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MEMORANDUM

DATE: August 19, 2021

TO: Frontier Communities

FROM: Ronald Brugger, Senior Air Quality Specialist
Jeffrey Haynes, Air Quality Analyst

SUBJECT: Air Quality and Greenhouse Gas Emissions Impact Analysis Memorandum for the proposed 107-unit Mango Townhome Project in Fontana (LSA Project No. FTR2102)

INTRODUCTION

This air quality and greenhouse gas (GHG) emissions impact analysis for the proposed 107-unit Mango Townhome in Fontana, California (project) has been prepared using methods and assumptions recommended in the South Coast Air Quality Management District's (SCAQMD) *CEQA Air Quality Handbook* (SCAQMD 1993). This analysis includes a description of existing regulatory framework, an assessment of project operational air quality emissions, and an assessment of GHG emissions. Measures to reduce or eliminate significant impacts are identified, where appropriate.

PROJECT LOCATION

The project site is located at the southwest corner of the intersection of South Highland and Mango Avenues within the Walnut Village Specific Plan (WVSP) in the City of Fontana, California. Attachment A, Figure 1 shows the regional vicinity and project location. Attachment A, Figure 2 shows the project site plan.

PROJECT DESCRIPTION

The project would develop 107 townhomes with 214 garages, 56 guest parking stalls, and approximately 16,050 square feet of green open space on a net 6.45-acre site. The project would integrate solar panels providing, at minimum, 460 kW of energy to offset energy usage. The proposed project site is currently designated "Community Commercial" under the City of Fontana General Plan and is zoned "Specific Plan." Within the WVSP, the project site located within Planning Area 1 "The Corner," an area originally planned for the development of "… retail and specialty uses." The proposed project anticipates processing of a General Plan Amendment (GPA), Specific Plan Amendment (SPA), and zone change (ZC) to allow the development of residential uses on the project site.

The tentative construction schedule would begin in May 2022 until completion between June 2023 and December of 2023, a duration of 13 to 19 months. For the purposes of this analysis, a conservative construction schedule of 13 months was applied.

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Land Uses in the Project Vicinity

Sensitive receptors include residences, schools, hospitals, and similar uses that are sensitive to air quality. The nearest sensitive receptors are identified as the single-family residences located along Prospect Avenue adjacent to the project's southern boundary. The residences' backyard walls are located approximately 5 feet from the project site. Additional single-family homes are located to the east along Pacific Avenue across Mango Avenue, approximately 75 feet from the eastern edge of the project site, and commercial retail shopping is located approximately 100 feet northeast from project site.

REGIONAL CLIMATE AND AIR QUALITY

The project site is located in Fontana, San Bernardino County, California, which is part of the South Coast Air Basin (Basin) and is under the jurisdiction of SCAQMD. Both the State of California (State) and the federal government have established health-based ambient air quality standards (AAQS) for seven air pollutants. As detailed in Table A, these pollutants include ozone (O_3), carbon monoxide (CO), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), particulate matter less than 10 microns in size (PM_{10}), particulate matter less than 2.5 microns in size ($PM_{2.5}$), and lead. In addition, the State has set standards for sulfates, hydrogen sulfide (H_2S), vinyl chloride, and visibility-reducing particles. These standards are designed to protect the health and welfare of the populace with a reasonable margin of safety.

Table B summarizes the most common health and environmental effects for each of the air pollutants for which there is a National and/or California AAQS (NAAQS and/or CAAQS), as well as for toxic air contaminants. Because the concentration standards were set at a level that protects public health with an adequate margin of safety (by the United States Environmental Protection Agency [EPA]), these health effects would not occur unless the standards are exceeded by a large margin or for a prolonged period of time. CAAQS are typically more stringent than NAAQS. Among the pollutants, O_3 and particulate matter ($PM_{2.5}$ and PM_{10}) are considered pollutants with regional effects, while the others have more localized effects.

The California Clean Air Act (CCAA) provides the SCAQMD and other air districts with the authority to manage transportation activities at indirect sources. Indirect sources of pollution include any facility, building, structure, or installation, or combination thereof, that attracts or generates mobile-source emissions of any pollutant. In addition, area-source emissions that are generated when minor sources collectively emit a substantial amount of pollution are also managed by the local air districts. Examples of this would be the motor vehicles at an intersection, at a mall, and on highways. The SCAQMD also regulates stationary sources of pollution throughout its jurisdictional area. The California Air Resources Board (CARB) regulates direct emissions from motor vehicles.

Climate/Meteorology

Air quality in the planning area is affected not only by various emissions sources (e.g., mobile and industry) but also by atmospheric conditions (e.g., wind speed, wind direction, temperature, and rainfall). The combination of topography, low mixing height, abundant sunshine, and emissions from the second-largest urban area in the United States gives the Basin some of the worst air pollution problems in the nation.

Table A: Ambient Air Quality Standards

Pollutant	Averaging Time	California Standards[1]		National Standards[2]		
		Concentration[3]	Method[4]	Primary[3,5]	Secondary[3,6]	Method[7]
O_3[8]	1-Hour	0.09 ppm (180 µg/m³)	Ultraviolet Photometry	—	Same as Primary Standard	Ultraviolet Photometry
	8-Hour	0.070 ppm (137 µg/m³)		0.070 ppm (137 µg/m³)		
Respirable Particulate Matter (PM_{10})[9]	24-Hour	50 µg/m³	Gravimetric or Beta Attenuation	150 µg/m³	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	20 µg/m³		—		
Fine Particulate Matter ($PM_{2.5}$)[9]	24-Hour	—	—	35 µg/m³	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	12 µg/m³	Gravimetric or Beta Attenuation	12.0 µg/m³	15 µg/m³	
CO	1-Hour	20 ppm (23 mg/m³)	Non-Dispersive Infrared Photometry (NDIR)	35 ppm (40 mg/m³)	—	Non-Dispersive Infrared Photometry (NDIR)
	8-Hour	9.0 ppm (10 mg/m³)		9 ppm (10 mg/m³)	—	
	8-Hour (Lake Tahoe)	6 ppm (7 mg/m³)		—	—	
NO_2[10]	1-Hour	0.18 ppm (339 µg/m³)	Gas Phase Chemiluminescence	100 ppb (188 µg/m³)	—	Gas Phase Chemiluminescence
	Annual Arithmetic Mean	0.030 ppm (57 µg/m³)		0.053 ppm (100 µg/m³)	Same as Primary Standard	
SO_2[11]	1-Hour	0.25 ppm (655 µg/m³)	Ultraviolet Fluorescence	75 ppb (196 µg/m³)	—	Ultraviolet Fluorescence; Spectrophotometry (Pararosaniline Method)
	3-Hour	—		—	0.5 ppm (1,300 µg/m³)	
	24-Hour	0.04 ppm (105 µg/m³)		0.14 ppm (for certain areas)[11]	—	
	Annual Arithmetic Mean	—		0.030 ppm (for certain areas)[11]	—	
Lead[12,13]	30-Day Average	1.5 µg/m³	Atomic Absorption	—	—	High-Volume Sampler and Atomic Absorption
	Calendar Quarter	—		1.5 µg/m³ (for certain areas)[13]	Same as Primary Standard	
	Rolling 3-Month Average[11]	—		0.15 µg/m³		
Visibility-Reducing Particles[14]	8-Hour	See footnote 14	Beta Attenuation and Transmittance through Filter Tape	No National Standards		
Sulfates	24-Hour	25 µg/m³	Ion Chromatography			
Hydrogen Sulfide	1-Hour	0.03 ppm (42 µg/m³)	Ultraviolet Fluorescence			
Vinyl Chloride[12]	24-Hour	0.01 ppm (26 µg/m³)	Gas Chromatography			

Source: CARB *Ambient Air Quality Standards*. May 4, 2016. Website: www.arb.ca.gov/sites/default/files/2020-07/aaqs2.pdf (accessed August 2021).

Footnotes are provided on the following page.

[1] California standards for O_3, CO (except 8-hour Lake Tahoe), SO_2 (1- and 24-hour), NO_2, and PM (PM_{10}, $PM_{2.5}$, and visibility-reducing particles) are values that are not to be exceeded. All others are not to be equaled or exceeded. California AAQS are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.

[2] National standards (other than for O_3 and PM and those based on the annual arithmetic mean) are not to be exceeded more than once a year. The ozone standard is attained when the fourth-highest 8-hour concentration measured at each site in a year, averaged over 3 years, is equal to or less than the standard. For PM_{10}, the 24-hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 µg/m^3 is equal to or less than 1. For $PM_{2.5}$, the 24-hour standard is attained when 98 percent of the daily concentrations, averaged over 3 years, are equal to or less than the standard. Contact the EPA for further clarification and current national policies.

[3] Concentration expressed first in the units in which it was promulgated. Equivalent units given in parentheses are based upon a reference temperature of 25°C and a reference pressure of 760 torr. Most measurements of air quality are to be corrected to a reference temperature of 25°C and a reference pressure of 760 torr; ppm in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.

[4] Any equivalent measurement method that can be shown to the satisfaction of the CARB to give equivalent results at or near the level of the air quality standard may be used.

[5] National Primary Standards: The levels of air quality necessary, with an adequate margin of safety to protect the public health.

[6] National Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.

[7] The reference method as described by the EPA. An "equivalent method" of measurement may be used but must have a "consistent relationship to the reference method" and must be approved by the EPA.

[8] On October 1, 2015, the national 8-hour O_3 primary and secondary standards were lowered from 0.075 to 0.070 ppm.

[9] On December 14, 2012, the national annual $PM_{2.5}$ primary standard was lowered from 15 µg/m^3 to 12.0 µg/m^3. The existing national 24-hour $PM_{2.5}$ standards (primary and secondary) were retained at 35 µg/m^3, as was the annual secondary standard of 15 µg/m^3. The existing 24-hour PM_{10} standards (primary and secondary) of 150 µg/m^3 also were retained. The form of the annual primary and secondary standards is the annual mean, averaged over 3 years.

[10] To attain the 1-hour standard, the 3-year average of the annual 98th percentile of the 1-hour daily maximum concentrations at each site must not exceed 100 ppb. Note that the national 1-hour standard is in units of parts per billion (ppb). California standards are in units of parts per million (ppm). To directly compare the national 1-hour standard to the California standards, the units can be converted from ppb to ppm. In this case, the national standard of 100 ppb is identical to 0.100 ppm.

[11] On June 2, 2010, a new 1-hour SO_2 standard was established, and the existing 24-hour and annual primary standards were revoked. To attain the 1-hour national standard, the 3-year average of the annual 99th percentile of the 1-hour daily maximum concentrations at each site must not exceed 75 ppb. The 1971 SO_2 national standards (24-hour and annual) remain in effect until 1 year after an area is designated for the 2010 standard, except that in areas designated as Nonattainment for the 1971 standards, the 1971 standards remain in effect until implementation plans to attain or maintain the 2010 standards are approved.

Note that the 1-hour national standard is in units of parts per billion (ppb). California standards are in units of parts per million (ppm). To directly compare the 1-hour national standard to the California standard, the units can be converted to ppm. In this case, the national standard of 75 ppb is identical to 0.075 ppm.

[12] CARB has identified lead and vinyl chloride as "toxic air contaminants" with no threshold level of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants.

[13] The national standard for lead was revised on October 15, 2008, to a rolling 3-month average. The 1978 lead standard (1.5 µg/m^3 as a quarterly average) remains in effect until 1 year after an area is designated for the 2008 standard, except that in areas designated as Nonattainment for the 1978 standard, the 1978 standard remains in effect until implementation plans to attain or maintain the 2008 standards are approved.

[14] In 1989, CARB converted both the general statewide 10 mi visibility standard and the Lake Tahoe 30 mi visibility standard to instrumental equivalents, which are "extinction of 0.23 per kilometer" and "extinction of 0.07 per kilometer" for the statewide and Lake Tahoe Air Basin standards, respectively.

°C = degrees Celsius
µg/m^3 = micrograms per cubic meter
AAQS = ambient air quality standards
CARB = California Air Resources Board
CO = carbon monoxide
EPA = United States Environmental Protection Agency
mg/m^3 = milligrams per cubic meter
mi = mile/miles
NO_2 = nitrogen dioxide
O_3 = ozone
PM = particulate matter
$PM_{2.5}$ = particulate matter less than 2.5 microns in size
PM_{10} = particulate matter less than 10 microns in size
ppb = parts per billion
ppm = parts per million
SO_2 = sulfur dioxide

Table B: Summary of Health and Environmental Effects of the Criteria Air Pollutants

Pollutant	Effects on Health and the Environment
Ozone (O_3)	• Respiratory symptoms • Worsening of lung disease leading to premature death • Damage to lung tissue • Crop, forest and ecosystem damage • Damage to a variety of materials, including rubber, plastics, fabrics, paint and metals
$PM_{2.5}$ (particulate matter less than 2.5 microns in aerodynamic diameter)	• Premature death • Hospitalization for worsening of cardiovascular disease • Hospitalization for respiratory disease • Asthma-related emergency room visits • Increased symptoms, increased inhaler usage
PM_{10} (particulate matter less than 10 microns in aerodynamic diameter)	• Premature death & hospitalization, primarily for worsening of respiratory disease • Reduced visibility and material soiling
Nitrogen Oxides (NO_X)	• Lung irritation • Enhanced allergic responses
Carbon Monoxide (CO)	• Chest pain in patients with heart disease • Headache • Light-headedness • Reduced mental alertness
Sulfur Oxides (SO_X)	• Worsening of asthma: increased symptoms, increased medication usage, and emergency room visits
Lead	• Impaired mental functioning in children • Learning disabilities in children • Brain and kidney damage
Hydrogen Sulfide (H_2S)	• Nuisance odor (rotten egg smell) • At high concentrations: headache & breathing difficulties
Sulfate	• Same as $PM_{2.5}$, particularly worsening of asthma and other lung diseases • Reduces visibility
Vinyl Chloride	• Central nervous system effects, such as dizziness, drowsiness & headaches • Long-term exposure: liver damage & liver cancer
Visibility Reducing Particles	• Reduced airport safety, scenic enjoyment, road safety, and discourages tourism
Toxic Air Contaminants About 200 chemicals have been listed as toxic air contaminants	• Cancer • Reproductive and developmental effects • Neurological effects

Source: CARB Common Air Pollutants. Website: www.arb.ca.gov/resources/common-air-pollutants (accessed August 2021).

CARB = California Air Resources Board

The annual average temperature varies little throughout the Basin, ranging from the low to middle 60s, measured in degrees Fahrenheit (°F). With a more pronounced oceanic influence, coastal areas show less variability in annual minimum and maximum temperatures than inland areas. The climatological station closest to the site with the most current available climate data is the Riverside Fire Station 3 (Western Regional Climate Center 2021). The monthly average maximum temperature recorded at this station ranged from 66.8°F in January to 94.4°F in August, with an annual average maximum of 79.5°F. The monthly average minimum temperature recorded at this station ranged from 39.1°F in January to 59.6°F in August, with an annual average minimum of 48.6°F. January is typically the coldest month, and July and August are typically the warmest months in this area of the Basin.

The majority of annual rainfall in the Basin occurs between November and April. Summer rainfall is minimal and is generally limited to scattered thundershowers in coastal regions and slightly heavier showers in the eastern portion of the Basin and along the coastal side of the mountains. Riverside Fire Station 3's monitored precipitation shows that average monthly rainfall varied from 2.20 inches in February to 0.04 inch in July, with an annual total of 10.21 inches. Patterns in monthly and yearly rainfall totals are unpredictable due to fluctuations in the weather.

The Basin experiences a persistent temperature inversion (increasing temperature with increasing altitude) as a result of the Pacific high. This inversion limits the vertical dispersion of air contaminants, holding them relatively near the ground. As the sun warms the ground and the lower air layer, the temperature of the lower air layer approaches the temperature of the base of the inversion (upper) layer until the inversion layer finally breaks, allowing vertical mixing with the lower layer. This phenomenon is observed in midafternoon to late afternoon on hot summer days, when the smog appears to clear up suddenly. Winter inversions frequently break by midmorning.

Winds in the project area blow predominantly from the south-southwest, with relatively low velocities. Wind speeds in the project area average about 5 miles per hour (mph). Summer wind speeds average slightly higher than winter wind speeds. Low average wind speeds, together with a persistent temperature inversion, limit the vertical dispersion of air pollutants throughout the Basin. Strong, dry, north, or northeasterly winds, known as Santa Ana winds, occur during the fall and winter months, dispersing air contaminants. The Santa Ana conditions tend to last for several days at a time.

The combination of stagnant wind conditions and low inversions produces the greatest pollutant concentrations. On days of no inversion or high wind speeds, ambient air pollutant concentrations are the lowest. During periods of low inversions and low wind speeds, air pollutants generated in urbanized areas are transported predominantly onshore into Riverside and San Bernardino Counties. In the winter, the greatest pollution problems are CO and nitrogen oxides (NO_X) because of extremely low inversions and air stagnation during the night and early morning hours. In the summer, the longer daylight hours and the brighter sunshine combine to cause a reaction between hydrocarbons and NO_X to form photochemical smog.

Description of Global Climate Change and Its Sources

Earth's natural warming process is known as the "greenhouse effect." This greenhouse effect compares the Earth and the atmosphere surrounding it to a greenhouse with glass panes. The glass allows solar radiation (sunlight) into Earth's atmosphere but prevents radiated heat from escaping, thus warming Earth's atmosphere. GHGs keep the average surface temperature of the Earth to approximately 60°F. However, excessive concentrations of GHGs in the atmosphere can result in increased global mean temperatures, with associated adverse climatic and ecological consequences (IPCC 2013a).

Scientists refer to the global warming context of the past century as the "enhanced greenhouse effect" to distinguish it from the natural greenhouse effect (Pew Center 2006). While the increase in temperature is known as "global warming," the resulting change in weather patterns is known as "global climate change." Global climate change (GCC) is evidenced in changes to global temperature rise, warming oceans, shrinking ice sheets, glacial retreat, decreased snow cover, sea level rise, declining Arctic sea ice, extreme weather events, and ocean acidification (IPCC 2014).

Higher temperatures, conducive to air pollution formation, could worsen air quality in California. While climate change may increase the concentration of ground-level ozone, the magnitude of the effect and, therefore, its indirect effects, are uncertain. If higher temperatures are accompanied by drier conditions, the potential for large wildfires could increase, which, in turn, would exacerbate air quality. Additionally, severe heat accompanied by drier conditions and poor air quality could increase the number of heat related deaths, illnesses, and asthma attacks throughout the state (CDPH 2014). However, if higher temperatures are accompanied by wetter, rather than drier conditions, the rains would temporarily clear the air of particulate pollution and reduce the incidence of large wildfires, thus reducing the pollution associated with wildfires. GHGs are present in the atmosphere naturally, are released by natural sources, or are formed from secondary reactions taking place in the atmosphere. The gases that are widely seen as the principal contributors to human-induced GCC are the following:[1]

- Carbon dioxide (CO_2);
- Methane (CH_4);
- Nitrous oxide (N_2O);
- Hydrofluorocarbons (HFCs);
- Perfluorocarbons (PFCs); and
- Sulfur hexafluoride (SF_6).

Over the last 200 years, human activities have caused substantial quantities of GHGs to be released into the atmosphere. These extra emissions are increasing GHG concentrations in the atmosphere and enhancing the natural greenhouse effect, which can cause global warming. Although GHGs produced by human activities include naturally occurring GHGs (e.g., CO_2, CH_4, and N_2O), some gases

[1] The greenhouse gases listed are consistent with the definition in Assembly Bill 32 (Government Code 38505), as discussed later in this section.

(e.g., HFCs, PFCs, and SF_6) are completely new to the atmosphere. Water vapor is a GHG, but is generally excluded from the list of GHGs because it is short-lived in the atmosphere and its atmospheric concentrations are largely determined by natural processes (e.g., oceanic evaporation). For the purposes of this air quality study, the term "GHGs" will refer collectively to the six gases identified in the bulleted list provided above.

These GHGs vary considerably in terms of global warming potential (GWP), which is a concept developed to compare the ability of each GHG to trap heat in the atmosphere relative to another gas. GWP is based on several factors, including the relative effectiveness of a gas in absorbing infrared radiation and the length of time that the gas remains in the atmosphere ("atmospheric lifetime"). The GWP of each gas is measured relative to CO_2, the most abundant GHG. The definition of GWP for a particular GHG is the ratio of heat trapped by one unit mass of the GHG to the ratio of heat trapped by one unit mass of CO_2 over a specified time period. For example, N_2O is from 265 to 310 times more potent at contributing to global warming than CO_2. GHG emissions are typically measured in terms of metric tons of CO_2 equivalents (MT CO_2e). Table C identifies the GWP for the three GHGs analyzed in this report. The EPA and CARB use GWP values from the 2007 IPCC Fourth Assessment Report. The IPCC has published the 2013 IPCC Fifth Assessment Report with updated GWP values.

Table C: Global Warming Potential for Selected Greenhouse Gases

Pollutant	Atmospheric Lifetime (Years)	Global Warming Potential (100-year)
Carbon Dioxide (CO_2)	~100[1]	1 (by definition)
Methane (CH_4)	12	25
Nitrous Oxide (N_2O)	114	298

Sources: *California's 2017 Climate Change Scoping Plan* (CARB 2017), IPCC Fifth Assessment Report (2013b), and *Climate Change 2007: The Physical Science Basis* (IPCC 2007).

[1] The EPA and CARB use global warming potential values from the IPCC Fourth Assessment Report (2007).

[2] CO_2 has a variable atmospheric lifetime and cannot be readily approximated as a single number.

CARB = California Air Resources Board
EPA = United States Environmental Protection Agency
IPCC = Intergovernmental Panel on Climate Change

Air Pollution Constituents and Attainment Status

CARB coordinates and oversees both State and federal air pollution control programs in the State. CARB oversees activities of local air quality management agencies and maintains air quality monitoring stations throughout the State in conjunction with the EPA and local air districts. CARB has divided the State into 15 air basins based on meteorological and topographical factors of air pollution. Data collected at these stations are used by CARB and the EPA to classify air basins as Attainment, Nonattainment, Nonattainment-Transitional, or Unclassified, based on air quality data for the most recent three calendar years compared with the AAQS.

Attainment areas may be the following:

- **Attainment/Unclassified ("Unclassifiable" in some lists).** These basins have never violated the air quality standard of interest or do not have enough monitoring data to establish Attainment or Nonattainment status.

- **Attainment-Maintenance (National Ambient Air Quality Standards [NAAQS] only).** These basins violated a NAAQS that is currently in use (were Nonattainment) in or after 1990, but now attain the standard and are officially redesignated as Attainment by the EPA with a Maintenance State Implementation Plan (SIP).
- **Attainment (usually only for California Ambient Air Quality Standards [CAAQS], but sometimes for NAAQS).** These basins have adequate monitoring data to show attainment, have never been Nonattainment, or, for NAAQS, have completed the official Maintenance period.

Nonattainment areas are imposed with additional restrictions as required by the EPA. The air quality data are also used to monitor progress in attaining air quality standards. Table D lists the attainment status for the criteria pollutants in the Basin.

Table D: Attainment Status of Criteria Pollutants in the South Coast Air Basin

Pollutant	State	Federal
O_3	Nonattainment (1-hour) Nonattainment (8-hour)	Extreme Nonattainment (1-hour) Extreme Nonattainment (8-hour)
PM_{10}	Nonattainment (24-hour) Nonattainment (Annual)	Attainment-Maintenance (24-hour)
$PM_{2.5}$	Nonattainment (Annual)	Serious Nonattainment (24-hour) Moderate Nonattainment (Annual)
CO	Attainment (1-hour) Attainment (8-hour)	Attainment-Maintenance (1-hour) Attainment-Maintenance (8-hour)
NO_2	Attainment (1-hour) Attainment (Annual)	Attainment/Unclassified (1-hour) Attainment-Maintenance (Annual)
SO_2	Attainment (1-hour) Attainment (24-hour)	Attainment/Unclassified (1-hour) Attainment/Unclassified (Annual)
Lead[1]	Attainment (30-day average)	Attainment (3-month rolling)
All Others	Attainment/Unclassified	N/A

Source: *National Ambient Air Quality Standards (NAAQS) and California Ambient Air Quality Standards (CAAQS) Attainment Status for South Coast Air Basin* (SCAQMD), Website:www.aqmd.gov/docs/default-source/clean-air-plans/air-quality-management-plans/naaqs-caaqs-feb2016.pdf (accessed August 2021).

[1] Only the Los Angeles County portion of the Basin is in nonattainment for lead.

CO = carbon monoxide
N/A = not applicable
NO_2 = nitrogen dioxide
O_3 = ozone
$PM_{2.5}$ = particulate matter less than 2.5 microns in size
PM_{10} = particulate matter less than 10 microns in size
SO_2 = sulfur dioxide

Regulatory Framework

Air quality and GHG standards and the regulatory framework are discussed below.

Federal Regulations

Pursuant to the Federal Clean Air Act (CAA) of 1970, the EPA established the NAAQS. The NAAQS were established for six major pollutants, termed "criteria" pollutants. Criteria pollutants are defined as those pollutants for which the federal and State governments have established AAQS, or criteria, for outdoor concentrations to protect public health.

The EPA has designated the Southern California Association of Governments (SCAG) as the Metropolitan Planning Organization responsible for ensuring compliance with the requirements of the CAA for the Basin.

The United States has historically had a voluntary approach to reducing GHG emissions; however, on April 2, 2007, the United States Supreme Court ruled that the EPA has the authority to regulate CO_2 emissions under the CAA. The Supreme Court ruled that GHGs fit within the CAA's definition of a pollutant and that the EPA did not have a valid rationale for not regulating GHGs. In December 2009, the EPA issued an endangerment finding for GHGs under the CAA.

On December 7, 2009, the EPA Administrator signed a final action under the CAA, finding that six GHGs (i.e., CO_2, CH_4, N_2O, HFCs, PFCs, and SF_6) constitute a threat to public health and welfare and that the combined emissions from motor vehicles cause and contribute to GCC.

In 2012, the EPA and the National Highway Traffic Safety Administration promulgated new rules to set GHG emission and fuel economy standards for new motor vehicles. The rules created requirements for model years 2017–2021 and 2022–2025, which would become more stringent each year, achieving greater GHG reductions over time. On March 31, 2020, the agencies issued the Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule (EPA 2021d) that increases the stringency of Corporate Average Fuel Economy Standard (CAFÉ) and CO_2 emissions standards by 1.5 percent each year through model year 2026.

Multistate

The Western Regional Climate Action Initiative. The Western Regional Climate Action Initiative is a partnership among seven states including California and four Canadian provinces to implement a regional, economy-wide cap-and-trade system to reduce global warming pollution. The Western Regional Climate Action Initiative will cap GHG emissions from the region's electricity, industrial, and transportation sectors with the goal to reduce the heat trapping emissions that cause global warming to 15 percent below 2005 levels by 2020. When the Western Regional Climate Action Initiative adopted this goal in 2007, it estimated this would require 2007 levels to be reduced worldwide between 50 percent and 85 percent by 2050. California is working closely with the other states and provinces to design a regional GHG reduction program that includes a cap-and-trade approach.

CARB has implemented a cap-and-trade program that is also intended to link California and the other member states and provinces. The cap-and-trade regulation, which is a key element of California's climate plan, took effect in January 2012 and compliance obligation began in January 2013. The cap-and-trade program sets a statewide limit on sources responsible for 85 percent of California's GHG emissions and establishes a price signal needed to drive long-term investment in cleaner fuels and more efficient use of energy. As of January 1, 2014, California's cap-and-trade program is linked to Quebec's pursuant to the *Agreement Between the CARB and the Gouvernement du Québec Concerning the Harmonization and Integration of Cap-and-Trade Programs Reducing Greenhouse Gas Emissions*, in accordance with the direction in CARB Resolution 13-7 (CARB 2013). As of January 1, 2018, California's cap-and-trade program and Québec's program linked with Ontario's cap-and-trade program. However, on July 3, 2018, the Ontario government revoked its

cap-and-trade regulation. With Ontario's withdrawal from the linked program, California and Québec will work together to ensure that the environmental integrity and stringency of the cap-and-trade program/market is sustained (CARB 2018).

The program is designed to provide covered entities the flexibility to seek out and implement the lowest-cost options to reduce emissions. The first phase of the cap-and-trade regulation included electricity generated in and imported into California, large combustion sources (i.e., generally those emitting more than 25,000 MT CO_2e per year), and certain industrial sectors. The second phase added providers of transportation fuels and other combustion fuels (e.g., natural gas, propane) to the cap-and-trade program.

Pacific Coast Action Plan on Climate and Energy. On October 28, 2013, the Governors of California, Oregon, and Washington and the Premier of British Columbia signed a clean energy pact, known as the Pacific Coast Action Plan on Climate and Energy. Although the Pacific Coast Action Plan does not impose legally enforceable obligations and lacks a specific schedule for implementation, the pact sets out a number of goals and aspirational measures. The Pacific Coast Action Plan calls upon each of the parties to undertake a number of measures to address the use of carbon-based fuels in the transportation sector, including the adoption or maintenance of low-carbon fuel standards, the development of targets and action plans in order to encourage public and private investment in low-carbon commercial fleets that use alternative fields, and the expansion of the sale of zero-emissions vehicles to a goal of 10 percent of new vehicle purchases by 2016.

California Air Resources Board

In 1967, the State Legislature passed the Mulford-Carrell Act, which combined two Department of Health bureaus (i.e., the Bureau of Air Sanitation and the Motor Vehicle Pollution Control Board) to establish the CARB. Since its formation, CARB has worked with the public, the business sector, and local governments to find solutions to the State's air pollution problems. California adopted the CCAA in 1988. CARB administers the CAAQs for the 10 air pollutants designated in the CCAA. These State air pollutants are the six criteria pollutants designated by the CAA as well as four others: visibility-reducing particulates, H_2S, sulfates, and vinyl chloride.

The California Global Warming Solutions Act of 2006, widely known as Assembly Bill (AB) 32, requires CARB to develop and enforce regulations for the reporting and verification of statewide GHG emissions. CARB was directed to set a statewide GHG emissions limit and set a timeline for adopting a scoping plan for achieving GHG reductions in a technologically and economically feasible manner.

The heart of the bill is the requirement that statewide GHG emissions be reduced to 1990 levels by 2020. The bill requires CARB to adopt rules and regulations in an open public process to achieve the maximum technologically feasible and cost-effective GHG reductions.

In 2016, the Legislature passed and Governor Jerry Brown signed, Senate Bill (SB) 32 and AB 197. SB 32 affirms the importance of addressing climate change by codifying into statute the GHG emissions reductions target of at least 40 percent below 1990 levels by 2030 contained in Governor Brown's April 2015 Executive Order (EO) B-30-15. SB 32 builds on AB 32 and keeps California on the

path toward achieving the State's 2050 objective of reducing emissions to 80 percent below 1990 levels, consistent with an IPCC analysis of the emissions trajectory that would stabilize atmospheric GHG concentrations at 450 ppm CO_2e and reduce the likelihood of catastrophic impacts from climate change. The companion bill to SB 32, AB 197, provides additional direction to CARB related to the adoption of strategies to reduce GHG emissions.

In December 2017, CARB adopted "California's 2017 Climate Change Scoping Plan: The Strategy for Achieving California's 2030 Greenhouse Gas Target" (CARB 2017) that describes the actions the State will take to achieve the SB 32 climate goal of reducing GHG emissions at least 40 percent below 1990 levels by 2030. The 2017 Scoping Plan includes input from a range of State agencies and is the result of a 2-year development process, including extensive public and stakeholder outreach, designed to ensure that California's climate and air quality efforts continue to improve public health and drive development of a more sustainable economy. It outlines an approach that cuts across economic sectors to combine GHG reductions with reductions of smog-causing pollutants, while also safeguarding public health and economic goals. The 2017 Scoping Plan reflects the direction from the Legislature on the Cap-and-Trade Program, as described in AB 398, the need to extend key existing emissions reductions programs, and acknowledges the parallel actions required under AB 617 to strengthen monitoring and reduce air pollution at the community level.

The actions identified in the 2017 Scoping Plan can reduce overall GHG emissions in California and deliver strong policy signals that will continue to drive investment and certainty in a low-carbon economy. The 2017 Scoping Plan builds upon the successful framework established by the original Scoping Plan and the 2014 Scoping Plan, while also identifying new, technologically feasibility and cost-effective strategies to ensure that California meets its GHG reduction targets in a way that promotes and rewards innovation, continues to foster economic growth, and delivers improvements to the environment and public health, including in disadvantaged communities.

Although the 2017 Scoping Plan does not impose any specific mandates or policies that specifically apply to individual development projects such as the proposed project, the Scoping Plan encourages local municipalities to update building codes and establish sustainable development practices for accommodating future growth. Key policies that involve the residential and commercial building sectors that are indirectly applicable to the proposed Project include the implementation of SB 275 (promoting infill development and high density housing in high quality transit areas), implementing green building practices (i.e., the California Green Building Standards Code), energy efficiency and water conservation policies, and waste diversion efforts.

Senate Bill 97 and CEQA Guidelines

In August 2007, the Legislature adopted SB 97, requiring the Office of Planning and Research (OPR) to prepare and transmit new California Environmental Quality Act (CEQA) guidelines for the mitigation of GHG emissions or the effects of GHG emissions to the California Natural Resources Agency. OPR submitted its proposed guidelines to the Secretary for Natural Resources on April 13, 2009, and the *CEQA Guidelines Amendments* were adopted on December 30, 2009 and became effective on March 18, 2010.

The *CEQA Guidelines Amendments* do not specify a threshold of significance for GHG emissions or prescribe assessment methodologies or specific mitigation measures. Instead, the amendments encourage lead agencies to consider many factors in performing a CEQA analysis but rely on the lead agencies in making their own significance determinations based upon substantial evidence. The *CEQA Guidelines Amendments* also encourage public agencies to make use of programmatic mitigation plans and programs from which to tier when they perform individual project analyses.

The *CEQA Guidelines Amendments* require a lead agency to make a good-faith effort based on the extent possible on scientific and factual data to describe, calculate or estimate the amount of GHG emissions resulting from a project. The *CEQA Guidelines Amendments* give discretion to the lead agency whether to (1) use a model or methodology to quantify GHG emissions resulting from a project and which model or methodology to use and/or (2) rely on a qualitative analysis or performance-based standards. The California Natural Resources Agency is required to periodically update the guidelines to incorporate new information or criteria established by CARB pursuant to AB 32.

California Green Building Standards

The California Green Building Standards Code, which is Part 11 of the California Code of Regulations, is commonly referred to as the CALGreen Code. The first edition of the CALGreen Code was released in 2008 and contained only voluntary standards. The 2019 CALGreen Code was updated in 2019, became effective on January 1, 2020, and applies to non-residential and residential developments. The CALGreen Code contains requirements for construction site selection, storm water control during construction, construction waste reduction, indoor water use reduction, material selection, natural resource conservation, site irrigation conservation, and more. The CALGreen Code provides for design options allowing the designer to determine how best to achieve compliance for a given site or building condition. The CALGreen Code also requires building commissioning, which is a process for the verification that all building systems, such as heating and cooling equipment and lighting systems, function at their maximum efficiency.

Regional Air Quality Planning Framework

SCAG is a council of governments for Imperial, Los Angeles, Orange, Riverside, San Bernardino, and Ventura Counties. SCAG is a regional planning agency and a forum for regional issues relating to transportation, the economy and community development, and the environment. Although SCAG is not an air quality management agency, it is responsible for developing transportation, land use, and energy conservation measures that affect air quality.

On September 3, 2020, the Regional Council of SCAG adopted *Connect SoCal*, also known as the *2020–2045 Regional Transportation Plan/Sustainable Communities Strategy: A Plan for Mobility, Accessibility, Sustainability, and High Quality of Life* (a.k.a., *2020–2045 RTP/SCS*). The *2020–2045 RTP/SCS* is a long-range visioning plan that balances future mobility and housing needs with economic, environmental and public health goals. Connect SoCal embodies a collective vision for the region's future and is developed with input from local governments, county transportation commissions (CTCs), tribal governments, non-profit organizations, businesses and local stakeholders within the Counties of Imperial, Los Angeles, Orange, Riverside, San Bernardino, and Ventura.

South Coast Air Quality Management District

The SCAQMD is the agency principally responsible for comprehensive air pollution control in the Basin. To that end, the SCAQMD, a regional agency, works directly with SCAG, county transportation commissions, and local governments, and cooperates actively with State and federal government agencies. The SCAQMD develops air quality-related rules and regulations, establishes permitting requirements, inspects emissions sources, and provides regulatory enforcement through such measures as educational programs or fines, when necessary.

Regional Air Quality Management Plan

SCAQMD and SCAG are responsible for formulating and implementing the AQMP for the Basin. The main purpose of an AQMP is to bring the area into compliance with federal and State air quality standards. SCAQMD prepares a new AQMP every three years, updating the previous plan and a 20-year horizon.

The latest plan is the 2016 AQMP, which incorporates the latest scientific and technological information and planning assumptions, including the *2020–2045 RTP/SCS* and updated emissions inventory methodologies for various source categories (SCAQMD 2017). The 2016 AQMP includes the integrated strategies and measures needed to meet the NAAQS, implementation of new technology measures, and demonstrations of attainment of the 1-hour and 8-hour O_3 NAAQS as well as the latest 24-hour and annual $PM_{2.5}$ standards. Key elements of the 2016 AQMP include the following:

- Calculation and credit for co-benefits from other planning efforts (e.g., climate, energy, and transportation).
- A strategy with fair-share emission reductions at the federal, State, and local levels.
- Investment in strategies and technologies meeting multiple air quality objectives.
- Identification of new partnerships and significant funding for incentives to accelerate deployment of zero and near-zero technologies.
- Enhanced socioeconomic assessment, including an expanded environmental-justice analysis.
- Attainment of the 24-hour $PM_{2.5}$ standard in 2019 with no additional measures.
- Attainment of the annual $PM_{2.5}$ standard by 2025 with implementation of a portion of the O_3 strategy.
- Attainment of the 1-hour O_3 standard by 2022 with no reliance on “black box” future technology (CAA Section 182(e)(5) measures).

SCAQMD adopts rules and regulations to implement portions of the AQMP. Several of these rules may apply to project construction or operation. For example, SCAQMD Rule 403 requires the implementation of the best-available fugitive dust control measure during active construction periods capable of generating fugitive dust emissions from on-site earthmoving activities, construction/demolition activities, and construction equipment travel on paved and unpaved roads.

Although the SCAQMD is responsible for regional air quality planning efforts, it does not have the authority to directly regulate the air quality issues associated with new development projects within the Basin, such as the proposed project. Instead, SCAQMD published the *CEQA Air Quality Handbook* (SCAQMD 1993) to assist lead agencies, as well as consultants, project proponents, and other interested parties in evaluating potential air quality impacts of projects proposed in the Basin. The *CEQA Air Quality Handbook* provides standards, methodologies, and procedures for conducting air quality analyses in Environmental Impact Reports and was used extensively in the preparation of this analysis. SCAQMD is currently in the process of replacing the *CEQA Air Quality Handbook* (1993) with the *Air Quality Analysis Guidance Handbook* (SCAQMD 2021).

To assist the CEQA practitioner in conducting an air quality analysis in the interim while the replacement *Air Quality Analysis Guidance Handbook* is being prepared, supplemental guidance/ information is provided on the SCAQMD website and includes (1) on-road vehicle emission factors, (2) background CO concentrations, (3) localized significance thresholds (LSTs), (4) mitigation measures and control efficiencies, (5) mobile-source toxics analysis, (6) off-road mobile-source emission factors, (7) $PM_{2.5}$ significance thresholds and calculation methodology, and (8) updated SCAQMD Air Quality Significance Thresholds. SCAQMD also recommends using approved models to calculate emissions from land use projects, such as the California Emissions Estimator Model (CalEEMod). These recommendations were followed in the preparation of this analysis.

The following SCAQMD rules and regulations would apply to the proposed project:

- SCAQMD Rule 403 (SCAQMD 2005) requires projects to incorporate fugitive dust control measures.
- SCAQMD Rule 1113 (SCAQMD 2016) limits the volatile organic compound (VOC) content of architectural coatings.

Local Regulations

City of Fontana General Plan

The Sustainability and Resilience element of the City's General Plan was updated in 2018 in an effort to focused especially on the City's resource efficiency and planning for climate change. The following are the goals and policies established in the Sustainability and Resilience Element:

- **Goal 1.** Fontana is a regional leader in sustainability and resilience with an effective "Sustainable Fontana" program.
    - Policy: Support establishment of a "Sustainable Fontana" program.
- **Goal 2.** City government facilities and operations are models of resource efficiency.
    - Incorporate goals for resource efficiency in municipal facilities and operations into the City Code.
    - Continue organizational and operational improvements to maximize energy and resource efficiency and reduce waste.

- **Goal 3.** Renewable sources of energy, including solar and wind, and other energy-conservation strategies are available to city households and businesses.
    - Support measures that permit small-scale wind and solar installations and other renewable options with appropriate regulations.
- **Goal 4.** Fontana meets the greenhouse gas reduction goals for 2030 and subsequent goals set by the State.
    - Continue to collaborate with SBCTA on greenhouse gas inventories and climate action planning.
- **Goal 5.** Fontana is an Inland Empire leader in energy-efficient energy development and retrofits.
    - Promote energy-efficient development in Fontana.
    - Meet State energy-efficiency goals for new construction.
- **Goal 6.** Green building techniques are used in new development and retrofits.
    - Promote green building through guidelines, awards and nonfinancial incentives.
- **Goal 7.** Conservation of water resources with best practices such as drought-tolerant plant species, recycled water, greywater systems, has become a way of life in Fontana.
    - Continue to promote and implement best practices to conserve water.

THRESHOLDS OF SIGNIFICANCE

Certain air districts (e.g., SCAQMD) have created guidelines and requirements to conduct air quality analyses. SCAQMD's current guidelines, the *CEQA Air Quality Handbook* (SCAQMD 1993) with associated updates, were followed in this assessment of air quality and climate impacts for the proposed project.

Based on the *State CEQA Guidelines*, Appendix G (Public Resources Code Sections 15000–15387), a project would normally be considered to have a significant effect on air quality if it would violate any CAAQS, contribute substantially to an existing air quality violation, expose sensitive receptors to substantial pollutants concentrations, or conflict with adopted environmental plans and goals of the community in which it is located.

POLLUTANTS WITH REGIONAL EFFECTS

SCAQMD has established daily emissions thresholds for construction and operation of a proposed project within the Basin. The emissions thresholds were established based on the attainment status of the Basin with regard to air quality standards for specific criteria pollutants. Because the concentration standards were set at a level that protects public health with an adequate margin of safety (SCAQMD 2017), these emissions thresholds are regarded as conservative and would overstate an individual project's contribution to health risks.

Regional Emissions Thresholds

Table E lists the CEQA significance thresholds for construction and operational emissions established for the Basin.

Table E: Regional Thresholds for Construction and Operational Emissions

Emissions Source	Pollutant Emissions Thresholds (lbs/day)					
	VOCs	NO_X	CO	PM_{10}	$PM_{2.5}$	SO_X
Construction	75	100	550	150	55	150
Operations	55	55	550	150	55	150

Source: SCAQMD Air Quality Significance Thresholds (SCAQMD 2019)

CO = carbon monoxide
lbs/day = pounds per day
NO_X = nitrogen oxides
$PM_{2.5}$ = particulate matter less than 2.5 microns in size
PM_{10} = particulate matter less than 10 microns in size
SCAQMD = South Coast Air Quality Management District
SO_X = sulfur oxides
VOC = volatile organic compound

Projects in the Basin with construction- or operation-related emissions that exceed any of their respective emission thresholds would be considered significant under SCAQMD guidelines. These thresholds, which SCAQMD developed and which apply throughout the Basin, apply as both project and cumulative thresholds. If a project exceeds these standards, it is considered to have a project-specific and cumulative impact.

Local Microscale Concentration Standards

The significance of localized project impacts under CEQA depends on whether ambient CO levels in the vicinity of the project are above or below State and federal CO standards. Because ambient CO levels are below the standards throughout the Basin, a project would be considered to have a significant CO impact if project emissions result in an exceedance of one or more of the 1-hour or 8-hour standards. The following are applicable local emission concentration standards for CO:

- California State 1-hour CO standard of 20 ppm; and
- California State 8-hour CO standard of 9 ppm.

LOCALIZED IMPACTS ANALYSIS

SCAQMD published its *Final Localized Significance Threshold Methodology* in June 2003 and updated it in July 2008 (SCAQMD 2008), recommending that all air quality analyses include an assessment of both construction and operational impacts on the air quality of nearby sensitive receptors. LSTs represent the maximum emissions from a project site that are not expected to result in an exceedance of the NAAQS or the CAAQS for CO, NO_2, PM_{10} and $PM_{2.5}$, as shown in Table A.

LSTs are based on the ambient concentrations of that pollutant within the project's Source Receptor Area (SRA) and the distance to the nearest sensitive receptor. For this project, the appropriate SRA is the Central San Bernardino Valley area (SRA 34). Sensitive receptors include residences, schools, hospitals, and similar uses that are sensitive to adverse air quality. As described above, the closest sensitive receptors are the single-family homes approximately 25 feet south of the project boundary

as well as, single-family homes west across Mango Avenue approximately 45 feet east of the project boundary.

The SCAQMD has issued LST guidance, which defines a buffer zone of 82 feet (25 meters) from the project boundary for evaluating LST's. Since the nearest receptors are located approximately 5 feet from the project boundary, the LST minimum receptor distance of 25 meters was used in this analysis (SCAQMD 2008). LSTs represent the maximum emissions from a project that would not cause or contribute to an exceedance of the most stringent applicable NAAQS or CAAQS, and are developed based on the ambient concentrations of that pollutant for each SRA.

If the total acres disturbed is less than or equal to 5 acres per day, then the SCAQMD's screening look-up tables can be used to determine if a project has the potential to result in a significant impact. The project site is 6.45 acres; however, this analysis evaluated construction activities with CalEEMod using maximum daily disturbed area of 1.5 acres. This approach is based on the SCAQMD's guidance for evaluating the amount of construction equipment and project area (SCAQMD 2008). The project operational evaluation of LSTs assumes that vehicles would travel over the approximately 5-acre area and the minimum distance of 82 feet. Table F lists the emissions thresholds that apply during project construction and operation.

Table F: SCAQMD Localized Significance Thresholds

Emissions Source Category	Pollutant Emissions (lbs/day)			
	NO_X	CO	PM_{10}	$PM_{2.5}$
Construction (1.5 acres, 82-foot distance)	144	820	6	4
Operations (5 acres, 82-foot distance)	270	1,746	4	2

Source: *Final Localized Significance Threshold Methodology* (SCAQMD 2008).
Note: SRA 34 is Central San Bernardino Valley.

CO = carbon monoxide
lbs/day = pounds per day
NO_X = nitrogen oxides
$PM_{2.5}$ = particulate matter less than 2.5 microns in size
PM_{10} = particulate matter less than 10 microns in size
SRA = Source Receptor Area

GLOBAL CLIMATE CHANGE

State CEQA Guidelines Section 15064(b) provides that the "determination of whether a project may have a significant effect on the environment calls for careful judgment on the part of the public agency involved, based to the extent possible on scientific and factual data," and further states that an "ironclad definition of significant effect is not always possible because the significance of an activity may vary with the setting."

Appendix G of the *State CEQA Guidelines* includes significance thresholds for GHG emissions. A project would normally have a significant effect on the environment if it would do either of the following:

- Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment; and/or
- Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs.

Currently, there is no statewide GHG emissions threshold that has been used to determine the potential GHG emissions impacts of a project. Threshold methodology and thresholds are still being developed and revised by air districts in California.

To provide guidance to local lead agencies on determining significance for GHG emissions in their CEQA documents, SCAQMD convened a GHG CEQA Significance Threshold Working Group (Working Group) in 2008. This Working Group proposed a tiered approach for evaluating GHG emissions for development projects where SCAQMD is not the lead agency. The applicable tier for this project is Tier 3, which states that if GHG emissions are less than 3,000 MT CO_2e per year, project-level and cumulative GHG emissions would be less than significant. However, this threshold was developed to meet the 2020 GHG emissions goals.

To be consistent with State goals detailed in SB 32, EO B-30-15, and EO S-3-05 to reduce GHG emissions by 40 percent below 1990 levels by 2030, a scaled screening GHG threshold can be developed for an assumed opening year of 2023, which is when the proposed project is anticipated to be operational. Though the SCAQMD has not published a quantified threshold beyond 2020, a threshold of 2,640 MT CO_2e per year would be the appropriate scaled GHG threshold for the buildout year of 2023 based on the GHG reduction goals of SB 32 and EO B-30-15. This is calculated as: $2,640 = 3,000 – ((2024 – 2020) \times \{[3,000 – 3,000 \times (1 – 40\%)] \div 10\})$.

IMPACTS AND MITIGATION MEASURES

Emissions would include criteria air pollutants and GHG emissions. The sections below describe the proposed project's consistency with applicable air quality plans, estimated project emissions, and the significance of impacts with respect to SCAQMD thresholds.

Air Quality Impacts

Consistency with Applicable Air Quality Plans

A consistency determination plays an essential role in local-agency project review by linking local planning and unique individual projects to the air quality plans. A consistency determination fulfills the CEQA goal of fully informing local-agency decision-makers of the environmental costs of the project under consideration at a stage early enough to ensure that air quality concerns are addressed. Only new or amended General Plan elements, Specific Plans, and significantly unique projects need to undergo a consistency review due to the air quality plan strategy being based on projections from local General Plans.

The AQMP is based on regional growth projections developed by SCAG. The proposed project is a residential development that would not house more than 1,000 persons, occupy more than 40 acres of land, or encompass more than 650,000 square feet of floor area. Thus, the proposed project would not be defined as a regionally significant project under CEQA; therefore, it does not meet SCAG's Intergovernmental Review criteria.

The proposed land use is not consistent with the City's General Plan designation and would require a General Plan Amendment (GPA). The existing site's land use is designated Community Commercial (C-C) under the City's General Plan and is zoned "Specific Plan." The proposed project anticipates

processing of a GPA, Specific Plan Amendment (SPA), and zone change (ZC) to allow the development of residential uses on the project site. The proposed project would result in the development of 107 residential units, which are needed to meet the residential housing needs forecast as part of the City's General Plan. As such, the proposed project is consistent with the regional residential growth assumptions assumed for the City, which would be consistent with the SCAG Regional Comprehensive Plan Guidelines and the SCAQMD AQMP.

Pursuant to the methodology provided in Chapter 12 of the 1993 SCAQMD *CEQA Air Quality Handbook*, consistency with the Basin 2016 AQMP is affirmed when a project would not increase the frequency or severity of an air quality standards violation or cause a new violation, and is consistent with the growth assumptions in the AQMP. Consistency review is presented as follows:

1. The project would result in short-term construction and long-term operational pollutant emissions that are all less than the CEQA significance emissions thresholds established by SCAQMD, as demonstrated above. Therefore, the project would not result in an increase in the frequency or severity of an air quality standard violation or cause a new air quality standard violation.
2. The *CEQA Air Quality Handbook* (SCAQMD 1993) 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, electricity-generating facilities, petroleum and gas refineries, designation of oil-drilling districts, water ports, solid-waste disposal sites, and offshore-drilling facilities; therefore, the proposed project is not defined as significant.

Based on the consistency analysis presented above, the proposed project would be consistent with the regional AQMP.

Criteria Pollutant Analysis

The Basin is designated as nonattainment for O_3 and $PM_{2.5}$ for federal standards and nonattainment for O_3, PM_{10}, and $PM_{2.5}$ for State standards. The SCAQMD's nonattainment status is attributed to the region's development history. Past, present, and future development projects contribute to the region's adverse air quality impacts on a cumulative basis. By its very nature, air pollution is largely a cumulative impact. No single project is sufficient in size to, by itself, result in nonattainment of ambient air quality standards. Instead, a project's individual emissions contribute to existing cumulatively significant adverse air quality impacts. If a project's contribution to the cumulative impact is considerable, then its impact on air quality would be considered significant.

In developing thresholds of significance for air pollutants, the SCAQMD considered the emission levels for which a project's individual emissions would be cumulatively considerable. If a project exceeds the identified significance thresholds, its emissions would be cumulatively considerable, resulting in significant adverse air quality impacts to the region's existing air quality conditions.

Construction Emissions. Construction activities produce combustion emissions from various sources (utility engines, tenant improvements, and motor vehicles transporting the construction crew). Exhaust emissions from construction activities envisioned on-site would vary daily as construction activity levels change.

The construction analysis includes estimating the construction equipment that would be used during each construction activity, the hours of use for that construction equipment, the quantities of earth and debris to be moved, and the on-road vehicle trips (e.g., worker, soil-hauling, and vendor trips). The proposed earthwork for the project assumes the site would be balanced (no import or export needed). CalEEMod defaults are assumed for the construction activities, off-road equipment, and on-road construction fleet mix and trip lengths. It is expected that construction would begin in May 2022 and be completed between June 2023 and December 2023, a duration of 13 to 19 months. As a conservative approach, a 13-month construction schedule was used. Table G lists the tentative project construction schedule.

Table G: Tentative Project Construction Schedule

Phase Name	Phase Start Date	Phase End Date	Number of Days
Site Preparation	5/2/2022	5/13/2022	10
Grading	5/14/2022	6/10/2022	20
Building Construction	6/11/2022	4/28/2023	230
Paving	4/29/2023	5/26/2023	20
Architectural Coating	5/27/2023	6/23/2023	20

Source: Estimated by LSA Associates, Inc. from the project information provided (August 2021).

The most recent version of CalEEMod (Version 2020.4.0) was used to develop the construction equipment inventory and calculate the construction emissions. Table H lists the estimated construction equipment that would be used during project construction as estimated by CalEEMod default values. The CalEEMod output is included as Attachment B.

Table H: Diesel Construction Equipment Used by Construction Phase

Construction Phase	Off-Road Equipment Type	Off-Road Equipment Unit Amount	Hours Used per Day	Horsepower	Load Factor
Site Preparation	Rubber-Tired Dozers	3	8	247	0.4
	Tractors/Loaders/Backhoes	1	8	97	0.37
Grading	Graders	1	8	187	0.41
	Excavators	1	8	158	0.38
	Rubber Tired Dozers	1	8	247	0.4
	Tractors/Loaders/Backhoes	3	8	97	0.37
Building Construction	Cranes	1	7	231	0.29
	Forklifts	3	8	89	0.2
	Generator Sets	1	8	84	0.74
	Tractors/Loaders/Backhoes	3	7	97	0.37
	Welders	1	8	46	0.45
Paving	Pavers	2	8	130	0.42
	Paving Equipment	1	8	132	0.36
	Rollers	2	8	80	0.38
Architectural Coating	Air Compressors	1	6	78	0.48

Source: Compiled by LSA Associates, Inc. using CalEEMod (California Emissions Estimator Model) defaults (August 2021).

The criteria pollutant emission rates shown in Table I are from the CalEEMod output tables listed as "Mitigated Construction," even though the only measures that have been applied to the analysis are the required construction emissions control measures, or standard conditions. They are also the combination of the on- and off-site emissions and the greater of summer and winter emissions. Each respective construction phase was evaluated for emissions and measured against the SCAQMD peak daily thresholds.

The project would include specific components that were included in CalEEMod. The project would construct 107 townhomes which include 214 parking spaces and 56 guest parking spaces. The project would grade and level the existing 6.45-acre lot. All construction equipment utilizing 50 or more horsepower would utilize, at minimum, Tier 2 engines. The project would be consistent with SCAQMD's Rule 403 Fugitive Dust Control Measures, discussed in further detail below.

Table I: Short-Term Regional Construction Emissions

Construction Phase	Total Regional Pollutant Emissions (lbs/day)							
	VOCs	NO_X	CO	SO_X	Fugitive PM_{10}	Exhaust PM_{10}	Fugitive $PM_{2.5}$	Exhaust $PM_{2.5}$
Site Preparation	1	34	24	<1	9	1	5	1
Grading	1	26	20	<1	3	1	2	1
Building Construction	2	24	22	<1	1	1	0	1
Paving	1	20	18	<1	0	1	<1	1
Architectural Coating	34	1	2	<1	0	<1	<1	<1
Peak Daily	**34**	**34**	**24**	**<1**	**10**		**6**	
SCAQMD Threshold	**75**	**100**	**550**	**150**	**150**		**55**	
Exceeds Threshold?	**No**	**No**	**No**	**No**	**No**		**No**	

Source: Compiled by LSA Associates, Inc. (August 2021).
PM_{10} and $PM_{2.5}$ fugitive emissions are from the Mitigated results; the only "mitigation" measures applied in this modeling are required dust control measures per SCAQMD Rule 403.

CO = carbon monoxide
lbs/day = pounds per day
NO_X = nitrogen oxides
$PM_{2.5}$ = particulate matter less than 2.5 microns in size
PM_{10} = particulate matter less than 10 microns in size
SCAQMD = South Coast Air Quality Management District
SO_X = sulfur oxides
VOCs = volatile organic compounds

As shown in Table I, no exceedances of any criteria pollutants are expected. Standard measures are documented in the CalEEMod output in Attachment B.

Fugitive Dust. Fugitive dust emissions are generally associated with land clearing and exposure of soils to the air and wind, as well as cut-and-fill grading operations. Dust generated during construction varies substantially on a project-by-project basis, depending on the level of activity, the specific operations, and weather conditions at the time of construction.

The construction calculations prepared for this project assumed that dust control measures (watering a minimum of two times daily consistent with SCAQMD Rule 403) would be employed to reduce emissions of fugitive dust during site grading. Furthermore, all construction would need to comply with SCAQMD Rule 403 regarding the emission of fugitive dust. Table I lists total

construction emissions (i.e., fugitive dust emissions and construction equipment exhausts) that have incorporated the following Rule 403 measures that would be implemented to significantly reduce PM_{10} emissions from construction:

- Water active sites at least twice daily (locations where grading is to occur shall be thoroughly watered prior to earthmoving).
- Cover all trucks hauling dirt, sand, soil, or other loose materials, or maintain at least 2 feet (0.6 meter) of freeboard (vertical space between the top of the load and the top of the trailer) in accordance with the requirements of California Vehicle Code Section 23114.
- Reduce traffic speeds on all unpaved roads to 15 miles per hour or less.

These Rule 403 measures were incorporated in the CalEEMod analysis.

Architectural Coatings. Architectural coatings contain VOCs that are part of the O_3 precursors. Based on the proposed project, it is estimated that application of the architectural coatings for the proposed peak construction day would result in a peak of 34 pounds per day of VOCs. Therefore, VOC emissions from architectural-coating application would not exceed the SCAQMD VOC threshold of 75 pounds per day.

Construction Localized Impacts Analysis. Table J shows the portion of the construction emissions that would be produced on the project site compared to the LSTs. Table J shows that the localized construction emissions would not result in a locally significant air quality impact.

Table J: Construction Localized Impacts Analysis

Emissions Sources	Pollutant Emissions (lbs/day)			
	NO_X	**CO**	**PM_{10}**	**$PM_{2.5}$**
On-Site Emissions	34	23	3	2
LST	**144**	**820**	**6**	**4**
Exceeds Threshold?	**No**	**No**	**No**	**No**

Source: Compiled by LSA Associates, Inc. (August 2021).

Note: Source Receptor Area 34 is Central San Bernardino Valley, 1.5 acres, receptors at 82 feet.

CO = carbon monoxide
lbs/day = pounds per day
NO_X = nitrogen oxides
LST = localized significance threshold
$PM_{2.5}$ = particulate matter less than 2.5 microns in size
PM_{10} = particulate matter less than 10 microns in size

Odors from Construction Activities. Heavy-duty equipment in the project area during construction would emit odors, primarily from the equipment exhaust. However, the construction-produced odors would cease to occur after individual construction is completed. No other sources of objectionable odors have been identified for the proposed project and no mitigation measures are required.

SCAQMD Rule 402 regarding nuisances 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 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."*

The proposed uses are not anticipated to emit any objectionable odors. Therefore, objectionable odors posing a health risk to potential on-site and existing off-site uses would not occur as a result of the proposed project.

Naturally Occurring Asbestos. The proposed project site is in San Bernardino County, which is among the counties found to have serpentine and ultramafic rock in their soils (California Department of Conservation 2020). However, according to the California Geological Survey, no such rock has been identified in the project vicinity. Therefore, the potential risk for naturally occurring asbestos during project construction is small and less than significant.

Construction Emissions Conclusions. Tables I and J show that daily regional construction emissions would not exceed the daily thresholds of any criteria pollutant emission thresholds established by SCAQMD; therefore, during construction, there would be no air quality impacts.

Operational Emissions. Long-term air pollutant emission impacts are those associated with mobile sources (e.g., vehicle trips), energy sources (e.g., electricity and natural gas) and area sources (e.g., architectural coatings and the use of landscape maintenance equipment) related to the proposed project.

PM_{10} emissions result from running exhaust, tire and brake wear, and the entrainment of dust into the atmosphere from vehicles traveling on paved roadways. Entrainment of PM_{10} occurs when vehicle tires pulverize small rocks and pavement and the vehicle wakes generate airborne dust. The contribution of tire and brake wear is small compared to the other PM emission processes. Gasoline-powered engines have small rates of particulate matter emissions compared with diesel-powered vehicles.

Energy source emissions result from activities in buildings for which electricity and natural gas are used. The quantity of emissions is the product of usage intensity (i.e., the amount of electricity or natural gas) and the emission factor of the fuel source. Major sources of energy demand include building mechanical systems, such as heating and air conditioning, lighting, and plug-in electronics, such as refrigerators and computers. Greater building or appliance efficiency reduces the amount of energy for a given activity and thus lowers the resultant emissions. The emission factor is determined by the fuel source, with cleaner energy sources, like renewable energy, producing fewer emissions than conventional sources. As previously noted, the project would incorporate solar panels as part of the project design providing, at minimum, 460 kW of energy to offset energy usage on site.

Typically, area source emissions consist of direct sources of air emissions located at the project site, including architectural coatings and the use of landscape maintenance equipment. Area source emissions associated with the project would include emissions from the use of landscaping equipment and the use of consumer products.

Emission estimates for operation of the project were calculated using CalEEMod Version 2020.4.0 and are shown in Table K. The primary emissions associated with the project are regional in nature, meaning that air pollutants are rapidly dispersed on release. Once operational, the project would generate 784 average daily trips (ADT), with 49 peak AM traffic hourly and 60 peak PM trips. Project traffic is described in the Mango and South Highland Vehicle Miles Traveled Screening (Urban

Crossroads 2021). SAFE emission factors were applied to vehicle trips. There would be no wood-burning stoves or fireplaces included as part of the project design. The project would incorporate 73 trees and additional landscaping. The project would incorporate water efficient faucets, toilets, and landscaping consistent with Title 24. The peak daily emissions associated with project operations are identified in Table K for reactive organic gases (ROG), NO_X, CO, SO_X, PM_{10}, and $PM_{2.5}$.

Table K: Project Operation Emissions (Pounds per Day)

	ROG	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$
Area Source Emissions	3	2	9	<1	0	0
Energy Source Emissions	<1	1	0	<1	<1	<1
Mobile Source Emissions	3	3	27	<1	6	2
Total Project Emissions	**5**	**5**	**37**	**<1**	**7**	**2**
SCAQMD Significance Threshold	**55**	**55**	**550**	**150**	**55**	**150**
Exceed Threshold?	**No**	**No**	**No**	**No**	**No**	**No**

Source: Compiled by LSA (August 2021).
Note: Some values may not appear to add up correctly due to rounding.

CO = carbon monoxide
lbs/day = pounds per day
NO_X = nitrogen oxides
$PM_{2.5}$ = particulate matter less than 2.5 microns in size
PM_{10} = particulate matter less than 10 microns in size
ROG = reactive organic gases
SCAQMD = South Coast Air Quality Management District
SO_X = sulfur oxides

The results shown in Table K indicate the project would not exceed the significance criteria for annual ROG, NO_X, CO, SO_X, PM_{10}, and $PM_{2.5}$ emissions; therefore, operation of the proposed project would not result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in nonattainment under an applicable NAAQS or CAAQS. Emission calculations sheets are attached in Appendix B.

Localized Impacts Analysis

Table L shows the calculated emissions for the proposed operational activities compared with the appropriate LSTs. By design, the localized impacts analysis only includes on-site sources; however, the CalEEMod outputs do not separate on-site and off-site emissions for operations. For a worst-case scenario assessment, the emissions shown in Table L include all on-site project-related stationary sources and 5 percent of the project-related new mobile sources, which is an estimate of the amount of project-related new vehicle traffic that would occur on site. A total of 5 percent is considered conservative because the average round-trip lengths assumed are 16.6 miles for commercial-work trips, 8.4 miles for commercial-customer trips, and 6.9 miles for other types of trips. It is unlikely that the average on-site distance driven would be even 1,000 feet, which is approximately 2 percent of the total miles traveled. Considering the total trip length included in CalEEMod, the 5 percent assumption is conservative.

Table L shows that the operational emission rates would not exceed the LSTs for sensitive receptors in the project area. Therefore, the proposed operational activity would not result in a locally significant air quality impact.

Table L: Long-Term Operational Localized Impacts Analysis

Emissions Sources	Pollutant Emissions (lbs/day)			
	NO_X	CO	PM_{10}	$PM_{2.5}$
On-Site Emissions	2	11	<1	<1
LST	**270**	**1,746**	**4**	**2**
Exceeds Threshold?	**No**	**No**	**No**	**No**

Source: Compiled by LSA (August 2021).

Note: SRA 34 is Central San Bernardino Valley, 1.5 acres, receptors at 82 feet. On-site traffic is assumed to be 5% of the total.

CO = carbon monoxide
LST = local significance threshold
NO_X = nitrogen oxides
$PM_{2.5}$ = particulate matter less than 2.5 microns in size
PM_{10} = particulate matter less than 10 microns in size
SRA = Source Receptor Area

Objectionable Odors

The SCAQMD addresses odor criteria within the *CEQA Handbook*. The district has not established a rule or standard regarding odor emissions, rather, the district has a nuisance rule: "Any project with the potential to frequently expose members of the public to objectionable odors should be deemed to have a significant impact."

The proposed project would not include any activities or operations that would generate objectionable odors. Therefore, the proposed project would not result in other emissions (such as those leading to odors) adversely affecting a substantial number of people.

Greenhouse Gas Impacts

Generate Greenhouse Gas Emissions

This section discusses the project's impacts related to the release of GHG emissions for the construction and operational phases of the project.

Construction Activities. Construction activities associated with maximum buildout would produce combustion emissions from various sources. During construction, GHGs would be emitted through the operation of construction equipment and from worker and builder supply vendor vehicles, each of which typically use fossil-based fuels to operate. The combustion of fossil-based fuels creates GHGs such as CO_2, CH_4, and N_2O. Furthermore, CH_4 is emitted during the fueling of heavy equipment. Exhaust emissions from on-site construction activities would vary daily as construction activity levels change.

The SCAQMD does not have an adopted threshold of significance for construction-related GHG emissions. However, lead agencies are encouraged to quantify and disclose GHG emissions that would occur during construction. Using CalEEMod, it is estimated that construction activities would generate approximately 474 metric tons of CO_2e.

Operational GHG Emissions. Long-term GHG emissions are typically generated from mobile sources (e.g., cars, trucks, and buses), area sources (e.g., maintenance activities and landscaping), indirect emissions from sources associated with energy consumption, waste sources (landfilling and waste disposal), and water sources (water supply and conveyance, treatment, and distribution). Mobile-

source GHG emissions would include project-generated vehicle and truck trips to and from the project. Area-source emissions would be associated with activities such as landscaping and maintenance on the project site. Energy source emissions would be generated at off-site utility providers as a result of increased electricity demand generated by the project, with exception to the on-site solar panels offsetting the need for off-site energy production. Waste source emissions generated by the proposed project include energy generated by landfilling and other methods of disposal related to transporting and managing project-generated waste. In addition, water source emissions associated with the proposed project are generated by water supply and conveyance, water treatment, water distribution, and wastewater treatment.

As described above, this analysis evaluates potential operational emissions associated with the proposed project. Operational GHG emissions were estimated using CalEEMod and the results are presented in Table M.

Table M: Operational GHG Emissions

Emissions Source Category	Operational Emissions (Metric Tons per Year)			
	CO_2	CH_4	N_2O	CO_2e
Construction Emissions Amortized over 30 Years	16	<1	<1	16
Operational Emissions				
Area	24	<1	<1	24
Energy	216	<1	<1	217
Mobile	901	<1	<1	915
Waste	10	<1	0	25
Water	28	0	<1	35
Total Operational				**1,216**
Total Construction Emissions Amortized over 30 years				**1,232**
SCAQMD Tier 3 Threshold (scaled for 2022)				**2,640**
Would the Project Exceed the Threshold?				**No**

Source: LSA (August 2021).
Note: Some values may not appear to add correctly due to rounding.

CH_4 = methane
CO_2 = carbon dioxide
CO_2e = carbon dioxide equivalent
MT/CO_2e = metric tons of carbon dioxide equivalent
MT = metric tons
N_2O = nitrous oxide

As shown in Table M, the project would generate 1,232 MT of CO_2e per year. This is less than SCAQMD's Tier 3 threshold of 3,000 MT CO_2e per year and less than the post-2020-adjusted Tier 3 threshold of 2,640 MT CO_2e per year. Therefore, the proposed project would not exceed the SCAQMD's GHG emission reduction target and the impact would be less than significant.

Consistency with Greenhouse Gas Reduction Plans

As shown in Table N, the project includes energy efficiency measures to comply with Chapter 12 of the City's General Plan Chapter 12 Sustainability and Resilience Element goals and policies. The residential water fixtures and photovoltaic cells would be higher efficiency than the minimum requirement and would be installed to offset the electricity required from the utility provider.

Table N: GHG Emissions Compliance Measures

General Plan Sustainability and Resilience Element Goals	
Goal 3: Renewable sources of energy, including solar and wind, and other energy-conservation strategies are available to city households and businesses.	*Consistent*: The project would include photovoltaic cells (solar panels) producing at minimum 460 kWh to the project residences, further reducing the demand for off-site energy generation.
Goal 4: Fontana meets the greenhouse gas reduction goals for 2030 and subsequent goals set by the State.	*Consistent:* The project would meet the 2030 GHG reductions targets consistent with the City's goals and SB 32.
Goal 5: Green building techniques are used in new development and retrofits.	*Consistent:* The project would be consistent with Title 24 and CalGreen standards. The project would incorporate solar panels as part of the project design. The project would include low-flow water fixtures and designs.

Source: City of Fontana General Plan (2018).

As shown in Table N, the proposed project would be consistent with the City's GHG reduction measures set forth in the General Plan. Therefore, the project would be consistent with applicable plans adopted for the purpose of reducing GHG emissions.

CUMULATIVE IMPACTS

The project would contribute criteria pollutants to the area during temporary project construction. A number of individual projects in the area may be under construction simultaneously with the proposed project. Depending on construction schedules and actual implementation of projects in the area, generation of fugitive dust and pollutant emissions during construction could result in substantial short-term increases in air pollutants. However, each project would be required to comply with SCAQMD standard construction measures. The project would be not contribute large amounts of emissions during project construction; therefore, it would not have a significant short-term cumulative air quality impact.

Similarly, the project's long-term operational emissions would not exceed SCAQMD's criteria pollutant thresholds. Again, all projects would be required to comply with SCAQMD's operational emissions thresholds, which are designed to accomplish regional emissions goals. Therefore, the proposed project would not have a significant long-term cumulative air quality impact.

Lastly, the project would produce GHG emissions at a level less than the SCAQMD's Tier 3 screening level threshold. The proposed project's design would be consistent with the applicable Sustainability and Resilience Element goals from the City's General Plan, thus insuring project consistency with the all City, regional, and State policies and goals. Therefore, the proposed project would not conflict with any applicable plan, policy, or regulation of an agency adopted for the purpose of reducing GHG emissions. Given this consistency, it is concluded that the proposed project's impact to the climate from GHG emissions would not be cumulatively considerable.

CONCLUSION

Based on the analysis presented above, operational emissions associated with the proposed project would not exceed SCAQMD established significance thresholds. The proposed project is not

expected to produce significant emissions that would affect nearby sensitive receptors. The proposed project would also not result in objectionable odors affecting a substantial number of people. GHG emissions released during operation of the project are estimated to be lower than significance thresholds and would not be cumulatively considerable. Additionally, the project would not conflict with the goals and objectives of State or regional plan, policy, or regulation of an agency adopted for the purpose of reducing GHG emissions.

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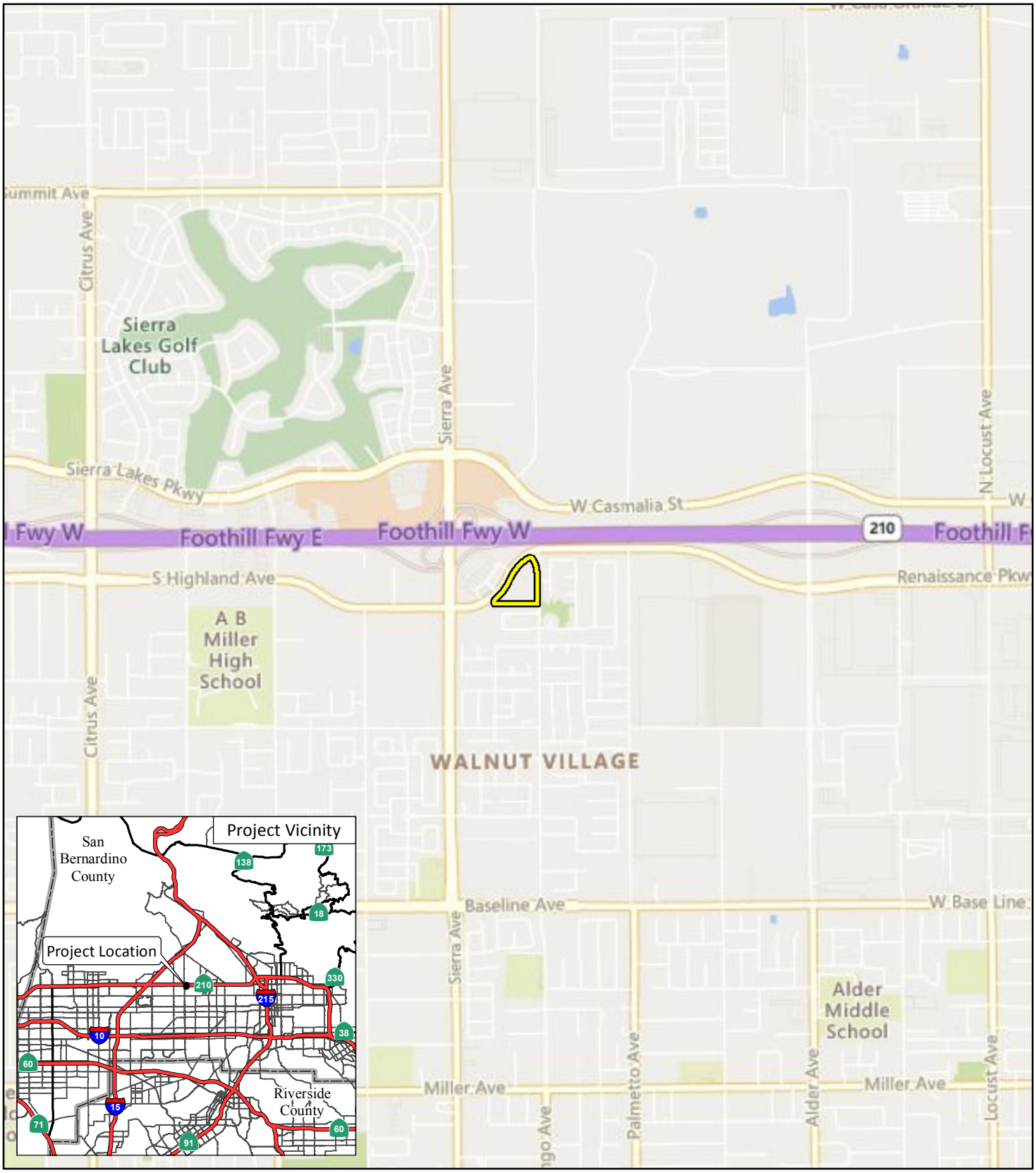
ATTACHMENTS

A: Figures
B: CalEEMod Output

ATTACHMENT A

FIGURE 1: PROJECT VICINITY

FIGURE 2: SITE PLANS



LSA

LEGEND

Project Location

FIGURE 1

N

0 1000 2000

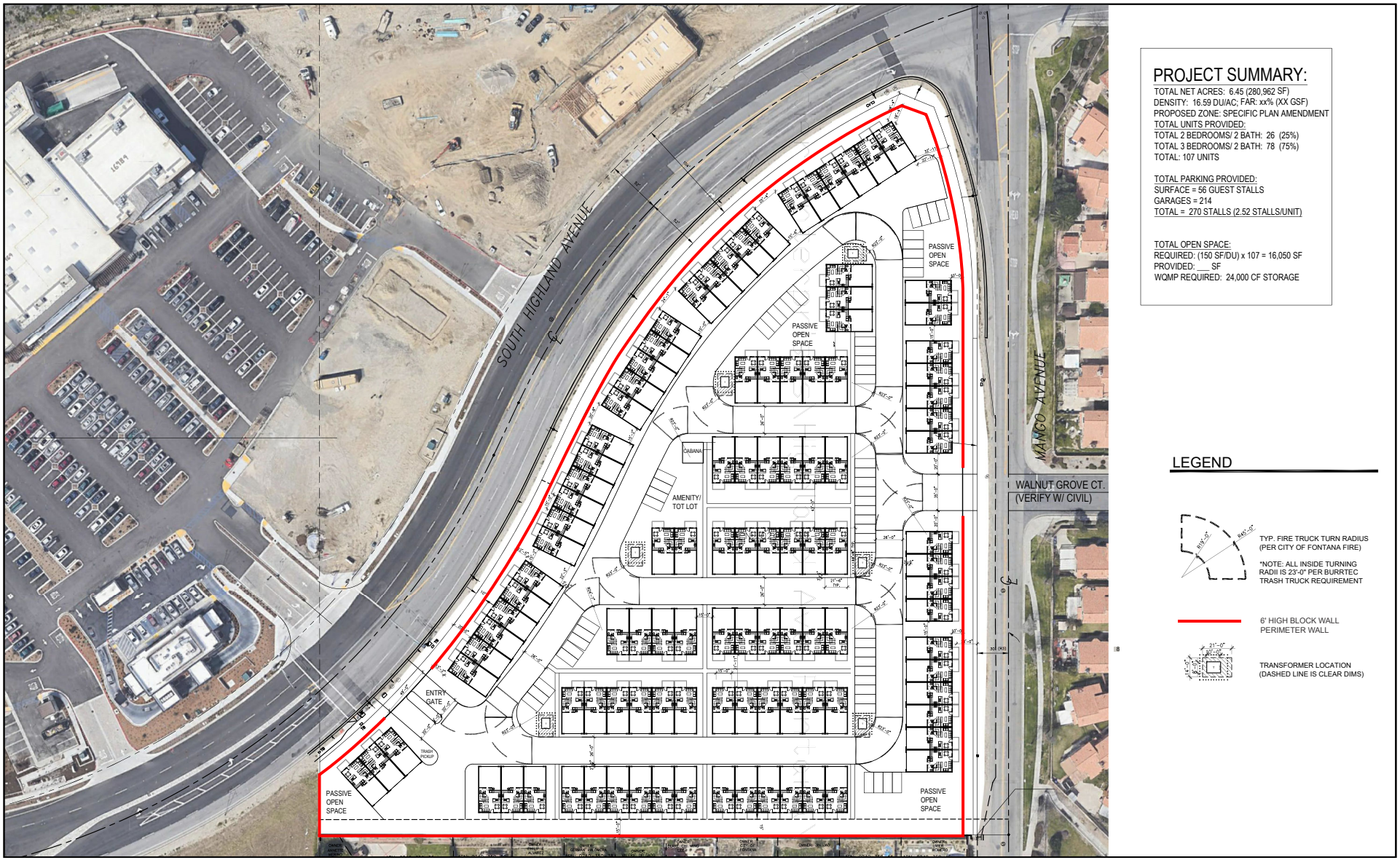
FEET

SOURCE: Bing (2020)

I:\FTR2102\GIS\MXD\Noise\ProjectLocation_Noise.mxd (7/28/2021)

Mango and South Highland Townhomes

Project Location and Vicinity



LSA

FIGURE 2

N

0 70 140

FEET

SOURCE: AO Architecture Design Relationships

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Mango and South Highland Townhomes

Site Plan

ATTACHMENT B

CALEEMOD OUTPUT

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

Mango Townhomes Project

South Coast AQMD Air District, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Condo/Townhouse	107.00	Dwelling Unit	5.58	107,000.00	306
Parking Lot	56.00	Space	0.50	22,400.00	0
City Park	0.37	Acre	0.37	16,117.20	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	31
Climate Zone	10			**Operational Year**	2023
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	390.98	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics - SAFE Rule Applied.

Land Use - Townhomes 107 DU. 56 guest parking spaces. 16,050 sf of open space. Net area 6.45 acres.

Construction Phase -

Vehicle Trips - 784 ADT.

Woodstoves - No woodburning stoves or woodburing fireplaces.

Sequestration - 73 trees proposed on site.

Construction Off-road Equipment Mitigation - All construction equipment with 50 or more horse-power rating would utilize tier 2 engines. Water exposed dirt areas at least twice daily for fugative dust control.

Area Mitigation -

Energy Mitigation - Project would integrate solar panels (PV cells) producing minimum of 460 kW.

Mango Townhomes Project - South Coast AQMD Air District, Annual

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

Table Name	Column Name	Default Value	New Value
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	10.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
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tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstructionPhase	PhaseEndDate	7/21/2023	6/23/2023
tblConstructionPhase	PhaseEndDate	5/26/2023	4/28/2023
tblConstructionPhase	PhaseEndDate	7/8/2022	6/10/2022
tblConstructionPhase	PhaseEndDate	6/23/2023	5/26/2023
tblConstructionPhase	PhaseEndDate	6/10/2022	5/13/2022
tblConstructionPhase	PhaseStartDate	6/24/2023	5/27/2023
tblConstructionPhase	PhaseStartDate	7/9/2022	6/11/2022
tblConstructionPhase	PhaseStartDate	6/11/2022	5/14/2022

Mango Townhomes Project - South Coast AQMD Air District, Annual

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

tblConstructionPhase	PhaseStartDate	5/27/2023	4/29/2023
tblConstructionPhase	PhaseStartDate	5/28/2022	5/2/2022
tblFireplaces	NumberWood	5.35	0.00
tblLandUse	LotAcreage	6.69	5.58
tblSequestration	NumberOfNewTrees	0.00	73.00
tblVehicleTrips	ST_TR	1.96	0.00
tblVehicleTrips	SU_TR	2.19	0.00
tblVehicleTrips	WD_TR	0.78	0.00
tblWoodstoves	NumberCatalytic	5.35	0.00
tblWoodstoves	NumberNoncatalytic	5.35	0.00

2.0 Emissions Summary

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

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2022	0.1848	1.5888	1.7064	3.3600e-003	0.2540	0.0772	0.3312	0.1075	0.0723	0.1798	0.0000	297.4712	297.4712	0.0566	5.2000e-003	300.4374
2023	0.4318	0.7657	1.0059	1.9400e-003	0.0519	0.0360	0.0879	0.0139	0.0338	0.0477	0.0000	172.0288	172.0288	0.0315	2.9200e-003	173.6860
Maximum	**0.4318**	**1.5888**	**1.7064**	**3.3600e-003**	**0.2540**	**0.0772**	**0.3312**	**0.1075**	**0.0723**	**0.1798**	**0.0000**	**297.4712**	**297.4712**	**0.0566**	**5.2000e-003**	**300.4374**

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	0.1327	2.2053	1.8839	3.3600e-003	0.1609	0.0763	0.2372	0.0609	0.0762	0.1371	0.0000	297.4709	297.4709	0.0566	5.2000e-003	300.4371
2023	0.4162	1.2432	1.1099	1.9400e-003	0.0519	0.0442	0.0961	0.0139	0.0442	0.0581	0.0000	172.0286	172.0286	0.0315	2.9200e-003	173.6858
Maximum	**0.4162**	**2.2053**	**1.8839**	**3.3600e-003**	**0.1609**	**0.0763**	**0.2372**	**0.0609**	**0.0762**	**0.1371**	**0.0000**	**297.4709**	**297.4709**	**0.0566**	**5.2000e-003**	**300.4371**

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

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**10.99**	**-46.46**	**-10.38**	**0.00**	**30.41**	**-6.44**	**20.46**	**38.41**	**-13.49**	**14.20**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	**5-2-2022**	**8-1-2022**	0.7327	0.9067
2	**8-2-2022**	**11-1-2022**	0.6165	0.8550
3	**11-2-2022**	**2-1-2023**	0.5996	0.8529
4	**2-2-2023**	**5-1-2023**	0.5396	0.8129
5	**5-2-2023**	**8-1-2023**	0.4554	0.5430
		Highest	0.7327	0.9067

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	0.4576	0.0316	1.1124	1.8000e-004		7.6400e-003	7.6400e-003		7.6400e-003	7.6400e-003	0.0000	23.6444	23.6444	2.1600e-003	4.0000e-004	23.8176
Energy	0.0122	0.1040	0.0443	6.6000e-004		8.4100e-003	8.4100e-003		8.4100e-003	8.4100e-003	0.0000	216.2516	216.2516	0.0104	3.1900e-003	217.4617
Mobile	0.4120	0.5158	4.3469	9.6500e-003	1.0032	7.0900e-003	1.0103	0.2677	6.5900e-003	0.2743	0.0000	901.4579	901.4579	0.0574	0.0398	914.7405
Waste						0.0000	0.0000		0.0000	0.0000	9.9973	0.0000	9.9973	0.5908	0.0000	24.7679
Water						0.0000	0.0000		0.0000	0.0000	2.2117	25.6269	27.8386	0.2293	5.6300e-003	35.2484
Total	**0.8818**	**0.6514**	**5.5036**	**0.0105**	**1.0032**	**0.0231**	**1.0263**	**0.2677**	**0.0226**	**0.2904**	**12.2090**	**1,166.9807**	**1,179.1898**	**0.8901**	**0.0490**	**1,216.0361**

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

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.4576	0.0316	1.1124	1.8000e-004		7.6400e-003	7.6400e-003		7.6400e-003	7.6400e-003	0.0000	23.6444	23.6444	2.1600e-003	4.0000e-004	23.8176
Energy	0.0122	0.1040	0.0443	6.6000e-004		8.4100e-003	8.4100e-003		8.4100e-003	8.4100e-003	0.0000	216.1701	216.1701	0.0104	3.1900e-003	217.3797
Mobile	0.4120	0.5158	4.3469	9.6500e-003	1.0032	7.0900e-003	1.0103	0.2677	6.5900e-003	0.2743	0.0000	901.4579	901.4579	0.0574	0.0398	914.7405
Waste						0.0000	0.0000		0.0000	0.0000	9.9973	0.0000	9.9973	0.5908	0.0000	24.7679
Water						0.0000	0.0000		0.0000	0.0000	2.2117	25.6269	27.8386	0.2293	5.6300e-003	35.2484
Total	**0.8818**	**0.6514**	**5.5036**	**0.0105**	**1.0032**	**0.0231**	**1.0263**	**0.2677**	**0.0226**	**0.2904**	**12.2090**	**1,166.8992**	**1,179.1082**	**0.8901**	**0.0490**	**1,215.9541**

	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**	**0.01**	**0.01**	**0.00**	**0.00**	**0.01**

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

2.3 Vegetation

Vegetation

	CO2e
Category	MT
New Trees	51.6840
Total	**51.6840**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	5/2/2022	5/13/2022	5	10	
2	Grading	Grading	5/14/2022	6/10/2022	5	20	
3	Building Construction	Building Construction	6/11/2022	4/28/2023	5	230	
4	Paving	Paving	4/29/2023	5/26/2023	5	20	
5	Architectural Coating	Architectural Coating	5/27/2023	6/23/2023	5	20	

Acres of Grading (Site Preparation Phase): 15

Acres of Grading (Grading Phase): 20

Acres of Paving: 0.5

Residential Indoor: 216,675; Residential Outdoor: 72,225; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 1,344 (Architectural Coating – sqft)

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

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Building Construction	Cranes	1	7.00	231	0.29
Grading	Excavators	1	8.00	158	0.38
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Grading	Graders	1	8.00	187	0.41
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Grading	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	6	15.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	93.00	18.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	19.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

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

Use Cleaner Engines for Construction Equipment

Water Exposed Area

3.2 Site Preparation - 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					0.0983	0.0000	0.0983	0.0505	0.0000	0.0505	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0159	0.1654	0.0985	1.9000e-004		8.0600e-003	8.0600e-003		7.4200e-003	7.4200e-003	0.0000	16.7197	16.7197	5.4100e-003	0.0000	16.8549
Total	**0.0159**	**0.1654**	**0.0985**	**1.9000e-004**	**0.0983**	**8.0600e-003**	**0.1064**	**0.0505**	**7.4200e-003**	**0.0579**	**0.0000**	**16.7197**	**16.7197**	**5.4100e-003**	**0.0000**	**16.8549**

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

3.2 Site Preparation - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.0000e-004	2.4000e-004	3.1900e-003	1.0000e-005	9.9000e-004	1.0000e-005	9.9000e-004	2.6000e-004	1.0000e-005	2.7000e-004	0.0000	0.8036	0.8036	2.0000e-005	2.0000e-005	0.8105
Total	**3.0000e-004**	**2.4000e-004**	**3.1900e-003**	**1.0000e-005**	**9.9000e-004**	**1.0000e-005**	**9.9000e-004**	**2.6000e-004**	**1.0000e-005**	**2.7000e-004**	**0.0000**	**0.8036**	**0.8036**	**2.0000e-005**	**2.0000e-005**	**0.8105**

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					0.0442	0.0000	0.0442	0.0227	0.0000	0.0227	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	6.0500e-003	0.1686	0.1148	1.9000e-004		4.7300e-003	4.7300e-003		4.7300e-003	4.7300e-003	0.0000	16.7197	16.7197	5.4100e-003	0.0000	16.8549
Total	**6.0500e-003**	**0.1686**	**0.1148**	**1.9000e-004**	**0.0442**	**4.7300e-003**	**0.0490**	**0.0227**	**4.7300e-003**	**0.0275**	**0.0000**	**16.7197**	**16.7197**	**5.4100e-003**	**0.0000**	**16.8549**

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

3.2 Site Preparation - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.0000e-004	2.4000e-004	3.1900e-003	1.0000e-005	9.9000e-004	1.0000e-005	9.9000e-004	2.6000e-004	1.0000e-005	2.7000e-004	0.0000	0.8036	0.8036	2.0000e-005	2.0000e-005	0.8105
Total	**3.0000e-004**	**2.4000e-004**	**3.1900e-003**	**1.0000e-005**	**9.9000e-004**	**1.0000e-005**	**9.9000e-004**	**2.6000e-004**	**1.0000e-005**	**2.7000e-004**	**0.0000**	**0.8036**	**0.8036**	**2.0000e-005**	**2.0000e-005**	**0.8105**

3.3 Grading - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0708	0.0000	0.0708	0.0343	0.0000	0.0343	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0195	0.2086	0.1527	3.0000e-004		9.4100e-003	9.4100e-003		8.6600e-003	8.6600e-003	0.0000	26.0548	26.0548	8.4300e-003	0.0000	26.2654
Total	**0.0195**	**0.2086**	**0.1527**	**3.0000e-004**	**0.0708**	**9.4100e-003**	**0.0802**	**0.0343**	**8.6600e-003**	**0.0429**	**0.0000**	**26.0548**	**26.0548**	**8.4300e-003**	**0.0000**	**26.2654**

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

3.3 Grading - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.0000e-004	4.1000e-004	5.3200e-003	1.0000e-005	1.6500e-003	1.0000e-005	1.6600e-003	4.4000e-004	1.0000e-005	4.5000e-004	0.0000	1.3393	1.3393	4.0000e-005	4.0000e-005	1.3509
Total	**5.0000e-004**	**4.1000e-004**	**5.3200e-003**	**1.0000e-005**	**1.6500e-003**	**1.0000e-005**	**1.6600e-003**	**4.4000e-004**	**1.0000e-005**	**4.5000e-004**	**0.0000**	**1.3393**	**1.3393**	**4.0000e-005**	**4.0000e-005**	**1.3509**

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					0.0319	0.0000	0.0319	0.0154	0.0000	0.0154	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0101	0.2628	0.1899	3.0000e-004		7.7200e-003	7.7200e-003		7.7200e-003	7.7200e-003	0.0000	26.0547	26.0547	8.4300e-003	0.0000	26.2654
Total	**0.0101**	**0.2628**	**0.1899**	**3.0000e-004**	**0.0319**	**7.7200e-003**	**0.0396**	**0.0154**	**7.7200e-003**	**0.0231**	**0.0000**	**26.0547**	**26.0547**	**8.4300e-003**	**0.0000**	**26.2654**

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

3.3 Grading - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.0000e-004	4.1000e-004	5.3200e-003	1.0000e-005	1.6500e-003	1.0000e-005	1.6600e-003	4.4000e-004	1.0000e-005	4.5000e-004	0.0000	1.3393	1.3393	4.0000e-005	4.0000e-005	1.3509
Total	**5.0000e-004**	**4.1000e-004**	**5.3200e-003**	**1.0000e-005**	**1.6500e-003**	**1.0000e-005**	**1.6600e-003**	**4.4000e-004**	**1.0000e-005**	**4.5000e-004**	**0.0000**	**1.3393**	**1.3393**	**4.0000e-005**	**4.0000e-005**	**1.3509**

3.4 Building Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1237	1.1321	1.1864	1.9500e-003		0.0587	0.0587		0.0552	0.0552	0.0000	168.0008	168.0008	0.0403	0.0000	169.0070
Total	**0.1237**	**1.1321**	**1.1864**	**1.9500e-003**		**0.0587**	**0.0587**		**0.0552**	**0.0552**	**0.0000**	**168.0008**	**168.0008**	**0.0403**	**0.0000**	**169.0070**

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

3.4 Building Construction - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.3500e-003	0.0637	0.0212	2.5000e-004	8.2300e-003	6.4000e-004	8.8700e-003	2.3700e-003	6.1000e-004	2.9800e-003	0.0000	24.3539	24.3539	8.1000e-004	3.5300e-003	25.4273
Worker	0.0226	0.0183	0.2392	6.5000e-004	0.0740	4.5000e-004	0.0744	0.0197	4.1000e-004	0.0201	0.0000	60.1993	60.1993	1.6600e-003	1.6100e-003	60.7214
Total	**0.0250**	**0.0820**	**0.2604**	**9.0000e-004**	**0.0822**	**1.0900e-003**	**0.0833**	**0.0220**	**1.0200e-003**	**0.0230**	**0.0000**	**84.5531**	**84.5531**	**2.4700e-003**	**5.1400e-003**	**86.1487**

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	0.0908	1.6912	1.3103	1.9500e-003		0.0627	0.0627		0.0627	0.0627	0.0000	168.0006	168.0006	0.0403	0.0000	169.0068
Total	**0.0908**	**1.6912**	**1.3103**	**1.9500e-003**		**0.0627**	**0.0627**		**0.0627**	**0.0627**	**0.0000**	**168.0006**	**168.0006**	**0.0403**	**0.0000**	**169.0068**

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

3.4 Building Construction - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.3500e-003	0.0637	0.0212	2.5000e-004	8.2300e-003	6.4000e-004	8.8700e-003	2.3700e-003	6.1000e-004	2.9800e-003	0.0000	24.3539	24.3539	8.1000e-004	3.5300e-003	25.4273
Worker	0.0226	0.0183	0.2392	6.5000e-004	0.0740	4.5000e-004	0.0744	0.0197	4.1000e-004	0.0201	0.0000	60.1993	60.1993	1.6600e-003	1.6100e-003	60.7214
Total	**0.0250**	**0.0820**	**0.2604**	**9.0000e-004**	**0.0822**	**1.0900e-003**	**0.0833**	**0.0220**	**1.0200e-003**	**0.0230**	**0.0000**	**84.5531**	**84.5531**	**2.4700e-003**	**5.1400e-003**	**86.1487**

3.4 Building Construction - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0668	0.6114	0.6904	1.1500e-003		0.0297	0.0297		0.0280	0.0280	0.0000	98.5170	98.5170	0.0234	0.0000	99.1029
Total	**0.0668**	**0.6114**	**0.6904**	**1.1500e-003**		**0.0297**	**0.0297**		**0.0280**	**0.0280**	**0.0000**	**98.5170**	**98.5170**	**0.0234**	**0.0000**	**99.1029**

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

3.4 Building Construction - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	8.3000e-004	0.0291	0.0111	1.4000e-004	4.8200e-003	1.6000e-004	4.9900e-003	1.3900e-003	1.6000e-004	1.5500e-003	0.0000	13.6148	13.6148	4.6000e-004	1.9700e-003	14.2141
Worker	0.0123	9.4800e-003	0.1293	3.7000e-004	0.0434	2.5000e-004	0.0436	0.0115	2.3000e-004	0.0118	0.0000	34.3610	34.3610	8.7000e-004	8.7000e-004	34.6430
Total	**0.0132**	**0.0386**	**0.1404**	**5.1000e-004**	**0.0482**	**4.1000e-004**	**0.0486**	**0.0129**	**3.9000e-004**	**0.0133**	**0.0000**	**47.9759**	**47.9759**	**1.3300e-003**	**2.8400e-003**	**48.8571**

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	0.0523	0.9896	0.7673	1.1500e-003		0.0364	0.0364		0.0364	0.0364	0.0000	98.5169	98.5169	0.0234	0.0000	99.1028
Total	**0.0523**	**0.9896**	**0.7673**	**1.1500e-003**		**0.0364**	**0.0364**		**0.0364**	**0.0364**	**0.0000**	**98.5169**	**98.5169**	**0.0234**	**0.0000**	**99.1028**

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

3.4 Building Construction - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	8.3000e-004	0.0291	0.0111	1.4000e-004	4.8200e-003	1.6000e-004	4.9900e-003	1.3900e-003	1.6000e-004	1.5500e-003	0.0000	13.6148	13.6148	4.6000e-004	1.9700e-003	14.2141
Worker	0.0123	9.4800e-003	0.1293	3.7000e-004	0.0434	2.5000e-004	0.0436	0.0115	2.3000e-004	0.0118	0.0000	34.3610	34.3610	8.7000e-004	8.7000e-004	34.6430
Total	**0.0132**	**0.0386**	**0.1404**	**5.1000e-004**	**0.0482**	**4.1000e-004**	**0.0486**	**0.0129**	**3.9000e-004**	**0.0133**	**0.0000**	**47.9759**	**47.9759**	**1.3300e-003**	**2.8400e-003**	**48.8571**

3.5 Paving - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0103	0.1019	0.1458	2.3000e-004		5.1000e-003	5.1000e-003		4.6900e-003	4.6900e-003	0.0000	20.0269	20.0269	6.4800e-003	0.0000	20.1888
Paving	6.6000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0110**	**0.1019**	**0.1458**	**2.3000e-004**		**5.1000e-003**	**5.1000e-003**		**4.6900e-003**	**4.6900e-003**	**0.0000**	**20.0269**	**20.0269**	**6.4800e-003**	**0.0000**	**20.1888**

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

3.5 Paving - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.7000e-004	3.6000e-004	4.9100e-003	1.0000e-005	1.6500e-003	1.0000e-005	1.6600e-003	4.4000e-004	1.0000e-005	4.5000e-004	0.0000	1.3040	1.3040	3.0000e-005	3.0000e-005	1.3147
Total	**4.7000e-004**	**3.6000e-004**	**4.9100e-003**	**1.0000e-005**	**1.6500e-003**	**1.0000e-005**	**1.6600e-003**	**4.4000e-004**	**1.0000e-005**	**4.5000e-004**	**0.0000**	**1.3040**	**1.3040**	**3.0000e-005**	**3.0000e-005**	**1.3147**

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	9.3100e-003	0.2012	0.1730	2.3000e-004		6.6700e-003	6.6700e-003		6.6700e-003	6.6700e-003	0.0000	20.0268	20.0268	6.4800e-003	0.0000	20.1888
Paving	6.6000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**9.9700e-003**	**0.2012**	**0.1730**	**2.3000e-004**		**6.6700e-003**	**6.6700e-003**		**6.6700e-003**	**6.6700e-003**	**0.0000**	**20.0268**	**20.0268**	**6.4800e-003**	**0.0000**	**20.1888**

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

3.5 Paving - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.7000e-004	3.6000e-004	4.9100e-003	1.0000e-005	1.6500e-003	1.0000e-005	1.6600e-003	4.4000e-004	1.0000e-005	4.5000e-004	0.0000	1.3040	1.3040	3.0000e-005	3.0000e-005	1.3147
Total	**4.7000e-004**	**3.6000e-004**	**4.9100e-003**	**1.0000e-005**	**1.6500e-003**	**1.0000e-005**	**1.6600e-003**	**4.4000e-004**	**1.0000e-005**	**4.5000e-004**	**0.0000**	**1.3040**	**1.3040**	**3.0000e-005**	**3.0000e-005**	**1.3147**

3.6 Architectural Coating - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.3379					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.9200e-003	0.0130	0.0181	3.0000e-005		7.1000e-004	7.1000e-004		7.1000e-004	7.1000e-004	0.0000	2.5533	2.5533	1.5000e-004	0.0000	2.5571
Total	**0.3398**	**0.0130**	**0.0181**	**3.0000e-005**		**7.1000e-004**	**7.1000e-004**		**7.1000e-004**	**7.1000e-004**	**0.0000**	**2.5533**	**2.5533**	**1.5000e-004**	**0.0000**	**2.5571**

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

3.6 Architectural Coating - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.9000e-004	4.6000e-004	6.2200e-003	2.0000e-005	2.0800e-003	1.0000e-005	2.1000e-003	5.5000e-004	1.0000e-005	5.6000e-004	0.0000	1.6518	1.6518	4.0000e-005	4.0000e-005	1.6653
Total	**5.9000e-004**	**4.6000e-004**	**6.2200e-003**	**2.0000e-005**	**2.0800e-003**	**1.0000e-005**	**2.1000e-003**	**5.5000e-004**	**1.0000e-005**	**5.6000e-004**	**0.0000**	**1.6518**	**1.6518**	**4.0000e-005**	**4.0000e-005**	**1.6653**

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	0.3379					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.9200e-003	0.0130	0.0181	3.0000e-005		7.1000e-004	7.1000e-004		7.1000e-004	7.1000e-004	0.0000	2.5533	2.5533	1.5000e-004	0.0000	2.5571
Total	**0.3398**	**0.0130**	**0.0181**	**3.0000e-005**		**7.1000e-004**	**7.1000e-004**		**7.1000e-004**	**7.1000e-004**	**0.0000**	**2.5533**	**2.5533**	**1.5000e-004**	**0.0000**	**2.5571**

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

3.6 Architectural Coating - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.9000e-004	4.6000e-004	6.2200e-003	2.0000e-005	2.0800e-003	1.0000e-005	2.1000e-003	5.5000e-004	1.0000e-005	5.6000e-004	0.0000	1.6518	1.6518	4.0000e-005	4.0000e-005	1.6653
Total	**5.9000e-004**	**4.6000e-004**	**6.2200e-003**	**2.0000e-005**	**2.0800e-003**	**1.0000e-005**	**2.1000e-003**	**5.5000e-004**	**1.0000e-005**	**5.6000e-004**	**0.0000**	**1.6518**	**1.6518**	**4.0000e-005**	**4.0000e-005**	**1.6653**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

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

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.4120	0.5158	4.3469	9.6500e-003	1.0032	7.0900e-003	1.0103	0.2677	6.5900e-003	0.2743	0.0000	901.4579	901.4579	0.0574	0.0398	914.7405
Unmitigated	0.4120	0.5158	4.3469	9.6500e-003	1.0032	7.0900e-003	1.0103	0.2677	6.5900e-003	0.2743	0.0000	901.4579	901.4579	0.0574	0.0398	914.7405

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	0.00	0.00	0.00		
Condo/Townhouse	783.24	870.98	671.96	2,664,959	2,664,959
Parking Lot	0.00	0.00	0.00		
Total	783.24	870.98	671.96	2,664,959	2,664,959

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
City Park	16.60	8.40	6.90	33.00	48.00	19.00	66	28	6
Condo/Townhouse	14.70	5.90	8.70	40.20	19.20	40.60	86	11	3
Parking Lot	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
City Park	0.543139	0.060749	0.184760	0.130258	0.023830	0.006353	0.011718	0.009137	0.000812	0.000509	0.024193	0.000750	0.003791
Condo/Townhouse	0.543139	0.060749	0.184760	0.130258	0.023830	0.006353	0.011718	0.009137	0.000812	0.000509	0.024193	0.000750	0.003791

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

Parking Lot	0.543139	0.060749	0.184760	0.130258	0.023830	0.006353	0.011718	0.009137	0.000812	0.000509	0.024193	0.000750	0.003791

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Kilowatt Hours of Renewable Electricity Generated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	95.6908	95.6908	8.0800e-003	9.8000e-004	96.1844
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	95.7723	95.7723	8.0800e-003	9.8000e-004	96.2664
NaturalGas Mitigated	0.0122	0.1040	0.0443	6.6000e-004		8.4100e-003	8.4100e-003		8.4100e-003	8.4100e-003	0.0000	120.4793	120.4793	2.3100e-003	2.2100e-003	121.1953
NaturalGas Unmitigated	0.0122	0.1040	0.0443	6.6000e-004		8.4100e-003	8.4100e-003		8.4100e-003	8.4100e-003	0.0000	120.4793	120.4793	2.3100e-003	2.2100e-003	121.1953

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

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Condo/Townhouse	2.2577e+006	0.0122	0.1040	0.0443	6.6000e-004		8.4100e-003	8.4100e-003		8.4100e-003	8.4100e-003	0.0000	120.4793	120.4793	2.3100e-003	2.2100e-003	121.1953
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0122**	**0.1040**	**0.0443**	**6.6000e-004**		**8.4100e-003**	**8.4100e-003**		**8.4100e-003**	**8.4100e-003**	**0.0000**	**120.4793**	**120.4793**	**2.3100e-003**	**2.2100e-003**	**121.1953**

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

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Condo/Townhouse	2.2577e+006	0.0122	0.1040	0.0443	6.6000e-004		8.4100e-003	8.4100e-003		8.4100e-003	8.4100e-003	0.0000	120.4793	120.4793	2.3100e-003	2.2100e-003	121.1953
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0122**	**0.1040**	**0.0443**	**6.6000e-004**		**8.4100e-003**	**8.4100e-003**		**8.4100e-003**	**8.4100e-003**	**0.0000**	**120.4793**	**120.4793**	**2.3100e-003**	**2.2100e-003**	**121.1953**

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

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
Condo/Townhouse	532192	94.3819	7.9700e-003	9.7000e-004	94.8688
Parking Lot	7840	1.3904	1.2000e-004	1.0000e-005	1.3976
Total		**95.7723**	**8.0900e-003**	**9.8000e-004**	**96.2664**

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

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
City Park	-153.333	-0.0272	0.0000	0.0000	-0.0273
Condo/Townhouse	532039	94.3547	7.9600e-003	9.7000e-004	94.8415
Parking Lot	7686.67	1.3632	1.2000e-004	1.0000e-005	1.3702
Total		**95.6908**	**8.0800e-003**	**9.8000e-004**	**96.1844**

6.0 Area Detail

6.1 Mitigation Measures Area

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

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.4576	0.0316	1.1124	1.8000e-004		7.6400e-003	7.6400e-003		7.6400e-003	7.6400e-003	0.0000	23.6444	23.6444	2.1600e-003	4.0000e-004	23.8176
Unmitigated	0.4576	0.0316	1.1124	1.8000e-004		7.6400e-003	7.6400e-003		7.6400e-003	7.6400e-003	0.0000	23.6444	23.6444	2.1600e-003	4.0000e-004	23.8176

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	0.0338					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.3882					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	2.2100e-003	0.0189	8.0300e-003	1.2000e-004		1.5200e-003	1.5200e-003		1.5200e-003	1.5200e-003	0.0000	21.8405	21.8405	4.2000e-004	4.0000e-004	21.9703
Landscaping	0.0333	0.0127	1.1044	6.0000e-005		6.1100e-003	6.1100e-003		6.1100e-003	6.1100e-003	0.0000	1.8039	1.8039	1.7400e-003	0.0000	1.8473
Total	**0.4576**	**0.0316**	**1.1125**	**1.8000e-004**		**7.6300e-003**	**7.6300e-003**		**7.6300e-003**	**7.6300e-003**	**0.0000**	**23.6443**	**23.6443**	**2.1600e-003**	**4.0000e-004**	**23.8176**

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

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0338					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.3882					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	2.2100e-003	0.0189	8.0300e-003	1.2000e-004		1.5200e-003	1.5200e-003		1.5200e-003	1.5200e-003	0.0000	21.8405	21.8405	4.2000e-004	4.0000e-004	21.9703
Landscaping	0.0333	0.0127	1.1044	6.0000e-005		6.1100e-003	6.1100e-003		6.1100e-003	6.1100e-003	0.0000	1.8039	1.8039	1.7400e-003	0.0000	1.8473
Total	**0.4576**	**0.0316**	**1.1125**	**1.8000e-004**		**7.6300e-003**	**7.6300e-003**		**7.6300e-003**	**7.6300e-003**	**0.0000**	**23.6443**	**23.6443**	**2.1600e-003**	**4.0000e-004**	**23.8176**

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 Applied

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	27.8386	0.2293	5.6300e-003	35.2484
Unmitigated	27.8386	0.2293	5.6300e-003	35.2484

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 0.440848	0.8686	7.0000e-005	1.0000e-005	0.8731
Condo/Townhouse	6.97148 / 4.39506	26.9700	0.2293	5.6200e-003	34.3753
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**27.8386**	**0.2293**	**5.6300e-003**	**35.2484**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 0.440848	0.8686	7.0000e-005	1.0000e-005	0.8731
Condo/Townhouse	6.97148 / 4.39506	26.9700	0.2293	5.6200e-003	34.3753
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**27.8386**	**0.2293**	**5.6300e-003**	**35.2484**

8.0 Waste Detail

8.1 Mitigation Measures Waste

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

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	9.9973	0.5908	0.0000	24.7679
Unmitigated	9.9973	0.5908	0.0000	24.7679

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0.03	6.0900e-003	3.6000e-004	0.0000	0.0151
Condo/Townhouse	49.22	9.9912	0.5905	0.0000	24.7528
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Total		**9.9973**	**0.5908**	**0.0000**	**24.7679**

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

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0.03	6.0900e-003	3.6000e-004	0.0000	0.0151
Condo/Townhouse	49.22	9.9912	0.5905	0.0000	24.7528
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Total		**9.9973**	**0.5908**	**0.0000**	**24.7679**

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

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

11.0 Vegetation

	Total CO2	CH4	N2O	CO2e
Category	MT			
Unmitigated	51.6840	0.0000	0.0000	51.6840

11.2 Net New Trees

Species Class

	Number of Trees	Total CO2	CH4	N2O	CO2e
		MT			
Miscellaneous	73	51.6840	0.0000	0.0000	51.6840
Total		**51.6840**	**0.0000**	**0.0000**	**51.6840**

Mango Townhomes Project - South Coast AQMD Air District, Summer

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

Mango Townhomes Project

South Coast AQMD Air District, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Condo/Townhouse	107.00	Dwelling Unit	5.58	107,000.00	306
Parking Lot	56.00	Space	0.50	22,400.00	0
City Park	0.37	Acre	0.37	16,117.20	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	31
Climate Zone	10			**Operational Year**	2023
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	390.98	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics - SAFE Rule Applied.

Land Use - Townhomes 107 DU. 56 guest parking spaces. 16,050 sf of open space. Net area 6.45 acres.

Construction Phase -

Vehicle Trips - 784 ADT.

Woodstoves - No woodburning stoves or woodburing fireplaces.

Sequestration - 73 trees proposed on site.

Construction Off-road Equipment Mitigation - All construction equipment with 50 or more horse-power rating would utilize tier 2 engines. Water exposed dirt areas at least twice daily for fugative dust control.

Area Mitigation -

Energy Mitigation - Project would integrate solar panels (PV cells) producing minimum of 460 kW.

Mango Townhomes Project - South Coast AQMD Air District, Summer

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

Table Name	Column Name	Default Value	New Value
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	10.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstructionPhase	PhaseEndDate	7/21/2023	6/23/2023
tblConstructionPhase	PhaseEndDate	5/26/2023	4/28/2023
tblConstructionPhase	PhaseEndDate	7/8/2022	6/10/2022
tblConstructionPhase	PhaseEndDate	6/23/2023	5/26/2023
tblConstructionPhase	PhaseEndDate	6/10/2022	5/13/2022
tblConstructionPhase	PhaseStartDate	6/24/2023	5/27/2023
tblConstructionPhase	PhaseStartDate	7/9/2022	6/11/2022
tblConstructionPhase	PhaseStartDate	6/11/2022	5/14/2022

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

tblConstructionPhase	PhaseStartDate	5/27/2023	4/29/2023
tblConstructionPhase	PhaseStartDate	5/28/2022	5/2/2022
tblFireplaces	NumberWood	5.35	0.00
tblLandUse	LotAcreage	6.69	5.58
tblSequestration	NumberOfNewTrees	0.00	73.00
tblVehicleTrips	ST_TR	1.96	0.00
tblVehicleTrips	SU_TR	2.19	0.00
tblVehicleTrips	WD_TR	0.78	0.00
tblWoodstoves	NumberCatalytic	5.35	0.00
tblWoodstoves	NumberNoncatalytic	5.35	0.00

2.0 Emissions Summary

Mango Townhomes Project - South Coast AQMD Air District, Summer

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

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2022	3.2321	33.1271	20.3848	0.0399	19.8582	1.6138	21.4720	10.1558	1.4847	11.6405	0.0000	3,881.6453	3,881.6453	1.1970	0.0764	3,920.6497
2023	34.0401	15.2377	19.7724	0.0393	1.1548	0.7094	1.8642	0.3089	0.6675	0.9763	0.0000	3,839.9248	3,839.9248	0.7176	0.0721	3,877.4618
Maximum	**34.0401**	**33.1271**	**20.3848**	**0.0399**	**19.8582**	**1.6138**	**21.4720**	**10.1558**	**1.4847**	**11.6405**	**0.0000**	**3,881.6453**	**3,881.6453**	**1.1970**	**0.0764**	**3,920.6497**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2022	1.6049	33.7650	23.6471	0.0399	9.0469	0.9474	9.9942	4.5995	0.9473	5.5467	0.0000	3,881.6453	3,881.6453	1.1970	0.0764	3,920.6497
2023	34.0401	24.1374	21.5832	0.0393	1.1548	0.8661	2.0209	0.3089	0.8655	1.1743	0.0000	3,839.9248	3,839.9248	0.7176	0.0721	3,877.4618
Maximum	**34.0401**	**33.7650**	**23.6471**	**0.0399**	**9.0469**	**0.9474**	**9.9942**	**4.5995**	**0.9473**	**5.5467**	**0.0000**	**3,881.6453**	**3,881.6453**	**1.1970**	**0.0764**	**3,920.6497**

Mango Townhomes Project - South Coast AQMD Air District, Summer

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

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	4.37	-19.72	-12.63	0.00	51.45	21.94	48.51	53.10	15.77	46.73	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 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	2.7556	1.6105	9.4774	0.0101		0.1709	0.1709		0.1709	0.1709	0.0000	1,941.9074	1,941.9074	0.0522	0.0353	1,953.7356
Energy	0.0667	0.5700	0.2426	3.6400e-003		0.0461	0.0461		0.0461	0.0461		727.7024	727.7024	0.0140	0.0133	732.0268
Mobile	2.6599	2.9057	27.3803	0.0615	6.2708	0.0435	6.3143	1.6710	0.0405	1.7115		6,327.0449	6,327.0449	0.3794	0.2570	6,413.1083
Total	**5.4822**	**5.0862**	**37.1003**	**0.0752**	**6.2708**	**0.2605**	**6.5313**	**1.6710**	**0.2575**	**1.9284**	**0.0000**	**8,996.6548**	**8,996.6548**	**0.4456**	**0.3056**	**9,098.8707**

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	2.7556	1.6105	9.4774	0.0101		0.1709	0.1709		0.1709	0.1709	0.0000	1,941.9074	1,941.9074	0.0522	0.0353	1,953.7356
Energy	0.0667	0.5700	0.2426	3.6400e-003		0.0461	0.0461		0.0461	0.0461		727.7024	727.7024	0.0140	0.0133	732.0268
Mobile	2.6599	2.9057	27.3803	0.0615	6.2708	0.0435	6.3143	1.6710	0.0405	1.7115		6,327.0449	6,327.0449	0.3794	0.2570	6,413.1083
Total	**5.4822**	**5.0862**	**37.1003**	**0.0752**	**6.2708**	**0.2605**	**6.5313**	**1.6710**	**0.2575**	**1.9284**	**0.0000**	**8,996.6548**	**8,996.6548**	**0.4456**	**0.3056**	**9,098.8707**

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

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	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	Site Preparation	Site Preparation	5/2/2022	5/13/2022	5	10	
2	Grading	Grading	5/14/2022	6/10/2022	5	20	
3	Building Construction	Building Construction	6/11/2022	4/28/2023	5	230	
4	Paving	Paving	4/29/2023	5/26/2023	5	20	
5	Architectural Coating	Architectural Coating	5/27/2023	6/23/2023	5	20	

Acres of Grading (Site Preparation Phase): 15

Acres of Grading (Grading Phase): 20

Acres of Paving: 0.5

Residential Indoor: 216,675; Residential Outdoor: 72,225; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 1,344 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Building Construction	Cranes	1	7.00	231	0.29
Grading	Excavators	1	8.00	158	0.38
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Grading	Graders	1	8.00	187	0.41

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

Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Grading	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	6	15.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	93.00	18.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	19.00	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

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

3.2 Site Preparation - 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					19.6570	0.0000	19.6570	10.1025	0.0000	10.1025			0.0000			0.0000
Off-Road	3.1701	33.0835	19.6978	0.0380		1.6126	1.6126		1.4836	1.4836		3,686.0619	3,686.0619	1.1922		3,715.8655
Total	**3.1701**	**33.0835**	**19.6978**	**0.0380**	**19.6570**	**1.6126**	**21.2696**	**10.1025**	**1.4836**	**11.5860**		**3,686.0619**	**3,686.0619**	**1.1922**		**3,715.8655**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0620	0.0436	0.6871	1.8200e-003	0.2012	1.2000e-003	0.2024	0.0534	1.1100e-003	0.0545		185.2465	185.2465	4.8100e-003	4.4000e-003	186.6790
Total	**0.0620**	**0.0436**	**0.6871**	**1.8200e-003**	**0.2012**	**1.2000e-003**	**0.2024**	**0.0534**	**1.1100e-003**	**0.0545**		**185.2465**	**185.2465**	**4.8100e-003**	**4.4000e-003**	**186.6790**

Mango Townhomes Project - South Coast AQMD Air District, Summer

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

3.2 Site Preparation - 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					8.8457	0.0000	8.8457	4.5461	0.0000	4.5461			0.0000			0.0000
Off-Road	1.2097	33.7214	22.9600	0.0380		0.9462	0.9462		0.9462	0.9462	0.0000	3,686.0619	3,686.0619	1.1922		3,715.8655
Total	**1.2097**	**33.7214**	**22.9600**	**0.0380**	**8.8457**	**0.9462**	**9.7918**	**4.5461**	**0.9462**	**5.4923**	**0.0000**	**3,686.0619**	**3,686.0619**	**1.1922**		**3,715.8655**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0620	0.0436	0.6871	1.8200e-003	0.2012	1.2000e-003	0.2024	0.0534	1.1100e-003	0.0545		185.2465	185.2465	4.8100e-003	4.4000e-003	186.6790
Total	**0.0620**	**0.0436**	**0.6871**	**1.8200e-003**	**0.2012**	**1.2000e-003**	**0.2024**	**0.0534**	**1.1100e-003**	**0.0545**		**185.2465**	**185.2465**	**4.8100e-003**	**4.4000e-003**	**186.6790**

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

3.3 Grading - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					7.0826	0.0000	7.0826	3.4247	0.0000	3.4247			0.0000			0.0000
Off-Road	1.9486	20.8551	15.2727	0.0297		0.9409	0.9409		0.8656	0.8656		2,872.0464	2,872.0464	0.9289		2,895.2684
Total	**1.9486**	**20.8551**	**15.2727**	**0.0297**	**7.0826**	**0.9409**	**8.0234**	**3.4247**	**0.8656**	**4.2903**		**2,872.0464**	**2,872.0464**	**0.9289**		**2,895.2684**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0517	0.0363	0.5726	1.5200e-003	0.1677	1.0000e-003	0.1687	0.0445	9.2000e-004	0.0454		154.3721	154.3721	4.0100e-003	3.6700e-003	155.5659
Total	**0.0517**	**0.0363**	**0.5726**	**1.5200e-003**	**0.1677**	**1.0000e-003**	**0.1687**	**0.0445**	**9.2000e-004**	**0.0454**		**154.3721**	**154.3721**	**4.0100e-003**	**3.6700e-003**	**155.5659**

Mango Townhomes Project - South Coast AQMD Air District, Summer

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

3.3 Grading - 2022

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					3.1872	0.0000	3.1872	1.5411	0.0000	1.5411			0.0000			0.0000
Off-Road	1.0093	26.2791	18.9906	0.0297		0.7725	0.7725		0.7725	0.7725	0.0000	2,872.0464	2,872.0464	0.9289		2,895.2684
Total	**1.0093**	**26.2791**	**18.9906**	**0.0297**	**3.1872**	**0.7725**	**3.9596**	**1.5411**	**0.7725**	**2.3136**	**0.0000**	**2,872.0464**	**2,872.0464**	**0.9289**		**2,895.2684**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0517	0.0363	0.5726	1.5200e-003	0.1677	1.0000e-003	0.1687	0.0445	9.2000e-004	0.0454		154.3721	154.3721	4.0100e-003	3.6700e-003	155.5659
Total	**0.0517**	**0.0363**	**0.5726**	**1.5200e-003**	**0.1677**	**1.0000e-003**	**0.1687**	**0.0445**	**9.2000e-004**	**0.0454**		**154.3721**	**154.3721**	**4.0100e-003**	**3.6700e-003**	**155.5659**

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

3.4 Building Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.7062	15.6156	16.3634	0.0269		0.8090	0.8090		0.7612	0.7612		2,554.3336	2,554.3336	0.6120		2,569.6322
Total	**1.7062**	**15.6156**	**16.3634**	**0.0269**		**0.8090**	**0.8090**		**0.7612**	**0.7612**		**2,554.3336**	**2,554.3336**	**0.6120**		**2,569.6322**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0328	0.8376	0.2872	3.4400e-003	0.1153	8.7600e-003	0.1240	0.0332	8.3800e-003	0.0416		370.2048	370.2048	0.0124	0.0537	386.5092
Worker	0.3203	0.2253	3.5498	9.4100e-003	1.0395	6.2100e-003	1.0457	0.2757	5.7200e-003	0.2814		957.1069	957.1069	0.0249	0.0228	964.5083
Total	**0.3531**	**1.0629**	**3.8370**	**0.0129**	**1.1548**	**0.0150**	**1.1698**	**0.3089**	**0.0141**	**0.3230**		**1,327.3117**	**1,327.3117**	**0.0373**	**0.0764**	**1,351.0175**

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

3.4 Building Construction - 2022

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.2517	23.3270	18.0727	0.0269		0.8652	0.8652		0.8652	0.8652	0.0000	2,554.3336	2,554.3336	0.6120		2,569.6322
Total	**1.2517**	**23.3270**	**18.0727**	**0.0269**		**0.8652**	**0.8652**		**0.8652**	**0.8652**	**0.0000**	**2,554.3336**	**2,554.3336**	**0.6120**		**2,569.6322**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0328	0.8376	0.2872	3.4400e-003	0.1153	8.7600e-003	0.1240	0.0332	8.3800e-003	0.0416		370.2048	370.2048	0.0124	0.0537	386.5092
Worker	0.3203	0.2253	3.5498	9.4100e-003	1.0395	6.2100e-003	1.0457	0.2757	5.7200e-003	0.2814		957.1069	957.1069	0.0249	0.0228	964.5083
Total	**0.3531**	**1.0629**	**3.8370**	**0.0129**	**1.1548**	**0.0150**	**1.1698**	**0.3089**	**0.0141**	**0.3230**		**1,327.3117**	**1,327.3117**	**0.0373**	**0.0764**	**1,351.0175**

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

3.4 Building Construction - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.5728	14.3849	16.2440	0.0269		0.6997	0.6997		0.6584	0.6584		2,555.2099	2,555.2099	0.6079		2,570.4061
Total	**1.5728**	**14.3849**	**16.2440**	**0.0269**		**0.6997**	**0.6997**		**0.6584**	**0.6584**		**2,555.2099**	**2,555.2099**	**0.6079**		**2,570.4061**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0199	0.6534	0.2572	3.2800e-003	0.1153	3.8000e-003	0.1191	0.0332	3.6400e-003	0.0368		352.8557	352.8557	0.0119	0.0511	368.3748
Worker	0.2971	0.1994	3.2711	9.1100e-003	1.0395	5.8500e-003	1.0454	0.2757	5.3900e-003	0.2811		931.8592	931.8592	0.0223	0.0210	938.6810
Total	**0.3170**	**0.8528**	**3.5284**	**0.0124**	**1.1548**	**9.6500e-003**	**1.1644**	**0.3089**	**9.0300e-003**	**0.3179**		**1,284.7149**	**1,284.7149**	**0.0342**	**0.0721**	**1,307.0558**

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

3.4 Building Construction - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.2295	23.2846	18.0549	0.0269		0.8565	0.8565		0.8565	0.8565	0.0000	2,555.2099	2,555.2099	0.6079		2,570.4061
Total	**1.2295**	**23.2846**	**18.0549**	**0.0269**		**0.8565**	**0.8565**		**0.8565**	**0.8565**	**0.0000**	**2,555.2099**	**2,555.2099**	**0.6079**		**2,570.4061**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0199	0.6534	0.2572	3.2800e-003	0.1153	3.8000e-003	0.1191	0.0332	3.6400e-003	0.0368		352.8557	352.8557	0.0119	0.0511	368.3748
Worker	0.2971	0.1994	3.2711	9.1100e-003	1.0395	5.8500e-003	1.0454	0.2757	5.3900e-003	0.2811		931.8592	931.8592	0.0223	0.0210	938.6810
Total	**0.3170**	**0.8528**	**3.5284**	**0.0124**	**1.1548**	**9.6500e-003**	**1.1644**	**0.3089**	**9.0300e-003**	**0.3179**		**1,284.7149**	**1,284.7149**	**0.0342**	**0.0721**	**1,307.0558**

Mango Townhomes Project - South Coast AQMD Air District, Summer

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

3.5 Paving - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.0327	10.1917	14.5842	0.0228		0.5102	0.5102		0.4694	0.4694		2,207.5841	2,207.5841	0.7140		2,225.4336
Paving	0.0655					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.0982**	**10.1917**	**14.5842**	**0.0228**		**0.5102**	**0.5102**		**0.4694**	**0.4694**		**2,207.5841**	**2,207.5841**	**0.7140**		**2,225.4336**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0479	0.0322	0.5276	1.4700e-003	0.1677	9.4000e-004	0.1686	0.0445	8.7000e-004	0.0453		150.2999	150.2999	3.6000e-003	3.3900e-003	151.4002
Total	**0.0479**	**0.0322**	**0.5276**	**1.4700e-003**	**0.1677**	**9.4000e-004**	**0.1686**	**0.0445**	**8.7000e-004**	**0.0453**		**150.2999**	**150.2999**	**3.6000e-003**	**3.3900e-003**	**151.4002**

Mango Townhomes Project - South Coast AQMD Air District, Summer

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

3.5 Paving - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.9311	20.1146	17.2957	0.0228		0.6670	0.6670		0.6670	0.6670	0.0000	2,207.5841	2,207.5841	0.7140		2,225.4336
Paving	0.0655					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.9966**	**20.1146**	**17.2957**	**0.0228**		**0.6670**	**0.6670**		**0.6670**	**0.6670**	**0.0000**	**2,207.5841**	**2,207.5841**	**0.7140**		**2,225.4336**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0479	0.0322	0.5276	1.4700e-003	0.1677	9.4000e-004	0.1686	0.0445	8.7000e-004	0.0453		150.2999	150.2999	3.6000e-003	3.3900e-003	151.4002
Total	**0.0479**	**0.0322**	**0.5276**	**1.4700e-003**	**0.1677**	**9.4000e-004**	**0.1686**	**0.0445**	**8.7000e-004**	**0.0453**		**150.2999**	**150.2999**	**3.6000e-003**	**3.3900e-003**	**151.4002**

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

3.6 Architectural Coating - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	33.7878					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1917	1.3030	1.8111	2.9700e-003		0.0708	0.0708		0.0708	0.0708		281.4481	281.4481	0.0168		281.8690
Total	**33.9794**	**1.3030**	**1.8111**	**2.9700e-003**		**0.0708**	**0.0708**		**0.0708**	**0.0708**		**281.4481**	**281.4481**	**0.0168**		**281.8690**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0607	0.0407	0.6683	1.8600e-003	0.2124	1.2000e-003	0.2136	0.0563	1.1000e-003	0.0574		190.3798	190.3798	4.5600e-003	4.2900e-003	191.7735
Total	**0.0607**	**0.0407**	**0.6683**	**1.8600e-003**	**0.2124**	**1.2000e-003**	**0.2136**	**0.0563**	**1.1000e-003**	**0.0574**		**190.3798**	**190.3798**	**4.5600e-003**	**4.2900e-003**	**191.7735**

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

3.6 Architectural Coating - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	33.7878					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1917	1.3030	1.8111	2.9700e-003		0.0708	0.0708		0.0708	0.0708	0.0000	281.4481	281.4481	0.0168		281.8690
Total	**33.9794**	**1.3030**	**1.8111**	**2.9700e-003**		**0.0708**	**0.0708**		**0.0708**	**0.0708**	**0.0000**	**281.4481**	**281.4481**	**0.0168**		**281.8690**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0607	0.0407	0.6683	1.8600e-003	0.2124	1.2000e-003	0.2136	0.0563	1.1000e-003	0.0574		190.3798	190.3798	4.5600e-003	4.2900e-003	191.7735
Total	**0.0607**	**0.0407**	**0.6683**	**1.8600e-003**	**0.2124**	**1.2000e-003**	**0.2136**	**0.0563**	**1.1000e-003**	**0.0574**		**190.3798**	**190.3798**	**4.5600e-003**	**4.2900e-003**	**191.7735**

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

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	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	2.6599	2.9057	27.3803	0.0615	6.2708	0.0435	6.3143	1.6710	0.0405	1.7115		6,327.0449	6,327.0449	0.3794	0.2570	6,413.1083
Unmitigated	2.6599	2.9057	27.3803	0.0615	6.2708	0.0435	6.3143	1.6710	0.0405	1.7115		6,327.0449	6,327.0449	0.3794	0.2570	6,413.1083

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	0.00	0.00	0.00		
Condo/Townhouse	783.24	870.98	671.96	2,664,959	2,664,959
Parking Lot	0.00	0.00	0.00		
Total	783.24	870.98	671.96	2,664,959	2,664,959

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
City Park	16.60	8.40	6.90	33.00	48.00	19.00	66	28	6
Condo/Townhouse	14.70	5.90	8.70	40.20	19.20	40.60	86	11	3
Parking Lot	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0

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

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
City Park	0.543139	0.060749	0.184760	0.130258	0.023830	0.006353	0.011718	0.009137	0.000812	0.000509	0.024193	0.000750	0.003791
Condo/Townhouse	0.543139	0.060749	0.184760	0.130258	0.023830	0.006353	0.011718	0.009137	0.000812	0.000509	0.024193	0.000750	0.003791
Parking Lot	0.543139	0.060749	0.184760	0.130258	0.023830	0.006353	0.011718	0.009137	0.000812	0.000509	0.024193	0.000750	0.003791

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Kilowatt Hours of Renewable Electricity Generated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0667	0.5700	0.2426	3.6400e-003		0.0461	0.0461		0.0461	0.0461		727.7024	727.7024	0.0140	0.0133	732.0268
NaturalGas Unmitigated	0.0667	0.5700	0.2426	3.6400e-003		0.0461	0.0461		0.0461	0.0461		727.7024	727.7024	0.0140	0.0133	732.0268

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

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Condo/Townhouse	6185.47	0.0667	0.5700	0.2426	3.6400e-003		0.0461	0.0461		0.0461	0.0461		727.7024	727.7024	0.0140	0.0133	732.0268
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0667**	**0.5700**	**0.2426**	**3.6400e-003**		**0.0461**	**0.0461**		**0.0461**	**0.0461**		**727.7024**	**727.7024**	**0.0140**	**0.0133**	**732.0268**

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

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Condo/Townhouse	6.18547	0.0667	0.5700	0.2426	3.6400e-003		0.0461	0.0461		0.0461	0.0461		727.7024	727.7024	0.0140	0.0133	732.0268
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0667**	**0.5700**	**0.2426**	**3.6400e-003**		**0.0461**	**0.0461**		**0.0461**	**0.0461**		**727.7024**	**727.7024**	**0.0140**	**0.0133**	**732.0268**

6.0 Area Detail

6.1 Mitigation Measures Area

Mango Townhomes Project - South Coast AQMD Air District, Summer

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

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	2.7556	1.6105	9.4774	0.0101		0.1709	0.1709		0.1709	0.1709	0.0000	1,941.9074	1,941.9074	0.0522	0.0353	1,953.7356
Unmitigated	2.7556	1.6105	9.4774	0.0101		0.1709	0.1709		0.1709	0.1709	0.0000	1,941.9074	1,941.9074	0.0522	0.0353	1,953.7356

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	0.1851					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	2.1274					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.1766	1.5087	0.6420	9.6300e-003		0.1220	0.1220		0.1220	0.1220	0.0000	1,926.0000	1,926.0000	0.0369	0.0353	1,937.4453
Landscaping	0.2665	0.1018	8.8354	4.7000e-004		0.0489	0.0489		0.0489	0.0489		15.9074	15.9074	0.0153		16.2904
Total	**2.7556**	**1.6105**	**9.4774**	**0.0101**		**0.1709**	**0.1709**		**0.1709**	**0.1709**	**0.0000**	**1,941.9074**	**1,941.9074**	**0.0522**	**0.0353**	**1,953.7356**

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

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.1851					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	2.1274					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.1766	1.5087	0.6420	9.6300e-003		0.1220	0.1220		0.1220	0.1220	0.0000	1,926.0000	1,926.0000	0.0369	0.0353	1,937.4453
Landscaping	0.2665	0.1018	8.8354	4.7000e-004		0.0489	0.0489		0.0489	0.0489		15.9074	15.9074	0.0153		16.2904
Total	**2.7556**	**1.6105**	**9.4774**	**0.0101**		**0.1709**	**0.1709**		**0.1709**	**0.1709**	**0.0000**	**1,941.9074**	**1,941.9074**	**0.0522**	**0.0353**	**1,953.7356**

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 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

Mango Townhomes Project - South Coast AQMD Air District, Winter

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

Mango Townhomes Project

South Coast AQMD Air District, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Condo/Townhouse	107.00	Dwelling Unit	5.58	107,000.00	306
Parking Lot	56.00	Space	0.50	22,400.00	0
City Park	0.37	Acre	0.37	16,117.20	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	31
Climate Zone	10			**Operational Year**	2023
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	390.98	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics - SAFE Rule Applied.

Land Use - Townhomes 107 DU. 56 guest parking spaces. 16,050 sf of open space. Net area 6.45 acres.

Construction Phase -

Vehicle Trips - 784 ADT.

Woodstoves - No woodburning stoves or woodburing fireplaces.

Sequestration - 73 trees proposed on site.

Construction Off-road Equipment Mitigation - All construction equipment with 50 or more horse-power rating would utilize tier 2 engines. Water exposed dirt areas at least twice daily for fugative dust control.

Area Mitigation -

Energy Mitigation - Project would integrate solar panels (PV cells) producing minimum of 460 kW.

Mango Townhomes Project - South Coast AQMD Air District, Winter

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

Table Name	Column Name	Default Value	New Value
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	10.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstructionPhase	PhaseEndDate	7/21/2023	6/23/2023
tblConstructionPhase	PhaseEndDate	5/26/2023	4/28/2023
tblConstructionPhase	PhaseEndDate	7/8/2022	6/10/2022
tblConstructionPhase	PhaseEndDate	6/23/2023	5/26/2023
tblConstructionPhase	PhaseEndDate	6/10/2022	5/13/2022
tblConstructionPhase	PhaseStartDate	6/24/2023	5/27/2023
tblConstructionPhase	PhaseStartDate	7/9/2022	6/11/2022
tblConstructionPhase	PhaseStartDate	6/11/2022	5/14/2022

Mango Townhomes Project - South Coast AQMD Air District, Winter

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

tblConstructionPhase	PhaseStartDate	5/27/2023	4/29/2023
tblConstructionPhase	PhaseStartDate	5/28/2022	5/2/2022
tblFireplaces	NumberWood	5.35	0.00
tblLandUse	LotAcreage	6.69	5.58
tblSequestration	NumberOfNewTrees	0.00	73.00
tblVehicleTrips	ST_TR	1.96	0.00
tblVehicleTrips	SU_TR	2.19	0.00
tblVehicleTrips	WD_TR	0.78	0.00
tblWoodstoves	NumberCatalytic	5.35	0.00
tblWoodstoves	NumberNoncatalytic	5.35	0.00

2.0 Emissions Summary

Mango Townhomes Project - South Coast AQMD Air District, Winter

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

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2022	3.2354	33.1312	20.3189	0.0398	19.8582	1.6138	21.4720	10.1558	1.4847	11.6405	0.0000	3,860.5368	3,860.5368	1.1970	0.0779	3,891.8547
2023	34.0435	15.2887	19.4698	0.0388	1.1548	0.7094	1.8642	0.3089	0.6675	0.9763	0.0000	3,786.4831	3,786.4831	0.7176	0.0735	3,824.4474
Maximum	**34.0435**	**33.1312**	**20.3189**	**0.0398**	**19.8582**	**1.6138**	**21.4720**	**10.1558**	**1.4847**	**11.6405**	**0.0000**	**3,860.5368**	**3,860.5368**	**1.1970**	**0.0779**	**3,891.8547**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2022	1.6209	33.7691	23.5811	0.0398	9.0469	0.9474	9.9942	4.5995	0.9473	5.5467	0.0000	3,860.5368	3,860.5368	1.1970	0.0779	3,891.8547
2023	34.0435	24.1885	21.2807	0.0388	1.1548	0.8661	2.0209	0.3089	0.8655	1.1744	0.0000	3,786.4831	3,786.4831	0.7176	0.0735	3,824.4474
Maximum	**34.0435**	**33.7691**	**23.5811**	**0.0398**	**9.0469**	**0.9474**	**9.9942**	**4.5995**	**0.9473**	**5.5467**	**0.0000**	**3,860.5368**	**3,860.5368**	**1.1970**	**0.0779**	**3,891.8547**

Mango Townhomes Project - South Coast AQMD Air District, Winter

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

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	4.33	-19.70	-12.75	0.00	51.45	21.94	48.51	53.10	15.77	46.73	0.00	0.00	0.00	0.00	0.00	0.00

Mango Townhomes Project - South Coast AQMD Air District, Winter

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

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	2.7556	1.6105	9.4774	0.0101		0.1709	0.1709		0.1709	0.1709	0.0000	1,941.9074	1,941.9074	0.0522	0.0353	1,953.7356
Energy	0.0667	0.5700	0.2426	3.6400e-003		0.0461	0.0461		0.0461	0.0461		727.7024	727.7024	0.0140	0.0133	732.0268
Mobile	2.5655	3.1236	26.3523	0.0586	6.2708	0.0436	6.3143	1.6710	0.0405	1.7115		6,031.9428	6,031.9428	0.3900	0.2672	6,121.3310
Total	**5.3878**	**5.3041**	**36.0723**	**0.0723**	**6.2708**	**0.2605**	**6.5313**	**1.6710**	**0.2575**	**1.9285**	**0.0000**	**8,701.5527**	**8,701.5527**	**0.4562**	**0.3159**	**8,807.0934**

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	2.7556	1.6105	9.4774	0.0101		0.1709	0.1709		0.1709	0.1709	0.0000	1,941.9074	1,941.9074	0.0522	0.0353	1,953.7356
Energy	0.0667	0.5700	0.2426	3.6400e-003		0.0461	0.0461		0.0461	0.0461		727.7024	727.7024	0.0140	0.0133	732.0268
Mobile	2.5655	3.1236	26.3523	0.0586	6.2708	0.0436	6.3143	1.6710	0.0405	1.7115		6,031.9428	6,031.9428	0.3900	0.2672	6,121.3310
Total	**5.3878**	**5.3041**	**36.0723**	**0.0723**	**6.2708**	**0.2605**	**6.5313**	**1.6710**	**0.2575**	**1.9285**	**0.0000**	**8,701.5527**	**8,701.5527**	**0.4562**	**0.3159**	**8,807.0934**

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

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	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	Site Preparation	Site Preparation	5/2/2022	5/13/2022	5	10	
2	Grading	Grading	5/14/2022	6/10/2022	5	20	
3	Building Construction	Building Construction	6/11/2022	4/28/2023	5	230	
4	Paving	Paving	4/29/2023	5/26/2023	5	20	
5	Architectural Coating	Architectural Coating	5/27/2023	6/23/2023	5	20	

Acres of Grading (Site Preparation Phase): 15

Acres of Grading (Grading Phase): 20

Acres of Paving: 0.5

Residential Indoor: 216,675; Residential Outdoor: 72,225; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 1,344 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Building Construction	Cranes	1	7.00	231	0.29
Grading	Excavators	1	8.00	158	0.38
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Grading	Graders	1	8.00	187	0.41

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

Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Grading	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	6	15.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	93.00	18.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	19.00	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

Mango Townhomes Project - South Coast AQMD Air District, Winter

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

3.2 Site Preparation - 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					19.6570	0.0000	19.6570	10.1025	0.0000	10.1025			0.0000			0.0000
Off-Road	3.1701	33.0835	19.6978	0.0380		1.6126	1.6126		1.4836	1.4836		3,686.0619	3,686.0619	1.1922		3,715.8655
Total	**3.1701**	**33.0835**	**19.6978**	**0.0380**	**19.6570**	**1.6126**	**21.2696**	**10.1025**	**1.4836**	**11.5860**		**3,686.0619**	**3,686.0619**	**1.1922**		**3,715.8655**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0652	0.0477	0.6211	1.7200e-003	0.2012	1.2000e-003	0.2024	0.0534	1.1100e-003	0.0545		174.4750	174.4750	4.8700e-003	4.6700e-003	175.9891
Total	**0.0652**	**0.0477**	**0.6211**	**1.7200e-003**	**0.2012**	**1.2000e-003**	**0.2024**	**0.0534**	**1.1100e-003**	**0.0545**		**174.4750**	**174.4750**	**4.8700e-003**	**4.6700e-003**	**175.9891**

Mango Townhomes Project - South Coast AQMD Air District, Winter

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

3.2 Site Preparation - 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					8.8457	0.0000	8.8457	4.5461	0.0000	4.5461			0.0000			0.0000
Off-Road	1.2097	33.7214	22.9600	0.0380		0.9462	0.9462		0.9462	0.9462	0.0000	3,686.0619	3,686.0619	1.1922		3,715.8655
Total	**1.2097**	**33.7214**	**22.9600**	**0.0380**	**8.8457**	**0.9462**	**9.7918**	**4.5461**	**0.9462**	**5.4923**	**0.0000**	**3,686.0619**	**3,686.0619**	**1.1922**		**3,715.8655**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0652	0.0477	0.6211	1.7200e-003	0.2012	1.2000e-003	0.2024	0.0534	1.1100e-003	0.0545		174.4750	174.4750	4.8700e-003	4.6700e-003	175.9891
Total	**0.0652**	**0.0477**	**0.6211**	**1.7200e-003**	**0.2012**	**1.2000e-003**	**0.2024**	**0.0534**	**1.1100e-003**	**0.0545**		**174.4750**	**174.4750**	**4.8700e-003**	**4.6700e-003**	**175.9891**

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

3.3 Grading - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					7.0826	0.0000	7.0826	3.4247	0.0000	3.4247			0.0000			0.0000
Off-Road	1.9486	20.8551	15.2727	0.0297		0.9409	0.9409		0.8656	0.8656		2,872.0464	2,872.0464	0.9289		2,895.2684
Total	**1.9486**	**20.8551**	**15.2727**	**0.0297**	**7.0826**	**0.9409**	**8.0234**	**3.4247**	**0.8656**	**4.2903**		**2,872.0464**	**2,872.0464**	**0.9289**		**2,895.2684**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0544	0.0398	0.5176	1.4300e-003	0.1677	1.0000e-003	0.1687	0.0445	9.2000e-004	0.0454		145.3958	145.3958	4.0600e-003	3.8900e-003	146.6576
Total	**0.0544**	**0.0398**	**0.5176**	**1.4300e-003**	**0.1677**	**1.0000e-003**	**0.1687**	**0.0445**	**9.2000e-004**	**0.0454**		**145.3958**	**145.3958**	**4.0600e-003**	**3.8900e-003**	**146.6576**

Mango Townhomes Project - South Coast AQMD Air District, Winter

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

3.3 Grading - 2022

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					3.1872	0.0000	3.1872	1.5411	0.0000	1.5411			0.0000			0.0000
Off-Road	1.0093	26.2791	18.9906	0.0297		0.7725	0.7725		0.7725	0.7725	0.0000	2,872.0464	2,872.0464	0.9289		2,895.2684
Total	**1.0093**	**26.2791**	**18.9906**	**0.0297**	**3.1872**	**0.7725**	**3.9596**	**1.5411**	**0.7725**	**2.3136**	**0.0000**	**2,872.0464**	**2,872.0464**	**0.9289**		**2,895.2684**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0544	0.0398	0.5176	1.4300e-003	0.1677	1.0000e-003	0.1687	0.0445	9.2000e-004	0.0454		145.3958	145.3958	4.0600e-003	3.8900e-003	146.6576
Total	**0.0544**	**0.0398**	**0.5176**	**1.4300e-003**	**0.1677**	**1.0000e-003**	**0.1687**	**0.0445**	**9.2000e-004**	**0.0454**		**145.3958**	**145.3958**	**4.0600e-003**	**3.8900e-003**	**146.6576**

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

3.4 Building Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.7062	15.6156	16.3634	0.0269		0.8090	0.8090		0.7612	0.7612		2,554.3336	2,554.3336	0.6120		2,569.6322
Total	**1.7062**	**15.6156**	**16.3634**	**0.0269**		**0.8090**	**0.8090**		**0.7612**	**0.7612**		**2,554.3336**	**2,554.3336**	**0.6120**		**2,569.6322**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0322	0.8741	0.2975	3.4400e-003	0.1153	8.7900e-003	0.1241	0.0332	8.4100e-003	0.0416		370.3902	370.3902	0.0124	0.0537	386.7143
Worker	0.3370	0.2465	3.2090	8.8600e-003	1.0395	6.2100e-003	1.0457	0.2757	5.7200e-003	0.2814		901.4540	901.4540	0.0252	0.0241	909.2771
Total	**0.3692**	**1.1206**	**3.5065**	**0.0123**	**1.1548**	**0.0150**	**1.1698**	**0.3089**	**0.0141**	**0.3230**		**1,271.8442**	**1,271.8442**	**0.0375**	**0.0779**	**1,295.9914**

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

3.4 Building Construction - 2022

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.2517	23.3270	18.0727	0.0269		0.8652	0.8652		0.8652	0.8652	0.0000	2,554.3336	2,554.3336	0.6120		2,569.6322
Total	**1.2517**	**23.3270**	**18.0727**	**0.0269**		**0.8652**	**0.8652**		**0.8652**	**0.8652**	**0.0000**	**2,554.3336**	**2,554.3336**	**0.6120**		**2,569.6322**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0322	0.8741	0.2975	3.4400e-003	0.1153	8.7900e-003	0.1241	0.0332	8.4100e-003	0.0416		370.3902	370.3902	0.0124	0.0537	386.7143
Worker	0.3370	0.2465	3.2090	8.8600e-003	1.0395	6.2100e-003	1.0457	0.2757	5.7200e-003	0.2814		901.4540	901.4540	0.0252	0.0241	909.2771
Total	**0.3692**	**1.1206**	**3.5065**	**0.0123**	**1.1548**	**0.0150**	**1.1698**	**0.3089**	**0.0141**	**0.3230**		**1,271.8442**	**1,271.8442**	**0.0375**	**0.0779**	**1,295.9914**

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

3.4 Building Construction - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.5728	14.3849	16.2440	0.0269		0.6997	0.6997		0.6584	0.6584		2,555.2099	2,555.2099	0.6079		2,570.4061
Total	**1.5728**	**14.3849**	**16.2440**	**0.0269**		**0.6997**	**0.6997**		**0.6584**	**0.6584**		**2,555.2099**	**2,555.2099**	**0.6079**		**2,570.4061**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0191	0.6858	0.2655	3.2800e-003	0.1153	3.8200e-003	0.1191	0.0332	3.6600e-003	0.0368		353.4936	353.4936	0.0118	0.0512	369.0521
Worker	0.3136	0.2180	2.9603	8.5800e-003	1.0395	5.8500e-003	1.0454	0.2757	5.3900e-003	0.2811		877.7796	877.7796	0.0226	0.0223	884.9892
Total	**0.3326**	**0.9039**	**3.2258**	**0.0119**	**1.1548**	**9.6700e-003**	**1.1645**	**0.3089**	**9.0500e-003**	**0.3179**		**1,231.2732**	**1,231.2732**	**0.0344**	**0.0735**	**1,254.0414**

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

3.4 Building Construction - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.2295	23.2846	18.0549	0.0269		0.8565	0.8565		0.8565	0.8565	0.0000	2,555.2099	2,555.2099	0.6079		2,570.4061
Total	**1.2295**	**23.2846**	**18.0549**	**0.0269**		**0.8565**	**0.8565**		**0.8565**	**0.8565**	**0.0000**	**2,555.2099**	**2,555.2099**	**0.6079**		**2,570.4061**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0191	0.6858	0.2655	3.2800e-003	0.1153	3.8200e-003	0.1191	0.0332	3.6600e-003	0.0368		353.4936	353.4936	0.0118	0.0512	369.0521
Worker	0.3136	0.2180	2.9603	8.5800e-003	1.0395	5.8500e-003	1.0454	0.2757	5.3900e-003	0.2811		877.7796	877.7796	0.0226	0.0223	884.9892
Total	**0.3326**	**0.9039**	**3.2258**	**0.0119**	**1.1548**	**9.6700e-003**	**1.1645**	**0.3089**	**9.0500e-003**	**0.3179**		**1,231.2732**	**1,231.2732**	**0.0344**	**0.0735**	**1,254.0414**

Mango Townhomes Project - South Coast AQMD Air District, Winter

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

3.5 Paving - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.0327	10.1917	14.5842	0.0228		0.5102	0.5102		0.4694	0.4694		2,207.5841	2,207.5841	0.7140		2,225.4336
Paving	0.0655					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.0982**	**10.1917**	**14.5842**	**0.0228**		**0.5102**	**0.5102**		**0.4694**	**0.4694**		**2,207.5841**	**2,207.5841**	**0.7140**		**2,225.4336**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0506	0.0352	0.4775	1.3800e-003	0.1677	9.4000e-004	0.1686	0.0445	8.7000e-004	0.0453		141.5774	141.5774	3.6500e-003	3.6000e-003	142.7402
Total	**0.0506**	**0.0352**	**0.4775**	**1.3800e-003**	**0.1677**	**9.4000e-004**	**0.1686**	**0.0445**	**8.7000e-004**	**0.0453**		**141.5774**	**141.5774**	**3.6500e-003**	**3.6000e-003**	**142.7402**

Mango Townhomes Project - South Coast AQMD Air District, Winter

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

3.5 Paving - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.9311	20.1146	17.2957	0.0228		0.6670	0.6670		0.6670	0.6670	0.0000	2,207.5841	2,207.5841	0.7140		2,225.4336
Paving	0.0655					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.9966**	**20.1146**	**17.2957**	**0.0228**		**0.6670**	**0.6670**		**0.6670**	**0.6670**	**0.0000**	**2,207.5841**	**2,207.5841**	**0.7140**		**2,225.4336**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0506	0.0352	0.4775	1.3800e-003	0.1677	9.4000e-004	0.1686	0.0445	8.7000e-004	0.0453		141.5774	141.5774	3.6500e-003	3.6000e-003	142.7402
Total	**0.0506**	**0.0352**	**0.4775**	**1.3800e-003**	**0.1677**	**9.4000e-004**	**0.1686**	**0.0445**	**8.7000e-004**	**0.0453**		**141.5774**	**141.5774**	**3.6500e-003**	**3.6000e-003**	**142.7402**

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

3.6 Architectural Coating - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	33.7878					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1917	1.3030	1.8111	2.9700e-003		0.0708	0.0708		0.0708	0.0708		281.4481	281.4481	0.0168		281.8690
Total	**33.9794**	**1.3030**	**1.8111**	**2.9700e-003**		**0.0708**	**0.0708**		**0.0708**	**0.0708**		**281.4481**	**281.4481**	**0.0168**		**281.8690**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0641	0.0446	0.6048	1.7500e-003	0.2124	1.2000e-003	0.2136	0.0563	1.1000e-003	0.0574		179.3313	179.3313	4.6200e-003	4.5600e-003	180.8043
Total	**0.0641**	**0.0446**	**0.6048**	**1.7500e-003**	**0.2124**	**1.2000e-003**	**0.2136**	**0.0563**	**1.1000e-003**	**0.0574**		**179.3313**	**179.3313**	**4.6200e-003**	**4.5600e-003**	**180.8043**

Mango Townhomes Project - South Coast AQMD Air District, Winter

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

3.6 Architectural Coating - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	33.7878					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1917	1.3030	1.8111	2.9700e-003		0.0708	0.0708		0.0708	0.0708	0.0000	281.4481	281.4481	0.0168		281.8690
Total	**33.9794**	**1.3030**	**1.8111**	**2.9700e-003**		**0.0708**	**0.0708**		**0.0708**	**0.0708**	**0.0000**	**281.4481**	**281.4481**	**0.0168**		**281.8690**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0641	0.0446	0.6048	1.7500e-003	0.2124	1.2000e-003	0.2136	0.0563	1.1000e-003	0.0574		179.3313	179.3313	4.6200e-003	4.5600e-003	180.8043
Total	**0.0641**	**0.0446**	**0.6048**	**1.7500e-003**	**0.2124**	**1.2000e-003**	**0.2136**	**0.0563**	**1.1000e-003**	**0.0574**		**179.3313**	**179.3313**	**4.6200e-003**	**4.5600e-003**	**180.8043**

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

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	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	2.5655	3.1236	26.3523	0.0586	6.2708	0.0436	6.3143	1.6710	0.0405	1.7115		6,031.9428	6,031.9428	0.3900	0.2672	6,121.3310
Unmitigated	2.5655	3.1236	26.3523	0.0586	6.2708	0.0436	6.3143	1.6710	0.0405	1.7115		6,031.9428	6,031.9428	0.3900	0.2672	6,121.3310

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	0.00	0.00	0.00		
Condo/Townhouse	783.24	870.98	671.96	2,664,959	2,664,959
Parking Lot	0.00	0.00	0.00		
Total	783.24	870.98	671.96	2,664,959	2,664,959

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
City Park	16.60	8.40	6.90	33.00	48.00	19.00	66	28	6
Condo/Townhouse	14.70	5.90	8.70	40.20	19.20	40.60	86	11	3
Parking Lot	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0

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

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
City Park	0.543139	0.060749	0.184760	0.130258	0.023830	0.006353	0.011718	0.009137	0.000812	0.000509	0.024193	0.000750	0.003791
Condo/Townhouse	0.543139	0.060749	0.184760	0.130258	0.023830	0.006353	0.011718	0.009137	0.000812	0.000509	0.024193	0.000750	0.003791
Parking Lot	0.543139	0.060749	0.184760	0.130258	0.023830	0.006353	0.011718	0.009137	0.000812	0.000509	0.024193	0.000750	0.003791

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Kilowatt Hours of Renewable Electricity Generated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0667	0.5700	0.2426	3.6400e-003		0.0461	0.0461		0.0461	0.0461		727.7024	727.7024	0.0140	0.0133	732.0268
NaturalGas Unmitigated	0.0667	0.5700	0.2426	3.6400e-003		0.0461	0.0461		0.0461	0.0461		727.7024	727.7024	0.0140	0.0133	732.0268

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

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Condo/Townhouse	6185.47	0.0667	0.5700	0.2426	3.6400e-003		0.0461	0.0461		0.0461	0.0461		727.7024	727.7024	0.0140	0.0133	732.0268
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0667**	**0.5700**	**0.2426**	**3.6400e-003**		**0.0461**	**0.0461**		**0.0461**	**0.0461**		**727.7024**	**727.7024**	**0.0140**	**0.0133**	**732.0268**

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

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Condo/Townhouse	6.18547	0.0667	0.5700	0.2426	3.6400e-003		0.0461	0.0461		0.0461	0.0461		727.7024	727.7024	0.0140	0.0133	732.0268
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0667**	**0.5700**	**0.2426**	**3.6400e-003**		**0.0461**	**0.0461**		**0.0461**	**0.0461**		**727.7024**	**727.7024**	**0.0140**	**0.0133**	**732.0268**

6.0 Area Detail

6.1 Mitigation Measures Area

Mango Townhomes Project - South Coast AQMD Air District, Winter

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

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	2.7556	1.6105	9.4774	0.0101		0.1709	0.1709		0.1709	0.1709	0.0000	1,941.9074	1,941.9074	0.0522	0.0353	1,953.7356
Unmitigated	2.7556	1.6105	9.4774	0.0101		0.1709	0.1709		0.1709	0.1709	0.0000	1,941.9074	1,941.9074	0.0522	0.0353	1,953.7356

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	0.1851					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	2.1274					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.1766	1.5087	0.6420	9.6300e-003		0.1220	0.1220		0.1220	0.1220	0.0000	1,926.0000	1,926.0000	0.0369	0.0353	1,937.4453
Landscaping	0.2665	0.1018	8.8354	4.7000e-004		0.0489	0.0489		0.0489	0.0489		15.9074	15.9074	0.0153		16.2904
Total	**2.7556**	**1.6105**	**9.4774**	**0.0101**		**0.1709**	**0.1709**		**0.1709**	**0.1709**	**0.0000**	**1,941.9074**	**1,941.9074**	**0.0522**	**0.0353**	**1,953.7356**

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

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.1851					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	2.1274					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.1766	1.5087	0.6420	9.6300e-003		0.1220	0.1220		0.1220	0.1220	0.0000	1,926.0000	1,926.0000	0.0369	0.0353	1,937.4453
Landscaping	0.2665	0.1018	8.8354	4.7000e-004		0.0489	0.0489		0.0489	0.0489		15.9074	15.9074	0.0153		16.2904
Total	**2.7556**	**1.6105**	**9.4774**	**0.0101**		**0.1709**	**0.1709**		**0.1709**	**0.1709**	**0.0000**	**1,941.9074**	**1,941.9074**	**0.0522**	**0.0353**	**1,953.7356**

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 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