Air Quality and Greenhouse Gas Study

Cherokee Court Single-Family Residential Development

San Dimas, CA

Prepared for:

Development 1 Group
2011 E. Financial Way, Suite 202
Glendora, CA 91741

Prepared by:

ENTECH CONSULTING GROUP
PLANNING • ENVIRONMENTAL • CONSTRUCTION MANAGEMENT

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TABLE OF CONTENTS

TABLE OF CONTENTS CONTINUED

APPENDIX

LIST OF FIGURES

LIST OF TABLES

ACRONYMS AND ABBREVIATIONS

Air Basin	South Coast Air Basin
AQMP	Air Quality Management Plan
CAAQS	California Ambient Air Quality Standards
CAPCOA	California Air Pollution Control Officers Association
CARB	California Air Resources Board
CCAA	California Clean Air Act
CEC	California Energy Commission
CEQA	California Environmental Quality Act
CO	Carbon monoxide
CO_2	Carbon dioxide
CO_2e	Carbon dioxide equivalent
DPM	Diesel particulate matter
EPA	Environmental Protection Agency
ºF	Fahrenheit
GHG	Greenhouse gas
GWP	Global warming potential
HFCs	Hydrofluorocarbons
IPCC	International Panel on Climate Change
LST	Localized Significant Thresholds
$MTCO_2e$	Metric tons of carbon dioxide equivalent
$MMTCO_2e$	Million metric tons of carbon dioxide equivalent
MPO	Metropolitan Planning Organization
NAAQS	National Ambient Air Quality Standards
NO_x	Nitrogen oxides
NO_2	Nitrogen dioxide
O_3	Ozone
PM	Particle matter
PM10	Particles that are less than 10 micrometers in diameter
PM2.5	Particles that are less than 2.5 micrometers in diameter
PPM	Parts per million
PPB	Parts per billion

PPT	Parts per trillion
RTIP	Regional Transportation Improvement Plan
SCAQMD	South Coast Air Quality Management District
SIP	State Implementation Plan
SO_x	Sulfur oxides
TAC	Toxic air contaminants
UNFCCC	United Nations' Framework Convention on Climate Change
VOC	Volatile organic compounds

1.0 INTRODUCTION

This air quality and greenhouse gas (GHG)analysis has been prepared to support the City of San Dimas (City) environmental review process. It provides information regarding potential impacts to air quality and GHG associated with the project's approval. This air quality/GHG study describes the existing air quality, identifies applicable rules and regulations, evaluates potential air quality impacts of the project, and, where appropriate, includes measures to mitigate or minimize pollutant emissions associated with the project.

1.1 Purpose of Analysis and Study Objectives

This Air Quality and Greenhouse Gas Emissions Impact Analysis has been completed to determine the air quality and greenhouse gas (GHG) emissions impacts of the Cherokee Court Residential Development (project). The following is provided in this report:

- A description of the project;
- A description of the atmospheric setting;
- A description of the criteria pollutants and GHGs;
- A description of the air quality regulatory framework;
- A description of the air quality and GHG emissions thresholds, including the California Environmental Quality Act (CEQA) significance thresholds;
- An analysis of the short-term construction-related and long-term operational air quality and GHG emissions impacts;
- An analysis of the conformity of the project with the South Coast Air Quality Management District (SCAQMD) Air Quality Management Plan (AQMP); and
- An analysis of the project's conformity with all applicable GHG emissions reduction plans and policies.

1.2 Site Location and Study Area

The project area is located on Cherokee Court in the City of San Dimas, in Los Angeles County. Specifically, the project area encompasses 1.4 acres and intersects Baseline Road to the south. **Figure 1** shows the project study area. The project site consists of seven (7) single-family residential parcels along Cherokee Court, as shown in **Figure 2**. The project site parcels are zoned as single-family residential with agriculture uses or single-family.

1.3 Sensitive Receptors in Project Vicinity

The nearest offsite sensitive receptors to the project site consist of residential homes surrounding the project site along Cherokee Court. Directly to the west of the site consists of a residential parcel with a mobile home storage parking area.

1.4 Project Description

The Cherokee Court Residential Development Project consists of constructing (7) seven single-family residential properties on lots ranging in size from 8,800 to 11,000 square feet. The total net acreage of the site is 1.4 acres and 61,014 square feet. The single-family residential homes will range from 3,000 to 4,000 square feet.

1.5 Standard Air Quality and GHG Regulatory Conditions

The project will be required to comply with the following regulatory conditions from the SCAQMD and the State of California (State).

South Coast Air Quality Management District Rules

The following lists the SCAQMD rules applicable to all mixed-use projects in the South Coast Air Basin (Air Basin).

Rule 402 - Nuisance

Rule 402 prohibits a person from discharging from any source whatsoever such quantities of air contaminants or other material which causes 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. Compliance with Rule 402 will reduce local air quality and odor impacts to nearby sensitive receptors.

Rule 403- Fugitive Dust

Rule 403 governs emissions of fugitive dust during construction activities. It requires that no person shall cause or allow fugitive dust emissions such that dust remains visible in the atmosphere beyond the property line or the dust emission exceeds 20 percent opacity if the dust is from the operation of a motorized vehicle. Compliance with this rule is achieved by applying standard Best Available Control Measures, which include but are not limited to the measures below. Compliance with these rules would reduce local air quality impacts to nearby sensitive receptors.

1.5.1 Utilize either a pad of washed gravel 50 feet long, 100 feet of paved surface, a wheel shaker, or a wheel washing device to remove material from vehicle tires and undercarriages before leaving the project site.

1.5.2 Do not allow any track out of material to extend more than 25 feet onto a public roadway and remove all track out at the end of each workday.

1.5.3 Water all exposed areas on active sites at least three times per day and pre-water all areas prior to clearing and soil moving activities.

1.5.4 Apply nontoxic chemical stabilizers according to manufacturer specifications to all construction areas that will remain inactive for 10 days or longer.

1.5.5 Pre-water all material to be exported prior to loading, and either cover all loads or maintain at least 2 feet of freeboard in accordance with the requirements of California Vehicle Code Section 23114.

1.5.6 Replant all disturbed areas as soon as practical.

1.5.7 Suspend all grading activities when wind speeds (including wind gusts) exceed 25 miles per hour.

1.5.8 Restrict traffic speeds on all unpaved roads to 15 miles per hour or less.

Rules 1108 and 1108.1 – Cutback and Emulsified Asphalt

Rules 1108 and 1108.1 govern the sale, use, and manufacturing of asphalt and limit asphalt's VOC content. This rule regulates the VOC contents of asphalt used during construction and any ongoing maintenance during

operations. Therefore, all asphalt used during the construction and operation of the project must comply with SCAQMD Rules 1108 and 1108.1.

Rule 1113 – Architectural Coatings

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

Rule 1143 – Paint Thinners

Rule 1143 governs the sale, use, and manufacturing of paint thinners and multi-purpose solvents that are used in thinning of coating materials, cleaning of coating application equipment, and other solvent cleaning operations. This rule regulates the VOC content of solvents used during construction, and solvents used during the construction and operation of the project must comply with SCAQMD Rule 1143.

State of California Rules

The following lists the State of California rules that apply to all residential projects.

CARB Regulation for In-Use Off-Road Diesel Vehicles

On July 26, 2007, the California Air Resources Board (CARB) adopted California Code of Regulations Title 13, Article 4.8, Chapter 9, Section 2449 to reduce diesel particulate matter (DPM) and NOx emissions from in-use off-road heavy-duty diesel vehicles in California. Such vehicles are used in construction, mining, and industrial operations. The regulation limits idling to no more than five consecutive minutes, requires reporting and labeling and requires disclosure of the regulation upon vehicle sale. Performance requirements of the rule are based on a fleet's average NOx emissions, which can be met by replacing older vehicles with newer, cleaner vehicles or by applying exhaust retrofits. The regulation was amended in 2010 to delay the original timeline of the performance requirement, making the first compliance deadline January 1, 2014, for large fleets (over 5,000 horsepower), 2017 for medium fleets (2,501-5,000 horsepower), and 2019 for small fleets (2,500 horsepower or less). Currently, no commercial operation in California may add any equipment to their fleet with a Tier 0 or Tier 1 engine. By January 1, 2018, medium and large fleets will be restricted from adding Tier 2 engines to their fleets. By January 2023, no commercial operation will be allowed to add Tier 2 engines to their fleets. It should be noted that commercial fleets may continue to use their existing Tier 0 and 1 equipment if they can demonstrate that the average emissions from their entire fleet emissions meet the NOx emissions targets.

CARB Resolution 08-43 for On-Road Diesel Truck Fleets

On December 12, 2008, the CARB adopted Resolution 08-43, limiting NOx, PM10 and PM2.5 emissions from on-road diesel truck fleets operating 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 2023 all commercial diesel trucks that operate in California shall meet the model year 2010 (Tier 4 Final) or latter emission standards. This regulation provides annual interim targets for fleet owners to meet in the interim period. By January 1, 2014, 50 percent of a truck fleet is required to have installed Best Available Control Technology (BACT) for NOx emissions, and 100 percent of a truck fleet installed BACT for PM10 emissions. This regulation also provides a few exemptions, including a one-time 3-day pass for trucks registered outside of California. All on-road diesel trucks utilized during the project's construction will be required to comply with Resolution 08-43.

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) standards require the installation of insulated hot water pipes, improved window performance, improved wall insulation, and mandatory duct sealing. Other Title 24 requirements include the use of cool

roofing shingles, a minimum of 1-inch air space between roof material and roof deck, and a minimum of R-22 roof/ceiling insulation. All lighting is required to be high efficiency, and daylight and motion sensors are required for outdoor lighting, bathrooms, utility rooms, and other spaces. The forced air systems are required to limit leakage to 5 percent or less and require all heat pump systems to be equipped with liquid line filter driers. The 2016 Title 24 Part 6 standards are anticipated to reduce electricity consumption by 281 gigawatt-hours per year and natural gas consumption by 16 million therms per year (http://www.energy.ca.gov/2015publications/CEC-400-2015-037/CEC-400-2015-037- CMF.pdf).

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

CCR Title 24, Part 11: *California Green Building Standards* (Title 24) requires 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. One focus of CCR Title 24, Part 11 is water conservation measures, which reduce GHG emissions by reducing electrical consumption associated with pumping and treating water. CCR Title 24, Part 11 has approximately 52 nonresidential mandatory measures and 130 provisions for optional use.

1.6 Summary of Analysis Results

The following is a summary of the project's impacts with regard to the State CEQA Guidelines air quality and GHG emissions checklist questions.

Conflict with or obstruct implementation of the applicable air quality plan?

Less than significant impact.

Violate any air quality standard or contribute substantially to an existing or projected air quality violation?

Less than significant impact.

Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable Federal or State ambient air quality standard?

Less than significant impact.

Expose sensitive receptors to substantial pollutant concentrations?

Less than significant impact.

Create objectionable odors affecting a substantial number of people?

Less than significant impact.

Generate GHG emissions, either directly or indirectly that may significantly impact the environment?

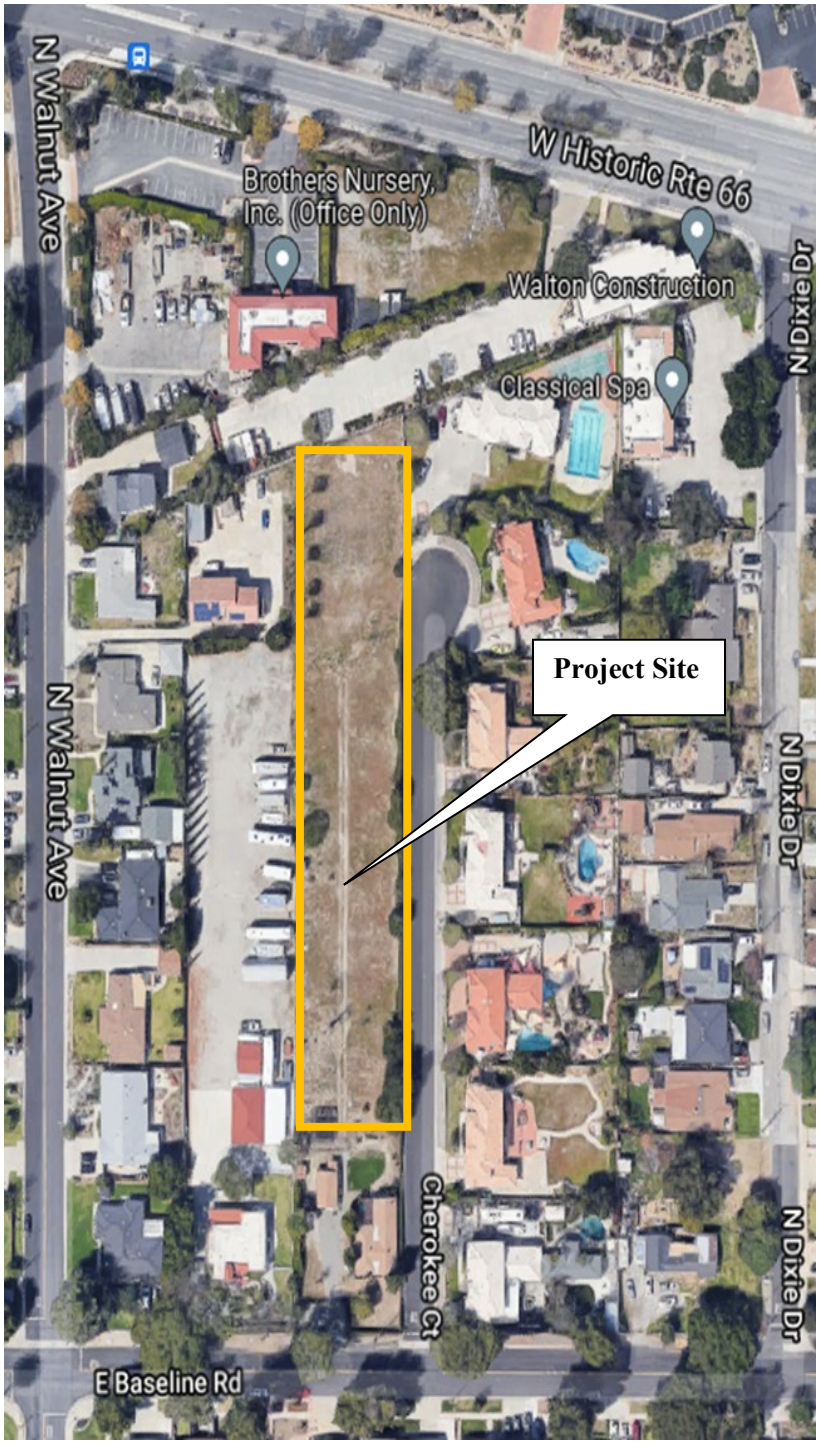
Less than significant impact.

Conflict with any applicable plan, policy, or regulation of an agency adopted to reduce the emissions of GHGs?

Less than significant impact.

1.7 Mitigation Measures Required for the Project

This analysis found that implementing the CARB and SCAQMD air quality emissions reductions regulations (i.e. watering 3 times per day, maintaining the moisture content of the dirt on-site not to exceed 12%, limiting construction vehicle speeds to less than 25 mph and using construction equipment that meets Tier 4 Final standards for diesel exhaust) was adequate to limit criteria pollutants, toxic air contaminants, odors, and GHG emissions from the project to less than significant levels. No additional mitigation measures are required for the project with respect to air quality and GHG emissions.



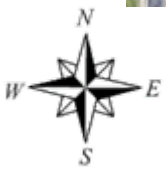


Figure 1. Local Project Study Area

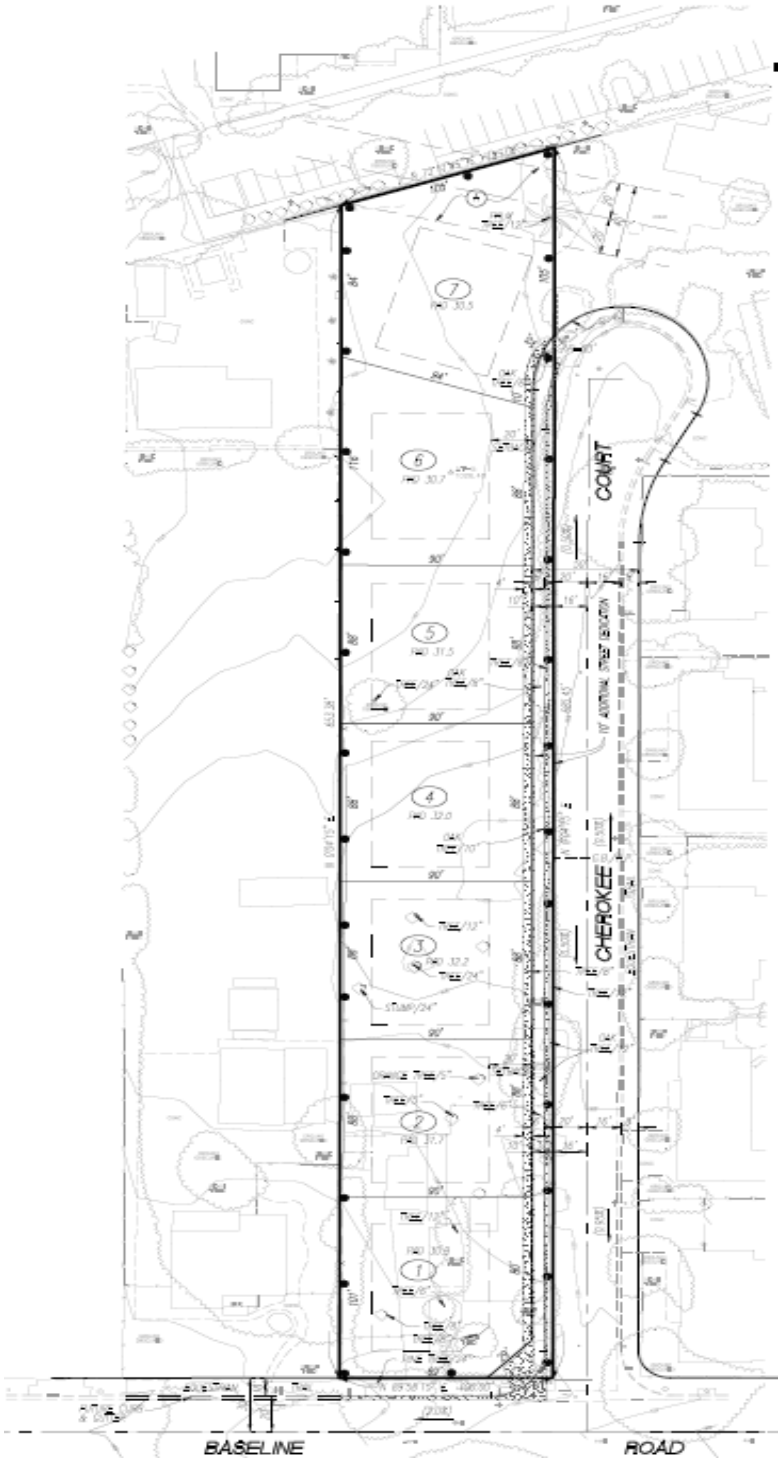


Figure 2. Local Project Study Area

2.0 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 crops' protection, materials, or avoidance of nuisance conditions). A summary of federal and state ambient air quality standards is provided in the Regulatory Framework section.

2.1 Criteria Pollutants

The criteria pollutants include ozone, nitrogen oxides, carbon monoxide, sulfur oxides, 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 Oxides

Nitrogen Oxides (NOx) is the generic term for a group of highly reactive gases which contain nitrogen and oxygen. While most NOx is colorless and odorless, concentrations of nitrogen dioxide (NO_2) can often be seen as a reddish-brown layer over many urban areas—NOx forms 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. NOx reacts with other pollutants to form ground-level ozone, nitrate particles, acid aerosols, and NO_2, 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 NOx is often most effective if done from a regional perspective, rather than focusing on the nearest sources.

Ozone

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

Carbon Monoxide

Carbon monoxide (CO) is a colorless, odorless gas formed when carbon in fuel is not burned completely. It is a component of motor vehicle exhaust, which contributes approximately 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, 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 concentrations generally occur in the immediate vicinity of roadways with high traffic volumes and traffic congestion, active parking lots, and 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 diseases 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 Oxides

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

Lead

Lead is a metal found naturally in the environment and 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 lead levels 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 Pb 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

Particle matter (PM) is the term for a mixture of solid particles and liquid droplets found in the air. PM is made up of many 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 less than 10 micrometers in diameter (PM10) are 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 less than 2.5 micrometers in diameter (PM2.5) have been designated as a subset of PM10 due to their increased negative health impacts and their ability to remain suspended in the air longer and travel further.

2.2 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 TACs 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 40 different toxic air contaminants. The most important of these TACs, in terms of health risk, are diesel particulates, benzene, formaldehyde, 1,3-butadiene, and

acetaldehyde. Public exposure to TACs can result from emissions from normal operations and accidental releases. The health effects of TACs include cancer, birth defects, neurological damage, and death.

TACs 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 TACs with varying degrees of toxicity. Sources of TACs include industrial processes, commercial operations (e.g., gasoline stations and dry cleaners), and motor vehicle exhaust.

According to *The California Almanac of Emissions and Air Quality 2013 Edition*, the majority of the estimated health risk from TACs can be attributed to relatively few compounds, the most important of which is diesel particulate matter (DPM). DPM is a subset of PM2.5 because the size of diesel particles is typically 2.5 microns and smaller. The identification of DPM as a TAC 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 DPM 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 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 DPM as a toxic air contaminant was based on its potential to cause cancer, premature deaths, and other health problems. Exposure to DPM 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 most of California's potential airborne cancer risk from combustion sources.

Asbestos

Asbestos is listed as a TAC by CARB and as a Hazardous Air Pollutant by the EPA. Asbestos occurs naturally in mineral formations, and crushing or breaking these rocks can release asbestiform fibers into the air through construction or other means. 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, maybe linked to such diseases as asbestosis, lung cancer, and mesothelioma. 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 in Santa Barbara County. The nearest historic asbestos mine to the project site, as identified in the *Reported Historic Asbestos Mines, Historic Asbestos Prospects, and Other Natural Occurrences of Asbestos in California,* prepared by the U.S. Geological Survey, is located at Asbestos Mountain, which is approximately 53 miles southeast of the project site in the San Jacinto Mountains. Due to the distance to the nearest natural occurrences of asbestos, the project site is not likely to contain asbestos.

2.3 Greenhouse Gases

Constituent gases of the Earth's atmosphere, called atmospheric greenhouse gases (GHGs), play a critical role in the Earth's radiation amount by trapping infrared radiation from the Earth's surface, which otherwise would have escaped to space. Prominent greenhouse gases contributing to this process include carbon dioxide (CO_2), methane (CH_4), ozone (O_3), water vapor, nitrous oxide (N_2O), and chlorofluorocarbons (CFCs). This phenomenon, known as the Greenhouse Effect, is responsible for maintaining a habitable climate. Anthropogenic (caused or produced by humans) emissions of these greenhouse gases in excess of natural ambient concentrations are responsible for the enhancement of the Greenhouse Effect and have led to a trend of unnatural warming of the Earth's natural climate, known as

global warming or climate change. Emissions of gases that induce global warming are attributable to human activities associated with industrial/manufacturing, agriculture, utilities, transportation, and residential land uses. Transportation is responsible for 41 percent of the State's greenhouse gas emissions, followed by electricity generation. Emissions of CO_2 and N_2O are byproducts of fossil fuel combustion. Methane is a potent greenhouse gas that results from off-gassing associated with agricultural practices and landfills. Sinks of CO_2, where CO_2 is stored outside the atmosphere, include uptake by vegetation and dissolution into the ocean. The following describes 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; it maintains a climate necessary for life in the atmosphere. Changes in its concentration are primarily considered a result of climate feedback 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 atmosphere's temperature 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 can "hold" more water when it is warmer), leading to more water vapor in the atmosphere. As a GHG, the higher concentration of water vapor can 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. This is referred to as a "positive feedback loop." The extent to which this positive feedback loop will continue is unknown as there are also dynamics that check the positive feedback loop. 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).

Carbon Dioxide

The natural production and absorption of CO_2 are 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 activity has increased in scale and distribution. CO_2 was the first GHG demonstrated to be increasing in atmospheric concentration, with the first conclusive measurements being made in the last half of the 20th century. Prior to the industrial revolution, concentrations were relatively stable at 280 parts per million (ppm). The International Panel on Climate Change (IPCC) indicates that concentrations were 379 ppm in 2005, an increase of more than 30 percent. Left unchecked, the IPCC projects that the concentration of carbon dioxide in the atmosphere is projected to increase to a minimum of 540 ppm by 2100 due to anthropogenic sources. This could result in an average global temperature rise of at least two degrees Celsius or 3.6 degrees Fahrenheit.

Methane

CH_4 is an extremely effective absorber of radiation, although its atmospheric concentration is less than CO_2. Its lifetime in the atmosphere is brief (10 to 12 years), compared to some other GHGs (such as CO_2, N_2O, and Chlorofluorocarbons (CFCs)). CH_4 has both natural and anthropogenic sources. It is released as part of the biological processes in low oxygen environments, such as in swamplands or 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 anthropocentric sources include fossil-fuel combustion and biomass burning.

Nitrous Oxide

Concentrations of N_2O also began to rise at the beginning of the industrial revolution. In 1998, the global concentration of this GHG was documented at 314 parts per billion (ppb). N_2O is produced by microbial processes in soil and water, including reactions in a 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. N_2O 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 race cars).

Chlorofluorocarbons

CFCs are gases formed synthetically by replacing all hydrogen atoms in methane or ethane (C_2H_6) with chlorine and/or fluorine atoms. CFCs are nontoxic, nonflammable, insoluble, and chemically unreactive in the troposphere (the level of the air at the Earth's surface). CFCs have no natural source but were first synthesized in 1928. They were used for refrigerants, aerosol propellants, and cleaning solvents. Due to the discovery that they can destroy stratospheric ozone, a global effort to halt their production was undertaken. 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 CFCs will remain in the atmosphere for over 100 years.

Hydrofluorocarbons

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

Perfluorocarbons

Perfluorocarbons (PFCs) have stable molecular structures and do not break down through the chemical processes in the lower atmosphere. High-energy ultraviolet rays about 60 kilometers above Earth's surface can destroy the compounds. Because of this, PFCs have very long lifetimes, between 10,000 and 50,000 years. Two common PFCs are tetrafluoromethane (CF_4) and hexafluoroethane (C_2F_6). Concentrations of CF_4 in the atmosphere are over 70 ppt. The two main sources of PFCs are primary aluminum production and semiconductor manufacturing.

Sulfur Hexafluoride

Sulfur Hexafluoride (SF_6) is an inorganic, odorless, colorless, nontoxic, nonflammable gas. SF_6 has the highest global warming potential of any gas evaluated, 23,900 times that of CO_2. Concentrations in the 1990s were about 4 ppt. Sulfur hexafluoride is used for insulation in electric power transmission and distribution equipment, in the magnesium industry, semiconductor manufacturing, and 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.

2.4 Global Warming Potential

GHGs have varying global warming potential (GWP). The GWP is the potential of a gas or aerosol to trap heat in the atmosphere; it is the cumulative radiative forcing effects of a gas over a specified time horizon resulting from the emission of a unit mass of gas relative to the reference gas, CO_2. The GHGs listed by the IPCC and the CEQA Guidelines are discussed in this section in order of abundance in the atmosphere. Water vapor, the most abundant GHG, is not included in this list because its natural concentrations and fluctuations far outweigh its anthropogenic (human-made) sources. GHGs are commonly defined in terms of their GWP to simplify reporting and analysis. The IPCCC defines the GWP of various GHG emissions on a normalized scale that recasts all GHG emissions in terms of CO_2e. The GWP of CO_2 is, by definition, 1. The GWP values used in this analysis are based on the IPCC Second Assessment Report (SAR) and United Nations Framework Convention on Climate Change (UNFCCC) reporting guidelines and are detailed in Table 2-1. The SAR GWPs are used in CARB's California inventory, and AB32 Scoping Plan estimates.

Table 2-1 – Global Warming Potentials, Atmospheric Lifetimes and Abundances of GHGs

Gas	Atmospheric Lifetime (years)[1]	Global Warming Potential (100 Year Horizon)[2]	Atmospheric Abundance
Carbon Dioxide (CO_2)	50-200	1	379 ppm
Methane (CH_4)	9-15	25	1,774 ppb
Nitrous Oxide (N_2O)	114	298	319 ppb
HFC-23	270	14,800	18 ppt
HFC-134a	14	1,430	35 ppt
HFC-152a	1.4	124	3.9 ppt
PFC: Tetrafluoromethane (CF_4)	50,000	7,390	74 ppt
PFC: Hexafluoroethane (C_2F_6)	10,000	12,200	2.9 ppt
Sulfur Hexafluoride (SF_6)	3,200	22,800	5.6 ppt

Notes:
[1] Defined as the half-life of the gas.
[2] Compared to the same quantity of CO_2 emissions and is based on the Intergovernmental Panel On Climate Change (IPCC) 2007 standard, which is utilized in CalEEmod (Version 2016.3.1), which is used in this report (CalEEmod user guide: Appendix A).
Definitions: ppm = parts per million; ppb = parts per billion; ppt = parts per trillion
Source: IPCC 2007, EPA 2015

3.0 AIR QUALITY MANAGEMENT

3.1 Regulatory Setting

The air quality at the project site is addressed through various international, federal, state, regional, and local government agencies. These agencies work jointly and 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.

International

In 1988, the United Nations established the Intergovernmental Panel on Climate Change (IPCC) to evaluate global climate change impacts and develop strategies that nations could implement to curtail global climate change. In 1992, the United States joined other countries worldwide in signing the United Nations' Framework Convention on Climate Change (UNFCCC) agreement to control GHG emissions. The parties of the UNFCCC adopted the Kyoto Protocol, which set binding GHG reduction targets for 37 industrialized countries, to reduce their collective GHG emissions by five percent below 1990 levels by 2012. The Kyoto Protocol has been ratified by 182 countries but has not been ratified by the United States. It should be noted that Japan and Canada opted out of the Kyoto Protocol, and the remaining developed countries that ratified the Kyoto Protocol have not met their Kyoto targets. The Kyoto Protocol expired in 2012, and the amendment for the second commitment period from 2013 to 2020 has not yet entered into legal force. The Parties to the Kyoto Protocol negotiated the Paris Agreement in December 2015, agreeing to set a goal of limiting global warming to less than 2 degrees Celsius compared with pre-industrial levels. The Paris Agreement has been adopted by 195 nations, with 147 ratifying it, including the United States by President Obama, who ratified it by Executive Order on September 3, 2016. On June 1, 2017, President Trump announced that the United States is withdrawing from the Paris Agreement; however, the Paris Agreement is still legally binding by the other remaining nations.

Initially, the Montreal Protocol was 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.

Federal – United States Environmental Protection Agency

The Clean Air Act, first passed in 1963 with major amendments in 1970, 1977, and 1990, is the overarching legislation covering air pollution regulation in the United States. The Clean Air Act has established the mandate to regulate both mobile and stationary sources of air pollution at the state and federal level. The Environmental Protection Agency (EPA) was created in 1970 in order to consolidate research, monitoring, standard-setting, and enforcement authority into a single agency.

The EPA is responsible for setting and enforcing the National Ambient Air Quality Standards (NAAQS) for atmospheric pollutants. It regulates emission sources under the federal government's exclusive authority, such as aircraft, ships, and certain locomotives. NAAQS pollutants were identified using medical evidence and are shown below in Table 3-1.

Table 3-1 – 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) Pulmonary function decrements 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 0.030 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 is accompanied by symptoms that 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; and (c) Increased risk of premature death from heart or lung diseases in the 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; and (f) Property damage.
Lead	1.5 µg/m^3 / 30-day	0.15 µg/m^3 /3-month rolling	(a) Learning disabilities; and (b) Impaired blood formation and nerve conduction.
Visibility Reducing Particles	Extinction coefficient of 0.23 per kilometer - visibility of ten miles or more due to particles when relative humidity is less than 70 percent.	No Federal Standards	Visibility impairment on days when relative humidity is less than 70 percent.

Source: http://www.arb.ca.gov/research/aaqs/aaqs2.pdf .

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

programs within the timeframe identified in the SIP. The CARB defines attainment as the category given to an area with no violations in the past three years. As indicated below in Table 3-2, the Air Basin has been designated by the EPA for the national standards as a non-attainment area for ozone (O3), suspended particulates (PM10 and PM2.5), and partial non-attainment for lead. Currently, the Air Basin is in attainment with the national ambient air quality standards for carbon monoxide (CO), sulfur dioxide (SO_2), and nitrogen dioxide (NO_2).

Table 3-2. Attainment Status of the South Coast Air Basin

Criteria Pollutant	Federal Designation	State Designation
Ozone	Nonattainment	Nonattainment
PM_{10}	Attainment	Nonattainment
$PM_{2.5}$	Nonattainment	Nonattainment
Carbon Monoxide	Maintenance	Attainment
Nitrogen Dioxide	Maintenance	Attainment
Sulfur Dioxide	Attainment	Attainment
Lead	Attainment	Attainment
Sulfates	No Standard	Attainment
Hydrogen Sulfide	No Standard	Unclassified*
Visibility Reducing Particles	No Standard	Unclassified*

Sources: *EPA website, http://www.epa.gov/oaqps001/greenbk/index.html, December 2014. and CARB website, http://www.arb.ca.gov/desig/adm/adm.htm, August 2014.*
*If there is inadequate or inconclusive data to make a definitive attainment designation, districts are considered "unclassified."

In 2011, the Air Basin exceeded federal standards for either ozone or PM2.5 at one or more locations on a total of 124 days, based on the current federal standards for 8-hour ozone and 24-hour PM2.5. Despite substantial improvements in air quality over the past few decades, some air monitoring stations in the Air Basin still exceed the NAAQS for ozone more frequently than any other stations in the U.S. In 2011, three of the top five stations that exceeded the 8-hour ozone NAAQS were located in the Air Basin (Central San Bernardino Mountains, East San Bernardino Valley, and Metropolitan Riverside County). (SCAQMD 2012)

PM2.5 in the Air Basin has improved significantly in recent years, with 2010 and 2011 being the cleanest years on record. In 2011, only one station in the Air Basin (Metropolitan Riverside County at Mira Loma) exceeded the annual PM2.5 NAAQS and the 98th percentile form of the 24-hour PM2.5 NAAQS, as well as the 3-year design values for these standards. Basin-wide, the federal PM2.5 24-hour standard level was exceeded in 2011 on 17 sampling days. (SCAQMD 2012)

The Air Basin is currently in attainment of the federal standards for NO_2. While the new 1-hour NO2 federal standard (100 ppb) concentration level was exceeded in the Air Basin at two stations (Central Los Angeles and Long Beach) on the same day in 2011, the NAAQS NO_2 design value has not been exceeded. (SCAQMD 2012) Therefore, the Basin remains in attainment of the NO_2 NAAQS.

Although much of the South Coast Air Basin, including the project site located in Los Angeles County, is in attainment for lead, the EPA designated the Los Angeles County portion of the Air Basin as nonattainment for the revised (2008) federal lead standard (0.15 µg/m^3, rolling 3-month average). This was due to the addition of source-specific monitoring under the new federal regulation. This designation was based on two source-specific monitors in Vernon and the City of Industry exceeding the revised standard in the 2007-2009 period of data used. As of the 2009-2011 data period, only one of these stations (Vernon) still exceeded the lead standard. The *2012 Lead State Implementation Plan Los Angeles County*, prepared by SCAQMD and adopted on May 4, 2012, provided measures to meet attainment of lead by December 31, 2015. Current monitoring data shows that lead is now below the standards at all monitoring stations; however, it will take three years of meeting the standards before Los Angeles County can request to be re-designated by the EPA.

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 concentrations of the six GHGs in the atmosphere threaten current and future generations' public health and welfare. The other is a cause or contribution finding that emissions from new motor vehicles and new motor vehicle engines contribute to GHG pollution, threatening public health and welfare. These actions did not impose any requirements on industry or other entities; however, since 2009, the EPA has been providing GHG emission standards for vehicles and other stationary sources of GHG emissions that the EPA regulates. On September 13, 2013, the EPA Administrator signed 40 CFR Part 60, limiting emissions from new sources to 1,100 pounds of CO2 per MWh for fossil fuel-fired utility boilers and 1,000 pounds of CO2 per MWh for large natural gas gas-fired combustion units.

On August 3, 2015, the EPA announced the Clean Power Plan, emissions guidelines for U.S. states to develop plans to reduce GHG emissions from existing fossil fuel-fired power plants (Federal Register Vol. 80, No. 205, October 23, 2015). On February 9, 2016, the Supreme Court stayed implementation of the Clean Power Plan due to a legal challenge from 29 states. In April 2017, the Supreme Court put the case on a 60-day hold and directed both sides to argue whether it should keep the case on hold indefinitely or close it and remand the issue to the EPA.

State – California Air Resources Board

The California Air Resources Board (CARB), a part of the California Environmental Protection Agency, is responsible for the coordination and administration of federal and state air pollution control programs within California. In this capacity, the CARB conducts research, sets the California Ambient Air Quality Standards (CAAQS), compiles emission inventories, develops suggested control measures, provides oversight of local programs and prepares the SIP. The CAAQS for criteria pollutants are shown above in Table 3-1. In addition, the CARB establishes emission standards for motor vehicles sold in California, consumer products (e.g., hairspray, aerosol paints, and barbeque lighter fluid), and various types of commercial equipment. It also sets fuel specifications to reduce vehicular emissions further.

The CARB has designated the Air Basin as a non-attainment area for ozone, PM10, PM2.5, and lead. The South Coast Air Basin is currently in attainment with the ambient air quality standards for CO, NO_2, SO_2, and sulfates and is unclassified for visibility reducing particles and Hydrogen Sulfide.

In 2008 the CARB adopted Resolution 08-43, limiting NOx, PM10 and PM2.5 emissions from on-road diesel truck fleets operating in California. In 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 2023 all commercial diesel trucks that operate in California shall meet the model year 2010 (Tier 4 Final) or latter emission standards. This regulation provides annual interim targets for fleet

owners to meet in the interim period. This regulation also provides a few exemptions, including a one-time 3-day pass for trucks registered outside of California.

CARB is also responsible for Toxic Air Contaminants (TACs) regulations. The Air Toxics "Hot Spots" Information and Assessment Act (Assembly Bill [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 in California. 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.

CARB also proposed interim statewide CEQA thresholds for GHG emissions. It released *Recommended Approaches for Setting Interim Significance Thresholds for Greenhouse Gases under the California Environmental Quality Act* on October 24, 2008, utilizing the SCAQMD's GHG Significance Threshold Stakeholder Working Group in their framework for developing SCAQMD's draft GHG emissions thresholds. Currently, the State 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.

Executive Order B-30-15, Senate Bill 32, and Assembly Bill 197

The California Governor issued Executive Order B-30-15 on April 29, 2015, to reduce California's GHG emissions 40 percent below 1990 levels by 2030. This executive order aligns California's GHG reduction targets with other international governments, such as the European Union, that set the same target for 2030 in October 2014. This target will make it possible to reach the ultimate goal of reducing GHG emissions 80 percent under 1990 levels by 2050 that is based on scientifically established levels needed in the U.S.A to limit global warming below 2 degrees Celsius – the warming threshold at which scientists say there will likely be major climate disruptions such as super droughts and rising sea levels. Assembly Bill 197 (AB 197) (September 8, 2016) and Senate Bill 32 (SB 32) (September 8, 2016) codified into statute the GHG emissions reduction targets of at least 40 percent below 1990 levels by 2030 as detailed in EO B-30-15. AB 197 also requires additional GHG emissions reporting broken down to sub-county levels and requires CARB to consider the social costs of emissions impacting disadvantaged communities.

Executive Order B-29-15

The California Governor issued Executive Order B-29-15 on April 1, 2015. He directed the State Water Resources Control Board to impose restrictions to achieve a statewide 25% reduction in urban water usage and directed the Department of Water Resources to replace 50 million square feet of lawn with drought-tolerant landscaping through an update to the State's Model Water Efficient Landscape Ordinance. The Ordinance also requires installation of more efficient irrigation systems, promotion of greywater usage and onsite stormwater capture, and limits the turf planted in new residential landscapes to 25 percent of the total area and restricts turf from being planted in median strips or in parkways unless the parkway is next to a parking strip and a flat surface is required to enter and exit vehicles. Executive Order B-29-15 would reduce GHG emissions associated with the energy used to transport and filter water.

Assembly Bill 1109

California Assembly Bill 1109 (AB 1109), also known as the Lighting Efficiency and Toxics Reduction Act, prohibits the manufacturing of lights after January 1, 2010 that contain levels of hazardous substances prohibited by the European Union pursuant to the RoHS Directive. AB 1109 also requires reductions in energy usage for lighting and is structured to reduce electrical lighting consumption by (1) At least 50 percent reduction from 2007 levels for indoor residential lighting; and (2) At least 25 percent reduction from 2007 levels for indoor commercial and all outdoor lighting by 2018. AB 1109 would

reduce GHG emissions by reducing the amount of electricity required to generate fossil fuels in California.

Assembly Bill 1493

California Assembly Bill 1493 (also known as the Pavley Bill, in reference to its author Fran Pavley) was enacted on July 22, 2002. CARB required developing and adopting regulations that reduce GHGs emitted by passenger vehicles and light-duty trucks. In 2004, CARB approved the "Pavley I" regulations limiting the amount of GHGs that may be released from new passenger automobiles phased in between model years 2009 through 2016. These regulations will reduce GHG emissions by 30 percent from 2002 levels by 2016. The second set of regulations, "Pavley II," is currently in development and will be phased in between model years 2017 through 2025 and will reduce emissions by 45 percent by the year 2020 as compared to the 2002 fleet. The Pavley II standards are being developed by linking the GHG emissions and formerly separate toxic tailpipe emissions standards previously known as the "LEV III" (third stage of the Low Emission Vehicle standards) into a single regulatory framework. The new rules reduce emissions from gasoline-powered cars and promote zero-emissions auto technologies such as electricity and hydrogen and through increasing the infrastructure for fueling hydrogen vehicles. In 2009, the U.S. EPA granted California the authority to implement the GHG standards for passenger cars, pickup trucks, and sport utility vehicles. In September 2009, the Pavley I regulations were adopted by CARB.

Executive Order S-3-05

In 2005 the California Governor issued Executive Order S 3-05, GHG Emission, 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.

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 incentives and regulatory programs. The State achieved its first goal of reducing greenhouse gas emissions to 2000 levels by 2010.

Assembly Bill 32

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 utilize best management practices that are technologically feasible and cost-effective.

In 2007 CARB released the calculated Year 1990 GHG emissions of 431 million metric tons of CO2e ($MMTCO_2e$). The 2020 target of 431 $MMTCO_2e$ requires the reduction of 78 $MMTCO_2e$, or approximately 16 percent from the State's projected 2020 business as usual emissions of 509 $MMTCO_2e$ (CARB, 2014). Under AB 32, CARB was required to adopt regulations by January 1, 2011, to achieve reductions in GHGs to meet the 1990 cap by 2020. Early measures CARB took to lower GHG emissions included requiring operators of the largest industrial facilities that emit 25,000 metric tons of CO_2 in a calendar year to submit verification of GHG emissions by December 1, 2010. The CARB Board also approved nine discrete early action measures that include regulations affecting landfills, motor vehicle

fuels, refrigerants in cars, port operations, and other sources, all of which became enforceable on or before January 1, 2010.

CARB's Scoping Plan adopted in 2009 proposes various measures, including strengthening energy efficiency and building standards; targeted fees on water and energy use; a market-based cap-and-trade system; achieving a 33 percent renewable energy mix; and a fee regulation to fund the program. The 2014 update to the Scoping Plan identifies strategies moving beyond the 2020 targets to the year 2050.

The Cap and Trade Program established under the Scoping Plan sets a statewide limit on sources responsible for 85 percent of California's GHG emissions and has established a market for long-term investment in energy efficiency and cleaner fuels since 2012.

Senate Bill 1368

Senate Bill 1368 (SB 1368) is the companion Bill of AB 32 and was adopted in September 2006. SB 1368 requires that the California Public Utilities Commission (CPUC) establish a performance standard for baseload generation of GHG emissions by investor-owned utilities by February 1, 2007, and local publicly owned utilities by June 30, 2007. These standards could not exceed the GHG emissions rate from a baseload combined-cycle, natural gas-fired plant. Furthermore, the legislation states that all electricity provided to the State, including imported electricity, must be generated by plants that meet the standards set by CPUC and California Energy Commission (CEC).

Executive Order S-1-07

Executive Order S-1-07 was issued in 2007 and proclaims that the transportation sector is the primary 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.

In 2009 CARB approved the proposed regulation to implement the low carbon fuel standard. The standard was challenged in the courts but has been in effect since 2011 and was re-approved by the CARB in 2015. 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 annually. Reformulated gasoline mixed with corn-derived ethanol and low-sulfur diesel fuel represents the baseline fuels. Lower carbon fuels may be ethanol, biodiesel, renewable diesel, or blends of these fuels with gasoline or diesel. Compressed natural gas and liquefied natural gas also may be low-carbon fuels. When used in fuel cells or electric vehicles, hydrogen and electricity are also considered low-carbon fuels.

Senate Bill 97

Senate Bill 97 (SB 97) was adopted in 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 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 incorporated 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 projects, noting that they have the freedom to select the models and methodologies that best meet their needs and circumstances. The section also recommends considering several qualitative factors that may be used to determine 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 thresholds of significance for GHG impacts assessment.
- When creating their significance thresholds, 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 consider a project's energy use and energy efficiency potential.

Senate Bills 1078, 107, and X1-2 and Executive Orders S-14-08 and S-21-09

Senate Bill 1078 (SB 1078) requires retail sellers of electricity to provide at least 20 percent of their supply from renewable sources by 2017. Senate Bill 107 (SB 107) changed the target date to 2010. Executive Order S-14-08 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 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 in September 2008 to support the State's climate action goals to reduce GHG emissions through coordinated regional transportation planning efforts, regional GHG emission reduction targets, and land use and housing allocation. SB 375 requires CARB to set regional GHG emissions reductions from passenger vehicle use. In 2010, CARB established targets for 2020 and 2035 for each Metropolitan Planning Organization (MPO) within the State. It was up to each MPO to adopt a sustainable communities strategy (SCS) that will prescribe land use allocation in that MPOs Regional Transportation Plan (RTP) to meet CARB's 2020 and 2035 GHG emission reduction targets. These reduction targets must be updated every eight years. In June 2017, CARB released Staff Report Proposed Update to the SB 375 Greenhouse Gas Emission Reduction Target, which provides recommended GHG emissions reduction targets for SCAG of 8 percent 2020 and 21 percent by 2035.

The *2016-2040 Regional Transportation Plan/Sustainable Communities Strategy* (RTP/SCS), adopted by

SCAG in April 2016, provides a 2020 GHG emission reduction target of 8 percent and a 2035 GHG emission reduction target of 18 percent. SCAG will need to develop additional strategies in its next revision of the RTP/SCS to meet CARB's new 21 percent GHG emission reduction target for 2035. CARB is also charged with reviewing SCAG's RTP/SCS for consistency with its assigned targets.

City and County land-use policies, including General Plans, are not required to be consistent with the RTP and associated SCS or APS. However, new provisions of CEQA would incentivize, through streamlining and other provisions, qualified projects that are consistent with an approved SCS or APS and categorized as "transit priority projects."

Assembly Bill 341 and Senate Bills 939 and 1374

Senate Bill 939 (SB 939) requires that each jurisdiction in California 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. Assembly Bill 341 (AB 341) was adopted in 2011, builds upon the waste reduction measures of SB 939 and 1374, and sets a new target of a 75 percent reduction in solid waste generated by 2020.

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 consider and incorporate 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.

Title 24 standards are updated on a three-year schedule, and the most current 2016 standards went into effect on January 1, 2017. The Title 24 standards require the installation of insulated hot water pipes, improved window performance, improved wall insulation, and mandatory duct sealing. Title 24 also requires roofs to be constructed to be solar-ready, with cool roofing shingles, a minimum of 1-inch air space between roof material and roof deck, and a minimum of R-22 roof/ceiling insulation. All lighting is required to be high efficiency, and daylight sensors and motion sensors are required for outdoor lighting, bathrooms, utility rooms, and other spaces. The forced air systems are required to limit leakage to 5 percent or less and require all heat pump systems to be equipped with liquid line filter driers. The 2016 Title 24 Part 6 standards are anticipated to reduce electricity consumption by 281 gigawatt-hours per year and natural gas consumption by 16 million therms per year (http://www.energy.ca.gov/2015publications/CEC-400-2015-037/CEC-400-2015-037-CMF.pdf).

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

CCR Title 24, Part 11: *California Green Building Standards* (Title 24) was developed in response to continued efforts to reduce GHG emissions associated with energy consumption. The most current version is the 2013 California Green Building Standards Code (CalGreen), which became effective on January 1, 2014, and replaced the 2010 CalGreen. One focus of CCR Title 24, Part 11 is water conservation measures, which reduce GHG emissions by reducing electrical consumption associated with pumping and treating water. CCR Title 24, Part 11 has approximately 52 nonresidential mandatory standards and 130 provisions for optional use. Some key mandatory measures for commercial occupancies include specified parking for clean air vehicles, a 20 percent reduction of potable water use within buildings through low-flow fixtures, a 50 percent construction waste diversion from landfills, and building finish materials that emit low levels of volatile organic compounds.

Regional

The SCAQMD is the agency 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

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. SCAQMD is directly responsible for reducing emissions from stationary, mobile, and indirect sources, and it has responded to this requirement by preparing a sequence of AQMPs. The *SCAQMD Board adopted the Draft Final 2016 Air Quality Management Plan (2016 AQMP)* on March 3, 2016. The 2016 AQMP was prepared to meet the following standards:

- 8-hour Ozone (75 ppb) by 2032
- Annual PM2.5 (12 µg/m3) by 2021-2025
- 8-hour Ozone (80 ppb) by 2024 (updated from the 2007 and 2012 AQMPs)
- 1-hour Ozone (120 ppb) by 2023 (updated from the 2012 AQMP)
- 24-hour PM2.5 (35 µg/m3) by 2019 (updated from the 2012 AQMP)

In addition to meeting the above standards, the 2016 AQMP will also include revisions to the attainment demonstrations for the 1997 8-hour ozone NAAQS and the 1979 1-hour ozone NAAQS. The prior 2012 AQMP was prepared to demonstrate attainment with the 24-hour PM2.5 standard by 2014 by adopting all feasible measures. The previous 2007 AQMP demonstrated attainment with the 1997 8-hour ozone (80 ppb) standard by 2023 through the implementation of future improvements in control techniques and technologies. These "black box" emissions reductions represent 65 percent of the remaining NOx emission reductions by 2023 to show attainment with the 1997 8-hour ozone NAAQS. Given the magnitude of these needed emissions reductions, additional NOx control measures have been provided in the 2012 AQMP, even though the primary purpose was to show compliance with 24-hour PM2.5 emissions standards.

The 2016 AQMP provides a new approach that focuses on available, proven, and cost-effective alternatives to traditional strategies while seeking to achieve multiple goals in partnership with other entities to promote reductions in GHG emissions and TAC emissions and efficiencies in energy use, transportation, and goods movement. The 2016 AQMP recognizes the critical importance of working with other agencies to develop funding and other incentives that encourage the accelerated transition of vehicles, buildings, and industrial facilities to cleaner technologies that benefit air quality and local businesses the regional economy.

Although 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 Air Basin. Instead, this is controlled through local jurisdictions according to 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 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 detailed in the AQMPs. The purpose of the SCAQMD CEQA Handbook is to assist Lead Agencies and consultants, project proponents, and other interested parties in evaluating a project's potential air quality impacts. Specifically, the SCAQMD CEQA Handbook explains the procedures SCAQMD recommends be followed for the environmental review process required by CEQA. The SCAQMD CEQA Handbook provides direction on evaluating potential air quality impacts, determining whether these impacts are significant, and how to mitigate these impacts. The SCAQMD intends that by providing this guidance, the air quality impacts of plans and development proposals will be analyzed accurately and consistently throughout the Air Basin, and adverse impacts will be minimized.

SCAQMD Working Group

Since neither CARB nor the OPR has developed the 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 either provides an annual quantitative threshold of 3,500 $MTCO_2e$ for residential uses, 1,400 $MTCO_2e$ for commercial uses, and 3,000 $MTCO_2e$ for mixed uses. An alternative annual threshold of 3,000 $MTCO_2e$ for all land use types is also proposed.

Southern California Association of Governments

The SCAG is the regional planning agency for Los Angeles, Orange, Ventura, Riverside, San Bernardino, and Imperial Counties. It addresses regional issues relating to transportation, the economy, community development, and the environment. SCAG is the federally designated Metropolitan Planning Organization (MPO) for the majority of the southern California region and is the largest MPO in the nation; concerning air quality planning; SCAG has prepared the 2016-2040 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS), adopted April 2016 and the *2015 Federal Transportation Improvement* Program (FTIP), adopted October 2013, which addresses regional development and growth forecasts. Although the RTP/SCS and FTIP are primarily planning documents for future transportation projects, a key component of these plans is to integrate land use planning with transportation planning that promotes higher density infill development near existing transit services. 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 the consistency analysis included in the AQMP. The RTP/SCS, FTIP, and AQMP are based on projections within the City and County General Plans.

Local – San Dimas

Local jurisdictions, such as the City of San Dimas, have the authority and responsibility to reduce air pollution through its police power and decision-making authority. Specifically, the City is responsible for assessing and mitigating air emissions resulting from its land-use decisions. The City is also responsible for implementing transportation control measures as outlined in the 2007 AQMP and 2012 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 discretionary conditioning permits, and monitors and enforces the implementation of such mitigation.

According to the CEQA requirements, the City does not have the expertise to develop plans, programs, procedures, and methodologies to ensure that air quality within the City and region will meet federal and state standards. Instead, the City relies on the expertise of the SCAQMD. It utilizes the SCAQMD CEQA Handbook as the guidance document for the environmental review of plans and development proposals within its jurisdiction.

4.0 ATMOSPHERIC SETTING

4.1 Regional – Los Angeles County

The project site is located within Los Angeles County, which is part of the South Coast Air Basin (Air Basin) that includes the non-desert portions of Riverside, San Bernardino, Los Angeles Counties, and all of Orange County. Temperature inversions are the prime factor in the accumulation of contaminants in the Air Basin. The mild climatological pattern is interrupted infrequently by periods of extremely hot weather, winter storms, and Santa Ana winds. The topography and climate of Southern California combine to create an area of high air pollution potential in the Air Basin. During the summer months, a warm air mass frequently descends over the cool, moist marine layer produced by the interaction between the ocean's surface and the lowest layer of the atmosphere. The warm upper layer forms a cup over the cool marine layer, preventing pollution from dispersing upward. This inversion allows pollutants to accumulate within the lower layer. Light winds during the summer further limit ventilation from occurring.

Due to the low average wind speeds in the summer and a persistent daytime temperature inversion, emissions of hydrocarbons and oxides of nitrogen have an opportunity to combine with sunlight in a complex series of reactions. These reactions produce a photochemical oxidant commonly known as smog. Since the Air Basin experiences more days of sunlight than any other major urban area in the United States, except Phoenix, the smog potential in the region is higher than in most other areas of the nation.

4.2 Monitored Local 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 Air Basin provided in the 2012 AQMP indicate that collectively, mobile sources account for 59 percent of the VOC, 88 percent of the NOx emissions, and 40 percent of directly emitted PM2.5, with another 10 percent of PM2.5 from road dust.

SCAQMD has divided the Air Basin into 38 air-monitoring areas. The project site is located in Air Monitoring Area 9, which covers San Dimas. The nearest air monitoring station to the project site is the Pomona Monitoring Station located at 924 N. Garey Ave., which is located approximately 6 miles southeast of the project site. However, it should be noted that due to the air monitoring station's distance from the project site, recorded air pollution levels at the Pomona Station reflect varying degrees of accuracy in local air quality conditions at the project site. It should also be noted that CO measurements have not been provided since CO is currently in attainment in the Air Basin and monitoring of CO within the Air Basin ended on March 31, 2013.

The Pomona Station does not monitor PM10 or PM2.5. The closest station that provides monitoring data for these pollutants is the Pasadena station located at 752 S. Wilson Ave, and this station is 21 miles from the project site. The monitoring data from the Station is presented in Table 4-1 and shows the most recent three years of monitoring data from CARB. Table 4-1 indicates that ozone and particulate matter (PM10 and PM2.5) are the air pollutants of primary concern in the project area.

Ozone

The State 1-hour concentration standard for ozone has been exceeded between 3 and 51 days each year over the past three years at the Pomona Station. The State's 8-hour ozone standard has been exceeded between 11 and 88 days each year over the past three years at the Pomona Station. The Federal 8- hour ozone standard has been exceeded between 10 and 84 days each year over the past three years at the Pomona Station.

Ozone is a secondary pollutant as it is not directly emitted. Ozone is the result of chemical reactions between other pollutants, most importantly hydrocarbons and NO_2, which occur only in the presence of bright sunlight. Pollutants emitted from upwind cities react during transport downwind to produce the oxidant concentrations experienced in the area. Many areas of Southern California contribute to the ozone levels experienced at this monitoring station, with the more significant areas being those directly upwind.

Nitrogen Dioxide

The Pomona Station did not exceed the Federal 1-hour NO_2 standard for the last three years.

Table 4-1 – Local Area Air Quality Monitoring Summary

	Year[1]		
Pollutant (Standard)	**2018**	**2019**	**2020**
Ozone:			
Maximum 1-Hour Concentration (ppm)	0.112	0.098	0.180
Days > CAAQS (0.09 ppm)	**7**	**3**	**51**
Maximum 8-Hour Concentration (ppm)	0.092	0.083	0.124
Days > NAAQS (0.070 ppm)	**10**	**12**	**84**
Days > CAAQs (0.070 ppm)	**11**	**13**	**88**
Nitrogen Dioxide:			
Maximum 1-Hour Concentration (ppb)	68	64	68
Days > NAAQS (100 ppb)	0	0	0
Ultra-Fine Particulates (PM2.5):			
Maximum 24-Hour National Measurement (ug/m^3)	32.5	41.8	67.7
Days > NAAQS (35 ug/m^3)	0	3.1	6.1
Annual Arithmetic Mean (AAM) (ug/m^3)	10.2	9.1	11.9
Annual > NAAQS and CAAQS (12 ug/m^3)	0	0	0

Notes: Exceedances are listed in **bold.** CAAQS = California Ambient Air Quality Standard; NAAQS = National Ambient Air Quality Standard; ppm = parts per million; ppb = parts per billion; ND = no data available.
[1] Data obtained from the Pomona Station.
Source: http://www.arb.ca.gov/adam/

Particulate Matter

Monitoring data is available for the Pomona or the Pasadena station because the South Coast Basin is in Attainment for PM10. Over the past three years, the federal 24-hour standard for PM2.5 has been exceeded between 3 and 6 days at the Pasadena Station. The annual PM 2.5 concentration at the Pasadena Station has not exceeded the federal standard for the past three years.

According to the EPA, some people are more sensitive 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 a 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.

4.3 Toxic Air Contaminant Levels in the Air Basin

In order to determine the Air Basin-wide risks associated with major airborne carcinogens, the SCAQMD conducted the Multiple Air Toxics Exposure Study (MATES) studies. According to the SCAQMD's MATES-IV study, the project site has an estimated cancer risk of 329 per million persons chance of cancer. In comparison, the average cancer risk for the Air Basin is 991 per million persons, which is based on the use of age-sensitivity factors detailed in the OEHHA Guidelines (OEHHA, 2015).

In order to provide a perspective of risk, it is often estimated that the incidence of cancer over a lifetime for the U.S. population ranges between 1 in 3 to 4 and 1 in 3 or a risk of about 300,000 per million persons. The MATES-III study referenced a Harvard Report on Cancer Prevention, which estimated that of cancers associated with known risk factors, about 30 percent were related to tobacco, about 30 percent were related to diet and obesity, and about 2 percent were related to environmental pollution-related exposures that include hazardous air pollutants.

5.0 THRESHOLDS OF SIGNIFICANCE

5.1 Regional Air Quality

Many air quality impacts derive from dispersed mobile sources, which are the dominate pollution generators in the Air Basin, often occur hours later and miles away after photochemical processes have converted primary exhaust pollutants into secondary contaminants such as ozone. An individual project's incremental regional air quality impact is minimal and difficult to measure. Therefore, 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 is not quantifiable on a regional scale. The SCAQMD CEQA Handbook states that any project in the Air Basin with daily emissions exceeding any of the identified significance thresholds should be considered individually and cumulatively significant air quality impact. For this air quality impact analysis, a regional air quality impact would be considered significant if emissions exceed the SCAQMD significance thresholds identified in Table 5-1.

Table 5-1 – SCAQMD Regional Criteria Pollutant Emission Thresholds of Significance

	Pollutant Emissions (pounds/day)						
	VOC	**NOx**	**CO**	**SO_x**	**PM10**	**PM2.5**	**Lead**
Construction	75	100	550	150	150	55	3
Operation	55	55	550	150	150	55	3

Source: http://www.aqmd.gov/ceqa/handbook/signthres.pdf

5.2 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 on the 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. SCAQMD has also provided *Final Localized Significance Threshold Methodology* (LST Methodology), July 2008, which details the methodology to analyze local air emission impacts. The LST Methodology found that the primary emissions of concern are NO_2, CO, PM10, and PM2.5.

The LST Methodology provides Look-Up Tables with different thresholds based on the location and size of the project site and distance to the nearest sensitive receptors. The project size of 2 acres disturbed per day was used based on the number and type of equipment utilized during each construction phase.

The project site is located in Air Monitoring Area 9, which covers San Dimas. The nearest sensitive receptors to the project site consist of single-family homes within 60 feet (18.3 meters) from the project site. According to LST Methodology, any receptor located closer than 25 meters (82 feet) shall be based on the 25-meter thresholds. Table 5-2 below shows the LSTs for NO_2, CO, PM10, and PM2.5 for construction and operational activities.

Table 5-2 – SCAQMD Local Air Quality Thresholds of Significance (pounds/day)[1]

Activity	NOx	CO	PM10	PM2.5
Construction	89	623	5	3
Operation	89	623	2	1

Notes:
[1] The nearest sensitive receptors are single-family homes located within 60 feet (18.3 meters) northwest of the project site. According to SCAQMD methodology, all receptors closer than 25 meters are based on the 25-meter threshold.
Source: Calculated from SCAQMD's Mass Rate Look-up Tables for one acre in Air Monitoring Area 9, Pomona.

5.3 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 project would result in a Hazard Index increase of 1 or greater.

In order to determine if the 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 project is anticipated to create HAPs 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 HAP and the toxicity of the HAP should be analyzed through a comprehensive facility-wide health risk assessment (HRA).

5.4 Odor Impacts

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

> "A person shall not discharge from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance, or annoyance to any considerable number of persons to the public, or which endanger the comfort, repose, health or safety of any such persons or the public, or which cause, or have a natural tendency to cause, injury or damage to business or property.
>
> The provisions of this rule shall not apply to odors emanating from agricultural operations necessary for the growing of crops or the raising of fowl or animals."

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

5.5 Greenhouse Gases

In 2008, SCAQMD formed a Working Group to identify GHG emissions thresholds for land use projects that local lead agencies in the SCAB could use. The Working Group developed several different options contained in the SCAQMD Draft Guidance Document – Interim CEQA GHG Significance Threshold, which could be applied by lead agencies. The working group has not provided additional guidance since the release of the interim guidance in 2008. The SCAQMD Board has not approved the thresholds; however, the Guidance Document provides substantial evidence supporting the approaches to the significance of GHG emissions that the lead agency can consider in adopting its threshold. The current interim thresholds consist of the following tiered approach:

 Tier 1 evaluates whether or not the project qualifies for any applicable exemption under CEQA.

 Tier 2 determines whether the project is consistent with a GHG reduction plan. If a project is consistent with a qualifying local GHG reduction plan, it does not have significant GHG 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 the project's operational emissions.

If the project's emissions are below the following screening thresholds, then the project is less than significant: Residential and Commercial land use: 3,000 MTCO2e per year.

6.0IMPACT ANALYSIS

6.1 CEQA Thresholds of Significance

Consistent with CEQA and the State CEQA Guidelines, a significant impact related to air quality and global climate change would occur if the project is determined to result in:

- Conflict with or obstruct implementation of the applicable air quality plan;
- Violate any air quality standard or contribute substantially to an existing or projected air quality violation;
- Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable Federal or State ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors);
- Expose sensitive receptors to substantial pollutant concentrations;
- Create objectionable odors affecting a substantial number of people.
- Generate GHG emissions, either directly or indirectly that may have a significant impact on the environment; or
- Conflict with any applicable plan, policy, or regulation of an agency adopted to reduce the emissions of GHGs.

6.2 Air Quality Compliance

The project would not conflict with or obstruct the implementation of the SCAQMD Air Quality Management Plan (AQMP). The following section discusses the project's consistency with the SCAQMD AQMP.

SCAQMD Air Quality Management Plan

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

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

The SCAQMD CEQA Handbook states that "New or amended General Plan Elements (including land-use zoning and density amendments), Specific Plans, and significant projects must be analyzed for consistency with the AQMP." Strict consistency with all aspects of the plan is usually not required, and a project should be considered 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 increase 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 or increments based on the year of project buildout and phase.

Both of these criteria are evaluated below.

Criterion 1 - Increase in the Frequency or Severity of Violations?

Based on this report's air quality modeling analysis, short-term regional construction air emissions would not result in significant impacts based on SCAQMD regional or local thresholds of significance. The ongoing operation of the project would generate air pollutant emissions that are inconsequential on a regional basis and would not result in significant impacts based on SCAQMD thresholds of significance. The long-term local air quality impacts analysis showed that local pollutant concentrations would not be projected to exceed the air quality standards. Therefore, a less than significant long-term impact would occur, and no mitigation would be required.

Criterion 2 - Exceed Assumptions in the AQMP?

The proposed uses are consistent with the zoning designation for the project site, consistent with the City General Plan. The City General Plan is consistent with the SCAG Regional Comprehensive Plan Guidelines and the SCAQMD AQMP. Pursuant to the methodology in Chapter 12 of the 1993 SCAQMD CEQA Air Quality Handbook, consistency with the Basin 2016 AQMP is affirmed when a project (1) does not increase the frequency or severity of an air quality standards violation or cause a new violation; and (2) is consistent with the growth assumptions in the AQMP. Consistency review is presented below.

The CEQA Air Quality Handbook indicates that consistency with AQMP growth assumptions must be analyzed for new or amended General Plan elements, Specific Plans, and significant projects. Significant projects include airports, electrical generating facilities, petroleum and gas refineries, designation of oil drilling districts, water ports, solid waste disposal sites, and offshore drilling facilities; therefore, the project is not defined as significant.

Based on the consistency analysis presented above, the project is consistent with the General Plans and the regional AQMP.

Level of Significance

Less than significant impact.

6.3 Air Quality Standard Violation

The project would not violate an air quality standard or contribute substantially to an existing or projected air quality violation. The following section calculates the potential air emissions associated with the construction and operations of the project and compares the emissions to the SCAQMD standards.

Construction Emissions

Construction-Related Regional Impacts

The CalEEMod model has been utilized to calculate the construction-related regional emissions from the project. The worst-case summer or winter daily construction-related criteria pollutant emissions from the project for each phase of construction activities are shown below in Table 6-1. The CalEEMod daily printouts are shown in Appendix A. Since it is possible that building construction, paving, and architectural coating activities may occur concurrently, Table 6-1 also shows the combined criteria pollutant emissions from building construction, paving, and architectural coating phases of construction.

Table 6-1 – Construction-Related Regional Criteria Pollutant Emissions (pounds/day)[1]

Construction Season	ROG	NOx	CO	SO2	PM10	PM2.5
Summer	38.4	17.0	14.5	0.02	3.6	2.0
Winter	38.4	17.0	14.5	0.02	3.6	2.0
SCAQMD Significance Threshold	75	100	550	150	150	55
Exceed Significance?	No	No	No	No	No	No

Source: CalEEMod Version 2020.4.0.
Notes:
[1] Fugitive dust suppression requirements applied for compliance with SCAQMD Rule 403.

Table 6-1 shows that none of the analyzed criteria pollutants would exceed the regional emissions thresholds during demolition, grading, or the combined building construction, paving, and architectural coatings phases. Therefore, a less than significant regional air quality impact would occur from the project's construction.

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 on the Air Basin.

The local air quality emissions from construction were analyzed utilizing the methodology described in *Localized Significance Threshold Methodology* (LST Methodology), prepared by SCAQMD, revised October 2009. The LST Methodology found the primary criteria pollutant emissions of concern are NOx, CO, PM10, and PM2.5. In order to determine if any of these pollutants require a detailed analysis of the local air quality impacts, each phase of construction was screened using the SCAQMD's Mass Rate LST Look-up Tables. The SCAQMD developed the Look-up Tables to readily determine if the daily onsite emissions of CO, NOx, PM10, and PM2.5 from the project could significantly impact the local air quality. Table 6-2 shows the onsite emissions from the CalEEMod model for the different construction phases and the calculated emissions thresholds. Since it is possible that building construction, paving, and architectural coating activities may occur concurrently, Table 6-2 also shows the combined local criteria pollutant emissions from building construction, paving, and architectural coating phases of construction.

Table 6-2 – Construction-Related Local Criteria Pollutant Emissions (lb/day)[1]

Construction Phrase	NOX	CO	PM10	PM2.5
Grading	17.0	9	3.5	2.0
Building Construction	12.5	12.7	0.59	0.6
Paving	6.8	8.8	0.35	0.3
Architectural Coating	1.4	1.8	0.08	0.08
Pollutants Total	37.7	32.3	4.52	2.98
Appendix C Mass LST Threshold	89	623	5	3
Exceed Significance Threshold	No	No	No	No

Source: Calculated from CalEEMod and SCAQMD's Mass Rate Look-up Tables for one acre in Air Monitoring Area 9, Pomona.
Notes:
[1] Grading based on adherence to fugitive dust suppression requirements from SCAQMD Rule 403. Watering 3 times per day, moisture content not to exceed 12%, vehicle speed less than 25 mph, and Tier 4 Final standards for diesel exhaust.
[2] The nearest sensitive receptors are single-family homes located as near as 18.3 meters (60 feet) northwest of the project site. According to LST Methodology, any receptor located closer than 25 meters (82 feet) shall be based on the 25-meter thresholds.

The data provided in Table 6-2 shows that none of the analyzed criteria pollutants would exceed the local emissions thresholds during the grading or the combined building construction, paving, and architectural coatings phases after applying SCAQMD Rule 403 for fugitive dust suppression and using Tier 4 Final exhaust emission controls for diesel equipment. Therefore, a less than significant local air quality impact would occur from the project's construction.

Operational Emissions

The ongoing operation of the 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 operational emissions from the ongoing use of the project. The following section provides an analysis of potential long-term air quality impacts due to regional air quality impacts with the project's ongoing operations. The potential air-related air emissions are analyzed below for the regional criteria pollutant emissions and cumulative impacts.

Operations-Related Criteria Pollutant Analysis

The operations-related criteria air quality impacts created by the project have been analyzed using the CalEEMod model. The worst-case summer or winter VOC, NOx, CO, SO_2, PM10, and PM2.5 daily emissions created from the project's long-term operations have been calculated and summarized below in Table 6-3 CalEEMod daily emissions printouts are shown in Appendix A.

Table 6-3 – Operational Criteria Pollutant Emissions (pounds/day)

Construction Season	ROG	NOx	CO	SO2	PM10	PM2.5
Summer	1.5	0.26	2.6	0.005	0.5	0.14
Winter	1.5	0.27	2.5	0.005	0.5	0.14
SCAQMD Significance Threshold	55	55	550	150	150	55
Exceed Significance Threshold?	No	No	No	No	No	No

Source: Calculated from CalEEMod Version 2020.4.0

The data provided in Table 6-3 above shows that none of the analyzed criteria pollutants would exceed the regional emissions thresholds. Therefore, a less than significant regional air quality impact would occur from the project's operation.

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 on the Air Basin. The project has been analyzed for potential local CO emission impacts from the project-generated vehicular trips and potential local air quality impacts from on-site operations. The following analysis analyzes the vehicular CO emissions and local impacts from on-site operations.

Local CO Hotspot 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 to indicate 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 of 20 ppm over one hour or 9 ppm over eight hours. At the time of the 1993 Handbook, the Air Basin was designated nonattainment under the CAAQS and NAAQS for CO. With the turnover of older vehicles, the introduction of cleaner fuels, and implementation of control technology on industrial facilities, CO concentrations in the Air Basin and the state have steadily declined. In 2007, the Air Basin was designated in attainment for CO under both the CAAQS and NAAQS.

The SCAQMD conducted a detailed CO analysis for the Basin during the preparation of the 2003 AQMP. The locations selected for microscale modeling in the 2003 AQMP included high average daily traffic (ADT) intersections in the Basin, which would be expected to experience the highest CO concentrations. The highest CO concentration observed was at the intersection of Wilshire Boulevard and Veteran Avenue on the west side of the City of Los Angeles near Interstate 405, located approximately 18 miles northwest of the site, with an ADT of approximately 100,000 vehicles per day. The concentration of CO at this intersection was 4.6 ppm, which is well below the 35-ppm 1-hour CO federal standard and the State standard of 20 ppm. Furthermore, the Basin has been in attainment of federal CO standards since 2007 (SCAQMD 2016). No stations in the vicinity of the project site have monitored CO in the last eight years. The highest 8-hour CO average recorded at the nearest monitoring, the Azusa monitoring station located approximately 4.6 miles northeast of the project site, was 1.13 ppm in 2012 (the most recent year for which data is available), which is well below the 8-hour CO federal and State standard of 9 ppm (CARB 2020).

Since the nearby intersections to the project are much smaller with less traffic than what was analyzed by the SCAQMD, no local CO hotspots are anticipated to be created from the project, and no CO Hotspot modeling was performed. Therefore, a less than significant long-term air quality impact is anticipated to local air quality with the ongoing use of the project.

6.4 Cumulative Net Increase in Non-Attainment Pollution

The project would not result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable Federal or State ambient air quality standard (including releasing emissions that exceed quantitative thresholds for ozone precursors).

Cumulative projects include local development and general growth within the project area. However, as with most development, the greatest source of emissions is from mobile sources, which travel throughout 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. Accordingly, the cumulative analysis for the project's air quality must be generic by nature. The project area is out of attainment for ozone and PM2.5 particulate matter. In accordance with CEQA

Guidelines Section 15130(b), this analysis of cumulative impacts incorporates a three-tiered approach to assess cumulative air quality impacts.

- Consistency with the SCAQMD project-specific thresholds for construction and operations.
- Project consistency with existing air quality plans; and
- Assessment of the cumulative health effects of the pollutants.

Consistency with Project Specific Thresholds

Construction-Related Impacts

The project site is located in the South Coast Air Basin. The EPA currently designates this area as a federal non-attainment area for ozone and PM2.5 and by CARB for the state standards as a non-attainment area for ozone, PM10, and PM2.5. The regional ozone, PM10, and PM2.5 emissions are associated with the project's construction. The analysis found that the project's development would result in less than significant regional emissions of VOC and NOx (ozone precursors), PM10, and PM2.5 during the project's construction. Therefore, a less than significant cumulative impact would occur from the project's construction.

Operational-Related Impacts

The greatest cumulative operational impact on the air quality to the Air Basin will be the incremental addition of pollutants mainly from increased traffic from the residential development. In accordance with SCAQMD methodology, projects that do not exceed SCAQMD criteria or can be mitigated to less than criteria levels are not significant and do not add to the overall cumulative impact. The regional ozone, PM10, and PM2.5 emissions created from the project's ongoing operations have been calculated. The analysis found that the project's development would result in less than significant regional emissions of VOC and NOx (ozone precursors), PM10, and PM2.5 during the project's operation. This project would create a less than significant cumulative impact with respect to long-term emissions.

Cumulative Health Impacts

The Air Basin is designated as nonattainment for ozone and PM2.5, which means that the background levels of those pollutants are at times higher than the ambient air quality standards. The air quality standards were set to protect public health, including the health of sensitive individuals (elderly, children, and the sick). Therefore, when the concentrations of those pollutants exceed the standard, it is likely that some sensitive individuals in the population will experience health effects. The regional analysis found that the project would not exceed the SCAQMD regional significance thresholds for VOC and NOx (ozone precursors), PM10, and PM2.5. As such, the project would result in a less than significant cumulative health impact.

Level of Significance

Less than significant impact.

6.5 Sensitive Receptors

The project would not expose sensitive receptors to substantial pollutant concentrations. The local concentrations of criteria pollutant emissions produced in the nearby vicinity of the project, which may expose sensitive receptors to substantial concentrations for both construction and operations, are discussed separately below. The discussion below also includes an analysis of the potential impacts of toxic air contaminant emissions.

Construction-Related Sensitive Receptor Impacts

Construction of the project may expose sensitive receptors to substantial pollutant concentrations of localized criteria pollutants and toxic air contaminant emissions created from onsite construction equipment, which are described below.

Local Criteria Pollutant Impacts from Construction

The local air quality impacts from the project's construction have been analyzed and found that the project's construction would not exceed the local NOx, CO, PM10, and PM2.5 thresholds of significance. Therefore, the project's construction would create a less than significant construction-related impact on local air quality, and no mitigation would be required.

Toxic Air Contaminants Impacts from Construction

The greatest potential for toxic air contaminant emissions would be related to diesel particulate matter (DPM) emissions associated with heavy equipment operations during the project's construction. According to SCAQMD methodology, 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 70-year lifetime will contract cancer, based on the use of the standard risk-assessment methodology. Given the relatively limited number of heavy-duty construction equipment and the short-term construction schedule, the project would not result in a long-term (i.e., 70 years) substantial source of toxic air contaminant emissions and corresponding individual cancer risk. In addition, California Code of Regulations Title 13, Article 4.8, Chapter 9, Section 2449 regulates emissions from off-road diesel equipment in California. This regulation limits equipment idling to no more than five minutes, requiring equipment operators to label each piece of equipment and provide annual reports to CARB of their fleet's usage and emissions. This regulation also requires systematic upgrading of the emission Tier level of each fleet. Currently, no commercial operator is allowed to purchase Tier 0 or Tier 1 equipment, and by January 2023, no commercial operator is allowed to purchase Tier 2 equipment. In addition to the purchase restrictions, equipment operators need to meet fleet average emissions targets that become more stringent each year between 2014 and 2023. Therefore, no significant short-term toxic air contaminant impacts would occur during the project's construction. As such, the project's construction would result in a less than significant exposure of sensitive receptors to substantial pollutant concentrations.

Operations-Related Sensitive Receptor Impacts

The project's ongoing operations may expose sensitive receptors to substantial pollutant concentrations of local CO emission impacts from the project-generated vehicular trips and the potential local air quality impacts from onsite operations. The following analyzes the vehicular CO emissions and local criteria pollutant impacts from onsite operations and toxic air contaminant impacts.

Local CO Hotspot Impacts from Project-Generated Vehicle 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 to indicate potential impacts to sensitive receptors. The analysis shows that no local CO Hotspots are anticipated to be created at any nearby intersections from the vehicle traffic generated by the project. Therefore, the project's operation would result in a less than significant exposure of offsite sensitive receptors to substantial pollutant concentrations.

Operations-Related Toxic Air Contaminant Impacts

Particulate matter (PM) from diesel exhaust is the predominant TAC in most areas. According to *The California Almanac of Emissions and Air Quality 2013 Edition*, prepared by CARB, about 80 percent of the outdoor TAC cancer risk is diesel exhaust. Some chemicals in diesel exhaust, such as benzene and

formaldehyde, have been listed as carcinogens by State Proposition 65 and the Federal Hazardous Air Pollutants program. Due to the nominal number of diesel truck trips generated by the project, a less than significant TAC impact would occur during the project's ongoing operations, and no mitigation would be required.

Level of Significance

Less than significant impact.

6.6 Objectionable Odors

The project would not create objectionable odors affecting a substantial number of people. Potential odor impacts have been analyzed separately for construction and operations below.

Individual responses to odors are highly variable and can result in various effects. Generally, the impact of an odor results from multiple factors such as frequency, duration, offensiveness, location, and sensory perception. The frequency measures how often an individual is exposed to an odor in the ambient environment. The intensity refers to an individual's or group's perception of the odor's strength or concentration. The duration of an odor refers to the elapsed time over which an odor is experienced. The offensiveness of the odor is the subjective rating of the pleasantness or unpleasantness of an odor. The location accounts for the type of area in which a potentially affected person lives, works, or visits; the type of activity in which they are engaged; and the sensitivity of the impacted receptor.

Sensory perception has four major components: detectability, intensity, character, and hedonic tone. The detection (or threshold) of an odor is based on a panel of responses to the odor. There are two thresholds: the odor detection threshold and the recognition threshold. The detection threshold is the lowest concentration of an odor that will elicit a response in a percentage of the people living and working near the project site and is typically presented as the mean (or 50 percent of the population). The recognition threshold is the minimum concentration that is recognized as having a characteristic odor quality, and this is typically represented by recognition by 50 percent of the population. The intensity refers to the perceived strength of the odor, and the odor character is what the substance smells like. The hedonic tone is a judgment of the pleasantness or unpleasantness of the odor. The hedonic tone varies in subjective experience, frequency, odor character, odor intensity, and duration.

Construction-Related Odor Impacts

Potential sources that may emit odors during construction activities include the application of coatings such as asphalt pavement, paints and solvents, and emissions from diesel equipment. The objectionable odors that may be produced during the construction process would be temporary and would not likely be noticeable for extended periods of time beyond the project site's boundaries. Due to the transitory nature of construction odors, a less than significant odor impact would occur, and no mitigation would be required.

Level of Significance

Less than significant impact.

6.7 Generation of Greenhouse Gas Emissions

The project would not generate GHG emissions, either directly or indirectly, that may significantly impact the environment. A screening threshold of 3,000 $MTCO_2e$ per year for residential development was used to compare project emissions. Table 6-4 summarizes the greenhouse gas emissions, and the CalEEMod model runs are provided in Appendix A.

Table 6-4 – Project Greenhouse Gas Annual Emissions

Category	CO2	CH4	N2O	CO2e
Area Sources	0.12	0.0001	0	0.12
Energy Usage	19.3	0.001	0.0003	19.4
Mobile Sources	72.5	0.005	0.003	73.6
Solid Waste	1.7	0.1	0	4.1
Water and Wastewater	1.8	0.02	0.0004	2.3
Construction Emissions[1]	2.4	0.0002	0.0001	2.5
Total 2022 Emissions	**97.82**	**0.1271**	**0.00371**	**106.22**
SCAQMD Draft Threshold of Significance for Residential Land Uses				**3,000**
Exceed Significance Threshold?				**No**

Source: Calculated from CalEEMod Version 2020.4.0
Notes:
[1] Construction emissions amortized over 30 years as recommended in the SCAQMD GHG Working Group on November 19, 2009.

The data provided in Table 6-4 shows that the project would create 106.22 $MTCO_2e$ per year. The project's GHG emissions would be below the SCAQMD's thresholds of significance for residential land use types of 3,000 $MTCO_2e$ per year. Therefore, impacts would be less than significant.

Level of Significance

Less than significant impact.

6.8 Greenhouse Gas Plan Consistency

The project would be below the residential land use threshold of 3,000 $MTCO_2e$ per year, and impacts would be less than significant.

Level of Significance

Less than significant impact.

7.0 REFERENCES

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APPENDIX A

CalEEMod Model Daily Printouts

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3643 Tentative Vesting Tract

South Coast Air Basin, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Single Family Housing	7.00	Dwelling Unit	1.40	61,014.00	20

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	31
Climate Zone	9			**Operational Year**	2024
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 - total acreage and square footage obtained from tentative vesting track map

Construction Phase -

Woodstoves - assumed no woodstoves/fireplaces

Construction Off-road Equipment Mitigation - applied rule 403 for dust mitigation.

Area Mitigation -

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	CleanPavedRoadPercentReduction	0	100
tblConstDustMitigation	WaterUnpavedRoadMoistureContent	0	12
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	25
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblFireplaces	FireplaceDayYear	25.00	0.00
tblFireplaces	FireplaceHourDay	3.00	0.00
tblFireplaces	FireplaceWoodMass	1,019.20	0.00
tblFireplaces	NumberGas	5.95	0.00
tblFireplaces	NumberNoFireplace	0.70	0.00
tblFireplaces	NumberWood	0.35	0.00

3643 Tentative Vesting Tract - South Coast Air Basin, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

tblLandUse	LandUseSquareFeet	12,600.00	61,014.00
tblLandUse	LotAcreage	2.27	1.40
tblWoodstoves	NumberCatalytic	0.35	0.00
tblWoodstoves	NumberNoncatalytic	0.35	0.00
tblWoodstoves	WoodstoveDayYear	25.00	0.00
tblWoodstoves	WoodstoveWoodMass	999.60	0.00

2.0 Emissions Summary

3643 Tentative Vesting Tract - South Coast Air Basin, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not 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	38.3860	17.0100	12.8463	0.0225	7.1944	0.7430	7.9373	3.4544	0.6835	4.1379						
Maximum	**38.3860**	**17.0100**	**12.8463**	**0.0225**	**7.1944**	**0.7430**	**7.9373**	**3.4544**	**0.6835**	**4.1379**						

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	38.2111	3.7691	13.2440	0.0225	2.7768	0.0343	2.8111	1.3414	0.0342	1.3757						
Maximum	**38.2111**	**3.7691**	**13.2440**	**0.0225**	**2.7768**	**0.0343**	**2.8111**	**1.3414**	**0.0342**	**1.3757**						

	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	N20	CO2e
Percent Reduction	**0.46**	**77.84**	**-3.10**	**0.00**	**61.40**	**95.38**	**64.58**	**61.17**	**94.99**	**66.75**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not 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	1.3300	6.6500e-003	0.5773	3.0000e-005		3.2000e-003	3.2000e-003		3.2000e-003	3.2000e-003						
Energy	5.2700e-003	0.0451	0.0192	2.9000e-004		3.6400e-003	3.6400e-003		3.6400e-003	3.6400e-003						
Mobile	0.1913	0.2242	1.9368	4.3600e-003	0.4808	3.2000e-003	0.4840	0.1281	2.9800e-003	0.1311						
Total	**1.5266**	**0.2759**	**2.5332**	**4.6800e-003**	**0.4808**	**0.0100**	**0.4908**	**0.1281**	**9.8200e-003**	**0.1379**						

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	1.3300	6.6500e-003	0.5773	3.0000e-005		3.2000e-003	3.2000e-003		3.2000e-003	3.2000e-003						
Energy	5.2700e-003	0.0451	0.0192	2.9000e-004		3.6400e-003	3.6400e-003		3.6400e-003	3.6400e-003						
Mobile	0.1913	0.2242	1.9368	4.3600e-003	0.4808	3.2000e-003	0.4840	0.1281	2.9800e-003	0.1311						
Total	**1.5266**	**0.2759**	**2.5332**	**4.6800e-003**	**0.4808**	**0.0100**	**0.4908**	**0.1281**	**9.8200e-003**	**0.1379**						

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not 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	N20	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Grading	Grading	1/21/2022	1/26/2022	5	4	
2	Building Construction	Building Construction	1/27/2022	11/2/2022	5	200	
3	Paving	Paving	11/3/2022	11/16/2022	5	10	
4	Architectural Coating	Architectural Coating	11/17/2022	11/30/2022	5	10	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 4

Acres of Paving: 0

Residential Indoor: 123,553; Residential Outdoor: 41,184; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Tractors/Loaders/Backhoes	2	7.00	97	0.37
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
Building Construction	Tractors/Loaders/Backhoes	1	6.00	97	0.37

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Building Construction	Welders	3	8.00	46	0.45
Paving	Cement and Mortar Mixers	1	6.00	9	0.56
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
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Architectural Coating	Air Compressors	1	6.00	78	0.48

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
Grading	4	10.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	7	3.00	1.00	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	1.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Water Exposed Area

Water Unpaved Roads

Reduce Vehicle Speed on Unpaved Roads

Clean Paved Roads

3643 Tentative Vesting Tract - South Coast Air Basin, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.2 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						
Off-Road	1.5403	16.9836	9.2202	0.0206		0.7423	0.7423		0.6829	0.6829						
Total	**1.5403**	**16.9836**	**9.2202**	**0.0206**	**7.0826**	**0.7423**	**7.8249**	**3.4247**	**0.6829**	**4.1076**						

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						
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker	0.0362	0.0264	0.3450	9.5000e-004	0.1118	6.7000e-004	0.1125	0.0296	6.2000e-004	0.0303						
Total	**0.0362**	**0.0264**	**0.3450**	**9.5000e-004**	**0.1118**	**6.7000e-004**	**0.1125**	**0.0296**	**6.2000e-004**	**0.0303**						

3643 Tentative Vesting Tract - South Coast Air Basin, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.2 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						
Off-Road	0.2522	1.0927	10.9071	0.0206		0.0336	0.0336		0.0336	0.0336						
Total	**0.2522**	**1.0927**	**10.9071**	**0.0206**	**2.7622**	**0.0336**	**2.7958**	**1.3357**	**0.0336**	**1.3693**						

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						
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker	0.0362	0.0264	0.3450	9.5000e-004	0.0146	6.7000e-004	0.0153	5.7900e-003	6.2000e-004	6.4100e-003						
Total	**0.0362**	**0.0264**	**0.3450**	**9.5000e-004**	**0.0146**	**6.7000e-004**	**0.0153**	**5.7900e-003**	**6.2000e-004**	**6.4100e-003**						

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.3 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						
Total	**1.6487**	**12.5031**	**12.7264**	**0.0221**		**0.5889**	**0.5889**		**0.5689**	**0.5689**						

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						
Vendor	1.8000e-003	0.0491	0.0163	1.9000e-004	6.4000e-003	4.8000e-004	6.8800e-003	1.8400e-003	4.6000e-004	2.3000e-003						
Worker	0.0109	7.9300e-003	0.1035	2.9000e-004	0.0335	2.0000e-004	0.0337	8.8900e-003	1.8000e-004	9.0800e-003						
Total	**0.0127**	**0.0571**	**0.1198**	**4.8000e-004**	**0.0399**	**6.8000e-004**	**0.0406**	**0.0107**	**6.4000e-004**	**0.0114**						

3643 Tentative Vesting Tract - South Coast Air Basin, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.3 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	0.2930	3.7120	13.1241	0.0221		0.0303	0.0303		0.0303	0.0303						
Total	**0.2930**	**3.7120**	**13.1241**	**0.0221**		**0.0303**	**0.0303**		**0.0303**	**0.0303**						

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						
Vendor	1.8000e-003	0.0491	0.0163	1.9000e-004	1.8400e-003	4.8000e-004	2.3200e-003	7.2000e-004	4.6000e-004	1.1900e-003						
Worker	0.0109	7.9300e-003	0.1035	2.9000e-004	4.3800e-003	2.0000e-004	4.5800e-003	1.7400e-003	1.8000e-004	1.9200e-003						
Total	**0.0127**	**0.0571**	**0.1198**	**4.8000e-004**	**6.2200e-003**	**6.8000e-004**	**6.9000e-003**	**2.4600e-003**	**6.4000e-004**	**3.1100e-003**						

3643 Tentative Vesting Tract - South Coast Air Basin, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.4 Paving - 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	0.6877	6.7738	8.8060	0.0135		0.3474	0.3474		0.3205	0.3205						
Paving	0.0000					0.0000	0.0000		0.0000	0.0000						
Total	**0.6877**	**6.7738**	**8.8060**	**0.0135**		**0.3474**	**0.3474**		**0.3205**	**0.3205**						

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						
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker	0.0471	0.0344	0.4485	1.2400e-003	0.1453	8.7000e-004	0.1462	0.0385	8.0000e-004	0.0393						
Total	**0.0471**	**0.0344**	**0.4485**	**1.2400e-003**	**0.1453**	**8.7000e-004**	**0.1462**	**0.0385**	**8.0000e-004**	**0.0393**						

3643 Tentative Vesting Tract - South Coast Air Basin, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.4 Paving - 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	0.1598	0.6922	9.8512	0.0135		0.0213	0.0213		0.0213	0.0213						
Paving	0.0000					0.0000	0.0000		0.0000	0.0000						
Total	**0.1598**	**0.6922**	**9.8512**	**0.0135**		**0.0213**	**0.0213**		**0.0213**	**0.0213**						

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						
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker	0.0471	0.0344	0.4485	1.2400e-003	0.0190	8.7000e-004	0.0199	7.5300e-003	8.0000e-004	8.3300e-003						
Total	**0.0471**	**0.0344**	**0.4485**	**1.2400e-003**	**0.0190**	**8.7000e-004**	**0.0199**	**7.5300e-003**	**8.0000e-004**	**8.3300e-003**						

3643 Tentative Vesting Tract - South Coast Air Basin, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.5 Architectural Coating - 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					
Archit. Coating	38.1778					0.0000	0.0000		0.0000	0.0000						
Off-Road	0.2045	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817						
Total	**38.3823**	**1.4085**	**1.8136**	**2.9700e-003**		**0.0817**	**0.0817**		**0.0817**	**0.0817**						

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						
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker	3.6200e-003	2.6400e-003	0.0345	1.0000e-004	0.0112	7.0000e-005	0.0112	2.9600e-003	6.0000e-005	3.0300e-003						
Total	**3.6200e-003**	**2.6400e-003**	**0.0345**	**1.0000e-004**	**0.0112**	**7.0000e-005**	**0.0112**	**2.9600e-003**	**6.0000e-005**	**3.0300e-003**						

3643 Tentative Vesting Tract - South Coast Air Basin, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.5 Architectural Coating - 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					
Archit. Coating	38.1778					0.0000	0.0000		0.0000	0.0000						
Off-Road	0.0297	0.1288	1.8324	2.9700e-003		3.9600e-003	3.9600e-003		3.9600e-003	3.9600e-003						
Total	**38.2075**	**0.1288**	**1.8324**	**2.9700e-003**		**3.9600e-003**	**3.9600e-003**		**3.9600e-003**	**3.9600e-003**						

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						
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker	3.6200e-003	2.6400e-003	0.0345	1.0000e-004	1.4600e-003	7.0000e-005	1.5300e-003	5.8000e-004	6.0000e-005	6.4000e-004						
Total	**3.6200e-003**	**2.6400e-003**	**0.0345**	**1.0000e-004**	**1.4600e-003**	**7.0000e-005**	**1.5300e-003**	**5.8000e-004**	**6.0000e-005**	**6.4000e-004**						

3643 Tentative Vesting Tract - South Coast Air Basin, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	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	0.1913	0.2242	1.9368	4.3600e-003	0.4808	3.2000e-003	0.4840	0.1281	2.9800e-003	0.1311						
Unmitigated	0.1913	0.2242	1.9368	4.3600e-003	0.4808	3.2000e-003	0.4840	0.1281	2.9800e-003	0.1311						

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Single Family Housing	66.08	66.78	59.85	223,106	223,106
Total	66.08	66.78	59.85	223,106	223,106

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
Single Family Housing	14.70	5.90	8.70	40.20	19.20	40.60	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Single Family Housing	0.543401	0.061496	0.184986	0.128935	0.023820	0.006437	0.011961	0.008652	0.000812	0.000508	0.024540	0.000745	0.003706

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

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	5.2700e-003	0.0451	0.0192	2.9000e-004		3.6400e-003	3.6400e-003		3.6400e-003	3.6400e-003						
NaturalGas Unmitigated	5.2700e-003	0.0451	0.0192	2.9000e-004		3.6400e-003	3.6400e-003		3.6400e-003	3.6400e-003						

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					
Single Family Housing	488.889	5.2700e-003	0.0451	0.0192	2.9000e-004		3.6400e-003	3.6400e-003		3.6400e-003	3.6400e-003						
Total		**5.2700e-003**	**0.0451**	**0.0192**	**2.9000e-004**		**3.6400e-003**	**3.6400e-003**		**3.6400e-003**	**3.6400e-003**						

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not 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					
Single Family Housing	0.488889	5.2700e-003	0.0451	0.0192	2.9000e-004		3.6400e-003	3.6400e-003		3.6400e-003	3.6400e-003						
Total		**5.2700e-003**	**0.0451**	**0.0192**	**2.9000e-004**		**3.6400e-003**	**3.6400e-003**		**3.6400e-003**	**3.6400e-003**						

6.0 Area Detail

6.1 Mitigation Measures Area

No Hearths Installed

	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	1.3300	6.6500e-003	0.5773	3.0000e-005		3.2000e-003	3.2000e-003		3.2000e-003	3.2000e-003						
Unmitigated	1.3300	6.6500e-003	0.5773	3.0000e-005		3.2000e-003	3.2000e-003		3.2000e-003	3.2000e-003						

3643 Tentative Vesting Tract - South Coast Air Basin, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

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	0.1046					0.0000	0.0000		0.0000	0.0000						
Consumer Products	1.2081					0.0000	0.0000		0.0000	0.0000						
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						
Landscaping	0.0174	6.6500e-003	0.5773	3.0000e-005		3.2000e-003	3.2000e-003		3.2000e-003	3.2000e-003						
Total	**1.3300**	**6.6500e-003**	**0.5773**	**3.0000e-005**		**3.2000e-003**	**3.2000e-003**		**3.2000e-003**	**3.2000e-003**						

3643 Tentative Vesting Tract - South Coast Air Basin, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not 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	0.1046					0.0000	0.0000		0.0000	0.0000						
Consumer Products	1.2081					0.0000	0.0000		0.0000	0.0000						
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						
Landscaping	0.0174	6.6500e-003	0.5773	3.0000e-005		3.2000e-003	3.2000e-003		3.2000e-003	3.2000e-003						
Total	**1.3300**	**6.6500e-003**	**0.5773**	**3.0000e-005**		**3.2000e-003**	**3.2000e-003**		**3.2000e-003**	**3.2000e-003**						

7.0 Water Detail

7.1 Mitigation Measures Water

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3643 Tentative Vesting Tract

South Coast Air Basin, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Single Family Housing	7.00	Dwelling Unit	1.40	61,014.00	20

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	31
Climate Zone	9			**Operational Year**	2024
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 - total acreage and square footage obtained from tentative vesting track map

Construction Phase -

Woodstoves - assumed no woodstoves/fireplaces

Construction Off-road Equipment Mitigation - applied rule 403 for dust mitigation.

Area Mitigation -

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	CleanPavedRoadPercentReduction	0	100
tblConstDustMitigation	WaterUnpavedRoadMoistureContent	0	12
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	25
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00

tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblFireplaces	FireplaceDayYear	25.00	0.00
tblFireplaces	FireplaceHourDay	3.00	0.00
tblFireplaces	FireplaceWoodMass	1,019.20	0.00
tblFireplaces	NumberGas	5.95	0.00
tblFireplaces	NumberNoFireplace	0.70	0.00
tblFireplaces	NumberWood	0.35	0.00

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

tblLandUse	LandUseSquareFeet	12,600.00	61,014.00
tblLandUse	LotAcreage	2.27	1.40
tblWoodstoves	NumberCatalytic	0.35	0.00
tblWoodstoves	NumberNoncatalytic	0.35	0.00
tblWoodstoves	WoodstoveDayYear	25.00	0.00
tblWoodstoves	WoodstoveWoodMass	999.60	0.00

2.0 Emissions Summary

3643 Tentative Vesting Tract - South Coast Air Basin, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not 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	38.3858	17.0077	12.8559	0.0225	7.1944	0.7430	7.9373	3.4544	0.6835	4.1379						
Maximum	**38.3858**	**17.0077**	**12.8559**	**0.0225**	**7.1944**	**0.7430**	**7.9373**	**3.4544**	**0.6835**	**4.1379**						

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	38.2109	3.7665	13.2536	0.0225	2.7768	0.0343	2.8111	1.3414	0.0342	1.3757						
Maximum	**38.2109**	**3.7665**	**13.2536**	**0.0225**	**2.7768**	**0.0343**	**2.8111**	**1.3414**	**0.0342**	**1.3757**						

	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	N20	CO2e
Percent Reduction	**0.46**	**77.85**	**-3.09**	**0.00**	**61.40**	**95.38**	**64.58**	**61.17**	**94.99**	**66.75**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3643 Tentative Vesting Tract - South Coast Air Basin, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not 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	1.3300	6.6500e-003	0.5773	3.0000e-005		3.2000e-003	3.2000e-003		3.2000e-003	3.2000e-003						
Energy	5.2700e-003	0.0451	0.0192	2.9000e-004		3.6400e-003	3.6400e-003		3.6400e-003	3.6400e-003						
Mobile	0.1965	0.2087	1.9962	4.5700e-003	0.4808	3.2000e-003	0.4840	0.1281	2.9800e-003	0.1311						
Total	**1.5318**	**0.2604**	**2.5926**	**4.8900e-003**	**0.4808**	**0.0100**	**0.4908**	**0.1281**	**9.8200e-003**	**0.1379**						

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	1.3300	6.6500e-003	0.5773	3.0000e-005		3.2000e-003	3.2000e-003		3.2000e-003	3.2000e-003						
Energy	5.2700e-003	0.0451	0.0192	2.9000e-004		3.6400e-003	3.6400e-003		3.6400e-003	3.6400e-003						
Mobile	0.1965	0.2087	1.9962	4.5700e-003	0.4808	3.2000e-003	0.4840	0.1281	2.9800e-003	0.1311						
Total	**1.5318**	**0.2604**	**2.5926**	**4.8900e-003**	**0.4808**	**0.0100**	**0.4908**	**0.1281**	**9.8200e-003**	**0.1379**						

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not 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	N20	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Grading	Grading	1/21/2022	1/26/2022	5	4	
2	Building Construction	Building Construction	1/27/2022	11/2/2022	5	200	
3	Paving	Paving	11/3/2022	11/16/2022	5	10	
4	Architectural Coating	Architectural Coating	11/17/2022	11/30/2022	5	10	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 4

Acres of Paving: 0

Residential Indoor: 123,553; Residential Outdoor: 41,184; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Tractors/Loaders/Backhoes	2	7.00	97	0.37
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
Building Construction	Tractors/Loaders/Backhoes	1	6.00	97	0.37

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Building Construction	Welders	3	8.00	46	0.45
Paving	Cement and Mortar Mixers	1	6.00	9	0.56
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
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Architectural Coating	Air Compressors	1	6.00	78	0.48

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
Grading	4	10.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	7	3.00	1.00	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	1.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Water Exposed Area

Water Unpaved Roads

Reduce Vehicle Speed on Unpaved Roads

Clean Paved Roads

3643 Tentative Vesting Tract - South Coast Air Basin, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.2 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						
Off-Road	1.5403	16.9836	9.2202	0.0206		0.7423	0.7423		0.6829	0.6829						
Total	**1.5403**	**16.9836**	**9.2202**	**0.0206**	**7.0826**	**0.7423**	**7.8249**	**3.4247**	**0.6829**	**4.1076**						

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						
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker	0.0341	0.0241	0.3789	1.0100e-003	0.1118	6.7000e-004	0.1125	0.0296	6.2000e-004	0.0303						
Total	**0.0341**	**0.0241**	**0.3789**	**1.0100e-003**	**0.1118**	**6.7000e-004**	**0.1125**	**0.0296**	**6.2000e-004**	**0.0303**						

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.2 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						
Off-Road	0.2522	1.0927	10.9071	0.0206		0.0336	0.0336		0.0336	0.0336						
Total	**0.2522**	**1.0927**	**10.9071**	**0.0206**	**2.7622**	**0.0336**	**2.7958**	**1.3357**	**0.0336**	**1.3693**						

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						
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker	0.0341	0.0241	0.3789	1.0100e-003	0.0146	6.7000e-004	0.0153	5.7900e-003	6.2000e-004	6.4100e-003						
Total	**0.0341**	**0.0241**	**0.3789**	**1.0100e-003**	**0.0146**	**6.7000e-004**	**0.0153**	**5.7900e-003**	**6.2000e-004**	**6.4100e-003**						

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.3 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						
Total	**1.6487**	**12.5031**	**12.7264**	**0.0221**		**0.5889**	**0.5889**		**0.5689**	**0.5689**						

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						
Vendor	1.8300e-003	0.0472	0.0158	1.9000e-004	6.4000e-003	4.8000e-004	6.8800e-003	1.8400e-003	4.6000e-004	2.3000e-003						
Worker	0.0102	7.2300e-003	0.1137	3.0000e-004	0.0335	2.0000e-004	0.0337	8.8900e-003	1.8000e-004	9.0800e-003						
Total	**0.0121**	**0.0544**	**0.1294**	**4.9000e-004**	**0.0399**	**6.8000e-004**	**0.0406**	**0.0107**	**6.4000e-004**	**0.0114**						

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.3 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	0.2930	3.7120	13.1241	0.0221		0.0303	0.0303		0.0303	0.0303						
Total	**0.2930**	**3.7120**	**13.1241**	**0.0221**		**0.0303**	**0.0303**		**0.0303**	**0.0303**						

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						
Vendor	1.8300e-003	0.0472	0.0158	1.9000e-004	1.8400e-003	4.8000e-004	2.3200e-003	7.2000e-004	4.6000e-004	1.1800e-003						
Worker	0.0102	7.2300e-003	0.1137	3.0000e-004	4.3800e-003	2.0000e-004	4.5800e-003	1.7400e-003	1.8000e-004	1.9200e-003						
Total	**0.0121**	**0.0544**	**0.1294**	**4.9000e-004**	**6.2200e-003**	**6.8000e-004**	**6.9000e-003**	**2.4600e-003**	**6.4000e-004**	**3.1000e-003**						

3643 Tentative Vesting Tract - South Coast Air Basin, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.4 Paving - 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	0.6877	6.7738	8.8060	0.0135		0.3474	0.3474		0.3205	0.3205						
Paving	0.0000					0.0000	0.0000		0.0000	0.0000						
Total	**0.6877**	**6.7738**	**8.8060**	**0.0135**		**0.3474**	**0.3474**		**0.3205**	**0.3205**						

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						
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker	0.0444	0.0313	0.4925	1.3100e-003	0.1453	8.7000e-004	0.1462	0.0385	8.0000e-004	0.0393						
Total	**0.0444**	**0.0313**	**0.4925**	**1.3100e-003**	**0.1453**	**8.7000e-004**	**0.1462**	**0.0385**	**8.0000e-004**	**0.0393**						

3643 Tentative Vesting Tract - South Coast Air Basin, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.4 Paving - 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	0.1598	0.6922	9.8512	0.0135		0.0213	0.0213		0.0213	0.0213						
Paving	0.0000					0.0000	0.0000		0.0000	0.0000						
Total	**0.1598**	**0.6922**	**9.8512**	**0.0135**		**0.0213**	**0.0213**		**0.0213**	**0.0213**						

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						
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker	0.0444	0.0313	0.4925	1.3100e-003	0.0190	8.7000e-004	0.0199	7.5300e-003	8.0000e-004	8.3300e-003						
Total	**0.0444**	**0.0313**	**0.4925**	**1.3100e-003**	**0.0190**	**8.7000e-004**	**0.0199**	**7.5300e-003**	**8.0000e-004**	**8.3300e-003**						

3643 Tentative Vesting Tract - South Coast Air Basin, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.5 Architectural Coating - 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					
Archit. Coating	38.1778					0.0000	0.0000		0.0000	0.0000						
Off-Road	0.2045	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817						
Total	**38.3823**	**1.4085**	**1.8136**	**2.9700e-003**		**0.0817**	**0.0817**		**0.0817**	**0.0817**						

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						
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker	3.4100e-003	2.4100e-003	0.0379	1.0000e-004	0.0112	7.0000e-005	0.0112	2.9600e-003	6.0000e-005	3.0300e-003						
Total	**3.4100e-003**	**2.4100e-003**	**0.0379**	**1.0000e-004**	**0.0112**	**7.0000e-005**	**0.0112**	**2.9600e-003**	**6.0000e-005**	**3.0300e-003**						

3643 Tentative Vesting Tract - South Coast Air Basin, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.5 Architectural Coating - 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					
Archit. Coating	38.1778					0.0000	0.0000		0.0000	0.0000						
Off-Road	0.0297	0.1288	1.8324	2.9700e-003		3.9600e-003	3.9600e-003		3.9600e-003	3.9600e-003						
Total	**38.2075**	**0.1288**	**1.8324**	**2.9700e-003**		**3.9600e-003**	**3.9600e-003**		**3.9600e-003**	**3.9600e-003**						

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						
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker	3.4100e-003	2.4100e-003	0.0379	1.0000e-004	1.4600e-003	7.0000e-005	1.5300e-003	5.8000e-004	6.0000e-005	6.4000e-004						
Total	**3.4100e-003**	**2.4100e-003**	**0.0379**	**1.0000e-004**	**1.4600e-003**	**7.0000e-005**	**1.5300e-003**	**5.8000e-004**	**6.0000e-005**	**6.4000e-004**						

3643 Tentative Vesting Tract - South Coast Air Basin, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	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	0.1965	0.2087	1.9962	4.5700e-003	0.4808	3.2000e-003	0.4840	0.1281	2.9800e-003	0.1311						
Unmitigated	0.1965	0.2087	1.9962	4.5700e-003	0.4808	3.2000e-003	0.4840	0.1281	2.9800e-003	0.1311						

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Single Family Housing	66.08	66.78	59.85	223,106	223,106
Total	66.08	66.78	59.85	223,106	223,106

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
Single Family Housing	14.70	5.90	8.70	40.20	19.20	40.60	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Single Family Housing	0.543401	0.061496	0.184986	0.128935	0.023820	0.006437	0.011961	0.008652	0.000812	0.000508	0.024540	0.000745	0.003706

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

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	5.2700e-003	0.0451	0.0192	2.9000e-004		3.6400e-003	3.6400e-003		3.6400e-003	3.6400e-003						
NaturalGas Unmitigated	5.2700e-003	0.0451	0.0192	2.9000e-004		3.6400e-003	3.6400e-003		3.6400e-003	3.6400e-003						

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					
Single Family Housing	488.889	5.2700e-003	0.0451	0.0192	2.9000e-004		3.6400e-003	3.6400e-003		3.6400e-003	3.6400e-003						
Total		**5.2700e-003**	**0.0451**	**0.0192**	**2.9000e-004**		**3.6400e-003**	**3.6400e-003**		**3.6400e-003**	**3.6400e-003**						

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					
Single Family Housing	0.488889	5.2700e-003	0.0451	0.0192	2.9000e-004		3.6400e-003	3.6400e-003		3.6400e-003	3.6400e-003						
Total		**5.2700e-003**	**0.0451**	**0.0192**	**2.9000e-004**		**3.6400e-003**	**3.6400e-003**		**3.6400e-003**	**3.6400e-003**						

6.0 Area Detail

6.1 Mitigation Measures Area

No Hearths Installed

	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	1.3300	6.6500e-003	0.5773	3.0000e-005		3.2000e-003	3.2000e-003		3.2000e-003	3.2000e-003						
Unmitigated	1.3300	6.6500e-003	0.5773	3.0000e-005		3.2000e-003	3.2000e-003		3.2000e-003	3.2000e-003						

3643 Tentative Vesting Tract - South Coast Air Basin, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

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	0.1046					0.0000	0.0000		0.0000	0.0000						
Consumer Products	1.2081					0.0000	0.0000		0.0000	0.0000						
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						
Landscaping	0.0174	6.6500e-003	0.5773	3.0000e-005		3.2000e-003	3.2000e-003		3.2000e-003	3.2000e-003						
Total	**1.3300**	**6.6500e-003**	**0.5773**	**3.0000e-005**		**3.2000e-003**	**3.2000e-003**		**3.2000e-003**	**3.2000e-003**						

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not 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	0.1046					0.0000	0.0000		0.0000	0.0000						
Consumer Products	1.2081					0.0000	0.0000		0.0000	0.0000						
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						
Landscaping	0.0174	6.6500e-003	0.5773	3.0000e-005		3.2000e-003	3.2000e-003		3.2000e-003	3.2000e-003						
Total	**1.3300**	**6.6500e-003**	**0.5773**	**3.0000e-005**		**3.2000e-003**	**3.2000e-003**		**3.2000e-003**	**3.2000e-003**						

7.0 Water Detail

7.1 Mitigation Measures Water

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

3643 Tentative Vesting Tract - South Coast Air Basin, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3643 Tentative Vesting Tract

South Coast Air Basin, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Single Family Housing	7.00	Dwelling Unit	1.40	61,014.00	20

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	31
Climate Zone	9			**Operational Year**	2024
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 - total acreage and square footage obtained from tentative vesting track map

Construction Phase -

Woodstoves - assumed no woodstoves/fireplaces

Construction Off-road Equipment Mitigation - applied rule 403 for dust mitigation.

Area Mitigation -

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	CleanPavedRoadPercentReduction	0	100
tblConstDustMitigation	WaterUnpavedRoadMoistureContent	0	12
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	25
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00

tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblFireplaces	FireplaceDayYear	25.00	0.00
tblFireplaces	FireplaceHourDay	3.00	0.00
tblFireplaces	FireplaceWoodMass	1,019.20	0.00
tblFireplaces	NumberGas	5.95	0.00
tblFireplaces	NumberNoFireplace	0.70	0.00
tblFireplaces	NumberWood	0.35	0.00

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

tblLandUse	LandUseSquareFeet	12,600.00	61,014.00
tblLandUse	LotAcreage	2.27	1.40
tblWoodstoves	NumberCatalytic	0.35	0.00
tblWoodstoves	NumberNoncatalytic	0.35	0.00
tblWoodstoves	WoodstoveDayYear	25.00	0.00
tblWoodstoves	WoodstoveWoodMass	999.60	0.00

2.0 Emissions Summary

3643 Tentative Vesting Tract - South Coast Air Basin, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not 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											0.0000	197.6924	197.6924	0.0349	3.7000e-004	198.6741
Maximum											**0.0000**	**197.6924**	**197.6924**	**0.0349**	**3.7000e-004**	**198.6741**

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											0.0000	197.6921	197.6921	0.0349	3.7000e-004	198.6738
Maximum											**0.0000**	**197.6921**	**197.6921**	**0.0349**	**3.7000e-004**	**198.6738**

	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	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)

3643 Tentative Vesting Tract - South Coast Air Basin, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

		Highest		

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											0.0000	0.1179	0.1179	1.1000e-004	0.0000	0.1208
Energy											0.0000	19.2775	19.2775	1.0100e-003	2.7000e-004	19.3844
Mobile											0.0000	72.5436	72.5436	4.7000e-003	3.1900e-003	73.6122
Waste											1.6645	0.0000	1.6645	0.0984	0.0000	4.1238
Water											0.1447	1.6197	1.7644	0.0150	3.7000e-004	2.2489
Total											**1.8092**	**93.5587**	**95.3679**	**0.1192**	**3.8300e-003**	**99.4900**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not 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											0.0000	0.1179	0.1179	1.1000e-004	0.0000	0.1208
Energy											0.0000	19.2775	19.2775	1.0100e-003	2.7000e-004	19.3844
Mobile											0.0000	72.5436	72.5436	4.7000e-003	3.1900e-003	73.6122
Waste											1.6645	0.0000	1.6645	0.0984	0.0000	4.1238
Water											0.1447	1.6197	1.7644	0.0150	3.7000e-004	2.2489
Total											**1.8092**	**93.5587**	**95.3679**	**0.1192**	**3.8300e-003**	**99.4900**

	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	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Grading	Grading	1/21/2022	1/26/2022	5	4	
2	Building Construction	Building Construction	1/27/2022	11/2/2022	5	200	
3	Paving	Paving	11/3/2022	11/16/2022	5	10	

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

4	Architectural Coating	Architectural Coating	11/17/2022	11/30/2022	5	10	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 4

Acres of Paving: 0

Residential Indoor: 123,553; Residential Outdoor: 41,184; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Tractors/Loaders/Backhoes	2	7.00	97	0.37
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
Building Construction	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Building Construction	Welders	3	8.00	46	0.45
Paving	Cement and Mortar Mixers	1	6.00	9	0.56
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
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Architectural Coating	Air Compressors	1	6.00	78	0.48

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
Grading	4	10.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Building Construction	7	3.00	1.00	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	1.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Water Exposed Area

Water Unpaved Roads

Reduce Vehicle Speed on Unpaved Roads

Clean Paved Roads

3.2 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											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road											0.0000	3.6205	3.6205	1.1700e-003	0.0000	3.6498
Total											**0.0000**	**3.6205**	**3.6205**	**1.1700e-003**	**0.0000**	**3.6498**

3643 Tentative Vesting Tract - South Coast Air Basin, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.2 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
Vendor											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker											0.0000	0.1774	0.1774	0.0000	0.0000	0.1790
Total											**0.0000**	**0.1774**	**0.1774**	**0.0000**	**0.0000**	**0.1790**

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											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road											0.0000	3.6205	3.6205	1.1700e-003	0.0000	3.6498
Total											**0.0000**	**3.6205**	**3.6205**	**1.1700e-003**	**0.0000**	**3.6498**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.2 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
Vendor											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker											0.0000	0.1774	0.1774	0.0000	0.0000	0.1790
Total											**0.0000**	**0.1774**	**0.1774**	**0.0000**	**0.0000**	**0.1790**

3.3 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											0.0000	181.5769	181.5769	0.0316	0.0000	182.3675
Total											**0.0000**	**181.5769**	**181.5769**	**0.0316**	**0.0000**	**182.3675**

3643 Tentative Vesting Tract - South Coast Air Basin, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.3 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
Vendor											0.0000	1.8741	1.8741	7.0000e-005	2.7000e-004	1.9569
Worker											0.0000	2.6611	2.6611	7.0000e-005	7.0000e-005	2.6843
Total											**0.0000**	**4.5352**	**4.5352**	**1.4000e-004**	**3.4000e-004**	**4.6413**

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											0.0000	181.5767	181.5767	0.0316	0.0000	182.3673
Total											**0.0000**	**181.5767**	**181.5767**	**0.0316**	**0.0000**	**182.3673**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.3 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
Vendor											0.0000	1.8741	1.8741	7.0000e-005	2.7000e-004	1.9569
Worker											0.0000	2.6611	2.6611	7.0000e-005	7.0000e-005	2.6843
Total											**0.0000**	**4.5352**	**4.5352**	**1.4000e-004**	**3.4000e-004**	**4.6413**

3.4 Paving - 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											0.0000	5.8848	5.8848	1.8700e-003	0.0000	5.9315
Paving											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total											**0.0000**	**5.8848**	**5.8848**	**1.8700e-003**	**0.0000**	**5.9315**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.4 Paving - 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
Vendor											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker											0.0000	0.5766	0.5766	2.0000e-005	2.0000e-005	0.5816
Total											**0.0000**	**0.5766**	**0.5766**	**2.0000e-005**	**2.0000e-005**	**0.5816**

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											0.0000	5.8848	5.8848	1.8700e-003	0.0000	5.9314
Paving											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total											**0.0000**	**5.8848**	**5.8848**	**1.8700e-003**	**0.0000**	**5.9314**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.4 Paving - 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
Vendor											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker											0.0000	0.5766	0.5766	2.0000e-005	2.0000e-005	0.5816
Total											**0.0000**	**0.5766**	**0.5766**	**2.0000e-005**	**2.0000e-005**	**0.5816**

3.5 Architectural Coating - 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					
Archit. Coating											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road											0.0000	1.2766	1.2766	8.0000e-005	0.0000	1.2787
Total											**0.0000**	**1.2766**	**1.2766**	**8.0000e-005**	**0.0000**	**1.2787**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.5 Architectural Coating - 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
Vendor											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker											0.0000	0.0444	0.0444	0.0000	0.0000	0.0447
Total											**0.0000**	**0.0444**	**0.0444**	**0.0000**	**0.0000**	**0.0447**

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											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road											0.0000	1.2766	1.2766	8.0000e-005	0.0000	1.2787
Total											**0.0000**	**1.2766**	**1.2766**	**8.0000e-005**	**0.0000**	**1.2787**

3643 Tentative Vesting Tract - South Coast Air Basin, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.5 Architectural Coating - 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
Vendor											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker											0.0000	0.0444	0.0444	0.0000	0.0000	0.0447
Total											**0.0000**	**0.0444**	**0.0444**	**0.0000**	**0.0000**	**0.0447**

3643 Tentative Vesting Tract - South Coast Air Basin, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	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											0.0000	72.5436	72.5436	4.7000e-003	3.1900e-003	73.6122
Unmitigated											0.0000	72.5436	72.5436	4.7000e-003	3.1900e-003	73.6122

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Single Family Housing	66.08	66.78	59.85	223,106	223,106
Total	66.08	66.78	59.85	223,106	223,106

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
Single Family Housing	14.70	5.90	8.70	40.20	19.20	40.60	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Single Family Housing	0.543401	0.061496	0.184986	0.128935	0.023820	0.006437	0.011961	0.008652	0.000812	0.000508	0.024540	0.000745	0.003706

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

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	9.7550	9.7550	8.2000e-004	1.0000e-004	9.8053
Electricity Unmitigated											0.0000	9.7550	9.7550	8.2000e-004	1.0000e-004	9.8053
NaturalGas Mitigated											0.0000	9.5225	9.5225	1.8000e-004	1.7000e-004	9.5791
NaturalGas Unmitigated											0.0000	9.5225	9.5225	1.8000e-004	1.7000e-004	9.5791

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not 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					
Single Family Housing	178445											0.0000	9.5225	9.5225	1.8000e-004	1.7000e-004	9.5791
Total												**0.0000**	**9.5225**	**9.5225**	**1.8000e-004**	**1.7000e-004**	**9.5791**

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					
Single Family Housing	178445											0.0000	9.5225	9.5225	1.8000e-004	1.7000e-004	9.5791
Total												**0.0000**	**9.5225**	**9.5225**	**1.8000e-004**	**1.7000e-004**	**9.5791**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Single Family Housing	55005.6	9.7550	8.2000e-004	1.0000e-004	9.8053
Total		**9.7550**	**8.2000e-004**	**1.0000e-004**	**9.8053**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Single Family Housing	55005.6	9.7550	8.2000e-004	1.0000e-004	9.8053
Total		**9.7550**	**8.2000e-004**	**1.0000e-004**	**9.8053**

6.0 Area Detail

6.1 Mitigation Measures Area

No Hearths Installed

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not 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											0.0000	0.1179	0.1179	1.1000e-004	0.0000	0.1208
Unmitigated											0.0000	0.1179	0.1179	1.1000e-004	0.0000	0.1208

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											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping											0.0000	0.1179	0.1179	1.1000e-004	0.0000	0.1208
Total											**0.0000**	**0.1179**	**0.1179**	**1.1000e-004**	**0.0000**	**0.1208**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not 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											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping											0.0000	0.1179	0.1179	1.1000e-004	0.0000	0.1208
Total											**0.0000**	**0.1179**	**0.1179**	**1.1000e-004**	**0.0000**	**0.1208**

7.0 Water Detail

7.1 Mitigation Measures Water

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	1.7644	0.0150	3.7000e-004	2.2489
Unmitigated	1.7644	0.0150	3.7000e-004	2.2489

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Single Family Housing	0.456078 / 0.287528	1.7644	0.0150	3.7000e-004	2.2489
Total		**1.7644**	**0.0150**	**3.7000e-004**	**2.2489**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Single Family Housing	0.456078 / 0.287528	1.7644	0.0150	3.7000e-004	2.2489
Total		**1.7644**	**0.0150**	**3.7000e-004**	**2.2489**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	1.6645	0.0984	0.0000	4.1238
Unmitigated	1.6645	0.0984	0.0000	4.1238

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Single Family Housing	8.2	1.6645	0.0984	0.0000	4.1238
Total		**1.6645**	**0.0984**	**0.0000**	**4.1238**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Single Family Housing	8.2	1.6645	0.0984	0.0000	4.1238
Total		**1.6645**	**0.0984**	**0.0000**	**4.1238**

9.0 Operational Offroad

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

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation