06
 LOCATION L0000434 VOLUME 421990.254 3734295.635 33.08
 LOCATION L0000435 VOLUME 421992.638 3734287.382 33.11
 LOCATION L0000436 VOLUME 421995.686 3734279.361 33.13
 LOCATION L0000437 VOLUME 421998.943 3734271.412 33.11
 LOCATION L0000438 VOLUME 422002.199 3734263.463 33.05
 LOCATION L0000439 VOLUME 422005.455 3734255.514 33.17
 LOCATION L0000440 VOLUME 422008.711 3734247.565 32.87
 LOCATION L0000441 VOLUME 422012.040 3734239.648 32.96
 LOCATION L0000442 VOLUME 422015.635 3734231.846 33.08
 LOCATION L0000443 VOLUME 422019.231 3734224.045 33.21
 LOCATION L0000444 VOLUME 422022.827 3734216.244 33.34
 LOCATION L0000445 VOLUME 422026.423 3734208.443 33.52
 LOCATION L0000446 VOLUME 422030.019 3734200.642 34.06
 LOCATION L0000447 VOLUME 422033.615 3734192.841 34.71
 LOCATION L0000448 VOLUME 422037.211 3734185.039 34.88
 LOCATION L0000449 VOLUME 422040.806 3734177.238 35.15
 LOCATION L0000450 VOLUME 422045.090 3734169.836 35.26
 LOCATION L0000451 VOLUME 422050.082 3734162.846 35.18
 LOCATION L0000452 VOLUME 422055.075 3734155.856 35.23
 LOCATION L0000453 VOLUME 422060.068 3734148.866 36.34
 LOCATION L0000454 VOLUME 422065.061 3734141.876 36.93
 LOCATION L0000455 VOLUME 422070.054 3734134.886 36.92
 LOCATION L0000456 VOLUME 422075.047 3734127.896 36.30
 LOCATION L0000457 VOLUME 422080.039 3734120.907 35.83
 LOCATION L0000458 VOLUME 422085.530 3734114.331 36.87

LOCATION	L0000459	VOLUME	422091.503	3734108.158	37.42
LOCATION	L0000460	VOLUME	422097.476	3734101.984	37.43
LOCATION	L0000461	VOLUME	422103.449	3734095.811	36.88
LOCATION	L0000462	VOLUME	422109.422	3734089.637	37.24
LOCATION	L0000463	VOLUME	422115.394	3734083.463	38.04
LOCATION	L0000464	VOLUME	422121.367	3734077.290	38.39
LOCATION	L0000465	VOLUME	422127.340	3734071.116	38.28
LOCATION	L0000466	VOLUME	422133.313	3734064.943	38.00
LOCATION	L0000467	VOLUME	422139.286	3734058.769	38.34
LOCATION	L0000468	VOLUME	422145.259	3734052.595	38.84
LOCATION	L0000469	VOLUME	422151.692	3734046.907	39.08
LOCATION	L0000470	VOLUME	422158.166	3734041.261	38.95
LOCATION	L0000471	VOLUME	422164.640	3734035.615	38.58
LOCATION	L0000472	VOLUME	422171.114	3734029.969	38.19
LOCATION	L0000473	VOLUME	422177.588	3734024.323	38.39
LOCATION	L0000474	VOLUME	422184.062	3734018.677	38.72
LOCATION	L0000475	VOLUME	422190.536	3734013.031	39.10
LOCATION	L0000476	VOLUME	422197.579	3734008.129	39.29
LOCATION	L0000477	VOLUME	422204.717	3734003.350	39.31
LOCATION	L0000478	VOLUME	422211.854	3733998.570	39.33
LOCATION	L0000479	VOLUME	422218.992	3733993.791	39.62
LOCATION	L0000480	VOLUME	422226.129	3733989.011	39.86
LOCATION	L0000481	VOLUME	422233.267	3733984.231	40.03
LOCATION	L0000482	VOLUME	422240.404	3733979.452	40.14
LOCATION	L0000483	VOLUME	422247.542	3733974.672	40.25

** End of LINE VOLUME Source ID = SLINE1

** -----

** Line Source Represented by Adjacent Volume Sources

** LINE VOLUME Source ID = SLINE2

** DESCRSRC 5 fwy SB

** PREFIX

** Length of Side = 8.59

** Configuration = Adjacent

** Emission Rate = 0.00045

** Elevated

** Vertical Dimension = 6.99

** SZINIT = 1.62

** Nodes = 5

** 421893.815, 3734459.219, 36.96, 3.49, 4.00

** 421974.602, 3734212.075, 35.53, 3.49, 4.00

** 422084.090, 3734059.004, 38.51, 3.49, 4.00

** 422156.904, 3733992.036, 39.89, 3.49, 4.00

** 422190.389, 3733967.587, 40.85, 3.49, 4.00

** -----

LOCATION	L0000484	VOLUME	421895.149	3734455.137	36.83
LOCATION	L0000485	VOLUME	421897.818	3734446.972	36.07
LOCATION	L0000486	VOLUME	421900.487	3734438.807	35.32
LOCATION	L0000487	VOLUME	421903.156	3734430.642	35.27
LOCATION	L0000488	VOLUME	421905.825	3734422.478	36.16
LOCATION	L0000489	VOLUME	421908.494	3734414.313	36.78
LOCATION	L0000490	VOLUME	421911.163	3734406.148	37.15

LOCATION	L0000491	VOLUME	421913.832	3734397.983	37.17
LOCATION	L0000492	VOLUME	421916.501	3734389.818	36.91
LOCATION	L0000493	VOLUME	421919.170	3734381.653	36.47
LOCATION	L0000494	VOLUME	421921.839	3734373.488	35.87
LOCATION	L0000495	VOLUME	421924.507	3734365.324	35.24
LOCATION	L0000496	VOLUME	421927.176	3734357.159	34.78
LOCATION	L0000497	VOLUME	421929.845	3734348.994	34.92
LOCATION	L0000498	VOLUME	421932.514	3734340.829	35.00
LOCATION	L0000499	VOLUME	421935.183	3734332.664	35.64
LOCATION	L0000500	VOLUME	421937.852	3734324.499	36.09
LOCATION	L0000501	VOLUME	421940.521	3734316.334	36.29
LOCATION	L0000502	VOLUME	421943.190	3734308.170	36.23
LOCATION	L0000503	VOLUME	421945.859	3734300.005	36.02
LOCATION	L0000504	VOLUME	421948.528	3734291.840	35.77
LOCATION	L0000505	VOLUME	421951.197	3734283.675	35.48
LOCATION	L0000506	VOLUME	421953.866	3734275.510	35.60
LOCATION	L0000507	VOLUME	421956.535	3734267.345	36.00
LOCATION	L0000508	VOLUME	421959.204	3734259.180	36.27
LOCATION	L0000509	VOLUME	421961.873	3734251.016	36.43
LOCATION	L0000510	VOLUME	421964.542	3734242.851	36.47
LOCATION	L0000511	VOLUME	421967.211	3734234.686	36.41
LOCATION	L0000512	VOLUME	421969.879	3734226.521	36.26
LOCATION	L0000513	VOLUME	421972.548	3734218.356	36.03
LOCATION	L0000514	VOLUME	421975.754	3734210.463	36.02
LOCATION	L0000515	VOLUME	421980.752	3734203.476	36.25
LOCATION	L0000516	VOLUME	421985.749	3734196.490	36.46
LOCATION	L0000517	VOLUME	421990.747	3734189.503	36.47
LOCATION	L0000518	VOLUME	421995.744	3734182.516	36.27
LOCATION	L0000519	VOLUME	422000.742	3734175.530	35.96
LOCATION	L0000520	VOLUME	422005.739	3734168.543	35.93
LOCATION	L0000521	VOLUME	422010.736	3734161.556	36.08
LOCATION	L0000522	VOLUME	422015.734	3734154.570	36.23
LOCATION	L0000523	VOLUME	422020.731	3734147.583	36.50
LOCATION	L0000524	VOLUME	422025.729	3734140.596	36.58
LOCATION	L0000525	VOLUME	422030.726	3734133.609	36.65
LOCATION	L0000526	VOLUME	422035.723	3734126.623	36.80
LOCATION	L0000527	VOLUME	422040.721	3734119.636	37.04
LOCATION	L0000528	VOLUME	422045.718	3734112.649	37.24
LOCATION	L0000529	VOLUME	422050.716	3734105.663	37.33
LOCATION	L0000530	VOLUME	422055.713	3734098.676	37.41
LOCATION	L0000531	VOLUME	422060.711	3734091.689	37.62
LOCATION	L0000532	VOLUME	422065.708	3734084.703	37.84
LOCATION	L0000533	VOLUME	422070.705	3734077.716	38.04
LOCATION	L0000534	VOLUME	422075.703	3734070.729	38.21
LOCATION	L0000535	VOLUME	422080.700	3734063.743	38.37
LOCATION	L0000536	VOLUME	422086.124	3734057.133	38.48
LOCATION	L0000537	VOLUME	422092.447	3734051.318	38.56
LOCATION	L0000538	VOLUME	422098.769	3734045.503	38.72
LOCATION	L0000539	VOLUME	422105.092	3734039.688	38.92
LOCATION	L0000540	VOLUME	422111.414	3734033.873	39.07
LOCATION	L0000541	VOLUME	422117.737	3734028.058	39.17

LOCATION	L0000542	VOLUME	422124.060	3734022.243	39.31
LOCATION	L0000543	VOLUME	422130.382	3734016.429	39.59
LOCATION	L0000544	VOLUME	422136.705	3734010.614	39.74
LOCATION	L0000545	VOLUME	422143.027	3734004.799	39.90
LOCATION	L0000546	VOLUME	422149.350	3733998.984	40.03
LOCATION	L0000547	VOLUME	422155.672	3733993.169	39.81
LOCATION	L0000548	VOLUME	422162.490	3733987.957	39.83
LOCATION	L0000549	VOLUME	422169.428	3733982.892	40.05
LOCATION	L0000550	VOLUME	422176.365	3733977.826	40.45
LOCATION	L0000551	VOLUME	422183.303	3733972.761	40.88
LOCATION	L0000552	VOLUME	422190.240	3733967.695	41.00
** End of LINE VOLUME Source ID = SLINE2					
** Source Parameters **					
** LINE VOLUME Source ID = SLINE1					
SRCPARAM	L0000415	0.000006522	3.49	4.00	1.62
SRCPARAM	L0000416	0.000006522	3.49	4.00	1.62
SRCPARAM	L0000417	0.000006522	3.49	4.00	1.62
SRCPARAM	L0000418	0.000006522	3.49	4.00	1.62
SRCPARAM	L0000419	0.000006522	3.49	4.00	1.62
SRCPARAM	L0000420	0.000006522	3.49	4.00	1.62
SRCPARAM	L0000421	0.000006522	3.49	4.00	1.62
SRCPARAM	L0000422	0.000006522	3.49	4.00	1.62
SRCPARAM	L0000423	0.000006522	3.49	4.00	1.62
SRCPARAM	L0000424	0.000006522	3.49	4.00	1.62
SRCPARAM	L0000425	0.000006522	3.49	4.00	1.62
SRCPARAM	L0000426	0.000006522	3.49	4.00	1.62
SRCPARAM	L0000427	0.000006522	3.49	4.00	1.62
SRCPARAM	L0000428	0.000006522	3.49	4.00	1.62
SRCPARAM	L0000429	0.000006522	3.49	4.00	1.62
SRCPARAM	L0000430	0.000006522	3.49	4.00	1.62
SRCPARAM	L0000431	0.000006522	3.49	4.00	1.62
SRCPARAM	L0000432	0.000006522	3.49	4.00	1.62
SRCPARAM	L0000433	0.000006522	3.49	4.00	1.62
SRCPARAM	L0000434	0.000006522	3.49	4.00	1.62
SRCPARAM	L0000435	0.000006522	3.49	4.00	1.62
SRCPARAM	L0000436	0.000006522	3.49	4.00	1.62
SRCPARAM	L0000437	0.000006522	3.49	4.00	1.62
SRCPARAM	L0000438	0.000006522	3.49	4.00	1.62
SRCPARAM	L0000439	0.000006522	3.49	4.00	1.62
SRCPARAM	L0000440	0.000006522	3.49	4.00	1.62
SRCPARAM	L0000441	0.000006522	3.49	4.00	1.62
SRCPARAM	L0000442	0.000006522	3.49	4.00	1.62
SRCPARAM	L0000443	0.000006522	3.49	4.00	1.62
SRCPARAM	L0000444	0.000006522	3.49	4.00	1.62
SRCPARAM	L0000445	0.000006522	3.49	4.00	1.62
SRCPARAM	L0000446	0.000006522	3.49	4.00	1.62
SRCPARAM	L0000447	0.000006522	3.49	4.00	1.62
SRCPARAM	L0000448	0.000006522	3.49	4.00	1.62
SRCPARAM	L0000449	0.000006522	3.49	4.00	1.62
SRCPARAM	L0000450	0.000006522	3.49	4.00	1.62
SRCPARAM	L0000451	0.000006522	3.49	4.00	1.62

SRCPARAM	L0000452	0.000006522	3.49	4.00	1.62
SRCPARAM	L0000453	0.000006522	3.49	4.00	1.62
SRCPARAM	L0000454	0.000006522	3.49	4.00	1.62
SRCPARAM	L0000455	0.000006522	3.49	4.00	1.62
SRCPARAM	L0000456	0.000006522	3.49	4.00	1.62
SRCPARAM	L0000457	0.000006522	3.49	4.00	1.62
SRCPARAM	L0000458	0.000006522	3.49	4.00	1.62
SRCPARAM	L0000459	0.000006522	3.49	4.00	1.62
SRCPARAM	L0000460	0.000006522	3.49	4.00	1.62
SRCPARAM	L0000461	0.000006522	3.49	4.00	1.62
SRCPARAM	L0000462	0.000006522	3.49	4.00	1.62
SRCPARAM	L0000463	0.000006522	3.49	4.00	1.62
SRCPARAM	L0000464	0.000006522	3.49	4.00	1.62
SRCPARAM	L0000465	0.000006522	3.49	4.00	1.62
SRCPARAM	L0000466	0.000006522	3.49	4.00	1.62
SRCPARAM	L0000467	0.000006522	3.49	4.00	1.62
SRCPARAM	L0000468	0.000006522	3.49	4.00	1.62
SRCPARAM	L0000469	0.000006522	3.49	4.00	1.62
SRCPARAM	L0000470	0.000006522	3.49	4.00	1.62
SRCPARAM	L0000471	0.000006522	3.49	4.00	1.62
SRCPARAM	L0000472	0.000006522	3.49	4.00	1.62
SRCPARAM	L0000473	0.000006522	3.49	4.00	1.62
SRCPARAM	L0000474	0.000006522	3.49	4.00	1.62
SRCPARAM	L0000475	0.000006522	3.49	4.00	1.62
SRCPARAM	L0000476	0.000006522	3.49	4.00	1.62
SRCPARAM	L0000477	0.000006522	3.49	4.00	1.62
SRCPARAM	L0000478	0.000006522	3.49	4.00	1.62
SRCPARAM	L0000479	0.000006522	3.49	4.00	1.62
SRCPARAM	L0000480	0.000006522	3.49	4.00	1.62
SRCPARAM	L0000481	0.000006522	3.49	4.00	1.62
SRCPARAM	L0000482	0.000006522	3.49	4.00	1.62
SRCPARAM	L0000483	0.000006522	3.49	4.00	1.62

** -----

** LINE VOLUME Source ID = SLINE2

SRCPARAM	L0000484	0.000006522	3.49	4.00	1.62
SRCPARAM	L0000485	0.000006522	3.49	4.00	1.62
SRCPARAM	L0000486	0.000006522	3.49	4.00	1.62
SRCPARAM	L0000487	0.000006522	3.49	4.00	1.62
SRCPARAM	L0000488	0.000006522	3.49	4.00	1.62
SRCPARAM	L0000489	0.000006522	3.49	4.00	1.62
SRCPARAM	L0000490	0.000006522	3.49	4.00	1.62
SRCPARAM	L0000491	0.000006522	3.49	4.00	1.62
SRCPARAM	L0000492	0.000006522	3.49	4.00	1.62
SRCPARAM	L0000493	0.000006522	3.49	4.00	1.62
SRCPARAM	L0000494	0.000006522	3.49	4.00	1.62
SRCPARAM	L0000495	0.000006522	3.49	4.00	1.62
SRCPARAM	L0000496	0.000006522	3.49	4.00	1.62
SRCPARAM	L0000497	0.000006522	3.49	4.00	1.62
SRCPARAM	L0000498	0.000006522	3.49	4.00	1.62
SRCPARAM	L0000499	0.000006522	3.49	4.00	1.62
SRCPARAM	L0000500	0.000006522	3.49	4.00	1.62

[illegible]

```

SRCPARAM L0000552      0.000006522      3.49      4.00      1.62
** -----
  URBANSRC ALL
  SRCGROUP ALL
SO FINISHED
**
*****
** AERMOD Receptor Pathway
*****
**
**
RE STARTING
  INCLUDED "19386 Cabrillo at First 2nd 14 year.rou"
RE FINISHED
**
*****
** AERMOD Meteorology Pathway
*****
**
**
ME STARTING
  SURFFILE "E:\New MET data\KSNA_V9_ADJU\KSNA_v9.SFC"
  PROFFILE "E:\New MET data\KSNA_V9_ADJU\KSNA_v9.PFL"
  SURFDATA 93184 2012
  UAIRDATA 3190 2012
  PROFBASE 17.0 METERS
ME FINISHED
**
*****
** AERMOD Output Pathway
*****
**
**
OU STARTING
** Auto-Generated Plotfiles
  PLOTFILE PERIOD ALL "19386 CABRILLO AT FIRST 2ND 14 YEAR.AD\PE00GALL.PLT" 31
  SUMMFILE "19386 Cabrillo at First 2nd 14 year.sum"
OU FINISHED

*** Message Summary For AERMOD Model Setup ***

----- Summary of Total Messages -----

A Total of          0 Fatal Error Message(s)
A Total of          2 Warning Message(s)
A Total of          0 Informational Message(s)

***** FATAL ERROR MESSAGES *****
      *** NONE ***

```

```

***** WARNING MESSAGES *****
ME W186      383      MEOPEN: THRESH_1MIN 1-min ASOS wind speed threshold used      0.50
ME W187      383      MEOPEN: ADJ_U* Option for Stable Low Winds used in AERMET

*****
*** SETUP Finishes Successfully ***
*****

*** AERMOD - VERSION 21112 ***      *** 19386 Cabrillo at First Mixed Use Freeway HRA      ***      01/21/22
*** AERMET - VERSION 16216 ***      *** DPM emissions from I-5 freeway Years 2040-2053      ***      18:12:58
                                                                                                     PAGE      1

*** MODELOPTs:      RegDFAULT CONC ELEV URBAN ADJ_U*

***      MODEL SETUP OPTIONS SUMMARY      ***
-----
**Model Is Setup For Calculation of Average CONCentration Values.

-- DEPOSITION LOGIC --
**NO GAS DEPOSITION Data Provided.
**NO PARTICLE DEPOSITION Data Provided.
**Model Uses NO DRY DEPLETION. DRYDPLT = F
**Model Uses NO WET DEPLETION. WETDPLT = F

**Model Uses URBAN Dispersion Algorithm for the SBL for 138 Source(s),
for Total of 1 Urban Area(s):
Urban Population = 3010232.0 ; Urban Roughness Length = 1.000 m

**Model Uses Regulatory DEFAULT Options:
1. Stack-tip Downwash.
2. Model Accounts for ELEVated Terrain Effects.
3. Use Calms Processing Routine.
4. Use Missing Data Processing Routine.
5. No Exponential Decay.
6. Urban Roughness Length of 1.0 Meter Assumed.

**Other Options Specified:
ADJ_U* - Use ADJ_U* option for SBL in AERMET
CCVR_Sub - Meteorological data includes CCVR substitutions
TEMP_Sub - Meteorological data includes TEMP substitutions

**Model Assumes No FLAGPOLE Receptor Heights.

**The User Specified a Pollutant Type of: DPM

**Model Calculates PERIOD Averages Only

**This Run Includes: 138 Source(s); 1 Source Group(s); and 454 Receptor(s)

```

with: 0 POINT(s), including
 0 POINTCAP(s) and 0 POINTHOR(s)
 and: 138 VOLUME source(s)
 and: 0 AREA type source(s)
 and: 0 LINE source(s)
 and: 0 RLINE/RLINEXT source(s)
 and: 0 OPENPIT source(s)
 and: 0 BUOYANT LINE source(s) with a total of 0 line(s)

**Model Set To Continue RUNNING After the Setup Testing.

**The AERMET Input Meteorological Data Version Date: 16216

**Output Options Selected:

Model Outputs Tables of PERIOD Averages by Receptor
 Model Outputs External File(s) of High Values for Plotting (PLOTFILE Keyword)
 Model Outputs Separate Summary File of High Ranked Values (SUMMFILE Keyword)

**NOTE: The Following Flags May Appear Following CONC Values: c for Calm Hours
 m for Missing Hours
 b for Both Calm and Missing Hours

**Misc. Inputs: Base Elev. for Pot. Temp. Profile (m MSL) = 17.00 ; Decay Coef. = 0.000 ; Rot. Angle = 0.0
 Emission Units = GRAMS/SEC ; Emission Rate Unit Factor = 0.10000E+07
 Output Units = MICROGRAMS/M**3

**Approximate Storage Requirements of Model = 3.6 MB of RAM.

**Input Runstream File: aermod.inp

**Output Print File: aermod.out

**Detailed Error/Message File: 19386 Cabrillo at First 2nd 14 year.err

**File for Summary of Results: 19386 Cabrillo at First 2nd 14 year.sum

*** AERMOD - VERSION 21112 *** 19386 Cabrillo at First Mixed Use Freeway HRA *** 01/21/22

*** AERMET - VERSION 16216 *** DPM emissions from I-5 freeway Years 2040-2053 *** 18:12:58

PAGE 2

*** MODELOPTs: RegDFAULT CONC ELEV URBAN ADJ_U*

*** VOLUME SOURCE DATA ***

SOURCE ID	NUMBER PART. CATS.	EMISSION RATE (GRAMS/SEC)	X (METERS)	Y (METERS)	BASE ELEV. (METERS)	RELEASE HEIGHT (METERS)	INIT. SY (METERS)	INIT. SZ (METERS)	URBAN SOURCE	EMISSION RATE SCALAR VARY BY
L0000415	0	0.65220E-05	421945.0	3734452.4	35.4	3.49	4.00	1.62	YES	
L0000416	0	0.65220E-05	421947.3	3734444.2	35.3	3.49	4.00	1.62	YES	

L0000417	0	0.65220E-05	421949.7	3734435.9	35.1	3.49	4.00	1.62	YES
L0000418	0	0.65220E-05	421952.1	3734427.7	35.0	3.49	4.00	1.62	YES
L0000419	0	0.65220E-05	421954.5	3734419.4	35.0	3.49	4.00	1.62	YES
L0000420	0	0.65220E-05	421956.9	3734411.2	35.1	3.49	4.00	1.62	YES
L0000421	0	0.65220E-05	421959.3	3734402.9	35.0	3.49	4.00	1.62	YES
L0000422	0	0.65220E-05	421961.7	3734394.7	34.9	3.49	4.00	1.62	YES
L0000423	0	0.65220E-05	421964.0	3734386.4	34.8	3.49	4.00	1.62	YES
L0000424	0	0.65220E-05	421966.4	3734378.2	34.5	3.49	4.00	1.62	YES
L0000425	0	0.65220E-05	421968.8	3734369.9	34.1	3.49	4.00	1.62	YES
L0000426	0	0.65220E-05	421971.2	3734361.7	34.0	3.49	4.00	1.62	YES
L0000427	0	0.65220E-05	421973.6	3734353.4	33.9	3.49	4.00	1.62	YES
L0000428	0	0.65220E-05	421976.0	3734345.2	33.8	3.49	4.00	1.62	YES
L0000429	0	0.65220E-05	421978.3	3734336.9	33.7	3.49	4.00	1.62	YES
L0000430	0	0.65220E-05	421980.7	3734328.6	33.7	3.49	4.00	1.62	YES
L0000431	0	0.65220E-05	421983.1	3734320.4	33.5	3.49	4.00	1.62	YES
L0000432	0	0.65220E-05	421985.5	3734312.1	33.2	3.49	4.00	1.62	YES
L0000433	0	0.65220E-05	421987.9	3734303.9	33.1	3.49	4.00	1.62	YES
L0000434	0	0.65220E-05	421990.3	3734295.6	33.1	3.49	4.00	1.62	YES
L0000435	0	0.65220E-05	421992.6	3734287.4	33.1	3.49	4.00	1.62	YES
L0000436	0	0.65220E-05	421995.7	3734279.4	33.1	3.49	4.00	1.62	YES
L0000437	0	0.65220E-05	421998.9	3734271.4	33.1	3.49	4.00	1.62	YES
L0000438	0	0.65220E-05	422002.2	3734263.5	33.0	3.49	4.00	1.62	YES
L0000439	0	0.65220E-05	422005.5	3734255.5	33.2	3.49	4.00	1.62	YES
L0000440	0	0.65220E-05	422008.7	3734247.6	32.9	3.49	4.00	1.62	YES
L0000441	0	0.65220E-05	422012.0	3734239.6	33.0	3.49	4.00	1.62	YES
L0000442	0	0.65220E-05	422015.6	3734231.8	33.1	3.49	4.00	1.62	YES
L0000443	0	0.65220E-05	422019.2	3734224.0	33.2	3.49	4.00	1.62	YES
L0000444	0	0.65220E-05	422022.8	3734216.2	33.3	3.49	4.00	1.62	YES
L0000445	0	0.65220E-05	422026.4	3734208.4	33.5	3.49	4.00	1.62	YES
L0000446	0	0.65220E-05	422030.0	3734200.6	34.1	3.49	4.00	1.62	YES
L0000447	0	0.65220E-05	422033.6	3734192.8	34.7	3.49	4.00	1.62	YES
L0000448	0	0.65220E-05	422037.2	3734185.0	34.9	3.49	4.00	1.62	YES
L0000449	0	0.65220E-05	422040.8	3734177.2	35.1	3.49	4.00	1.62	YES
L0000450	0	0.65220E-05	422045.1	3734169.8	35.3	3.49	4.00	1.62	YES
L0000451	0	0.65220E-05	422050.1	3734162.8	35.2	3.49	4.00	1.62	YES
L0000452	0	0.65220E-05	422055.1	3734155.9	35.2	3.49	4.00	1.62	YES
L0000453	0	0.65220E-05	422060.1	3734148.9	36.3	3.49	4.00	1.62	YES
L0000454	0	0.65220E-05	422065.1	3734141.9	36.9	3.49	4.00	1.62	YES

*** AERMOD - VERSION 21112 ***
 *** AERMET - VERSION 16216 ***

*** 19386 Cabrillo at First Mixed Use Freeway HRA
 *** DPM emissions from I-5 freeway Years 2040-2053

*** 01/21/22
 *** 18:12:58
 PAGE 3

*** MODELOPTs: RegDFAULT CONC ELEV URBAN ADJ_U*

*** VOLUME SOURCE DATA ***

SOURCE ID	NUMBER PART. CATS.	EMISSION RATE (GRAMS/SEC)	X (METERS)	Y (METERS)	BASE ELEV. (METERS)	RELEASE HEIGHT (METERS)	INIT. SY (METERS)	INIT. SZ (METERS)	URBAN SOURCE	EMISSION RATE SCALAR VARY BY

L0000455	0	0.65220E-05	422070.1	3734134.9	36.9	3.49	4.00	1.62	YES
L0000456	0	0.65220E-05	422075.0	3734127.9	36.3	3.49	4.00	1.62	YES
L0000457	0	0.65220E-05	422080.0	3734120.9	35.8	3.49	4.00	1.62	YES
L0000458	0	0.65220E-05	422085.5	3734114.3	36.9	3.49	4.00	1.62	YES
L0000459	0	0.65220E-05	422091.5	3734108.2	37.4	3.49	4.00	1.62	YES
L0000460	0	0.65220E-05	422097.5	3734102.0	37.4	3.49	4.00	1.62	YES
L0000461	0	0.65220E-05	422103.4	3734095.8	36.9	3.49	4.00	1.62	YES
L0000462	0	0.65220E-05	422109.4	3734089.6	37.2	3.49	4.00	1.62	YES
L0000463	0	0.65220E-05	422115.4	3734083.5	38.0	3.49	4.00	1.62	YES
L0000464	0	0.65220E-05	422121.4	3734077.3	38.4	3.49	4.00	1.62	YES
L0000465	0	0.65220E-05	422127.3	3734071.1	38.3	3.49	4.00	1.62	YES
L0000466	0	0.65220E-05	422133.3	3734064.9	38.0	3.49	4.00	1.62	YES
L0000467	0	0.65220E-05	422139.3	3734058.8	38.3	3.49	4.00	1.62	YES
L0000468	0	0.65220E-05	422145.3	3734052.6	38.8	3.49	4.00	1.62	YES
L0000469	0	0.65220E-05	422151.7	3734046.9	39.1	3.49	4.00	1.62	YES
L0000470	0	0.65220E-05	422158.2	3734041.3	38.9	3.49	4.00	1.62	YES
L0000471	0	0.65220E-05	422164.6	3734035.6	38.6	3.49	4.00	1.62	YES
L0000472	0	0.65220E-05	422171.1	3734030.0	38.2	3.49	4.00	1.62	YES
L0000473	0	0.65220E-05	422177.6	3734024.3	38.4	3.49	4.00	1.62	YES
L0000474	0	0.65220E-05	422184.1	3734018.7	38.7	3.49	4.00	1.62	YES
L0000475	0	0.65220E-05	422190.5	3734013.0	39.1	3.49	4.00	1.62	YES
L0000476	0	0.65220E-05	422197.6	3734008.1	39.3	3.49	4.00	1.62	YES
L0000477	0	0.65220E-05	422204.7	3734003.3	39.3	3.49	4.00	1.62	YES
L0000478	0	0.65220E-05	422211.9	3733998.6	39.3	3.49	4.00	1.62	YES
L0000479	0	0.65220E-05	422219.0	3733993.8	39.6	3.49	4.00	1.62	YES
L0000480	0	0.65220E-05	422226.1	3733989.0	39.9	3.49	4.00	1.62	YES
L0000481	0	0.65220E-05	422233.3	3733984.2	40.0	3.49	4.00	1.62	YES
L0000482	0	0.65220E-05	422240.4	3733979.5	40.1	3.49	4.00	1.62	YES
L0000483	0	0.65220E-05	422247.5	3733974.7	40.2	3.49	4.00	1.62	YES
L0000484	0	0.65220E-05	421895.1	3734455.1	36.8	3.49	4.00	1.62	YES
L0000485	0	0.65220E-05	421897.8	3734447.0	36.1	3.49	4.00	1.62	YES
L0000486	0	0.65220E-05	421900.5	3734438.8	35.3	3.49	4.00	1.62	YES
L0000487	0	0.65220E-05	421903.2	3734430.6	35.3	3.49	4.00	1.62	YES
L0000488	0	0.65220E-05	421905.8	3734422.5	36.2	3.49	4.00	1.62	YES
L0000489	0	0.65220E-05	421908.5	3734414.3	36.8	3.49	4.00	1.62	YES
L0000490	0	0.65220E-05	421911.2	3734406.1	37.1	3.49	4.00	1.62	YES
L0000491	0	0.65220E-05	421913.8	3734398.0	37.2	3.49	4.00	1.62	YES
L0000492	0	0.65220E-05	421916.5	3734389.8	36.9	3.49	4.00	1.62	YES
L0000493	0	0.65220E-05	421919.2	3734381.7	36.5	3.49	4.00	1.62	YES
L0000494	0	0.65220E-05	421921.8	3734373.5	35.9	3.49	4.00	1.62	YES

*** AERMOD - VERSION 21112 ***
 *** AERMET - VERSION 16216 ***

*** 19386 Cabrillo at First Mixed Use Freeway HRA
 *** DPM emissions from I-5 freeway Years 2040-2053

*** 01/21/22
 *** 18:12:58
 PAGE 4

*** MODELOPTs: RegDFAULT CONC ELEV URBAN ADJ_U*

*** VOLUME SOURCE DATA ***

NUMBER	EMISSION RATE	BASE	RELEASE	INIT.	INIT.	URBAN	EMISSION RATE
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SOURCE ID	PART. CATS.	(GRAMS/SEC)	X (METERS)	Y (METERS)	ELEV. (METERS)	HEIGHT (METERS)	SY (METERS)	SZ (METERS)	SOURCE	SCALAR VARY BY
L0000495	0	0.65220E-05	421924.5	3734365.3	35.2	3.49	4.00	1.62	YES	
L0000496	0	0.65220E-05	421927.2	3734357.2	34.8	3.49	4.00	1.62	YES	
L0000497	0	0.65220E-05	421929.8	3734349.0	34.9	3.49	4.00	1.62	YES	
L0000498	0	0.65220E-05	421932.5	3734340.8	35.0	3.49	4.00	1.62	YES	
L0000499	0	0.65220E-05	421935.2	3734332.7	35.6	3.49	4.00	1.62	YES	
L0000500	0	0.65220E-05	421937.9	3734324.5	36.1	3.49	4.00	1.62	YES	
L0000501	0	0.65220E-05	421940.5	3734316.3	36.3	3.49	4.00	1.62	YES	
L0000502	0	0.65220E-05	421943.2	3734308.2	36.2	3.49	4.00	1.62	YES	
L0000503	0	0.65220E-05	421945.9	3734300.0	36.0	3.49	4.00	1.62	YES	
L0000504	0	0.65220E-05	421948.5	3734291.8	35.8	3.49	4.00	1.62	YES	
L0000505	0	0.65220E-05	421951.2	3734283.7	35.5	3.49	4.00	1.62	YES	
L0000506	0	0.65220E-05	421953.9	3734275.5	35.6	3.49	4.00	1.62	YES	
L0000507	0	0.65220E-05	421956.5	3734267.3	36.0	3.49	4.00	1.62	YES	
L0000508	0	0.65220E-05	421959.2	3734259.2	36.3	3.49	4.00	1.62	YES	
L0000509	0	0.65220E-05	421961.9	3734251.0	36.4	3.49	4.00	1.62	YES	
L0000510	0	0.65220E-05	421964.5	3734242.9	36.5	3.49	4.00	1.62	YES	
L0000511	0	0.65220E-05	421967.2	3734234.7	36.4	3.49	4.00	1.62	YES	
L0000512	0	0.65220E-05	421969.9	3734226.5	36.3	3.49	4.00	1.62	YES	
L0000513	0	0.65220E-05	421972.5	3734218.4	36.0	3.49	4.00	1.62	YES	
L0000514	0	0.65220E-05	421975.8	3734210.5	36.0	3.49	4.00	1.62	YES	
L0000515	0	0.65220E-05	421980.8	3734203.5	36.2	3.49	4.00	1.62	YES	
L0000516	0	0.65220E-05	421985.7	3734196.5	36.5	3.49	4.00	1.62	YES	
L0000517	0	0.65220E-05	421990.7	3734189.5	36.5	3.49	4.00	1.62	YES	
L0000518	0	0.65220E-05	421995.7	3734182.5	36.3	3.49	4.00	1.62	YES	
L0000519	0	0.65220E-05	422000.7	3734175.5	36.0	3.49	4.00	1.62	YES	
L0000520	0	0.65220E-05	422005.7	3734168.5	35.9	3.49	4.00	1.62	YES	
L0000521	0	0.65220E-05	422010.7	3734161.6	36.1	3.49	4.00	1.62	YES	
L0000522	0	0.65220E-05	422015.7	3734154.6	36.2	3.49	4.00	1.62	YES	
L0000523	0	0.65220E-05	422020.7	3734147.6	36.5	3.49	4.00	1.62	YES	
L0000524	0	0.65220E-05	422025.7	3734140.6	36.6	3.49	4.00	1.62	YES	
L0000525	0	0.65220E-05	422030.7	3734133.6	36.6	3.49	4.00	1.62	YES	
L0000526	0	0.65220E-05	422035.7	3734126.6	36.8	3.49	4.00	1.62	YES	
L0000527	0	0.65220E-05	422040.7	3734119.6	37.0	3.49	4.00	1.62	YES	
L0000528	0	0.65220E-05	422045.7	3734112.6	37.2	3.49	4.00	1.62	YES	
L0000529	0	0.65220E-05	422050.7	3734105.7	37.3	3.49	4.00	1.62	YES	
L0000530	0	0.65220E-05	422055.7	3734098.7	37.4	3.49	4.00	1.62	YES	
L0000531	0	0.65220E-05	422060.7	3734091.7	37.6	3.49	4.00	1.62	YES	
L0000532	0	0.65220E-05	422065.7	3734084.7	37.8	3.49	4.00	1.62	YES	
L0000533	0	0.65220E-05	422070.7	3734077.7	38.0	3.49	4.00	1.62	YES	
L0000534	0	0.65220E-05	422075.7	3734070.7	38.2	3.49	4.00	1.62	YES	

*** AERMOD - VERSION 21112 *** *** 19386 Cabrillo at First Mixed Use Freeway HRA
 *** AERMET - VERSION 16216 *** *** DPM emissions from I-5 freeway Years 2040-2053

 *** MODELOPTs: RegDFAULT CONC ELEV URBAN ADJ_U*

*** 01/21/22
 *** 18:12:58
 PAGE 5

*** VOLUME SOURCE DATA ***

[illegible]

*** SOURCE IDs DEFINING SOURCE GROUPS ***

SRCGROUP ID		SOURCE IDs														

ALL	L0000415	,	L0000416	,	L0000417	,	L0000418	,	L0000419	,	L0000420	,	L0000421	,	L0000422	,
	L0000423	,	L0000424	,	L0000425	,	L0000426	,	L0000427	,	L0000428	,	L0000429	,	L0000430	,
	L0000431	,	L0000432	,	L0000433	,	L0000434	,	L0000435	,	L0000436	,	L0000437	,	L0000438	,
	L0000439	,	L0000440	,	L0000441	,	L0000442	,	L0000443	,	L0000444	,	L0000445	,	L0000446	,
	L0000447	,	L0000448	,	L0000449	,	L0000450	,	L0000451	,	L0000452	,	L0000453	,	L0000454	,
	L0000455	,	L0000456	,	L0000457	,	L0000458	,	L0000459	,	L0000460	,	L0000461	,	L0000462	,
	L0000463	,	L0000464	,	L0000465	,	L0000466	,	L0000467	,	L0000468	,	L0000469	,	L0000470	,

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*** AERMOD - VERSION 21112 *** *** 19386 Cabrillo at First Mixed Use Freeway HRA *** 01/21/22
*** AERMET - VERSION 16216 *** *** DPM emissions from I-5 freeway Years 2040-2053 *** 18:12:58
*** MODELOPTs: RegDFAULT CONC ELEV URBAN ADJ_U* *** PAGE 7

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*** SOURCE IDs DEFINED AS URBAN SOURCES ***

URBAN ID	URBAN POP	SOURCE IDs
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L0000422	3010232.	L0000415 , L0000416 , L0000417 , L0000418 , L0000419 , L0000420 , L0000421 ,
	,	
	L0000423	, L0000424 , L0000425 , L0000426 , L0000427 , L0000428 , L0000429 , L0000430 ,
	L0000431	, L0000432 , L0000433 , L0000434 , L0000435 , L0000436 , L0000437 , L0000438 ,
	L0000439	, L0000440 , L0000441 , L0000442 , L0000443 , L0000444 , L0000445 , L0000446 ,
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	L0000471	, L0000472 , L0000473 , L0000474 , L0000475 , L0000476 , L0000477 , L0000478 ,

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 L0000543 , L0000544 , L0000545 , L0000546 , L0000547 , L0000548 , L0000549 , L0000550 ,
 L0000551 , L0000552 ,

*** AERMOD - VERSION 21112 *** *** 19386 Cabrillo at First Mixed Use Freeway HRA *** 01/21/22
 *** AERMET - VERSION 16216 *** *** DPM emissions from I-5 freeway Years 2040-2053 *** 18:12:58
 PAGE 8

*** MODELOPTs: RegDFAULT CONC ELEV URBAN ADJ_U*

*** GRIDDED RECEPTOR NETWORK SUMMARY ***

*** NETWORK ID: UCART1 ; NETWORK TYPE: GRIDCART ***

*** X-COORDINATES OF GRID ***
(METERS)

421875.2, 421895.2, 421915.2, 421935.2, 421955.2, 421975.2, 421995.2, 422015.2, 422035.2, 422055.2,
 422075.2, 422095.2, 422115.2, 422135.2, 422155.2, 422175.2, 422195.2, 422215.2, 422235.2, 422255.2,
 422275.2,

*** Y-COORDINATES OF GRID ***
(METERS)

3734034.2, 3734054.2, 3734074.2, 3734094.2, 3734114.2, 3734134.2, 3734154.2, 3734174.2, 3734194.2, 3734214.2,
 3734234.2, 3734254.2, 3734274.2, 3734294.2, 3734314.2, 3734334.2, 3734354.2, 3734374.2, 3734394.2, 3734414.2,
 3734434.2,

*** AERMOD - VERSION 21112 *** *** 19386 Cabrillo at First Mixed Use Freeway HRA *** 01/21/22
 *** AERMET - VERSION 16216 *** *** DPM emissions from I-5 freeway Years 2040-2053 *** 18:12:58
 PAGE 9

*** MODELOPTs: RegDFAULT CONC ELEV URBAN ADJ_U*

*** NETWORK ID: UCART1 ; NETWORK TYPE: GRIDCART ***

* ELEVATION HEIGHTS IN METERS *

Y-COORD (METERS)	X-COORD (METERS)								
	421875.19	421895.19	421915.19	421935.19	421955.19	421975.19	421995.19	422015.19	422035.19
3734434.21	42.10	36.80	35.10	35.10	35.30	38.20	41.30	42.90	42.90
3734414.21	42.00	38.60	36.10	34.90	35.00	36.80	40.60	42.60	42.70
3734394.21	41.80	40.30	37.00	34.60	34.70	35.50	39.20	41.50	42.20
3734374.21	41.50	41.60	37.70	34.50	34.40	34.20	36.20	38.90	41.40
3734354.21	41.40	41.70	38.00	34.70	34.30	33.90	35.40	37.70	40.10
3734334.21	41.30	41.50	38.50	35.50	34.20	33.70	34.70	36.70	39.10
3734314.21	41.10	41.30	40.00	37.40	34.20	33.50	33.20	35.70	39.60
3734294.21	40.80	40.90	40.80	38.60	34.70	33.60	32.90	36.10	40.40
3734274.21	40.60	40.70	41.10	39.50	35.60	33.90	33.20	36.30	40.50
3734254.21	40.40	40.60	41.00	40.00	37.20	34.40	33.40	33.60	35.90
3734234.21	40.20	40.40	40.70	40.30	38.60	35.00	33.90	33.00	34.70
3734214.21	40.00	40.20	40.30	40.40	39.80	35.80	34.60	33.70	35.20
3734194.21	40.00	40.10	40.20	40.40	40.10	37.70	35.70	34.50	34.90
3734174.21	39.90	39.90	40.10	40.20	40.10	39.20	36.70	35.40	35.10
3734154.21	39.70	39.70	39.90	40.00	40.10	40.20	37.70	36.30	35.60
3734134.21	39.90	39.60	39.70	39.80	39.90	40.00	39.20	37.80	36.50
3734114.21	40.00	39.70	39.50	39.60	39.70	39.90	39.90	38.90	37.70
3734094.21	40.00	39.80	39.50	39.50	39.70	39.70	39.70	39.70	39.10
3734074.21	39.60	39.50	39.40	39.30	39.40	39.60	39.70	39.70	39.40
3734054.21	39.20	39.20	39.20	39.10	39.10	39.50	39.60	39.60	39.50
3734034.21	39.00	38.90	38.80	38.70	38.80	39.30	39.30	39.40	39.40

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*** AERMOT - VERSION 21112 ***    *** 19386 Cabrillo at First Mixed Use Freeway HRA ***    01/21/22
*** AERMET - VERSION 16216 ***    *** DPM emissions from I-5 freeway Years 2040-2053 ***    18:12:58
                                     PAGE 10

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*** MODELOPTs:      ReqDFAULT  CONC  ELEV  URBAN  ADJ_U*
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*** NETWORK ID: UCART1 ; NETWORK TYPE: GRIDCART ***
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* ELEVATION HEIGHTS IN METERS *

Y-COORD (METERS)	X-COORD (METERS)								
	422055.19	422075.19	422095.19	422115.19	422135.19	422155.19	422175.19	422195.19	422215.19
3734434.21	42.80	42.70	42.60	42.40	42.10	42.30	42.30	42.30	42.20
3734414.21	42.60	42.50	42.40	42.30	42.00	42.20	42.20	42.20	42.10
3734394.21	42.50	42.50	42.40	42.10	41.90	42.30	42.30	42.20	42.20
3734374.21	42.50	42.80	42.50	42.10	41.80	42.20	42.30	42.20	42.20
3734354.21	41.90	42.60	42.40	41.90	41.60	42.20	42.30	42.30	42.20
3734334.21	41.40	42.20	42.10	41.60	41.40	42.10	42.20	42.20	42.10
3734314.21	41.60	41.60	41.80	41.60	41.20	41.60	41.70	41.80	41.70
3734294.21	41.30	41.30	41.30	41.30	41.10	41.30	41.40	41.40	41.50
3734274.21	41.10	41.00	41.00	41.00	41.00	41.00	41.10	41.20	41.30
3734254.21	41.20	41.00	41.00	41.00	41.20	41.10	41.10	41.10	41.30

3734234.21	41.40	41.10	40.90	41.00	41.10	41.00	40.80	41.00	41.20
3734214.21	41.20	41.00	40.90	40.90	40.90	40.80	40.40	40.60	41.00
3734194.21	37.60	40.10	40.80	40.80	40.80	40.70	40.30	40.40	40.70
3734174.21	35.70	39.80	40.80	40.90	40.90	40.60	40.20	40.30	40.50
3734154.21	35.20	39.90	40.90	41.00	41.10	40.60	40.10	40.30	40.60
3734134.21	36.00	37.20	39.50	40.90	41.00	40.50	40.10	40.30	40.60
3734114.21	36.70	36.20	38.10	40.00	40.80	40.40	40.10	40.30	40.50
3734094.21	37.60	37.20	36.80	38.30	40.60	40.30	40.00	40.30	40.50
3734074.21	38.70	38.10	37.60	37.90	39.00	40.10	40.10	40.10	40.00
3734054.21	39.30	38.80	38.40	38.10	38.10	39.60	39.70	39.70	39.70
3734034.21	39.30	39.10	39.10	39.00	38.70	38.60	38.40	39.10	39.70

*** AERMOD - VERSION 21112 ***	*** 19386 Cabrillo at First Mixed Use Freeway HRA	***	01/21/22
*** AERMET - VERSION 16216 ***	*** DPM emissions from I-5 freeway Years 2040-2053	***	18:12:58
			PAGE 11

*** MODELOPTs: RegDFAULT CONC ELEV URBAN ADJ_U*

*** NETWORK ID: UCART1 ; NETWORK TYPE: GRIDCART ***

* ELEVATION HEIGHTS IN METERS *

Y-COORD (METERS)	422235.19	422255.19	422275.19
3734434.21	42.10	42.30	42.50
3734414.21	42.00	42.20	42.50
3734394.21	42.00	42.30	42.40
3734374.21	42.00	42.20	42.30
3734354.21	42.00	42.10	42.20
3734334.21	41.90	42.00	42.20
3734314.21	41.70	41.80	42.00
3734294.21	41.50	41.60	41.70
3734274.21	41.30	41.30	41.30
3734254.21	41.40	41.40	41.30
3734234.21	41.20	41.20	41.30
3734214.21	40.80	40.90	41.20
3734194.21	40.50	40.70	40.80
3734174.21	40.30	40.60	40.60
3734154.21	40.40	40.50	40.60
3734134.21	40.30	40.50	40.60
3734114.21	40.30	40.40	40.50
3734094.21	40.30	40.20	40.30
3734074.21	40.00	40.20	40.30
3734054.21	39.70	40.00	40.20
3734034.21	39.60	39.40	39.90

*** AERMOD - VERSION 21112 ***	*** 19386 Cabrillo at First Mixed Use Freeway HRA	***	01/21/22
*** AERMET - VERSION 16216 ***	*** DPM emissions from I-5 freeway Years 2040-2053	***	18:12:58
			PAGE 12

*** MODELOPTs: RegDFAULT CONC ELEV URBAN ADJ_U*

* HILL HEIGHT SCALES IN METERS *

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*** AERMOD - VERSION 21112 ***      *** 19386 Cabrillo at First Mixed Use Freeway HRA ***      01/21/22
*** AERMET - VERSION 16216 ***      *** DPM emissions from I-5 freeway Years 2040-2053 ***      18:12:58
                                     PAGE 13

*** MODELOPTs:      RegDFAULT  CONC  ELEV  URBAN  ADJ_U*

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* HILL HEIGHT SCALES IN METERS *

Apx-173

[illegible]

* HILL HEIGHT SCALES IN METERS *

*** AERMOD - VERSION 21112 *** *** 19386 Cabrillo at First Mixed Use Freeway HRA *** 01/21/22

*** AERMET - VERSION 16216 *** *** DPM emissions from I-5 freeway Years 2040-2053 *** 18:12:58
PAGE 15

*** MODELOPTs: RegDFAULT CONC ELEV URBAN ADJ_U*

*** DISCRETE CARTESIAN RECEPTORS ***
(X-COORD, Y-COORD, ZELEV, ZHILL, ZFLAG)
(METERS)

(422062.1, 3734197.9,	39.0,	41.6,	0.0);	(422069.8, 3734180.0,	38.7,	40.6,	0.0);
(422089.6, 3734199.3,	40.8,	40.8,	0.0);	(422087.3, 3734217.0,	40.9,	40.9,	0.0);
(422085.2, 3734237.4,	41.0,	41.0,	0.0);	(422062.6, 3734221.7,	41.3,	41.3,	0.0);
(422096.1, 3734179.2,	40.8,	40.8,	0.0);	(422117.4, 3734237.3,	41.0,	41.0,	0.0);
(422119.4, 3734198.2,	40.8,	40.8,	0.0);	(422120.9, 3734177.5,	40.9,	40.9,	0.0);
(422118.2, 3734218.3,	40.9,	40.9,	0.0);	(422063.1, 3734243.3,	41.2,	41.2,	0.0);
(422088.9, 3734210.1,	40.8,	40.8,	0.0);				

*** AERMOD - VERSION 21112 *** *** 19386 Cabrillo at First Mixed Use Freeway HRA *** 01/21/22
*** AERMET - VERSION 16216 *** *** DPM emissions from I-5 freeway Years 2040-2053 *** 18:12:58
PAGE 16

*** MODELOPTs: RegDFAULT CONC ELEV URBAN ADJ_U*

* SOURCE-RECEPTOR COMBINATIONS FOR WHICH CALCULATIONS MAY NOT BE PERFORMED *
LESS THAN 1.0 METER; WITHIN OPENPIT; OR BEYOND 80KM FOR FASTAREA/FASTALL

SOURCE ID	- - RECEPTOR LOCATION - - XR (METERS) YR (METERS)	DISTANCE (METERS)
L0000417	421955.2 3734434.2	-2.88
L0000418	421955.2 3734434.2	-1.38
L0000419	421955.2 3734414.2	-3.34
L0000420	421955.2 3734414.2	-5.12
L0000422	421955.2 3734394.2	-2.12
L0000425	421975.2 3734374.2	-0.90
L0000426	421975.2 3734354.2	-0.15
L0000427	421975.2 3734354.2	-6.79
L0000428	421975.2 3734354.2	0.49
L0000429	421975.2 3734334.2	-4.46
L0000430	421975.2 3734334.2	-0.75
L0000434	421995.2 3734294.2	-3.46
L0000435	421995.2 3734294.2	-1.31
L0000436	421995.2 3734274.2	-3.43
L0000437	421995.2 3734274.2	-3.92
L0000440	422015.2 3734254.2	0.68
L0000441	422015.2 3734234.2	-2.32
L0000442	422015.2 3734234.2	-6.19
L0000444	422015.2 3734214.2	-0.70
L0000446	422035.2 3734194.2	-0.35
L0000447	422035.2 3734194.2	-6.51
L0000448	422035.2 3734194.2	0.79

L0000449	422035.2	3734174.2	-2.22
L0000452	422055.2	3734154.2	-6.95
L0000453	422055.2	3734154.2	-1.36
L0000455	422075.2	3734134.2	-3.42
L0000456	422075.2	3734134.2	-2.28
L0000457	422075.2	3734114.2	-0.33
L0000459	422095.2	3734114.2	-1.51
L0000460	422095.2	3734094.2	-0.50
L0000461	422095.2	3734094.2	-0.19
L0000462	422115.2	3734094.2	-1.24
L0000463	422115.2	3734074.2	0.66
L0000464	422115.2	3734074.2	-1.70
L0000465	422135.2	3734074.2	-0.16
L0000466	422135.2	3734074.2	0.86
L0000467	422135.2	3734054.2	-2.47
L0000469	422155.2	3734054.2	-0.50
L0000470	422155.2	3734034.2	-0.95
L0000471	422155.2	3734034.2	0.95

*** AERMOD - VERSION 21112 *** *** 19386 Cabrillo at First Mixed Use Freeway HRA
 *** AERMET - VERSION 16216 *** *** DPM emissions from I-5 freeway Years 2040-2053

*** 01/21/22
 *** 18:12:58
 *** PAGE 17

*** MODELOPTs: RegDFAULT CONC ELEV URBAN ADJ_U*

* SOURCE-RECEPTOR COMBINATIONS FOR WHICH CALCULATIONS MAY NOT BE PERFORMED *
 LESS THAN 1.0 METER; WITHIN OPENPIT; OR BEYOND 80KM FOR FASTAREA/FASTALL

SOURCE ID	- - RECEPTOR LOCATION - - XR (METERS) YR (METERS)	DISTANCE (METERS)
L0000472	422175.2 3734034.2	-2.72
L0000486	421895.2 3734434.2	-1.59
L0000487	421895.2 3734434.2	0.13
L0000489	421915.2 3734414.2	-1.90
L0000490	421915.2 3734414.2	0.41
L0000491	421915.2 3734394.2	-4.59
L0000492	421915.2 3734394.2	-4.02
L0000493	421915.2 3734374.2	-0.16
L0000494	421915.2 3734374.2	-1.91
L0000496	421935.2 3734354.2	-0.06
L0000497	421935.2 3734354.2	-1.13
L0000498	421935.2 3734334.2	-1.46
L0000499	421935.2 3734334.2	-7.05
L0000501	421935.2 3734314.2	-2.86
L0000504	421955.2 3734294.2	-1.53
L0000506	421955.2 3734274.2	-6.74
L0000507	421955.2 3734274.2	-1.60
L0000508	421955.2 3734254.2	-2.21
L0000509	421955.2 3734254.2	-1.19

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*** AERMOD - VERSION 21112 *** *** 19386 Cabrillo at First Mixed Use Freeway HRA *** 01/21/22
*** AERMET - VERSION 16216 *** *** DPM emissions from I-5 freeway Years 2040-2053 *** 18:12:58
                                                                                                     PAGE 18
*** MODELOPTs:      RegDFault  CONC  ELEV  URBAN  ADJ  U*

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SOURCE ID	- - RECEPTOR LOCATION - - XR (METERS)	YR (METERS)	DISTANCE (METERS)
L0000541	422115.2	3734034.2	-1.94

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*** AERMOD - VERSION 21112 *** *** 19386 Cabrillo at First Mixed Use Freeway HRA *** 01/21/22
*** AERMET - VERSION 16216 *** *** DPM emissions from I-5 freeway Years 2040-2053 *** 18:12:58
                                                                    PAGE 19

*** MODELOPTs:      RegDFAULT  CONC  ELEV  URBAN  ADJ U*

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[illegible]

NOTE: METEOROLOGICAL DATA ACTUALLY PROCESSED WILL ALSO DEPEND ON WHAT IS INCLUDED IN THE DATA FILE.

1.54, 3.09, 5.14, 8.23, 10.80,

*** UP TO THE FIRST 24 HOURS OF METEOROLOGICAL DATA ***

First 24 hours of scalar data																				
YR	MO	DY	JDY	HR	H0	U*	W*	DT/DZ	ZICNV	ZIMCH	M-O	LEN	Z0	BOWEN	ALBEDO	REF WS	WD	HT	REF TA	HT
12	01	01	1	01	-4.5	0.082	-9.000	-9.000	-999.	56.	11.0	0.12	2.65	1.00	0.87	62.	5.8	283.8	2.0	
12	01	01	1	02	-3.5	0.073	-9.000	-9.000	-999.	47.	9.9	0.12	2.65	1.00	0.77	27.	5.8	283.1	2.0	
12	01	01	1	03	-3.5	0.073	-9.000	-9.000	-999.	47.	9.9	0.12	2.65	1.00	0.77	336.	5.8	283.1	2.0	
12	01	01	1	04	-3.3	0.070	-9.000	-9.000	-999.	45.	9.7	0.12	2.65	1.00	0.74	34.	5.8	283.1	2.0	
12	01	01	1	05	-3.0	0.068	-9.000	-9.000	-999.	42.	9.4	0.12	2.65	1.00	0.70	154.	5.8	282.5	2.0	
12	01	01	1	06	-999.0	-9.000	-9.000	-9.000	-999.	-999.	-99999.0	0.12	2.65	1.00	0.00	0.	5.8	282.0	2.0	
12	01	01	1	07	-2.0	0.059	-9.000	-9.000	-999.	34.	9.0	0.12	2.65	1.00	0.55	343.	5.8	281.4	2.0	
12	01	01	1	08	-2.6	0.066	-9.000	-9.000	-999.	40.	9.7	0.12	2.65	0.53	0.69	25.	5.8	281.4	2.0	
12	01	01	1	09	21.6	0.133	0.252	0.010	27.	116.	-9.9	0.12	2.65	0.31	1.03	344.	5.8	282.5	2.0	
12	01	01	1	10	115.6	0.162	0.713	0.008	114.	156.	-3.3	0.12	2.65	0.24	1.06	233.	5.8	286.4	2.0	
12	01	01	1	11	160.9	0.126	1.129	0.005	325.	108.	-1.1	0.12	2.65	0.21	0.67	261.	5.8	291.4	2.0	
12	01	01	1	12	187.0	0.138	1.467	0.005	614.	123.	-1.3	0.12	2.65	0.20	0.75	252.	5.8	294.9	2.0	
12	01	01	1	13	186.9	0.189	1.755	0.005	1051.	197.	-3.3	0.12	2.65	0.20	1.23	280.	5.8	297.5	2.0	
12	01	01	1	14	168.3	0.247	1.857	0.005	1383.	295.	-8.1	0.12	2.65	0.21	1.86	268.	5.8	299.2	2.0	
12	01	01	1	15	115.3	0.275	1.688	0.005	1517.	346.	-16.3	0.12	2.65	0.24	2.25	248.	5.8	298.1	2.0	
12	01	01	1	16	41.5	0.262	1.211	0.005	1552.	322.	-39.2	0.12	2.65	0.33	2.32	227.	5.8	295.9	2.0	
12	01	01	1	17	-17.9	0.217	-9.000	-9.000	-999.	244.	52.0	0.12	2.65	0.60	2.18	227.	5.8	292.5	2.0	
12	01	01	1	18	-24.7	0.250	-9.000	-9.000	-999.	300.	68.7	0.12	2.65	1.00	2.50	219.	5.8	288.8	2.0	
12	01	01	1	19	-5.2	0.088	-9.000	-9.000	-999.	91.	12.0	0.12	2.65	1.00	0.94	201.	5.8	287.5	2.0	
12	01	01	1	20	-3.5	0.073	-9.000	-9.000	-999.	47.	10.0	0.12	2.65	1.00	0.77	259.	5.8	287.0	2.0	
12	01	01	1	21	-2.6	0.064	-9.000	-9.000	-999.	39.	9.1	0.12	2.65	1.00	0.65	264.	5.8	286.4	2.0	

Apx-179

*** AERMOD - VERSION 21112 *** 19386 Cabrillo at First Mixed Use Freeway HRA *** 01/21/22
 *** AERMET - VERSION 16216 *** DPM emissions from I-5 freeway Years 2040-2053 *** 18:12:58
 PAGE 22

*** MODELOPTs: RegDFAULT CONC ELEV URBAN ADJ_U*

*** THE PERIOD (43848 HRS) AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
 INCLUDING SOURCE(S): L0000415 , L0000416 , L0000417 , L0000418 , L0000419 ,
 L0000420 , L0000421 , L0000422 , L0000423 , L0000424 , L0000425 , L0000426 , L0000427 ,
 L0000428 , L0000429 , L0000430 , L0000431 , L0000432 , L0000433 , L0000434 , L0000435 ,
 L0000436 , L0000437 , L0000438 , L0000439 , L0000440 , L0000441 , L0000442 , . . . ,

*** NETWORK ID: UCART1 ; NETWORK TYPE: GRIDCART ***

** CONC OF DPM IN MICROGRAMS/M**3 **

Y-COORD (METERS)	422055.19	422075.19	422095.19	422115.19	422135.19	422155.19	422175.19	422195.19	422215.19
3734434.21	0.02499	0.02237	0.02024	0.01849	0.01700	0.01564	0.01449	0.01346	0.01254
3734414.21	0.02679	0.02383	0.02146	0.01949	0.01786	0.01638	0.01512	0.01401	0.01303
3734394.21	0.02850	0.02517	0.02259	0.02054	0.01873	0.01710	0.01576	0.01457	0.01352
3734374.21	0.03012	0.02629	0.02368	0.02155	0.01964	0.01786	0.01641	0.01515	0.01402
3734354.21	0.03258	0.02784	0.02495	0.02269	0.02062	0.01865	0.01710	0.01575	0.01455
3734334.21	0.03500	0.02974	0.02649	0.02397	0.02155	0.01955	0.01784	0.01639	0.01513
3734314.21	0.03707	0.03217	0.02820	0.02526	0.02260	0.02055	0.01870	0.01708	0.01570
3734294.21	0.03995	0.03443	0.03015	0.02672	0.02390	0.02153	0.01954	0.01781	0.01632
3734274.21	0.04345	0.03726	0.03238	0.02850	0.02535	0.02274	0.02053	0.01862	0.01701
3734254.21	0.04737	0.04055	0.03497	0.03058	0.02696	0.02412	0.02170	0.01963	0.01782
3734234.21	0.05217	0.04452	0.03818	0.03309	0.02900	0.02581	0.02310	0.02080	0.01877
3734214.21	0.06011	0.05011	0.04223	0.03621	0.03154	0.02782	0.02491	0.02223	0.01994
3734194.21	0.08698	0.05970	0.04772	0.04027	0.03465	0.03032	0.02694	0.02393	0.02131
3734174.21	0.10383	0.07295	0.05508	0.04543	0.03857	0.03349	0.02948	0.02595	0.02297
3734154.21	0.08743	0.09266	0.06543	0.05242	0.04351	0.03754	0.03273	0.02842	0.02489
3734134.21	0.10418	0.08903	0.08654	0.06310	0.05102	0.04306	0.03688	0.03155	0.02730
3734114.21	0.10277	0.09572	0.09652	0.08237	0.06226	0.05078	0.04240	0.03562	0.03036
3734094.21	0.07455	0.10094	0.08573	0.09266	0.07968	0.06204	0.05016	0.04109	0.03431
3734074.21	0.07173	0.07585	0.09636	0.08653	0.07995	0.07949	0.06142	0.04902	0.03991
3734054.21	0.05179	0.07746	0.06690	0.09549	0.09186	0.08986	0.07947	0.06091	0.04762
3734034.21	0.03915	0.05305	0.07635	0.07357	0.09481	0.08236	0.08462	0.07852	0.05928

*** AERMOD - VERSION 21112 *** 19386 Cabrillo at First Mixed Use Freeway HRA *** 01/21/22
 *** AERMET - VERSION 16216 *** DPM emissions from I-5 freeway Years 2040-2053 *** 18:12:58
 PAGE 23

*** MODELOPTs: RegDFAULT CONC ELEV URBAN ADJ_U*

*** THE PERIOD (43848 HRS) AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
 INCLUDING SOURCE(S): L0000415 , L0000416 , L0000417 , L0000418 , L0000419 ,
 L0000420 , L0000421 , L0000422 , L0000423 , L0000424 , L0000425 , L0000426 , L0000427 ,
 L0000428 , L0000429 , L0000430 , L0000431 , L0000432 , L0000433 , L0000434 , L0000435 ,

L0000436 , L0000437 , L0000438 , L0000439 , L0000440 , L0000441 , L0000442 , . . . ,

*** NETWORK ID: UCART1 ; NETWORK TYPE: GRIDCART ***

** CONC OF DPM IN MICROGRAMS/M**3 **

Y-COORD (METERS)	422235.19	422255.19	422275.19	X-COORD (METERS)
3734434.21	0.01171	0.01097	0.01031	
3734414.21	0.01214	0.01134	0.01064	
3734394.21	0.01258	0.01173	0.01095	
3734374.21	0.01302	0.01210	0.01129	
3734354.21	0.01348	0.01251	0.01162	
3734334.21	0.01395	0.01293	0.01198	
3734314.21	0.01445	0.01332	0.01236	
3734294.21	0.01498	0.01380	0.01273	
3734274.21	0.01556	0.01427	0.01311	
3734254.21	0.01628	0.01488	0.01360	
3734234.21	0.01705	0.01552	0.01414	
3734214.21	0.01803	0.01632	0.01476	
3734194.21	0.01918	0.01723	0.01550	
3734174.21	0.02052	0.01827	0.01634	
3734154.21	0.02203	0.01947	0.01724	
3734134.21	0.02390	0.02086	0.01826	
3734114.21	0.02616	0.02254	0.01943	
3734094.21	0.02900	0.02459	0.02078	
3734074.21	0.03281	0.02703	0.02228	
3734054.21	0.03779	0.03015	0.02400	
3734034.21	0.04489	0.03403	0.02586	

*** AERMOD - VERSION 21112 *** *** 19386 Cabrillo at First Mixed Use Freeway HRA *** 01/21/22

*** AERMET - VERSION 16216 *** *** DPM emissions from I-5 freeway Years 2040-2053 *** 18:12:58

PAGE 24

*** MODELOPTs: RegDFAULT CONC ELEV URBAN ADJ_U*

*** THE PERIOD (43848 HRS) AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): L0000415 , L0000416 , L0000417 , L0000418 , L0000419 ,
L0000420 , L0000421 , L0000422 , L0000423 , L0000424 , L0000425 , L0000426 , L0000427 ,
L0000428 , L0000429 , L0000430 , L0000431 , L0000432 , L0000433 , L0000434 , L0000435 ,
L0000436 , L0000437 , L0000438 , L0000439 , L0000440 , L0000441 , L0000442 , . . . ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF DPM IN MICROGRAMS/M**3

**

X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)	Y-COORD (M)	CONC
422062.12	3734197.94	0.07136	422069.82	3734180.01	0.07681
422089.61	3734199.31	0.04858	422087.32	3734216.98	0.04439
422085.20	3734237.42	0.04058	422062.62	3734221.72	0.05283
422096.15	3734179.19	0.05258	422117.42	3734237.26	0.03216
422119.39	3734198.16	0.03813	422120.86	3734177.55	0.04241
422118.24	3734218.28	0.03475	422063.11	3734243.31	0.04680
422088.86	3734210.12	0.04565			

*** AERMOD - VERSION 21112 *** 19386 Cabrillo at First Mixed Use Freeway HRA *** 01/21/22
 *** AERMET - VERSION 16216 *** DPM emissions from I-5 freeway Years 2040-2053 *** 18:12:58
 PAGE 25

*** MODELOPTs: RegDFAULT CONC ELEV URBAN ADJ_U*

*** THE SUMMARY OF MAXIMUM PERIOD (43848 HRS) RESULTS ***

** CONC OF DPM IN MICROGRAMS/M**3

**

GROUP ID	AVERAGE CONC	RECEPTOR (XR, YR, ZELEV, ZHILL, ZFLAG)	OF TYPE	NETWORK GRID-ID
ALL	1ST HIGHEST VALUE IS 0.10418 AT (422055.19, 3734134.21, 36.00, 40.90, 0.00)	GC	UCART1	
	2ND HIGHEST VALUE IS 0.10383 AT (422055.19, 3734174.21, 35.70, 41.60, 0.00)	GC	UCART1	
	3RD HIGHEST VALUE IS 0.10358 AT (422035.19, 3734214.21, 35.20, 41.60, 0.00)	GC	UCART1	
	4TH HIGHEST VALUE IS 0.10356 AT (422035.19, 3734154.21, 35.60, 40.90, 0.00)	GC	UCART1	
	5TH HIGHEST VALUE IS 0.10277 AT (422055.19, 3734114.21, 36.70, 36.70, 0.00)	GC	UCART1	
	6TH HIGHEST VALUE IS 0.10094 AT (422075.19, 3734094.21, 37.20, 37.20, 0.00)	GC	UCART1	
	7TH HIGHEST VALUE IS 0.10075 AT (422015.19, 3734174.21, 35.40, 41.60, 0.00)	GC	UCART1	
	8TH HIGHEST VALUE IS 0.09952 AT (421975.19, 3734314.21, 33.50, 41.70, 0.00)	GC	UCART1	
	9TH HIGHEST VALUE IS 0.09899 AT (422035.19, 3734174.21, 35.10, 41.60, 0.00)	GC	UCART1	
	10TH HIGHEST VALUE IS 0.09859 AT (421995.19, 3734254.21, 33.40, 41.60, 0.00)	GC	UCART1	

*** RECEPTOR TYPES: GC = GRIDCART
 GP = GRIDPOLR
 DC = DISCCART
 DP = DISCPOLR

*** AERMOD - VERSION 21112 *** 19386 Cabrillo at First Mixed Use Freeway HRA *** 01/21/22
 *** AERMET - VERSION 16216 *** DPM emissions from I-5 freeway Years 2040-2053 *** 18:12:58
 PAGE 26

*** MODELOPTs: RegDFAULT CONC ELEV URBAN ADJ_U*

*** Message Summary : AERMOD Model Execution ***

----- Summary of Total Messages -----

A Total of 0 Fatal Error Message(s)
A Total of 2 Warning Message(s)
A Total of 1864 Informational Message(s)

A Total of 43848 Hours Were Processed

A Total of 1500 Calm Hours Identified

A Total of 364 Missing Hours Identified (0.83 Percent)

***** FATAL ERROR MESSAGES *****
*** NONE ***

***** WARNING MESSAGES *****
ME W186 383 MEOPEN: THRESH_1MIN 1-min ASOS wind speed threshold used 0.50
ME W187 383 MEOPEN: ADJ_U* Option for Stable Low Winds used in AERMET

*** AERMOD Finishes Successfully ***

EMFAC2021 for South Coast AQMD

PM2.5 Running Exhaust

Area	Season	Veh	Fuel	MdlYr	Speed (Miles/hr)	2039 (gms/mile)	2040 (gms/mile)	2041 (gms/mile)	2042 (gms/mile)	2043 (gms/mile)
South Coast AQMD	Annual	LDA	GAS	AlIMYr	70	0.000556	0.000533	0.000515	0.0005	0.000488
South Coast AQMD	Annual	LDA	DSL	AlIMYr	70	0.001847	0.001605	0.001432	0.001285	0.001153
South Coast AQMD	Annual	LDT1	GAS	AlIMYr	70	0.00068	0.00064	0.000615	0.000591	0.000569
South Coast AQMD	Annual	LDT1	DSL	AlIMYr	70	0.003153	0.00317	0.003186	0.0032	0.003213
South Coast AQMD	Annual	LDT2	GAS	AlIMYr	70	0.000573	0.000551	0.000534	0.000519	0.000507
South Coast AQMD	Annual	LDT2	DSL	AlIMYr	70	0.003163	0.003167	0.003171	0.003174	0.003176
South Coast AQMD	Annual	LHDT1	GAS	AlIMYr	60	0.00094	0.00094	0.000942	0.000944	0.000945
South Coast AQMD	Annual	LHDT1	DSL	AlIMYr	60	0.009221	0.009131	0.009056	0.008967	0.008894
South Coast AQMD	Annual	LHDT2	GAS	AlIMYr	60	0.000913	0.000918	0.000924	0.000929	0.000933
South Coast AQMD	Annual	LHDT2	DSL	AlIMYr	60	0.010863	0.010845	0.010843	0.010838	0.010841
South Coast AQMD	Annual	MDV	GAS	AlIMYr	60	0.000487	0.000468	0.000453	0.000441	0.000429
South Coast AQMD	Annual	MDV	DSL	AlIMYr	60	0.0011	0.001024	0.000961	0.000908	0.000866
South Coast AQMD	Annual	MHDT	GAS	AlIMYr	55	0.000756	0.000758	0.00076	0.000762	0.000764
South Coast AQMD	Annual	MHDT	DSL	AlIMYr	55	0.004713	0.004606	0.004511	0.004415	0.004325
South Coast AQMD	Annual	HHDT	GAS	AlIMYr	55	0.000762	0.000765	0.000767	0.000769	0.00077
South Coast AQMD	Annual	HHDT	DSL	AlIMYr	55	0.019207	0.019141	0.019084	0.019037	0.019001

		1 yr	14 yr	14 yr	2 yr
		2023	2026-2039	2040-2053	2024-2025
LDA	70	0.03210317	0.0071785	0.0009429	0.026824
LDT1	70	0.27647106	0.0819504	0.0032316	0.274504
LDT2	70	0.00585478	0.0032558	0.0031824	0.004311
MDV	60	0.00729219	0.0025113	0.0007933	0.006381
LHDT1	60	0.01644908	0.0101658	0.0086346	0.014225
LHDT2	60	0.01617041	0.0113692	0.0105678	0.014348
MHDT	55	0.013060	0.006363	0.004181	0.011189
HHDT	55	0.021506	0.019983	0.018980	0.021102

2044	2045	2046	2047	2048	2049	2050	2051	2052	2053
(gms/mile)	(gms/mile)	(gms/mile)	(gms/mile)	(gms/mile)	(gms/mile)	(gms/mile)	(gms/mile)	(gms/mile)	(gms/mile)
0.000478	0.00047	0.000464	0.000459	0.000455	0.000452	0.00045	0.00045	0.00045	0.00045
0.001037	0.000954	0.000883	0.000808	0.000741	0.000702	0.00065	0.00065	0.00065	0.00065
0.00055	0.000533	0.000519	0.000506	0.000497	0.000491	0.000485	0.000485	0.000485	0.000485
0.00322	0.003228	0.003236	0.003239	0.003248	0.003255	0.003262	0.003262	0.003262	0.003262
0.000496	0.000486	0.000478	0.000472	0.000466	0.000463	0.000461	0.000461	0.000461	0.000461
0.003179	0.003181	0.003184	0.003186	0.003188	0.00319	0.003189	0.003189	0.003189	0.003189
0.000946	0.000947	0.000947	0.000947	0.000947	0.00095	0.000952	0.000952	0.000952	0.000952
0.008803	0.008723	0.008635	0.008561	0.008487	0.00839	0.008309	0.008309	0.008309	0.008309
0.000937	0.000941	0.000944	0.000946	0.000948	0.000951	0.000953	0.000953	0.000953	0.000953
0.010801	0.010756	0.010693	0.010636	0.010561	0.010417	0.010179	0.010179	0.010179	0.010179
0.000419	0.000409	0.0004	0.000391	0.000384	0.00038	0.000377	0.000377	0.000377	0.000377
0.000829	0.000801	0.000779	0.000761	0.000747	0.000734	0.000674	0.000674	0.000674	0.000674
0.000765	0.000767	0.000768	0.000769	0.00077	0.000771	0.000772	0.000772	0.000772	0.000772
0.004245	0.004189	0.00414	0.004094	0.004052	0.004017	0.003985	0.003985	0.003985	0.003985
0.000771	0.000771	0.000772	0.000772	0.000773	0.000773	0.000774	0.000774	0.000774	0.000774
0.018976	0.018959	0.01895	0.018944	0.01894	0.018939	0.018938	0.018938	0.018938	0.018938

EMFAC2021 only has up to 2050. Used 2050 values for beyond 2050.

APPENDIX D

CALEEMOD MODEL ANNUAL EMISSIONS PRINTOUTS AND EMFAC DATA

19386 Cabrillo at First Mixed-Use Residential - Orange County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**19386 Cabrillo at First Mixed-Use Residential
Orange County, Annual****1.0 Project Characteristics****1.1 Land Usage**

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Apartments Low Rise	35.00	Dwelling Unit	0.73	73,500.00	100
Other Non-Asphalt Surfaces	13.89	1000sqft	0.32	13,889.00	0
Parking Lot	11.00	Space	0.35	15,246.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	30
Climate Zone	8			Operational Year	2023
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	390.98	CH4 Intensity (lb/MWhr)	0.033	N2O Intensity (lb/MWhr)	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - 1.4 ac w/ 35 MF DU (bldgs total ~73,500 sf), 13,889 sf of open space, & parking lot w/ 11 open/guest parking spaces (77 total spaces, however 66 are garages). Assumed ~25% site (~0.35 acres) paving of parking & on-site driveways.

Construction Phase - Construction anticipated to begin 5/12/2022 & be completed by 8/16/2023.

Grading - Site anticipated to balance.

Demolition - ~19,175 sf parking lot paving to be removed (19,175sf x 0.3in = 5,752.5cu ftx 45lbs/cf2 = 258,862.5lbs = ~129.4 tons).

Vehicle Trips - Per Project Trip Gen, 6.74 trips/DU/day weekday. ITE Trip Generation Manual 11th Edition utilized for Saturday (4.55 trips/DU/day) & Sunday (3.86 trips/DU/day) trip gen rates.

Woodstoves - SCAQMD Rule 445 prohibits the installation of wood burning devices in new developments.

Sequestration - 72 new trees to be planted.

Construction Off-road Equipment Mitigation -

19386 Cabrillo at First Mixed-Use Residential - Orange County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Mobile Land Use Mitigation - Site is ~0.02 miles west & south of OCTA Rte 64 stop 1st-Cabrillo Park & ~1.81 miles SE of downtown portion of Santa Ana. Sidewalks provided on/connecting off-site. 35 DU/1.4 ac = 25 DU/acre.

Water Mitigation - 20% indoor water reduction per CalGreen Standards. Water-efficient irrigation systems.

Waste Mitigation - AB 341 requires each jurisdiction in CA to divert at least 75% of their waste away from landfills by 2020.

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	10.00	14.00
tblConstructionPhase	NumDays	200.00	270.00
tblConstructionPhase	NumDays	20.00	27.00
tblConstructionPhase	NumDays	4.00	5.00
tblConstructionPhase	NumDays	10.00	14.00
tblConstructionPhase	PhaseEndDate	4/20/2023	8/16/2023
tblConstructionPhase	PhaseEndDate	3/23/2023	7/9/2023
tblConstructionPhase	PhaseEndDate	6/8/2022	6/17/2022
tblConstructionPhase	PhaseEndDate	6/16/2022	6/24/2022
tblConstructionPhase	PhaseEndDate	4/6/2023	7/27/2023
tblConstructionPhase	PhaseStartDate	4/7/2023	7/28/2023
tblConstructionPhase	PhaseStartDate	6/17/2022	6/25/2022
tblConstructionPhase	PhaseStartDate	6/11/2022	6/18/2022
tblConstructionPhase	PhaseStartDate	3/24/2023	7/10/2023
tblFireplaces	NumberGas	29.75	31.50
tblFireplaces	NumberWood	1.75	0.00
tblLandUse	LandUseSquareFeet	35,000.00	73,500.00
tblLandUse	LandUseSquareFeet	4,400.00	15,246.00
tblLandUse	LotAcreage	2.19	0.73
tblLandUse	LotAcreage	0.10	0.35
tblSequestration	NumberOfNewTrees	0.00	72.00
tblVehicleTrips	ST_TR	8.14	4.55
tblVehicleTrips	SU_TR	6.28 Apx-188	3.86

19386 Cabrillo at First Mixed-Use Residential - Orange County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

tblVehicleTrips	WD_TR	7.32	6.74
tblWoodstoves	NumberCatalytic	1.75	0.00
tblWoodstoves	NumberNoncatalytic	1.75	0.00

2.0 Emissions Summary

19386 Cabrillo at First Mixed-Use Residential - Orange County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**2.1 Overall Construction****Unmitigated Construction**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2022	0.1471	1.1465	1.1652	2.2400e-003	0.0527	0.0534	0.1060	0.0178	0.0511	0.0689	0.0000	190.7813	190.7813	0.0313	2.2900e-003	192.2464
2023	0.3512	0.8709	1.0114	1.9500e-003	0.0328	0.0376	0.0704	8.7900e-003	0.0363	0.0451	0.0000	165.7865	165.7865	0.0247	2.1000e-003	167.0282
Maximum	0.3512	1.1465	1.1652	2.2400e-003	0.0527	0.0534	0.1060	0.0178	0.0511	0.0689	0.0000	190.7813	190.7813	0.0313	2.2900e-003	192.2464

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2022	0.1471	1.1465	1.1652	2.2400e-003	0.0410	0.0534	0.0944	0.0124	0.0511	0.0635	0.0000	190.7811	190.7811	0.0313	2.2900e-003	192.2462
2023	0.3512	0.8709	1.0114	1.9500e-003	0.0328	0.0376	0.0704	8.7900e-003	0.0363	0.0451	0.0000	165.7863	165.7863	0.0247	2.1000e-003	167.0281
Maximum	0.3512	1.1465	1.1652	2.2400e-003	0.0410	0.0534	0.0944	0.0124	0.0511	0.0635	0.0000	190.7811	190.7811	0.0313	2.2900e-003	192.2462

19386 Cabrillo at First Mixed-Use Residential - Orange County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	13.64	0.00	6.60	20.14	0.00	4.70	0.00	0.00	0.00	0.00	0.00	0.00

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	5-12-2022	8-11-2022	0.5432	0.5432
2	8-12-2022	11-11-2022	0.4854	0.4854
3	11-12-2022	2-11-2023	0.4705	0.4705
4	2-12-2023	5-11-2023	0.4369	0.4369
5	5-12-2023	8-11-2023	0.5216	0.5216
6	8-12-2023	9-30-2023	0.0624	0.0624
		Highest	0.5432	0.5432

19386 Cabrillo at First Mixed-Use Residential - Orange County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**2.2 Overall Operational****Unmitigated Operational**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.3026	0.0107	0.3641	6.0000e-005		2.5300e-003	2.5300e-003		2.5300e-003	2.5300e-003	0.0000	8.1545	8.1545	7.1000e-004	1.4000e-004	8.2137
Energy	2.3400e-003	0.0200	8.5200e-003	1.3000e-004		1.6200e-003	1.6200e-003		1.6200e-003	1.6200e-003	0.0000	49.0996	49.0996	2.6300e-003	6.9000e-004	49.3711
Mobile	0.1045	0.1216	1.0944	2.5300e-003	0.2710	1.7400e-003	0.2728	0.0723	1.6200e-003	0.0740	0.0000	235.6993	235.6993	0.0142	9.8100e-003	238.9794
Waste						0.0000	0.0000		0.0000	0.0000	3.2682	0.0000	3.2682	0.1931	0.0000	8.0967
Water						0.0000	0.0000		0.0000	0.0000	0.7235	8.0985	8.8220	0.0750	1.8400e-003	11.2443
Total	0.4094	0.1523	1.4671	2.7200e-003	0.2710	5.8900e-003	0.2769	0.0723	5.7700e-003	0.0781	3.9916	301.0519	305.0435	0.2857	0.0125	315.9052

19386 Cabrillo at First Mixed-Use Residential - Orange County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**2.2 Overall Operational****Mitigated Operational**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.3026	0.0107	0.3641	6.0000e-005		2.5300e-003	2.5300e-003		2.5300e-003	2.5300e-003	0.0000	8.1545	8.1545	7.1000e-004	1.4000e-004	8.2137
Energy	2.3400e-003	0.0200	8.5200e-003	1.3000e-004		1.6200e-003	1.6200e-003		1.6200e-003	1.6200e-003	0.0000	49.0996	49.0996	2.6300e-003	6.9000e-004	49.3711
Mobile	0.0781	0.0742	0.6644	1.3400e-003	0.1409	9.8000e-004	0.1419	0.0376	9.1000e-004	0.0385	0.0000	124.8408	124.8408	9.4100e-003	6.0700e-003	126.8853
Waste						0.0000	0.0000		0.0000	0.0000	0.8170	0.0000	0.8170	0.0483	0.0000	2.0242
Water						0.0000	0.0000		0.0000	0.0000	0.5788	7.0453	7.6241	0.0600	1.4800e-003	9.5649
Total	0.3830	0.1050	1.0370	1.5300e-003	0.1409	5.1300e-003	0.1460	0.0376	5.0600e-003	0.0427	1.3958	189.1403	190.5361	0.1211	8.3800e-003	196.0591

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	6.46	31.10	29.31	43.75	48.02	12.90	47.28	48.02	12.31	45.38	65.03	37.17	37.54	57.62	32.85	37.94

19386 Cabrillo at First Mixed-Use Residential - Orange County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**2.3 Vegetation****Vegetation**

	CO2e
Category	MT
New Trees	50.9760
Total	50.9760

3.0 Construction Detail**Construction Phase**

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	5/12/2022	6/17/2022	5	27	
2	Grading	Grading	6/18/2022	6/24/2022	5	5	
3	Building Construction	Building Construction	6/25/2022	7/9/2023	5	270	
4	Paving	Paving	7/10/2023	7/27/2023	5	14	
5	Architectural Coating	Architectural Coating	7/28/2023	8/16/2023	5	14	

Acres of Grading (Site Preparation Phase): 0**Acres of Grading (Grading Phase): 5****Acres of Paving: 0.67**

Residential Indoor: 148,838; Residential Outdoor: 49,613; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 1,748 (Architectural Coating – sqft)

19386 Cabrillo at First Mixed-Use Residential - Orange County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**OffRoad Equipment**

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Paving	Cement and Mortar Mixers	1	6.00	9	0.56
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Building Construction	Cranes	1	6.00	231	0.29
Building Construction	Forklifts	1	6.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Grading	Graders	1	8.00	187	0.41
Paving	Pavers	1	6.00	130	0.42
Paving	Paving Equipment	1	8.00	132	0.36
Paving	Rollers	1	7.00	80	0.38
Demolition	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Building Construction	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Demolition	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Grading	Tractors/Loaders/Backhoes	2	7.00	97	0.37
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Building Construction	Welders	3	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	5	13.00	0.00	13.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	4	10.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	7	37.00	9.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	5	13.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	7.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

19386 Cabrillo at First Mixed-Use Residential - Orange County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**3.1 Mitigation Measures Construction**

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Demolition - 2022**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					1.3800e-003	0.0000	1.3800e-003	2.1000e-004	0.0000	2.1000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0228	0.2244	0.1885	3.3000e-004		0.0113	0.0113		0.0106	0.0106	0.0000	28.4549	28.4549	7.2500e-003	0.0000	28.6362
Total	0.0228	0.2244	0.1885	3.3000e-004	1.3800e-003	0.0113	0.0127	2.1000e-004	0.0106	0.0108	0.0000	28.4549	28.4549	7.2500e-003	0.0000	28.6362

19386 Cabrillo at First Mixed-Use Residential - Orange County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**3.2 Demolition - 2022****Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	3.0000e-005	1.0600e-003	2.9000e-004	0.0000	1.1000e-004	1.0000e-005	1.2000e-004	3.0000e-005	1.0000e-005	4.0000e-005	0.0000	0.3987	0.3987	4.0000e-005	6.0000e-005	0.4187
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.3000e-004	4.0000e-004	5.5000e-003	2.0000e-005	1.9300e-003	1.0000e-005	1.9400e-003	5.1000e-004	1.0000e-005	5.2000e-004	0.0000	1.5227	1.5227	4.0000e-005	4.0000e-005	1.5349
Total	5.6000e-004	1.4600e-003	5.7900e-003	2.0000e-005	2.0400e-003	2.0000e-005	2.0600e-003	5.4000e-004	2.0000e-005	5.6000e-004	0.0000	1.9214	1.9214	8.0000e-005	1.0000e-004	1.9536

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					5.4000e-004	0.0000	5.4000e-004	8.0000e-005	0.0000	8.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0228	0.2244	0.1885	3.3000e-004		0.0113	0.0113		0.0106	0.0106	0.0000	28.4548	28.4548	7.2500e-003	0.0000	28.6361
Total	0.0228	0.2244	0.1885	3.3000e-004	5.4000e-004	0.0113	0.0119	8.0000e-005	0.0106	0.0107	0.0000	28.4548	28.4548	7.2500e-003	0.0000	28.6361

19386 Cabrillo at First Mixed-Use Residential - Orange County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**3.2 Demolition - 2022****Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	3.0000e-005	1.0600e-003	2.9000e-004	0.0000	1.1000e-004	1.0000e-005	1.2000e-004	3.0000e-005	1.0000e-005	4.0000e-005	0.0000	0.3987	0.3987	4.0000e-005	6.0000e-005	0.4187
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.3000e-004	4.0000e-004	5.5000e-003	2.0000e-005	1.9300e-003	1.0000e-005	1.9400e-003	5.1000e-004	1.0000e-005	5.2000e-004	0.0000	1.5227	1.5227	4.0000e-005	4.0000e-005	1.5349
Total	5.6000e-004	1.4600e-003	5.7900e-003	2.0000e-005	2.0400e-003	2.0000e-005	2.0600e-003	5.4000e-004	2.0000e-005	5.6000e-004	0.0000	1.9214	1.9214	8.0000e-005	1.0000e-004	1.9536

3.3 Grading - 2022**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0177	0.0000	0.0177	8.5600e-003	0.0000	8.5600e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.8500e-003	0.0425	0.0231	5.0000e-005		1.8600e-003	1.8600e-003		1.7100e-003	1.7100e-003	0.0000	4.5257	4.5257	1.4600e-003	0.0000	4.5623
Total	3.8500e-003	0.0425	0.0231	5.0000e-005	0.0177	1.8600e-003	0.0196	8.5600e-003	1.7100e-003	0.0103	0.0000	4.5257	4.5257	1.4600e-003	0.0000	4.5623

19386 Cabrillo at First Mixed-Use Residential - Orange County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**3.3 Grading - 2022****Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	8.0000e-005	6.0000e-005	7.8000e-004	0.0000	2.7000e-004	0.0000	2.8000e-004	7.0000e-005	0.0000	7.0000e-005	0.0000	0.2169	0.2169	1.0000e-005	1.0000e-005	0.2187
Total	8.0000e-005	6.0000e-005	7.8000e-004	0.0000	2.7000e-004	0.0000	2.8000e-004	7.0000e-005	0.0000	7.0000e-005	0.0000	0.2169	0.2169	1.0000e-005	1.0000e-005	0.2187

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					6.9100e-003	0.0000	6.9100e-003	3.3400e-003	0.0000	3.3400e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.8500e-003	0.0425	0.0231	5.0000e-005		1.8600e-003	1.8600e-003		1.7100e-003	1.7100e-003	0.0000	4.5257	4.5257	1.4600e-003	0.0000	4.5623
Total	3.8500e-003	0.0425	0.0231	5.0000e-005	6.9100e-003	1.8600e-003	8.7700e-003	3.3400e-003	1.7100e-003	5.0500e-003	0.0000	4.5257	4.5257	1.4600e-003	0.0000	4.5623

19386 Cabrillo at First Mixed-Use Residential - Orange County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**3.3 Grading - 2022****Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	8.0000e-005	6.0000e-005	7.8000e-004	0.0000	2.7000e-004	0.0000	2.8000e-004	7.0000e-005	0.0000	7.0000e-005	0.0000	0.2169	0.2169	1.0000e-005	1.0000e-005	0.2187
Total	8.0000e-005	6.0000e-005	7.8000e-004	0.0000	2.7000e-004	0.0000	2.8000e-004	7.0000e-005	0.0000	7.0000e-005	0.0000	0.2169	0.2169	1.0000e-005	1.0000e-005	0.2187

3.4 Building Construction - 2022**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1113	0.8440	0.8590	1.4900e-003		0.0398	0.0398		0.0384	0.0384	0.0000	122.5644	122.5644	0.0214	0.0000	123.0981
Total	0.1113	0.8440	0.8590	1.4900e-003		0.0398	0.0398		0.0384	0.0384	0.0000	122.5644	122.5644	0.0214	0.0000	123.0981

19386 Cabrillo at First Mixed-Use Residential - Orange County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**3.4 Building Construction - 2022****Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.0000e-003	0.0286	9.8400e-003	1.2000e-004	3.8300e-003	2.7000e-004	4.0900e-003	1.1000e-003	2.5000e-004	1.3600e-003	0.0000	11.4293	11.4293	6.5000e-004	1.6400e-003	11.9341
Worker	7.5300e-003	5.6600e-003	0.0782	2.3000e-004	0.0274	1.5000e-004	0.0276	7.2800e-003	1.4000e-004	7.4200e-003	0.0000	21.6687	21.6687	5.4000e-004	5.4000e-004	21.8434
Total	8.5300e-003	0.0342	0.0881	3.5000e-004	0.0313	4.2000e-004	0.0317	8.3800e-003	3.9000e-004	8.7800e-003	0.0000	33.0980	33.0980	1.1900e-003	2.1800e-003	33.7776

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1113	0.8440	0.8590	1.4900e-003		0.0398	0.0398		0.0384	0.0384	0.0000	122.5643	122.5643	0.0214	0.0000	123.0979
Total	0.1113	0.8440	0.8590	1.4900e-003		0.0398	0.0398		0.0384	0.0384	0.0000	122.5643	122.5643	0.0214	0.0000	123.0979

19386 Cabrillo at First Mixed-Use Residential - Orange County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**3.4 Building Construction - 2022****Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.0000e-003	0.0286	9.8400e-003	1.2000e-004	3.8300e-003	2.7000e-004	4.0900e-003	1.1000e-003	2.5000e-004	1.3600e-003	0.0000	11.4293	11.4293	6.5000e-004	1.6400e-003	11.9341
Worker	7.5300e-003	5.6600e-003	0.0782	2.3000e-004	0.0274	1.5000e-004	0.0276	7.2800e-003	1.4000e-004	7.4200e-003	0.0000	21.6687	21.6687	5.4000e-004	5.4000e-004	21.8434
Total	8.5300e-003	0.0342	0.0881	3.5000e-004	0.0313	4.2000e-004	0.0317	8.3800e-003	3.9000e-004	8.7800e-003	0.0000	33.0980	33.0980	1.1900e-003	2.1800e-003	33.7776

3.4 Building Construction - 2023**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1028	0.7905	0.8513	1.4900e-003		0.0347	0.0347		0.0335	0.0335	0.0000	122.5794	122.5794	0.0208	0.0000	123.0998
Total	0.1028	0.7905	0.8513	1.4900e-003		0.0347	0.0347		0.0335	0.0335	0.0000	122.5794	122.5794	0.0208	0.0000	123.0998

19386 Cabrillo at First Mixed-Use Residential - Orange County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**3.4 Building Construction - 2023****Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	6.0000e-004	0.0223	8.9600e-003	1.1000e-004	3.8300e-003	1.1000e-004	3.9400e-003	1.1000e-003	1.0000e-004	1.2100e-003	0.0000	10.8885	10.8885	6.5000e-004	1.5600e-003	11.3706
Worker	7.0600e-003	5.0400e-003	0.0729	2.3000e-004	0.0274	1.4000e-004	0.0276	7.2800e-003	1.3000e-004	7.4100e-003	0.0000	21.1074	21.1074	4.9000e-004	5.0000e-004	21.2696
Total	7.6600e-003	0.0273	0.0818	3.4000e-004	0.0313	2.5000e-004	0.0315	8.3800e-003	2.3000e-004	8.6200e-003	0.0000	31.9959	31.9959	1.1400e-003	2.0600e-003	32.6402

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1028	0.7905	0.8513	1.4900e-003		0.0347	0.0347		0.0335	0.0335	0.0000	122.5793	122.5793	0.0208	0.0000	123.0996
Total	0.1028	0.7905	0.8513	1.4900e-003		0.0347	0.0347		0.0335	0.0335	0.0000	122.5793	122.5793	0.0208	0.0000	123.0996

19386 Cabrillo at First Mixed-Use Residential - Orange County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**3.4 Building Construction - 2023****Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	6.0000e-004	0.0223	8.9600e-003	1.1000e-004	3.8300e-003	1.1000e-004	3.9400e-003	1.1000e-003	1.0000e-004	1.2100e-003	0.0000	10.8885	10.8885	6.5000e-004	1.5600e-003	11.3706
Worker	7.0600e-003	5.0400e-003	0.0729	2.3000e-004	0.0274	1.4000e-004	0.0276	7.2800e-003	1.3000e-004	7.4100e-003	0.0000	21.1074	21.1074	4.9000e-004	5.0000e-004	21.2696
Total	7.6600e-003	0.0273	0.0818	3.4000e-004	0.0313	2.5000e-004	0.0315	8.3800e-003	2.3000e-004	8.6200e-003	0.0000	31.9959	31.9959	1.1400e-003	2.0600e-003	32.6402

3.5 Paving - 2023**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	4.5100e-003	0.0437	0.0616	9.0000e-005		2.1600e-003	2.1600e-003		1.9900e-003	1.9900e-003	0.0000	8.2407	8.2407	2.6100e-003	0.0000	8.3060
Paving	4.6000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	4.9700e-003	0.0437	0.0616	9.0000e-005		2.1600e-003	2.1600e-003		1.9900e-003	1.9900e-003	0.0000	8.2407	8.2407	2.6100e-003	0.0000	8.3060

19386 Cabrillo at First Mixed-Use Residential - Orange County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**3.5 Paving - 2023****Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.6000e-004	1.8000e-004	2.6500e-003	1.0000e-005	1.0000e-003	1.0000e-005	1.0000e-003	2.7000e-004	0.0000	2.7000e-004	0.0000	0.7691	0.7691	2.0000e-005	2.0000e-005	0.7750
Total	2.6000e-004	1.8000e-004	2.6500e-003	1.0000e-005	1.0000e-003	1.0000e-005	1.0000e-003	2.7000e-004	0.0000	2.7000e-004	0.0000	0.7691	0.7691	2.0000e-005	2.0000e-005	0.7750

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	4.5100e-003	0.0437	0.0616	9.0000e-005		2.1600e-003	2.1600e-003		1.9900e-003	1.9900e-003	0.0000	8.2407	8.2407	2.6100e-003	0.0000	8.3060
Paving	4.6000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	4.9700e-003	0.0437	0.0616	9.0000e-005		2.1600e-003	2.1600e-003		1.9900e-003	1.9900e-003	0.0000	8.2407	8.2407	2.6100e-003	0.0000	8.3060

19386 Cabrillo at First Mixed-Use Residential - Orange County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**3.5 Paving - 2023****Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.6000e-004	1.8000e-004	2.6500e-003	1.0000e-005	1.0000e-003	1.0000e-005	1.0000e-003	2.7000e-004	0.0000	2.7000e-004	0.0000	0.7691	0.7691	2.0000e-005	2.0000e-005	0.7750
Total	2.6000e-004	1.8000e-004	2.6500e-003	1.0000e-005	1.0000e-003	1.0000e-005	1.0000e-003	2.7000e-004	0.0000	2.7000e-004	0.0000	0.7691	0.7691	2.0000e-005	2.0000e-005	0.7750

3.6 Architectural Coating - 2023**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.2340					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.3400e-003	9.1200e-003	0.0127	2.0000e-005		5.0000e-004	5.0000e-004		5.0000e-004	5.0000e-004	0.0000	1.7873	1.7873	1.1000e-004	0.0000	1.7900
Total	0.2354	9.1200e-003	0.0127	2.0000e-005		5.0000e-004	5.0000e-004		5.0000e-004	5.0000e-004	0.0000	1.7873	1.7873	1.1000e-004	0.0000	1.7900

19386 Cabrillo at First Mixed-Use Residential - Orange County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**3.6 Architectural Coating - 2023****Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.4000e-004	1.0000e-004	1.4300e-003	0.0000	5.4000e-004	0.0000	5.4000e-004	1.4000e-004	0.0000	1.5000e-004	0.0000	0.4141	0.4141	1.0000e-005	1.0000e-005	0.4173
Total	1.4000e-004	1.0000e-004	1.4300e-003	0.0000	5.4000e-004	0.0000	5.4000e-004	1.4000e-004	0.0000	1.5000e-004	0.0000	0.4141	0.4141	1.0000e-005	1.0000e-005	0.4173

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.2340					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.3400e-003	9.1200e-003	0.0127	2.0000e-005		5.0000e-004	5.0000e-004		5.0000e-004	5.0000e-004	0.0000	1.7873	1.7873	1.1000e-004	0.0000	1.7900
Total	0.2354	9.1200e-003	0.0127	2.0000e-005		5.0000e-004	5.0000e-004		5.0000e-004	5.0000e-004	0.0000	1.7873	1.7873	1.1000e-004	0.0000	1.7900

19386 Cabrillo at First Mixed-Use Residential - Orange County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**3.6 Architectural Coating - 2023****Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.4000e-004	1.0000e-004	1.4300e-003	0.0000	5.4000e-004	0.0000	5.4000e-004	1.4000e-004	0.0000	1.5000e-004	0.0000	0.4141	0.4141	1.0000e-005	1.0000e-005	0.4173
Total	1.4000e-004	1.0000e-004	1.4300e-003	0.0000	5.4000e-004	0.0000	5.4000e-004	1.4000e-004	0.0000	1.5000e-004	0.0000	0.4141	0.4141	1.0000e-005	1.0000e-005	0.4173

4.0 Operational Detail - Mobile**4.1 Mitigation Measures Mobile**

Increase Density

Improve Destination Accessibility

Increase Transit Accessibility

Improve Pedestrian Network

19386 Cabrillo at First Mixed-Use Residential - Orange County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0781	0.0742	0.6644	1.3400e-003	0.1409	9.8000e-004	0.1419	0.0376	9.1000e-004	0.0385	0.0000	124.8408	124.8408	9.4100e-003	6.0700e-003	126.8853
Unmitigated	0.1045	0.1216	1.0944	2.5300e-003	0.2710	1.7400e-003	0.2728	0.0723	1.6200e-003	0.0740	0.0000	235.6993	235.6993	0.0142	9.8100e-003	238.9794

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Low Rise	235.90	159.25	135.10	719,481	373,964
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Total	235.90	159.25	135.10	719,481	373,964

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Low Rise	14.70	5.90	8.70	40.20	19.20	40.60	86	11	3
Other Non-Asphalt Surfaces	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
Parking Lot	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Low Rise	0.544795	0.058861	0.186903	0.129401	0.024381	0.006522	0.014242	0.004855	0.000656	0.000385	0.024332	0.000723	0.003942
Other Non-Asphalt Surfaces	0.544795	0.058861	0.186903	0.129401	0.024381	0.006522	0.014242	0.004855	0.000656	0.000385	0.024332	0.000723	0.003942

19386 Cabrillo at First Mixed-Use Residential - Orange County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Parking Lot	0.544795	0.058861	0.186903	0.129401	0.024381	0.006522	0.014242	0.004855	0.000656	0.000385	0.024332	0.000723	0.003942
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5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	25.9039	25.9039	2.1900e-003	2.7000e-004	26.0376
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	25.9039	25.9039	2.1900e-003	2.7000e-004	26.0376
Natural Gas Mitigated	2.3400e-003	0.0200	8.5200e-003	1.3000e-004		1.6200e-003	1.6200e-003		1.6200e-003	1.6200e-003	0.0000	23.1956	23.1956	4.4000e-004	4.3000e-004	23.3335
Natural Gas Unmitigated	2.3400e-003	0.0200	8.5200e-003	1.3000e-004		1.6200e-003	1.6200e-003		1.6200e-003	1.6200e-003	0.0000	23.1956	23.1956	4.4000e-004	4.3000e-004	23.3335

19386 Cabrillo at First Mixed-Use Residential - Orange County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**5.2 Energy by Land Use - NaturalGas****Unmitigated**

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments Low Rise	434670	2.3400e-003	0.0200	8.5200e-003	1.3000e-004		1.6200e-003	1.6200e-003		1.6200e-003	1.6200e-003	0.0000	23.1956	23.1956	4.4000e-004	4.3000e-004	23.3335
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		2.3400e-003	0.0200	8.5200e-003	1.3000e-004		1.6200e-003	1.6200e-003		1.6200e-003	1.6200e-003	0.0000	23.1956	23.1956	4.4000e-004	4.3000e-004	23.3335

19386 Cabrillo at First Mixed-Use Residential - Orange County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**5.2 Energy by Land Use - NaturalGas****Mitigated**

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments Low Rise	434670	2.3400e-003	0.0200	8.5200e-003	1.3000e-004		1.6200e-003	1.6200e-003		1.6200e-003	1.6200e-003	0.0000	23.1956	23.1956	4.4000e-004	4.3000e-004	23.3335
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		2.3400e-003	0.0200	8.5200e-003	1.3000e-004		1.6200e-003	1.6200e-003		1.6200e-003	1.6200e-003	0.0000	23.1956	23.1956	4.4000e-004	4.3000e-004	23.3335

19386 Cabrillo at First Mixed-Use Residential - Orange County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**5.3 Energy by Land Use - Electricity****Unmitigated**

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Low Rise	140729	24.9576	2.1100e-003	2.6000e-004	25.0864
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	5336.1	0.9463	8.0000e-005	1.0000e-005	0.9512
Total		25.9039	2.1900e-003	2.7000e-004	26.0376

19386 Cabrillo at First Mixed-Use Residential - Orange County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**5.3 Energy by Land Use - Electricity****Mitigated**

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Low Rise	140729	24.9576	2.1100e-003	2.6000e-004	25.0864
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	5336.1	0.9463	8.0000e-005	1.0000e-005	0.9512
Total		25.9039	2.1900e-003	2.7000e-004	26.0376

6.0 Area Detail**6.1 Mitigation Measures Area**

19386 Cabrillo at First Mixed-Use Residential - Orange County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.3026	0.0107	0.3641	6.0000e-005		2.5300e-003	2.5300e-003		2.5300e-003	2.5300e-003	0.0000	8.1545	8.1545	7.1000e-004	1.4000e-004	8.2137
Unmitigated	0.3026	0.0107	0.3641	6.0000e-005		2.5300e-003	2.5300e-003		2.5300e-003	2.5300e-003	0.0000	8.1545	8.1545	7.1000e-004	1.4000e-004	8.2137

6.2 Area by SubCategory**Unmitigated**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0234					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.2675					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	7.6000e-004	6.5300e-003	2.7800e-003	4.0000e-005		5.3000e-004	5.3000e-004		5.3000e-004	5.3000e-004	0.0000	7.5643	7.5643	1.4000e-004	1.4000e-004	7.6093
Landscaping	0.0109	4.1600e-003	0.3613	2.0000e-005		2.0000e-003	2.0000e-003		2.0000e-003	2.0000e-003	0.0000	0.5902	0.5902	5.7000e-004	0.0000	0.6044
Total	0.3026	0.0107	0.3641	6.0000e-005		2.5300e-003	2.5300e-003		2.5300e-003	2.5300e-003	0.0000	8.1545	8.1545	7.1000e-004	1.4000e-004	8.2137

19386 Cabrillo at First Mixed-Use Residential - Orange County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**6.2 Area by SubCategory****Mitigated**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0234					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.2675					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	7.6000e-004	6.5300e-003	2.7800e-003	4.0000e-005		5.3000e-004	5.3000e-004		5.3000e-004	5.3000e-004	0.0000	7.5643	7.5643	1.4000e-004	1.4000e-004	7.6093
Landscaping	0.0109	4.1600e-003	0.3613	2.0000e-005		2.0000e-003	2.0000e-003		2.0000e-003	2.0000e-003	0.0000	0.5902	0.5902	5.7000e-004	0.0000	0.6044
Total	0.3026	0.0107	0.3641	6.0000e-005		2.5300e-003	2.5300e-003		2.5300e-003	2.5300e-003	0.0000	8.1545	8.1545	7.1000e-004	1.4000e-004	8.2137

7.0 Water Detail**7.1 Mitigation Measures Water**

Apply Water Conservation Strategy

Use Water Efficient Irrigation System

19386 Cabrillo at First Mixed-Use Residential - Orange County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	7.6241	0.0600	1.4800e-003	9.5649
Unmitigated	8.8220	0.0750	1.8400e-003	11.2443

7.2 Water by Land Use**Unmitigated**

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Low Rise	2.28039 / 1.43764	8.8220	0.0750	1.8400e-003	11.2443
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		8.8220	0.0750	1.8400e-003	11.2443

19386 Cabrillo at First Mixed-Use Residential - Orange County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**7.2 Water by Land Use****Mitigated**

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Low Rise	1.82431 / 1.43764	7.6241	0.0600	1.4800e-003	9.5649
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		7.6241	0.0600	1.4800e-003	9.5649

8.0 Waste Detail**8.1 Mitigation Measures Waste**

Institute Recycling and Composting Services

19386 Cabrillo at First Mixed-Use Residential - Orange County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**Category/Year**

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.8170	0.0483	0.0000	2.0242
Unmitigated	3.2682	0.1931	0.0000	8.0967

8.2 Waste by Land Use**Unmitigated**

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Low Rise	16.1	3.2682	0.1931	0.0000	8.0967
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Total		3.2682	0.1931	0.0000	8.0967

19386 Cabrillo at First Mixed-Use Residential - Orange County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**8.2 Waste by Land Use****Mitigated**

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Low Rise	4.025	0.8170	0.0483	0.0000	2.0242
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Total		0.8170	0.0483	0.0000	2.0242

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
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10.0 Stationary Equipment**Fire Pumps and Emergency Generators**

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type
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Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type
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User Defined Equipment

Equipment Type	Number
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19386 Cabrillo at First Mixed-Use Residential - Orange County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**11.0 Vegetation**

	Total CO2	CH4	N2O	CO2e
Category	MT			
Unmitigated	50.9760	0.0000	0.0000	50.9760

11.2 Net New Trees**Species Class**

	Number of Trees	Total CO2	CH4	N2O	CO2e
		MT			
Miscellaneous	72	50.9760	0.0000	0.0000	50.9760
Total		50.9760	0.0000	0.0000	50.9760

Source: EMFAC2021 (v1.0.1) Emissions Inventory

Region Type: Air Basin

Region: South Coast

Calendar Year: 2022

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	2022	HHDT	Aggregate	Aggregate	Gasoline	93.77521787	1876.254559	0	1.271766939	1271.766939	1998484.407	4872.85011	11739264.89	5.87	HHDT
South Coast	2022	HHDT	Aggregate	Aggregate	Diesel	86344.61493	1308488.279	0	1883.165573	1883165.573		11080949.98			
South Coast	2022	HHDT	Aggregate	Aggregate	Natural Gas	9530.013799	64445.55712	0	114.0470669	114047.0669		653442.0558			
South Coast	2022	LDA	Aggregate	Aggregate	Gasoline	5432984.929	25333114.49	0	7742.158581	7742158.581	7863292.337	217937990	233491817.2	29.69	LDA
South Coast	2022	LDA	Aggregate	Aggregate	Diesel	16596.66266	70061.62945	0	12.98213336	12982.13336		525055.9524			
South Coast	2022	LDA	Aggregate	Aggregate	Electricity	204269.3588	1027049.78	3533212.262	0	0		9151442.882			
South Coast	2022	LDA	Aggregate	Aggregate	Plug-in Hybrid	123066.1719	508878.6208	856005.7326	108.1516236	108151.6236		5877328.413			
South Coast	2022	LD1	Aggregate	Aggregate	Gasoline	508118.9525	2234897.36	0	772.6742907	772674.2907	773091.3918	18186231.22	18233327.62	23.58	LD1
South Coast	2022	LD1	Aggregate	Aggregate	Diesel	219.3543012	650.4955004	0	0.181276274	181.2762739		4217.627426			
South Coast	2022	LD1	Aggregate	Aggregate	Electricity	860.4090968	3929.280026	11231.02673	0	0		29089.70421			
South Coast	2022	LD1	Aggregate	Aggregate	Plug-in Hybrid	262.0628223	1083.62977	2172.476691	0.2358249	235.8249004		13789.07098			
South Coast	2022	LD2	Aggregate	Aggregate	Gasoline	2380478.996	11180656.67	0	4304.779926	4304779.926	4326812.467	97358601.17	97676672.01	22.57	LD2
South Coast	2022	LD2	Aggregate	Aggregate	Diesel	7265.359325	35160.20236	0	10.4792726	10479.2726		318070.8386			
South Coast	2022	LD2	Aggregate	Aggregate	Electricity	6619.441536	34120.34272	95194.32476	0	0		246564.7012			
South Coast	2022	LD2	Aggregate	Aggregate	Plug-in Hybrid	12770.05734	52804.18709	99473.18925	11.55326881	11553.26881		651602.4969			
South Coast	2022	LHDT1	Aggregate	Aggregate	Gasoline	200207.0512	2982786.755	0	596.2532604	596253.2604	791494.8201	7670055.089	11609061.87	14.67	LHDT1
South Coast	2022	LHDT1	Aggregate	Aggregate	Diesel	95425.65716	1200334.722	0	195.2415597	195241.5597		3939006.782			
South Coast	2022	LHDT2	Aggregate	Aggregate	Gasoline	31310.70271	466482.8175	0	100.8426005	100842.6005	201968.3332	1148331.498	2852151.512	14.12	LHDT2
South Coast	2022	LHDT2	Aggregate	Aggregate	Diesel	41221.34914	518512.7157	0	101.1257327	101125.7327		1703820.013			
South Coast	2022	MCY	Aggregate	Aggregate	Gasoline	232866.3127	465732.6253	0	36.03993715	36039.93715	36039.93715	1478622.183	1478622.183	41.03	MCY
South Coast	2022	MDV	Aggregate	Aggregate	Gasoline	1546490.389	7140651.876	0	3192.182291	3192182.291	3233168.731	58964077.19	60366385.9	18.67	MDV
South Coast	2022	MDV	Aggregate	Aggregate	Diesel	19342.84345	91596.79576	0	34.03297982	34032.97982		777527.7955			
South Coast	2022	MDV	Aggregate	Aggregate	Electricity	6696.74782	34502.63749	96159.45426	0	0		249064.5022			
South Coast	2022	MDV	Aggregate	Aggregate	Plug-in Hybrid	8117.761373	33566.94328	55475.93063	6.953460429	6953.460429		375716.4182			
South Coast	2022	MH	Aggregate	Aggregate	Gasoline	31850.36852	3186.310866	0	60.85222666	60852.22666	71928.89964	295792.8678	407742.3745	5.67	MH
South Coast	2022	MH	Aggregate	Aggregate	Diesel	11356.53565	1135.653565	0	11.07667298	11076.67298		111949.5066			
South Coast	2022	MHDT	Aggregate	Aggregate	Gasoline	26007.04178	520348.8919	0	274.1467882	274146.7882	819392.7308	1387695.111	6218651.542	7.59	MHDT
South Coast	2022	MHDT	Aggregate	Aggregate	Diesel	111240.7041	1363402.45	0	537.3888811	537388.8811		4766318.794			
South Coast	2022	MHDT	Aggregate	Aggregate	Natural Gas	1338.762023	12270.86005	0	7.857061417	7857.061417		64637.63673			
South Coast	2022	OBUS	Aggregate	Aggregate	Gasoline	5619.001977	112424.9916	0	46.10429672	46104.29672	82591.31041	229489.8627	490521.1159	5.94	OBUS
South Coast	2022	OBUS	Aggregate	Aggregate	Diesel	2896.768075	36743.40436	0	32.79511564	32795.11564		229036.0369			
South Coast	2022	OBUS	Aggregate	Aggregate	Natural Gas	537.7361163	4785.851435	0	3.691898056	3691.898056		31995.21632			
South Coast	2022	SBUS	Aggregate	Aggregate	Gasoline	2656.068282	10624.27313	0	13.13398403	13133.98403	40315.41184	115961.1562	260029.2373	6.45	SBUS
South Coast	2022	SBUS	Aggregate	Aggregate	Diesel	3463.174133	50146.76145	0	9.812107071	9812.107071		71631.6642			
South Coast	2022	SBUS	Aggregate	Aggregate	Natural Gas	2857.078854	41370.50181	0	17.36932074	17369.32074		72436.41685			
South Coast	2022	UBUS	Aggregate	Aggregate	Gasoline	892.5609011	3570.243605	0	14.15154342	14151.54342	205291.0561	96764.45551	693436.26	3.38	UBUS
South Coast	2022	UBUS	Aggregate	Aggregate	Diesel	15.79905129	63.19620517	0	0.277029151	277.0291511		1863.133553			
South Coast	2022	UBUS	Aggregate	Aggregate	Electricity	58.06621632	232.2648653	5333.126445	0	0		2542.871299			
South Coast	2022	UBUS	Aggregate	Aggregate	Natural Gas	4946.181814	19784.72726	0	190.8624835	190862.4835		592265.7996			

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	1902570.073	4463.059823	11350616.67	5.97	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	7680508.917	635905.4264	228542169.3	29.76	LDA
South Coast	2023	LDA	Aggregate	Aggregate	Gasoline	5370115.979	25014254.84	0	7560.140191	7560140.191		216250190.4			
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	870253.2499	6496196.814	24547955.06	28.21	LDT1
South Coast	2023	LDT1	Aggregate	Aggregate	Gasoline	499113.9009	2195668.394	0	753.4930394	753493.0394		18009866.74			
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	4351441.574	24314.99018	100316975.8	23.05	LDT2
South Coast	2023	LDT2	Aggregate	Aggregate	Gasoline	2429950.117	11422828.59	0	4340.074795	4340074.795		100292660.9			
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	604831.9262	867992.1123	8688662.767	14.37	LHDT1
South Coast	2023	LHDT1	Aggregate	Aggregate	Gasoline	200398.3929	2985637.46	0	589.944376	589944.376		7820670.654			
South Coast	2023	LHDT1	Aggregate	Aggregate	Diesel	99896.36028	1256570.543	0	206.0356758	206035.6758	305180.3742	4194656.56	5351327.632	17.53	LHDT2
South Coast	2023	LHDT2	Aggregate	Aggregate	Gasoline	31213.47663	465034.2937	0	99.14469838	99144.69838		1156671.072			
South Coast	2023	LHDT2	Aggregate	Aggregate	Diesel	43691.53059	549584.4908	0	107.1632097	107163.2097	107163.2097	1828609.129	1828609.129	17.06	MCY
South Coast	2023	MCY	Aggregate	Aggregate	Gasoline	237586.076	475172.1521	0	36.88140998	36881.40998	3258846.142	1522726.619	62822547.87	19.28	MDV
South Coast	2023	MDV	Aggregate	Aggregate	Gasoline	1559902.035	7210563.701	0	3188.051046	3188051.046		60070040.07			
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	67468.7074	464374.4805	752062.2021	11.15	MH
South Coast	2023	MH	Aggregate	Aggregate	Gasoline	30468.55432	3048.074174	0	59.14587153	59145.87153		287687.7216			
South Coast	2023	MH	Aggregate	Aggregate	Diesel	11533.11741	1153.311741	0	11.30112611	11301.12611	819648.6117	114141.8155	6302753.398	7.69	MHDT
South Coast	2023	MHDT	Aggregate	Aggregate	Gasoline	25436.77287	508938.9517	0	266.1846594	266184.6594		1361855.942			
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	52048.54694	1295.841104	289973.7428	5.57	OBUS
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		220170.8028			
South Coast	2023	OBUS	Aggregate	Aggregate	Diesel	2949.128306	37294.91051	0	33.32983706	33329.83706	50038.16004	233227.1381	381057.5339	7.62	SBUS
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		119164.9071			
South Coast	2023	SBUS	Aggregate	Aggregate	Diesel	3377.128927	48900.82686	0	9.464602039	9464.602039	41441.52119	69271.73995	241028.6401	5.82	UBUS
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		96960.55907			
South Coast	2023	UBUS	Aggregate	Aggregate	Diesel	14.61165815	58.44663261	0	0.262644403			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			593592.4153			

APPENDIX E

METRO EAST MIXED-USE OVERLAY DISTRICT MMRP MEASURES

MITIGATION MONITORING AND REPORTING PROGRAM FOR THE METRO EAST MIXED-USE OVERLAY DISTRICT EXPANSION AND ELAN DEVELOPMENT PROJECTS

PREPARED FOR:

City of Santa Ana, Planning and Building Agency
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Santa Ana, CA 92701
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(714) 647-5882

PREPARED BY:

ICF
49 Discovery, Suite 250
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(949) 333-6625

August 2018



ICF. 2018. Mitigation Monitoring and Reporting Program for the Metro East Mixed-Use Overlay District Expansion and Elan Development Projects. August. (ICF 0019.18.) Irvine, CA. Prepared for City of Santa Ana, CA.

Mitigation Monitoring and Reporting Program

Introduction

The California Public Resources Code, Section 21081.6, requires that a lead or responsible agency adopt a mitigation monitoring and reporting program (MMRP) when approving or carrying out a project when an environmental impact report (EIR) identifies measures to reduce potential adverse environmental impacts to less-than-significant levels. An EIR has been prepared for the project that addresses the potential environmental impacts, and, where appropriate, recommends measures to mitigate these impacts. As such, an MMRP is required to ensure that the adopted mitigation measures are implemented successfully. As lead agency for the proposed project, the City of Santa Ana (City) is responsible for adoption and oversight of the MMRP. This document plan lists each mitigation measure, describes the methods for implementation and verification, and identifies the responsible party or parties.

Project Overview

The City is proposing to expand the boundaries of the existing approximately 200-acre Metro East Mixed Use (MEMU) Overlay Zone by an additional 33.52 acres, while maintaining the potential development capacity in place. Additionally, the City is considering an application within the expanded MEMU boundaries for the development of a mixed-use project featuring 603 residential apartments and approximately 8,500 square feet (sf) of commercial space on the old Elks Club site at the corner of Lyon and First Street (Elan Project). The MEMU Overlay zoning document would also be updated to refine development standards and allowable land uses. Together these proposals constitute the “proposed project.” The City actions required to approve the proposed project include the following:

- Certify the SEIR and adopt the Mitigation Monitoring and Reporting Program.
- Approve the General Plan Amendment.
- Approve the Zone Change.

Monitoring and Reporting Procedures

The MMRP for the proposed project will be in place through all phases of the project, including design, construction, and operation. The City will be responsible for administering the MMRP and ensuring that all parties comply with its provisions. The City may delegate monitoring activities to staff, consultants, or contractors. The City will also ensure that monitoring is documented through periodic reports and that deficiencies are promptly corrected. The designated environmental monitor will track and document compliance with mitigation measures, note any problems that may result, and take appropriate action to rectify problems.

Mitigation Monitoring and Reporting Program Implementation

Due to the program- and project-level components of this SEIR, the MMRP has been divided into two parts to address each component separately. The mitigation measures that pertain to implementation of the MEMU Overlay District Expansion and their methods of implementation are listed in Table 1. The mitigation measures, which include several mitigation measures from the program-level component, that pertain to the Elan Development Project are listed in Table 2. Certain inspections and reports may require preparation by qualified individuals, and these are specified as needed. The timing and method of verification for each measure are also specified.

It should also be noted that where applicable, mitigation measures from the 2007 Final MEMU EIR were carried forward into this SEIR, and, for some impacts, new mitigation measures were developed (highlighted gray in the tables below). Mitigation measures carried forward from the 2007 Final MEMU EIR maintained their original numbering and naming convention from the MEMU EIR and begin with “MM-OZ” in this MMRP.

Project Contact Information

Lead Agency:

City of Santa Ana, Planning and Building Agency
20 Civic Center Plaza, M20
Santa Ana, CA 92702

Contact Person/Telephone:

Ali Pezeshkpour, AICP, Senior Planner
(714) 647-5882

Table 1. Mitigation Monitoring and Reporting Program for the Metro East Mixed-Use Overlay District Expansion

Mitigation Measure No.	Mitigation Measure	Monitoring Party	Implementing Party	Mitigation Timing
AIR QUALITY				
MM-OZ 4.2-2	The developer shall require by contract specifications that all diesel-powered equipment used would be retrofitted with after-treatment products (e.g., engine catalysts and other technologies available at the time construction commences) when construction activities commence. Contract specifications shall be included in the proposed project construction documents, which shall be approved by the City of Santa Ana Planning and Building Agency staff.	Planning and Building Agency	Project applicant	Prior to construction
MM-OZ 4.2-3	The developer shall require by contract specifications that all heavy-duty diesel-powered equipment operating and refueling at the project site would use low-NOx diesel fuel to the extent that it is readily available and cost effective (up to 125 percent of the cost of California Air Resources Board diesel) in the South Coast Air Basin at the time construction activities commence. This requirement shall not apply to diesel-powered trucks traveling to and from the project site. Contract specifications shall be included in the proposed project construction documents, which shall be approved by the City of Santa Ana Planning and Building Agency staff.	Planning and Building Agency	Project applicant	Prior to construction
MM-OZ 4.2-4	The developer shall require by contract specifications that alternative fuel construction equipment (i.e., compressed natural gas, liquid petroleum gas, and unleaded gasoline) would be utilized to the extent feasible in the South Coast Air Basin at the time construction activities commence. Contract specifications shall be included in the proposed project construction documents, which shall be approved by the City of Santa Ana Planning and Building Agency staff.	Planning and Building Agency	Project applicant	Prior to construction

Mitigation Measure No.	Mitigation Measure	Monitoring Party	Implementing Party	Mitigation Timing
MM-OZ 4.2-5	The developer shall require by contract specifications that construction equipment engines will be maintained in good condition and in proper tune per manufacturer's specification for the duration of construction. Contract specifications shall be included in the proposed project construction documents, which shall be approved by the City of Santa Ana Planning and Building Agency staff.	Planning and Building Agency	Project applicant	Prior to construction
MM-OZ 4.2-6	The developer shall require by contract specifications that construction-related equipment, including heavy-duty equipment, motor vehicles, and portable equipment, shall be turned off when not in use for more than 5 minutes. Contract specifications shall be included in the proposed project construction documents, which shall be approved by the City of Santa Ana Planning and Building Agency staff.	Planning and Building Agency	Project applicant	Prior to construction
MM-OZ 4.2-7	The developer shall require by contract specifications that construction operations rely on the electricity infrastructure surrounding the construction site rather than electrical generators powered by internal combustion engines to the extent feasible. Contract specifications shall be included in the proposed project construction documents, which shall be approved by the City of Santa Ana Planning and Building Agency staff.	Planning and Building Agency	Project applicant	Prior to construction
MM-OZ 4.2-8	The developer shall require by contract specifications that construction parking be configured to minimize traffic interference during the construction period and, therefore, reduce idling of traffic. Contract specifications shall be included in the proposed project construction documents, which shall be approved by the City of Santa Ana Planning and Building Agency staff.	Planning and Building Agency/Public Works	Project applicant	Prior to construction
MM-OZ 4.2-9	The developer shall require by contract specifications that temporary traffic controls are provided, such as a flag person, during all phases of construction to maintain smooth traffic flow. Contract specifications shall be included in the proposed project construction documents, which shall be approved by the City of Santa Ana Planning and Building Agency staff.	Planning and Building Agency/Public Works	Project applicant	Prior to construction

Mitigation Measure No.	Mitigation Measure	Monitoring Party	Implementing Party	Mitigation Timing
MM-OZ 4.2-10	The developer shall require by contract specifications that construction activities that affect traffic flow on the arterial system be scheduled to off-peak hours (10:00 A.M. to 4:00 P.M.). Contract specifications shall be included in the proposed project construction documents, which shall be approved by the City of Santa Ana Planning and Building Agency staff.	Planning and Building Agency/Public Works	Project applicant	Prior to construction
MM-OZ 4.2-11	The developer shall require by contract specifications that dedicated on-site and off-site left-turn lanes on truck hauling routes be utilized for movement of construction trucks and equipment on site and off site to the extent feasible during construction activities. Contract specifications shall be included in the proposed project construction documents, which shall be approved by the City of Santa Ana Planning and Building Agency staff.	Planning and Building Agency/Public Works	Project applicant	Prior to construction
MM-OZ 4.2-12	Upon issuance of building or grading permits, whichever is issued earliest, notification shall be mailed to owners and occupants of all developed land uses within ¼ mile of the Overlay Zone and the individual projects within the Overlay Zone providing a schedule for major construction activities that will occur through the duration of the construction period. In addition, the notification will include the identification and contact number for a community liaison and designated construction manager that would be available on site to monitor construction activities. The construction manager shall be responsible for complying with all project requirements related to PM10 generation. The construction manager will be located at the on-site construction office during construction hours for the duration of all construction activities. Contract information for the community liaison and construction manager will be located at the construction office, City Hall, the police department, and a sign on site.	Planning and Building Agency	Project applicant	Upon issuance of building or grading permits

Mitigation Measure No.	Mitigation Measure	Monitoring Party	Implementing Party	Mitigation Timing
MM-OZ 4.2-13	<p>As required by South Coast Air Quality Management District Rule 403–Fugitive Dust, all construction activities that are capable of generating fugitive dust are required to implement dust control measures during each phase of project development to reduce the amount of particulate matter entrained in the ambient air. These measures include:</p> <ul style="list-style-type: none"> • Limiting the amount of area disturbed during site grading to 10 acres per day • Application of soil stabilizers to inactive construction areas • Quick replacement of ground cover in disturbed areas • Watering of exposed surfaces three times daily • Watering of all unpaved haul roads three times daily • Covering all stock piles with tarp • Reduction of vehicle speed on unpaved roads • Post signs on site, limiting traffic to 15 miles per hour or less • Sweep streets adjacent to the project site at the end of the day if visible soil material is carried over to adjacent roads • Cover or have water applied to the exposed surface of all trucks hauling dirt, sand, soil, or other loose materials prior to leaving the site to prevent dust from impacting the surrounding areas • Install wheel washers where vehicles enter and exit unpaved roads onto paved roads to wash off trucks and any equipment leaving the site each trip 	Planning and Building Agency	Project applicant	During grading, construction and project implementation
MM-OZ 4.2-14	The developer shall require by contract specifications that the architectural coating (paint and primer) products used would have a VOC rating of 100 grams per liter or less. Contract specifications shall be included in the proposed project construction documents, which shall be reviewed and approved by the City of Santa Ana Planning and Building Agency staff.	Planning and Building Agency	Project applicant	Prior to construction

Mitigation Measure No.	Mitigation Measure	Monitoring Party	Implementing Party	Mitigation Timing
MM-OZ 4.2-15	The developer shall require by contract specifications that materials that do not require painting be used during construction to the extent feasible. Contract specifications shall be included in the proposed project construction documents, which shall be reviewed and approved by the City of Santa Ana Planning and Building Agency staff.	Planning and Building Agency	Project applicant	Prior to construction
MM-OZ 4.2-16	The developer shall require by contract specifications that pre-painted construction materials be used to the extent feasible. Contract specifications shall be included in the proposed project construction documents, which shall be reviewed and approved by the City of Santa Ana Planning and Building Agency staff.	Planning and Building Agency	Project applicant	Prior to construction
MM AQ-1	All applicants proposing development of projects within the MEMU Overlay Zone and expansion area shall require their contractors, as a condition of contract, to further reduce construction-related exhaust emissions by ensuring that all off-road equipment greater than 50 horsepower (hp) and operating for more than 20 total hours over the entire duration of construction activities shall operate on an EPA-approved Tier 4 or newer engine. Exemptions can be made for specialized equipment where Tier 4 engines are not commercially available within 200 miles of the MEMEU Overlay Zone and expansion area. The construction contract must identify these pieces of equipment, document their unavailability, and ensure that they operate on no less than an EPA-approved Tier 3 engine.	Planning and Building Agency	Project applicant	Prior to construction
MM-AQ-2	All applicants proposing development of projects within the MEMU Overlay Zone and expansion area shall require their contractors, as a condition of contract, to use diesel trucks that have 2010 model year or newer engines. In the event that 2010 model year or newer diesel trucks cannot be obtained, the contractor must provide documentation to the City showing that a good faith effort to locate such engines was conducted. If the lead agency determines that 2010 model year diesel trucks are not feasible, supported by substantial evidence in the record, then the lead agency shall require the use of trucks that meet EPA 2007 model year NOx emissions requirements, at a minimum.	Planning and Building Agency	Project applicant	Prior to construction

Mitigation Measure No.	Mitigation Measure	Monitoring Party	Implementing Party	Mitigation Timing
MM-AQ-3	All applicants proposing development of projects within the MEMU Overlay Zone and expansion area shall require their contractors, as a condition of contract, to reduce construction-related fugitive VOC emissions by ensuring that low-VOC coatings that have a VOC content of 10 grams/liter (g/L) or less are used during construction. The project applicant will submit evidence of the use of low-VOC coatings to SCAQMD prior to the start of construction.	Planning and Building Agency	Project applicant	Prior to construction
CULTURAL RESOURCES				
MM-OZ 4.4-1	The City of Santa Ana shall require as part of the environmental review of development projects within the Overlay Zone Expansion Area that impacts to potentially significant historical resources be considered. If any existing structures on a proposed development site are at or approaching 50 or more years of age at the time of CEQA review, the City shall retain the services of a qualified architectural historian to conduct a field survey of the structure in question and technical study to determine its potential historical potential significance and develop mitigation measures as necessary.	Planning and Building Agency	Project applicant	During environmental review of future projects
MM-OZ 4.4-2	Due to the lack of cultural resource studies for the Overlay Zone Expansion Area, and in order to avoid damaging any unidentified cultural resources, a qualified archaeologist would be retained to monitor any significant ground-disturbing activities in undeveloped areas within the Expansion Area, and any deep (10" or deeper) ground-disturbing activities in all areas of the Expansion Area.	Planning and Building Agency	Project applicant	During construction
MM-OZ 4.4-3	In the event that archaeological resources are unearthed during project subsurface activities, all earth-disturbing work within a 100-meter radius must be temporarily suspended or redirected until an archaeologist has evaluated the nature and significance of the find. After the find has been appropriately mitigated, work in the area may resume.	Planning and Building Agency	Project applicant	During construction
MM-OZ 4.4-5	If human remains are unearthed, State Health and Safety Code Section 7050.5 requires that no further disturbance shall occur until the County coroner has made the necessary findings as to origin and disposition pursuant to Public Resources Code Section	Planning and Building Agency/NAHC	Project applicant	During construction

Mitigation Measure No.	Mitigation Measure	Monitoring Party	Implementing Party	Mitigation Timing
	discussions of the methods used, stratigraphic section(s) exposed, fossils collected, and significance of recovered fossils.			
GREENHOUSE GAS EMISSIONS				
MM-GHG-1	<p>The following improvements should be implemented to encourage cycling within the planning area:</p> <ul style="list-style-type: none"> Projects should be within at least 0.5 mile of an existing/planned Class I or Class II bike lane and include a network that provides connection to existing off-site facilities. Bicycle routes should also connect to all streets contiguous with the project site; the route should have minimum conflicts with automobile parking and circulation facilities. All streets internal to the project wider than 75 feet should have Class II bicycle lanes on both sides. Bike parking should be provided at nonresidential projects (one bike rack space per 20 vehicle/employee parking spaces) and multi-unit residential projects (one long-term bicycle parking space for each unit without a garage). Long-term facilities should be provided at multi-unit residential developments and consist of a bicycle locker, locked room with standard racks, or a standard rack location that is staffed or monitored. Non-residential projects should provide “end-of-trip” facilities, including showers, lockers, and changing spaces. Bike-share infrastructure installation. 	Planning and Building Agency	Project applicant	During environmental review of future projects
MM-GHG-2	<p>The following improvements will be implemented, when feasible, to achieve more energy-efficient operations within the planning area:</p> <ul style="list-style-type: none"> Projects should exceed Title 24 requirements by at least 20 percent. Projects will, to the extent feasible, incorporate on-site renewable energy systems, including solar, wind, geothermal, low-impact hydro, and biomass and bio-gas strategies. Projects will incorporate water and energy saving measures into the project design, including, but not limited to, the following: 	Planning and Building Agency	Project applicant	During project design and construction

Mitigation Measure No.	Mitigation Measure	Monitoring Party	Implementing Party	Mitigation Timing
	<ul style="list-style-type: none"> Installation of low-water-use appliances, Use of only natural gas or electric stoves, Installation of EnergyStar-labeled roof materials, Installation of highly reflective cool roofing materials, Installation of electrical outlets at exterior areas, Use of energy-efficient appliances (e.g., EnergyStar), Installation of shading mechanisms for windows, patios, and walkways, and Installation of programmable thermostats. Projects will “weatherize” any existing structures to achieve energy savings. Weatherization strategies can include sealing air ducts, insulating, glazing windows, and tuning up or replacing air-conditioning and heating equipment. 			
MM-GHG-3	Where feasible, SCE-owned streetlights within the planning area will be purchased by the City, and the high-pressure sodium fixtures will be replaced with LED fixtures. Those streetlights within the planning area that are currently owned by the City will also be replaced with LED fixtures.	Planning and Building Agency/ Public Works	Project applicant/ Public Works	During environmental review of future projects
MM-GHG-4	Where feasible and applicable, projects within the planning area will incorporate rain barrels and rainwater re-use practices into project design.	Planning and Building Agency	Project applicant	During project design and construction
MM-GHG-5	<p>The following measures should be implemented to reduce water use and electricity associated with water-intensive plants:</p> <ul style="list-style-type: none"> Drought-resistant native plants, as well as plants with low emissions and high carbon sequestration potential, should substitute landscaping with turf grass and other water-intensive vegetation. Vegetable gardens, bunch grass, and low-water landscaping should be encouraged for development within the planning area. 	Planning and Building Agency	Project applicant	During project design and construction
MM-GHG-6	The following measures would be implemented by future development projects in the MEMU Overlay Zone to the extent practicable to improve pedestrian safety and encourage walking to and from the project area:	Planning and Building Agency	Project applicant	During environmental review of future projects

Mitigation Measure No.	Mitigation Measure	Monitoring Party	Implementing Party	Mitigation Timing
	<ul style="list-style-type: none"> Projects shall provide a pedestrian access network that links all internal uses to all existing/planned external streets and pedestrian facilities contiguous with the project site, where applicable. The route connecting internal and external networks should have minimal conflict with parking and circulation facilities. All internal and adjacent sidewalks associated with a project should be a minimum of 5 feet wide, with vertical curbs, where applicable. Where feasible, pedestrian barriers should be minimized using grade separation, wider sidewalks, and traffic calming. In addition, physical barriers such as walls, landscaping, and slopes between facilities that impede pedestrian movement should be avoided. 			
HAZARDS AND HAZARDOUS MATERIALS				
MM-OZ 4.6-2	<p>Prior to the issuance of grading permits on any project site, the developer(s) shall:</p> <ul style="list-style-type: none"> Investigate the project site to determine whether it or immediately adjacent areas have a record of hazardous materials contamination via the preparation of a preliminary environmental site assessment (ESA), which shall be submitted to the City for review. If contamination is found, the report shall characterize the site according to the nature and extent of contamination that is present before development activities proceed at that site. If contamination is determined to be onsite, the City, in accordance with appropriate regulatory agencies, shall determine the need for further investigation and/or remediation of the soils conditions on the contaminated site. If further investigation or remediation is required, it shall be the responsibility of the site developer(s) to complete such investigation and/or remediation prior to construction of the project. If remediation is required as identified by the local oversight agency, it shall be accomplished in a manner that reduces risk 	Planning and Building Agency	Project applicant	Prior to issuance of grading permits



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