COTTONWOOD COLLECTION

AIR QUALITY, ENERGY, AND GREENHOUSE GAS IMPACT ANALYSIS

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1 INTRODUCTION

This Air Quality, Energy, and Greenhouse Gas Analysis evaluates the potential impacts of the proposed Pacifica Cottonwood residential project (project). The project is located within the jurisdiction of the South Coast Air Quality Management District (SCAQMD). The project site is located south of Cottonwood Avenue, north of Bay Avenue, and east of Quincy Street in the City of Moreno Valley. The proposed project would build 60 single-family homes on a 20.03-acre site. The site is currently vacant. The regional location and site plan can be found in Figure 1 and Figure 2, respectively.

1.1 Purpose of the Report

To support the CEQA document for the project, this report analyzes the project's construction and operational impacts to air quality (emissions of criteria pollutants), energy usage, and greenhouse gas emissions using the California Emissions Estimator Model (CalEEMod) Version 2020.4.0. land use emission model. The purpose of this model is to calculate construction-source and operational-source criteria pollutant (VOCs, NO_X, SO_2, CO, PM10, and PM2.5) and GHG emissions from direct and indirect sources; and quantify applicable air quality and GHG reductions achieved from mitigation. The thresholds of significance used are the adopted thresholds by the SCAQMD.

1.2 Conclusions

The conclusions for the Air Quality, Energy, and Greenhouse Gas (GHG) analysis are as follows:

Air Quality: The project's maximum daily regional and local construction and operational emissions would not exceed SCAQMD's regional thresholds of significance. In addition, all construction activities would comply with applicable SCAQMD rules and regulations, including Rule 402 and Rule 403 to minimize odors and fugitive particulate matter (PM) dust emissions, and Rule 1113 regarding "Low-Volatile Organic Compounds (VOC)" paints (no more than 50 gram/liter (g/L) of VOC). Projects that do not exceed the regional thresholds are assumed to not have a significant impact on a project level and cumulative level. Therefore, the project would have less than significant Air Quality impacts.

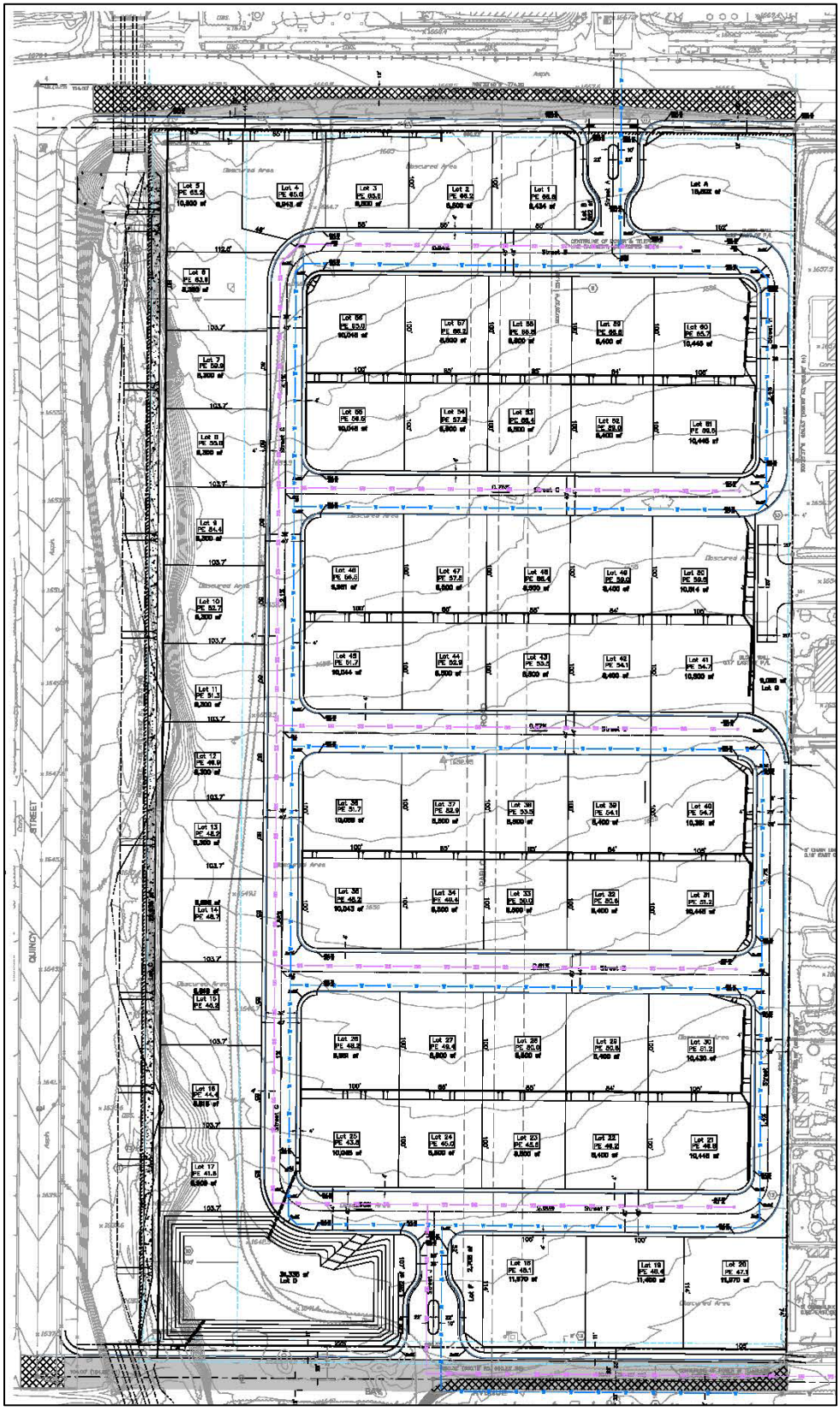
Energy: The project's energy consumption for construction activities related to development of the site for new residential uses would be permitted to require compliance with existing fuel standards, machinery efficiency standards, and CARB requirements that limit idling of trucks. Through compliance with existing standards the Project would not result in demand for fuel greater on a per-development basis than other development projects in Southern California. Operation of the project would comply with all the energy efficiency requirements under Title 24 and all applicable City business and energy regulations, as verified by the City through the permitting processes. Therefore, the construction and operation of the project would not result in inefficient, wasteful, or unnecessary energy use, and impacts would be less than significant.

Greenhouse Gas: The project is consistent with the actions and measures of the 2017 Scoping Plan and Moreno Valley Climate Action Plan respectively and would not interfere with the policies and

goals set within those plans. In addition, the project's GHG emissions of 922 $MTCO_2e$ per year is below the SCAQMD Significance threshold of 3,000 $MTCO_2e$ per year. Therefore, the project would have a less than significant impact related to GHG emissions.

Figure 1: Project Location

Figure 2: Project Site Plan



2 AIR QUALITY ENVIRONMENTAL SETTING

2.1 Local Climate and Meteorology

Climate

The proposed project is located in the South Coast Air Basin (SCAB), which incorporates all of Orange County, and parts of Los Angeles, Riverside, and San Bernardino Counties. The SCAB is a coastal plain, bounded by the Pacific Ocean to the west and southwest, and high mountains surrounding the plain to the north, east and south. The plain exists in a semi-permanent high-pressure zone, resulting in a mild climate tempered by cool sea breezes with light average wind speeds. The vertical dispersion of air pollutants in the SCAB limited by the simi—permanent high-pressure zone creating persistent temperature inversions. High-pressure systems like the one that exists in the SCAB consist of dry air that warms as it descends and restricts the mobility of the cooler moist marine influenced air near the ground surface. The restriction of the vertical dispersion and strong sunlight create the conditions to form photochemical smog.

Meteorology

Meteorological data from the Perris climate station, located 9.8 miles southwest of the project site, were used for the project baseline. The average maximum temperature is 77.8 degrees Fahrenheit (°F), with July having the highest monthly average maximum temperature and December having the lowest monthly average minimum temperature at 97.3 °F and 34.4 °F respectively. The average annual precipitation is 6.37 inches (Western Regional Climate Center).

2.2 Criteria Pollutants

Criteria Pollutants are air pollutants with state and national air quality standards that define allowable concentrations of these substances in ambient air. These criteria pollutants include:

- **Reactive Organic Gases (ROGs).** ROGs are hydrocarbon compounds that contribute to the formation of smog through atmospheric photochemical reactions and/or may be toxic. Compounds of carbon (also known as organic compounds) are a precursor to O_3. ROGs often have an odor, and some examples include gasoline, alcohol, and the solvents used in paints. Not all ROGs have health effects; however, breathing some ROGs can irritate the eyes, nose and throat, can cause difficulty breathing and nausea, and can damage the central nervous system or cause cancer.
- **Oxides of nitrogen (NO_x).** NO_x consists of nitric oxide (NO) and nitrogen dioxide (NO_2) and five other compounds, which are formed when nitrogen (N) combines with oxygen. NO_x is typically created during combustion processes and are major contributors to smog formation and acid deposition. Increase in resistance to air flow and airway contraction is occurs after short-term exposure to NO_x in healthy subjects and an increase in acute respiratory illness, including infections and respiratory symptoms in children, is associated with long-term exposure to NO_x.

- **Carbon monoxide (CO).** CO is a colorless, odorless gas produced by sources that burns fuel such as vehicles, construction equipment, and building heating. CO concentrations tend to be the highest during the winter morning, when little to no wind and surface-based inversions trap the pollutant at ground levels. Motor vehicles are the primary source of CO in the SCAB and the highest ambient CO concentrations are generally found near congested transportation corridors and intersections. Inhaled CO has no direct toxic effect on the lungs but exerts its effect on tissues by interfering with O_2 transport and competing with O_2 to combine with hemoglobin present in the blood to form carboxyhemoglobin (COHb). Conditions with an increased demand for O_2 supply can be adversely affected by exposure to CO. Individuals most at risk include fetuses, patients with diseases involving heart and blood vessels, and patients with chronic hypoxemia (O2 deficiency).
- **Sulfur dioxide (SO_2).** SO_2 is a respiratory irritant generated by burning high sulfur-content fuel oils and coal and from chemical processes occurring at chemical plants and refineries. Exposure to SO_2 can result in reduction in breathing capacity leading to breathing difficulties.
- **Particulate matter PM10 (PM10).** PM10 is a major air pollutant consisting of tiny solid or liquid particles of soot, dust, smoke, fumes, and aerosols. PM pollution is a major cause of reduce visibility (haze) which is caused by the scattering of light and consequently the significant reduction air clarity. The size of the particles (10 microns or smaller, about 0.0004 inches or less) allows them to easily enter the lungs where they may be deposited, resulting in adverse health effects that include respiratory infections, asthma, lung cancer.
- **Particulate matter PM2.5 (PM2.5).** PM2.5 consists of tiny solid or liquid particles which are 2.5 microns or smaller (which is often referred to as fine particles). These particles are formed in the atmosphere from primary gaseous emissions that include SO_4 formed from SO_2 release from power plants and industrial facilities and nitrates that are formed from NO_x release from power plants, automobiles, and other types of combustion sources. PM2.5 results in the same type of health effects as PM2.5.

The emissions of these criteria pollutants were estimated using CalEEMod (Version 2020.4.0) to identify the construction and net operational emissions that would be generated by the proposed project.

2.3 Sensitive Receptors

A sensitive receptor is defined as an individual who is most susceptible to negative health affects when exposed to air pollutants including children, the elderly, and adults with chronic health issues. Such receptors include residences, schools, elderly care centers, and hospitals where an individual can remain for 24 hours.

The sensitive receptors located near the project site include residences surrounding the project in all directions of the site, with the closest residence approximately 6.0 meters from the project boundary.

2.4 Existing Air Quality

Regional Air Quality

The USEPA and the state has established air quality standards for six criteria pollutants and the SCAQMD monitors levels of various criteria pollutants at monitoring stations. The air quality in a region is considered to be in attainment if the measured ambient air pollutant levels do not exceed the air quality standards. Conversely, nonattainment means that an area has monitored air quality that does not meet the USEPA or state standards. In order to improve air quality in nonattainment areas, a State Implementation Plan (SIP) is drafted by the California Air Resources Board (CARB). The SIP outlines the measures that the state will take to improve air quality. Once nonattainment areas meet the standards and additional redesignation requirements, the USEPA designates the area as a maintenance area. As shown in Table Five, the project site is in a federal nonattainment area for Ozone (8 hour) and PM2.5, and a state nonattainment area for Ozone (1 and 8 hour), PM10 and PM2.5.

Table 1. Attainment Status of Criteria Pollutants in the South Coast Air Basin

Pollutant	State	Federal
Ozone (1 hour)	Nonattainment	No Standard
Ozone (8 hour)	Nonattainment	Nonattainment
PM10	Nonattainment	Attainment
PM2.5	Nonattainment	Nonattainment
CO	Attainment	Attainment
NO_2	Attainment	Attainment
SO_2	Attainment	Attainment
Lead	Attainment	Attainment
All others	Attainment/Unclassified	No Standards

Source: CARB 2014; USEPA 2015

Local Air Quality

The project site is located within the Source Receptor Area (SRA) 24. Within SRA 24, the SCAQMD Perris Valley monitoring station, located 9.1 miles from the site, is the nearest long-term air quality monitoring station. The Perris Valley monitoring station does not include data for CO, NOx and PM2.5. As such, the next nearest monitoring stations will be used. The Metropolitan Riverside County 3 monitoring station, located in SRA 23, is the next nearest monitoring station for CO, NOx, PM2.5, and is located approximately 14 miles northwest of the project site.

The most recent three years of data available is shown on Table 2 and identifies the number of days ambient air quality standards were exceeded for the study area, which is considered to be representative of the local air quality at the project site. Data for O_3, CO, NO_2, PM10, and PM2.5 for 2018 through 2020 was obtained from the SCAQMD Air Quality Data Tables. Additionally, data for SO_2 has been omitted as attainment is regularly met in the SCAB and few monitoring stations measure SO_2 concentrations.

Table 2. Project Area Air Quality Monitoring Summary 2018-2020

Pollutant	Standard	Year		
		2018	2019	2020
O_3				
Maximum Federal 1-Hour Concentration (ppm)		0.117	0.118	0.125
Maximum Federal 8-Hour Concentration (ppm)		0.103	0.095	0.106
Number of Days Exceeding State 1-Hour Standard	0.09 ppm	31	26	34
Number of Days Exceeding State/Federal 8-Hour Standard	0.070 ppm	67	64	74
CO[1]				
Maximum Federal 1-Hour Concentration	35 ppm	2.6	2.0	1.8
Maximum Federal 8-Hour Concentration	20 ppm	2.4	1.3	1.5
NOx[1]				
Maximum Federal 1-Hour Concentration	0.100 ppm	54.5	56.0	58.1
Annual Federal Standard Design Value		13.7	12.2	12.3
PM10				
Maximum Federal 24-Hour Concentration (µg/m^3)	150 µg/m^3	64	97	77
Annual Federal Arithmetic Mean (µg/m^3)		29.7	25.3	35.9
Number of Days Exceeding Federal 24-Hour Standard	150 µg/m^3	0	0	0
Number of Days Exceeding State 24-Hour Standard	50 µg/m^3	3	4	6
PM2.5[1]				
Maximum Federal 24-Hour Concentration (µg/m^3)	35 µg/m^3	64.80	46.70	38.70
Annual Federal Arithmetic Mean (µg/m^3)	12 µg/m^3	13.87	12.53	14.03
Number of Days Exceeding Federal 24-Hour Standard	35 µg/m^3	4	9	5

ppm= Parts Per Million
Source: SCAQMD Historical Air Quality Data By Year, Air Quality Data Tables for Perris Valley Air Quality Monitoring Station.
[1] Data obtained from SRA 23 Metropolitan Riverside County 3

3 AIR QUALITY REGULATORY SETTING

Federal

The U.S. Environmental Protection Agency (USEPA) is responsible for setting and enforcing the National Ambient Air Quality Standards (NAAQS) for criteria pollutants. The USEPA standards, along with the California standards, are shown in Table 3: California and National Ambient Air Quality Standards. The USEPA draws primarily from the Clean Air Act (CAA) to create their air quality mandates. The USEPA requires each state with federal nonattainment areas to prepare and submit a SIP as a part of its enforcement responsibilities. The SIP demonstrates the means to attain and maintain the federal standards set by the USEPA, and must integrate federal, state, and local plan components and regulations to reduce pollution within the SIP identified timeframe. The sections of the CAA most directly applicable to the development of the project site include Title I (Non-Attainment Provisions) and Title II (Mobile Source Provisions). Title I provisions were established with the goal of attaining the national air quality standards and Title II provisions are related to mobile source emissions and require use of cleaner burning gasoline and other cleaner burning fuels.

State

The California Air Resources Board (CARB), a department of the California Environmental Protection Agency, oversees air quality planning and control throughout California. CARB is responsible for coordination and oversight of state and local air pollution control programs in California and for implementation of the California Clean Air Act (CCAA), which requires CARB to establish the California Ambient Air Quality Standards (CAAQS). CARB has established CAAQS for sulfates, hydrogen sulfide, vinyl chloride, visibility-reducing particulate matter, and the above-mentioned criteria air pollutants. Applicable CAAQS are shown in Table 3.

The CCAA requires all local air districts in the state to endeavor to achieve and maintain the CAAQS by the earliest practical date. The act specifies that local air districts shall focus particular attention on reducing the emissions from transportation and area-wide emission sources and provides districts with the authority to regulate indirect sources.

Among CARB's other responsibilities are overseeing compliance by local air districts with California and federal laws, approving local air quality plans, submitting SIPs to the USEPA, monitoring air quality, determining and updating area designations and maps, and setting emissions standards for new mobile sources, consumer products, small utility engines, off-road vehicles, and fuels.

Table 3. California and National Ambient Air Quality Standards

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]
Ozone (O_3)[8]	1 Hour	0.09 ppm (180 µg/m^3)	Ultraviolet Photometry	—	Same as Primary Standard	Ultraviolet Photometry
	8 Hour	0.070 ppm (137 µg/m^3)		0.070 ppm (137 µg/m^3)		
Respirable Particulate Matter (PM10)[9]	24 Hour	50 µg/m^3	Gravimetric or Beta Attenuation	150 µg/m^3	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	20 µg/m^3		—		
Fine Particulate Matter (PM2.5)[9]	24 Hour	—	—	35 µg/m^3	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	12 µg/m^3	Gravimetric or Beta Attenuation	12.0 µg/m^3	15 µg/m^3	
Carbon Monoxide (CO)	1 Hour	20 ppm (23 mg/m^3)	Non-Dispersive Infrared Photometry (NDIR)	35 ppm (40 mg/m^3)	—	Non-Dispersive Infrared Photometry (NDIR)
	8 Hour	9.0 ppm (10 mg/m^3)		9 ppm (10 mg/m^3)	—	
	8 Hour (Lake Tahoe)	6 ppm (7 mg/m^3)		—	—	
Nitrogen Dioxide (NO_2)[10]	1 Hour	0.18 ppm (339 µg/m^3)	Gas Phase Chemiluminescence	100 ppb (188 µg/m^3)	—	Gas Phase Chemiluminescence
	Annual Arithmetic Mean	0.030 ppm (57 µg/m^3)		0.053 ppm (100 µg/m^3)	Same as Primary Standard	
Sulfur Dioxide (SO_2)[11]	1 Hour	0.25 ppm (655 µg/m^3)	Ultraviolet Fluorescence	75 ppb (196 µg/m^3)	—	Ultraviolet Flourescence; Spectrophotometry (Pararosaniline Method)
	3 Hour	—		—	0.5 ppm (1300 µg/m^3)	
	24 Hour	0.04 ppm (105 µg/m^3)		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/m^3	Atomic Absorption	—	—	High Volume Sampler and Atomic Absorption
	Calendar Quarter	—		1.5 µg/m^3 (for certain areas)[12]	Same as Primary Standard	
	Rolling 3-Month Average	—		0.15 µg/m^3		
Visibility Reducing Particles[14]	8 Hour	See footnote 14	Beta Attenuation and Transmittance through Filter Tape	No National Standards		
Sulfates	24 Hour	25 µg/m^3	Ion Chromatography			
Hydrogen Sulfide	1 Hour	0.03 ppm (42 µg/m^3)	Ultraviolet Fluorescence			
Vinyl Chloride[12]	24 Hour	0.01 ppm (26 µg/m^3)	Gas Chromatography			

See footnotes on next page ...

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California Air Resources Board (5/4/16)

1. California standards for ozone, carbon monoxide (except 8-hour Lake Tahoe), sulfur dioxide (1 and 24 hour), nitrogen dioxide, and particulate matter (PM10, PM2.5, and visibility reducing particles), are values that are not to be exceeded. All others are not to be equaled or exceeded. California ambient air quality standards are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.

2. National standards (other than ozone, particulate matter, and those based on 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 three years, is equal to or less than the standard. For PM10, the 24 hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 $\mu g/m^3$ is equal to or less than one. For PM2.5, the 24 hour standard is attained when 98 percent of the daily concentrations, averaged over three years, are equal to or less than the standard. Contact the U.S. EPA for further clarification and current national policies.

3. Concentration expressed first in 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 which can be shown to the satisfaction of the ARB 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. Reference method as described by the U.S. 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 U.S. EPA.

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

9. On December 14, 2012, the national annual PM2.5 primary standard was lowered from 15 $\mu g/m^3$ to 12.0 $\mu g/m^3$. The existing national 24-hour PM2.5 standards (primary and secondary) were retained at 35 $\mu g/m^3$, as was the annual secondary standard of 15 $\mu g/m^3$. The existing 24-hour PM10 standards (primary and secondary) of 150 $\mu g/m^3$ 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 national 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 one year after an area is designated for the 2010 standard, except that in areas designated 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. The ARB 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 $\mu g/m^3$ as a quarterly average) remains in effect until one year after an area is designated for the 2008 standard, except that in areas designated nonattainment for the 1978 standard, the 1978 standard remains in effect until implementation plans to attain or maintain the 2008 standard are approved.

14. In 1989, the ARB converted both the general statewide 10-mile visibility standard and the Lake Tahoe 30-mile 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.

For more information please call ARB-PIO at (916) 322-2990 **California Air Resources Board (5/4/16)**

Title 24, Energy Efficiency and Green Building Standards. California Code of Regulations (CCR) Title 24 Part 6: California's Energy Efficiency Standards are updated every three years to incorporate new energy efficient technologies and construction methods. The most recent approved update consisting of the 2019 California Green Building Code Standards which became effective January 1, 2020.

The 2019 Title 24 standards result in less energy use, thereby reducing air pollutant emissions associated with energy consumption. Title 24 standards require solar photovoltaic systems and encourage demand responsive technologies for new residential structures.

Regional

The South Coast Air Quality Management District (SCAQMD) is the air pollution control agency in the Basin. The role of the local SCAQMD is to protect the people and the environment of the Basin from the effects of air pollution. SCAQMD shares responsibility with CARB for ensuring that air quality standards are achieved and maintained within the Basin.

SCAQMD has adopted a series of Air Quality Management Plans (AQMPs) to meet the state and federal ambient air quality standards. The 2016 AQMP is the most recent, and was adopted on March 3, 2017. The 2016 AQMP includes a comprehensive analysis of emissions, meteorology, atmospheric chemistry, regional growth projections, and the impact of existing control measures, to meet the following NAAQS:

- 8-hour ozone (75 ppb) by 2032
- Annual PM2.5 (12 µg/m^3) by 2021-2025
- 8-hour ozone (80 ppb) by 2024
- 1-hour ozone (120 ppb) by 2023
- 24-hour PM2.5 (35 µg/m^3) by 2019

The SCAQMD establishes a program of rules and regulations to obtain attainment of the state and federal standards along with the AQMP. The rules and regulations applicable to this project include, but are not limited to, the following:

- **SCAQMD Rule 402** governs emissions of air contaminants or other material which cause injury, determinant, nuisance, or annoyance to any considerable number of persons or to the public. These apply to any odors that would be deemed objectionable to a substantial number of people. This rule does not apply to agricultural operations necessary for the growing of crops or the raising of fowl or animals.
- **SCAQMD Rule 403** governs emissions of fugitive dust during construction and operation activities. Compliance with this rule is achieved through application of standard Best Management Practices, such as application of water or chemical stabilizers to disturbed soils, covering haul vehicles, restricting vehicle speeds on unpaved roads to 15 miles per hour, sweeping loose dirt from paved site access roadways, cessation of construction activity when winds exceed 25 mph, and establishing a permanent ground cover on finished sites.
- **SCAQMD Rule 445** restricts wood burning devices from being installed into any new development and is intended to reduce the emissions of particulate matter for wood burning devices.

- **SCAQMD Rule 1113** allows the use of only Low-Volatile Organic Compounds (VOC) paints (no more than 50 gram/liter (g/L) of VOC) consistent.

Toxic Air Contaminants

SCAQMD also requires projects to analyze Toxic Air Contaminants (TACs) and the health risks resulting from them. In the SCAB, SCAQMD has prepared a series on in-depth analysis called the Multiple Air Toxics Exposure Studies (MATES). These include MATES I-V. In these reports, Diesel Particulate Matter (DMP) and other air toxics relation to cancer risk incidence were analyzed (MATES V 2021). Reductions of cancer risk incidence of 54 percent between MATES IV and MATES V can be seen due to the increasingly stringent DMP emission regulations and improved DMP emission control technologies. MATES V Data (2018) shows that exposure to TACs in the SCAB increased the chances of developing cancer by 455 chances in one million, with Diesel Particulate matter composes 67.3 percent of the TACs analyzed in the report.

4 AIR QUALITY THRESHOLDS

Regional Emissions Thresholds

SCAQMD has adopted regional significance thresholds that identified the maximum daily emissions[1] (pounds/day) for the criteria pollutants during construction and operation of a project. Pursuant to the SCAQMD's CEQA Air Quality Significance Thresholds, projects with daily emissions that exceed any of the indicated thresholds is considered to result in an individually and cumulatively significant air quality impact. The regional thresholds are listed in Table 4: SCAQMD Regional Emission Significance Thresholds. These emission thresholds include the project emissions generated both from onsite sources (such as off-road construction equipment and fugitive dust) and offsite sources (vehicle travel leaving and arriving to the site).

Table 4. SCAQMD Regional Emissions Significance Thresholds

Air Pollutant	Maximum Daily Emissions (pounds/day)	
	Construction	Operation
ROGs	75	55
NOx	100	55
CO	550	550
SO_2	150	150
PM10	150	150
PM2.5	55	55

Source: SCAQMD 2015

Localized Significance Thresholds

Localized significance thresholds (LSTs) were adopted by the SCAQMD)[2] to identify the maximum emissions from a project that would not cause or contribute to an exceedance of the most stringent applicable federal or state ambient air quality standard at the nearest residence or sensitive receptor. SCAQMD provides screening look up tables (Appendix C of the SCAQMD 2008 Final Localized Significance Threshold Methodology)[3] for projects that disturb 5 acres or less per day. These tables are based on the amount of area disturbed and distance from sensitive receptors and were created to easily determine if the daily emissions of NO_x, CO, PM10, and PM2.5 from a project could result in a significant impact to the local air quality.

The "acres disturbed" is the estimated maximum area that given piece of equipment would pass over in an 8-hour workday. Table 5: Daily Acres Graded, shows that based on size of the project site and the default acres of grading derived from the CalEEMod model, the project would grade

[1] SCAQMD April 2019. Referenced at http://www.aqmd.gov/docs/default-source/ceqa/handbook/scaqmd-air-quality-significance-thresholds.pdf
[2] SCAQMD 2011: Fact Sheet for Applying CalEEMod to Localized Significance Thresholds. Referenced at http://www.aqmd.gov/docs/defaultsource/ceqa/handbook/localized-significance-thresholds/caleemod-guidance.pdf
[3] SCAQMD 2008: Final Localized Significance Threshold Methodology Appendix C. Referenced at http://www.aqmd.gov/home/rules-compliance/ceqa/air-quality-analysis-handbook/localized-significance-thresholds

4 acres per day. Therefore, the SCAQMD thresholds for 2 acres and 5 acres were interpolated for a 4-acre site.

Also, because the closest residence is approximately 2.5 meters from the project boundary, pursuant to SCAQMD methodology, a threshold for a distance of 25 meters was used. Table 6: Construction Localized Significance Thresholds, shows the LST thresholds in SRA 24 for a maximum of 4-acres of grading per day.

Table 5. Daily Acres Graded

Equipment	#	Total Acres Graded Daily
Graders	1	0.5
Rubber Tired Dozers	1	0.5
Scrapers	2	2
Crawler Tractors	2	1
Total	**6**	**4**

Source: CalEEMod Output Sheets, LST Fact Sheet

Table 6. Construction Localized Significance Thresholds

Air Pollutant	Maximum Daily Emissions (pounds/day)
NO_x	236.6
CO	1345.6
PM10	11.0
PM2.5	6.7

Source: Localized Significance Threshold Methodology Appendix C

5 AIR QUALITY EMISSIONS MODELING METHODOLOGY

California Emissions Estimator Model

The current version of CalEEMod (2020.4.0) was used to calculate emissions that would be generated by the proposed project. The purpose of this model is to calculate construction-source and operational-source criteria pollutant emissions and GHG emissions from direct and indirect sources and quantify applicable air quality and GHG reductions achieved from mitigation. The model runs for both construction and operational activity are attached.

Emission Factors Model

In April 2021, the 2021 version of the EMissions FACtor model (EMFAC) web database for use in SIP and transportation conformity analyses was released. EMFAC2021 is a mathematical model that was developed to calculate emission rates, fuel consumption, VMT from motor vehicles that operate on highways, freeways, and local roads in California and is used by the CARB. These emission and fuel consumption rates are included in the attached fuel calculation sheet.

6 AIR QUALITY PROJECT IMPACTS

6.1 Construction Emissions

The construction schedule, off-road equipment, and vehicle trips can be found in Table 7. Construction Schedule, Table 8. Construction Equipment Inventory, and Table 9. Construction Vehicle Trips. Construction Vehicle Trips were generated using the defaults from CalEEMod. As shown in Table 7, construction of the project would occur over an approximate 44-month period. The worker and vendor trips were based on the CalEEMod defaults. All excavation and grading during the site prep and grading phases would be balanced onsite, so no offsite haul trips are anticipated to occur during the site prep and grading phase.

Table 7. Construction Schedule

Activity	Start Date	End Date	Total Days
Site Preparation	1/2/2023	1/13/2023	30
Grading	1/14/2023	3/3/2023	35
Building Construction	3/4/2023	8/2/2024	370
Paving	8/3/2024	8/30/2024	20
Architectural Coating	8/31/2024	10/25/2024	20

Source: CalEEmod Output Sheets

Table 8. Construction Equipment Inventory

Activity	Equipment	Number	Hours per day	Horse-power	Load Factor
Site Preparation	Rubber Tired Dozers	3	8	247	0.40
	Crawler Tractors	4	8	212	0.43
Grading	Excavators	2	8	158	0.38
	Graders	1	8	187	0.41
	Rubber Tired Dozers	1	8	247	0.40
	Scrapers	2	8	367	0.48
	Crawler Tractors	2	8	212	0.43
Building Construction	Cranes	1	8	231	0.29
	Forklifts	3	8	89	0.20
	Generator Sets	1	8	84	0.74
	Tractors/Loaders/Backhoes	3	8	97	0.37
	Welders	1	8	46	0.45
Paving	Pavers	2	8	130	0.42
	Paving Equipment	2	8	132	0.36
	Rollers	2	8	80	0.38
Architectural Coating	Air Compressors	1	8	78	0.48

Source: CalEEmod Output Sheets

Table 9. Construction Vehicle Trips

Activity	Construction Trips per Day		Total Trips
	Worker	Vendor	Haul
Site Preparation	18	0	0
Grading	20	0	1,346
Model Building Construction	158	59	0
Paving	15	0	0
Architectural Coating	32	0	0

Source: CalEEmod Output Sheets

The project's estimated maximum daily regional and localized construction emissions are shown in Table 10: Regional Construction Emission Estimates, and Table 11: Localized Construction Emission Estimates, respectively. As noted from Table 10 and Table 11, the construction of the project would not exceed the SCAQMD regional or localized emission significance thresholds. All CalEEMod output sheets can be found in Appendix A.

Table 10. Regional Construction Emission Estimates

Construction Activity	Maximum Daily Regional Emissions (pounds/day)					
	ROG	NO_x	CO	SO_2	PM10	PM2.5
2023						
Site Prep	3.9	41.9	19.0	0.1	10.5	5.7
Grading	4.1	45.8	29.9	0.1	6.6	3.3
Building Construction	2.3	17.9	23.9	0.1	2.9	1.3
Maximum Daily Emissions	4.1	45.8	29.9	0.1	10.5	5.7
2024						
Building Construction	2.2	16.8	23.4	0.1	2.8	1.2
Paving	2.0	9.6	15.1	0.0	0.6	0.5
Architectural Coating	35.8	1.7	3.5	0.0	0.4	0.2
Maximum Daily Emissions	35.8	16.8	23.4	0.1	2.8	1.2
Maximum Daily Emission 2023-2024	35.8	45.8	29.9	0.1	10.5	5.7
SCAQMD Significance Thresholds	75	100	550	150	150	55
Threshold Exceeded?	**No**	**No**	**No**	**No**	**No**	**No**

Source: CalEEmod Output Sheets

Table 11. Localized Construction Emission Estimates

Construction Activity	Maximum Daily Regional Emissions (pounds/day)			
	NO_x	CO	PM10	PM2.5
2023				
Site Preparation	41.9	18.3	10.3	5.6
Grading	41.7	28.1	5.7	3.0
Building Construction	15.4	17.3	0.7	0.7
Maximum Daily Emissions	41.9	28.1	10.3	5.6
2024				
Building Construction	14.4	17.2	0.7	0.6
Paving	9.5	14.6	0.5	0.4
Architectural Coating	1.6	2.4	0.1	0.1
Maximum Daily Emissions	14.4	17.2	0.7	0.6
Maximum Daily Emission 2023-2024	41.9	28.1	10.3	5.6
SCAQMD Significance Thresholds	236.6	1345.6	11.0	6.6
Threshold Exceeded?	**No**	**No**	**No**	**No**

Source: CalEEmod Output Sheets

6.2 Operational Emissions

Long-term operational emissions would be generated resulting from the day-to-day operations, which include:

- Mobile-source emissions: automobiles traveling to and from the project site
- Area-source emissions: landscaping maintenance activities and periodic architectural coatings
- Energy-source emissions: natural gas and electricity consumption

Based on the project trip generation[4], the project is expected to generate 2,185 daily weekday trips. The CalEEMod default mix of vehicles include light duty automobiles, light duty trucks, medium duty trucks, busses, and motorcycles, the types of vehicles that would be associated with a residential project. For the regional analysis of operational emissions, the default vehicle trip distances provided in the CalEEMod model were applied to the project trips.

The project's estimated maximum daily regional Table 12: Regional Operational Emission Estimates. As noted from Table 12, the operation of the project would not exceed the SCAQMD regional emission significance thresholds. All CalEEMod output sheets can be found in Appendix A.

[4] EPD Solutions: Pacifica Cottonwood Vehicle Miles Traveled Screening Memo, 2022

Table 12. Regional Operational Emission Estimates

Operational Activity	Maximum Daily Regional Emissions (pounds/day)					
	ROG	NO_x	CO	SO_2	PM10	PM2.5
Area	2.6	0.1	4.9	0.0	0.0	0.0
Energy	0.1	0.4	0.2	0.0	0.1	0.1
Mobile	1.8	2.5	17.4	0.0	4.1	1.1
Total Project Operational Emissions	4.5	3.0	22.5	0.0	4.2	1.2
SCAQMD Significance Thresholds	*55*	*55*	550	150	150	*55*
Threshold Exceeded?	**No**	**No**	**No**	**No**	**No**	**No**

Source: CalEEmod Output Sheets

LSTs for Operation

According to the SCAQMD LST methodology, LSTs apply to project stationary mobile sources. Projects that involve mobile sources that spend long periods queuing and idling at a site, such as transfer facilities or warehousing and distribution buildings, have the potential to exceed the operational localized significance thresholds. The proposed project would operate 227 residential units, which do not involve vehicles idling or queueing for long periods. Therefore, due to the lack of significant stationary source emissions, impacts related to operational localized significance thresholds would be less than significant.

6.3 Toxic Air Contaminants

The construction of the project would have short-term diesel particulate matter (DPM) emissions from the use of off-road heavy-duty equipment and medium heavy-duty vendor truck vehicles. DPM is a listed carcinogen and toxic air contaminant (TAC) in the State of California. To determine the heath risk associated with a project, the two important factors to consider are the dose of the substance and the duration of the exposure. According to the Office of Environmental Heath Hazard Assessment, Heath Risk Assessments (HRA's) are used to determine the impact of exposure of TAC emissions on sensitive receptors. The period/duration of the assessment is based on a 70-year exposure.

The impact of construction equipment on sensitive receptors would be minimal due to the limited number of equipment utilized during the construction period and the short duration of construction when analyzed on a 70-year analysis period. Therefore, the construction of the project would be presumed to have a less than significant impact.

In addition, DPM emissions would be the most significant TAC emissions during the long-term operation of the project. The project is residential, and therefore would expect infrequent truck trips for moving in and out and occasionally large deliveries/home improvements. The amount of DPM emissions released from the infrequent truck trips would be insignificant and sporadic, and therefore would be presumed to have a less than significant impact.

6.4 Air Quality Management Plan Consistency

SCAQMD's CEQA Handbook provides the following two criteria to determine whether a project would be consistent or in conflict with the AQMP:

1. The project would not generate population and employment growth that would be inconsistent with SCAG's growth forecasts.
2. The project would not result in an increase in the frequency or severity of existing air quality violations or cause or contribute to new violations or delay the timely attainment of air quality standards or the interim emissions reductions specified in the AQMP.

Consistency Criterion No. 1 refers to the SCAG's growth forecasts and associated assumptions included in the AQMP. The future air quality levels projected in the AQMP are based on SCAG's growth projections, which are based, in part, on the general plans of cities located within the SCAG region. Therefore, if the level of housing related to the proposed project are consistent with the applicable assumptions used in the development of the AQMP, the project would not jeopardize attainment of the air quality levels identified in the AQMP.

The project site has a current General Plan land use designation of Residential: Max 3 dwelling units per acre (R3). The project would develop the 20.03-acre site with 60 single-family residences, which would result in a gross density of 3 units per acre. The proposed density and land use is allowed under the R3 land use; therefore, implementation of the project would not exceed the growth assumptions for the project site. As a result, the proposed project would be consistent with Consistency Criterion No. 1.

Consistency Criterion No. 2 refers to the California Ambient Air Quality Standards. An impact would occur if the long-term emissions associated with the proposed project would exceed SCAQMD's regional significance thresholds for operation-phase emissions.

The quantified air quality emissions analysis describes that the proposed project would not exceed any air quality standards. Therefore, the proposed project would be consistent with Criterion No. 2. As the project would be consistent with both Criterion No. 1 and 2, impacts related to consistency with the AQMP would be less than significant.

6.5 Odors

Odors would be produced during the construction of the project due to the operation of heavy-duty off-road equipment. The primary odor emitted would be DPM from the vendor trucks and heavy-duty off-road equipment. This odor may be noticeable by nearby residents; however, these odors would be expected and not necessarily objectionable. These odors would also dissipate quickly and be temporary. Therefore, due to the temporary and non-objectionable to a substantial number of people nature of the odor produced during construction, the odor impact would be less than significant.

For operational odor emissions, SCAQMD *CEQA Air Quality Handbook*, land use associated with odor complaints include the following:

- Agricultural Uses
- Chemical Plants
- Composting Activities
- Dairies
- Fiberglass Molding
- Food processing plants
- Landfills
- Refineries
- Wastewater Treatment Plants

The project does not propose any of the above land uses and is required to comply with SCAQMD Rule 402, Nuisance, which states:

> *A person shall not discharge from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance, or annoyance to any considerable number of persons 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 provisions of this rule shall not apply to odors emanating from agricultural operations necessary for the growing of crops or the raising of fowl or animals.*

Thus, impacts associated with odor sources produced by the project would be less than significant.

6.6 Conclusion

As shown above in Tables 10-12, the project's maximum daily regional and localized construction and operational emissions would not exceed SCAQMD's regional thresholds of significance. In addition, all construction activities would comply with applicable SCAQMD rules and regulations. Given the project land use and size, the exposure to toxic air contaminants and odors produced by the construction would be minimal and temporary, and operation of the site would be minimal and similar to the surrounding land uses. Therefore, the proposed project would have a less than significant air quality impact and no mitigation is required.

7 ENERGY

7.1 Environmental Setting

The operation of the project would consume three main sources of energy, electricity, natural gas, and transportation energy resources.

Electricity
Electricity in the project area is provided by Moreno Valley Electric Utility (MVU). MVU provides electric power to more than 6,500 customers within its 33.48 square mile service area. MVU purchases a mix of renewable sources (solar, wind, hydro, etc.) as well as non-renewable sources (coal, natural gas, nuclear, etc.) The Power Content Label Mix (MVU 2020[5]) states that the power mix for MUV is as follows:

- Fossil fuels
  - Other and Unspecified Sources (79.3%)
- Eligible Renewable (20.7%)
  - Biomass and Waste (5.6%)
  - Solar (4.0%)
  - Wind (11.0%)

The California Independent Service Operator (ISO) is a nonprofit public benefit corporation that is tasked with the operation of California's power grid and is responsible for maintaining grid reliability. They are also responsible approving improvements and additions to the power grid required to accommodate the State's electrical needs. The ISO works with other western US states to ensure grid reliability in cases of over and under production within the state. The California Energy Commission (CEC) Total System Electric Generation table[6] shows that California In-State Generation is 190,913 GWh and the Total Import amount is 81,663 GWh for a total 272,576 GWh of energy.

Natural Gas
The proposed project and project area is served by Southern California Gas (SoCalGas) which serves 5.9 million customers. The California Public Utilities Commission (CPUP) serves as the regulator of natural gas for SoCalGas, Pacific Gas & Electric, San Diego Gas & Electric (SDG&E), and several smaller and independent utilities and storage operators.

The natural gas consumed is available by both in-state and out-of-state sources, allocated by market supply and demand. The CPUC is tasked with overseeing the purchase and transmission of natural gas, by working with in-state sources and the Federal Energy Regulatory Commission to acquire out-of-state sources through the multiple interstate and international pipelines.

[5] 2020 Power Content Label for Moreno Valley Electric Utility found at: http://www.moval.org/mvu/power-content.html

[6] California Energy Commission 2020 Total System Electric Generation found at: https://www.energy.ca.gov/data-reports/energy-almanac/california-electricity-data/2020-total-system-electric-generation

According to the 2021 Supplemental California Gas Report[7], the 2020 Gas Supply Taken for SoCalGas in million cubic feet per day (MMcf/d) is as follows:

- Core Customers (residential, small commercial, and small industrial) – demand was 920 (MMcf/d)
- Noncore Customers (Electric generator and large industrial) – demand was 1,118 MMcf/d.
- Wholesale/International – demand was 374 MMcf/d.

Transportation Energy Resources

In addition to consuming electricity and natural Gas, the construction and operation of the project would consume fuel for transportation, predominately petroleum (gasoline and diesel fuel). As of January 2021, the Department of Motor Vehicles stated that there were 35.2 million registered vehicles in California[8], which would consume an estimated that 17.7 billion gallons of fuel a year (calculated using the EMFAC2021 (2021) projection estimates). Of the 17.7 billion gallons consumed, 14.6 billion gallons were gasoline, and 3.1 billion gallons were diesel fuel.

7.2 Regulatory Setting

Energy use and consumption are regulated by Federal and State Agencies. The Federal Agencies that impact energy policies and programs include the US Department of Transportation, US Department of Energy, and US Environmental Protection Agency. The State Agencies that impact energy policies include the CPUC and California Energy Commission (CEC).

Title 24, Energy Efficiency and Green Building Standards. California Code of Regulations (CCR) Title 24 Part 6: California's Energy Efficiency Standards are updated every three years to incorporate new energy efficient technologies and construction methods. The most recent approved update consisting of the 2019 California Green Building Code Standards which became effective January 1, 2020 and result in less energy use. Title 24 standards require solar photovoltaic systems and encourage demand responsive technologies for new residential structures.

AB 1493 Pavley Fuel Efficiency Regulations. California AB 1493 required CARB to develop and adopt regulations that reduce GHGs emitted by passenger vehicles and light duty trucks. Although aimed at reducing GHG emissions, the Pavley standards implement improvements in fuel efficiency that results in a reduction in fuel consumption.

California Renewable Portfolio Standard. These standards require retail sellers of electric services to provide 33% of total retail sales of electricity from renewable resources by 2020.

Clean Energy and Pollution Reduction Act of 2015. The standards implemented by this Act (SB 350) requires:

- Increase the amount of electricity procured from renewable energy sources from 33% to 50% by 2030, with interim targets of 40% by 2024, and 25% by 2027.
- Double the energy efficiency in existing buildings by 2030.

[7] 2021 California Gas Report found at: https://www.socalgas.com/regulatory/cgr

[8] California DMV Statistics 2021 found at: https://www.dmv.ca.gov/portal/news-and-media/dmv-statistics/

- Reorganize the Independent System Operator (ISO) to develop more regional electrify transmission markets and to improve accessibility in these markets, which will facilitate the growth of renewable energy markets in the western United States.

7.3 Assumptions and Thresholds

The State CEQA Guidelines do not have specific thresholds for Energy consumption. Rather, the question in Appendix G: VI Energy (a) asks, "[Does the proposed project] Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources during project construction or operation?". Therefore, for the purpose of this analysis, a significant impact would occur if:

- The Project design and/or location encourages wasteful, inefficient, and unnecessary consumption of energy, especially fossil fuels such as coal, natural gas, and petroleum, as well as the use of fuel by vehicles anticipated to travel to and from the project.

The following assumptions were used to calculate the energy consumption of the proposed project:

- The project's construction and operational energy consumption would be provided by MVU.
- Construction equipment fuel consumption derived from ARB Offroad2021 emission model
- Fuel Consumption from vehicle travel derived from ARB EMFAC2021 emission model
- Electrical, natural gas, and fuel usage was derived from the CalEEMod model Version 2020.4.0.

7.4 Construction Consumption

Electricity and Natural Gas Usage

The energy consumption during the construction of the project would be negligible in comparison to the project as it would be temporary and confined as-necessary lighting and electronic equipment such as computers inside temporary construction trailers. Natural Gas is not anticipated to be needed for construction activities. Any consumption of natural gas would be minor and negligible in comparison to the operation of the proposed project.

Petroleum Fuel Usage

The construction equipment associated with construction activities (off-road/heavy duty vehicles) would rely on diesel fuel as would vendor and haul trucks involved in delivering building materials and removing the demolition debris from the project site. Construction workers would travel to and from the project site throughout the duration of construction, and for a conservative analysis it is assumed that construction workers would travel in gasoline-powered passenger vehicles.

Table 13: Construction Equipment Fuel Usage, used the total fuel consumption and horsepower-hour data contained within the ARB OffRoad2021 emission model for specific types of diesel construction equipment. It should be noted that the total fuel consumption is a conservative analysis and would likely overstate the amount of fuel usage, as specific construction equipment is not expected to

operate during the duration of the construction activity (e.g., crane). Table 14: Estimate Project Vehicle Fuel Usage, summarizes the project's construction vehicle fuel usage based on vehicle miles traveled and fuel usage factors contained in the ARB EMFAC2021. The trips included are worker vehicles, vendor vehicles, and haul vehicles. Table 15: Total Construction Fuel Usage, shows the overall fuel consumption for construction of the proposed project. Fuel calculations can be found in Appendix B.

Table 13. Construction Equipment Fuel Usage

Activity	Equipment	Number	Hours per day	Horse-power	Load Factor	Days of Construction	Total Horsepower-hours	Fuel Rate (gal/hp-hr)	Fuel Use (gallons)
Site Preparation	Rubber Tired Dozers	3	8	247	0.4	10	23712	0.020601315	488
	Crawler Tractors	4	8	212	0.43	10	29171	0.022175849	647
Grading	Excavators	2	8	158	0.38	35	33622	0.01985595	668
	Graders	1	8	187	0.41	35	21468	0.021161331	454
	Rubber Tired Dozers	1	8	247	0.4	35	27664	0.020601315	570
	Scrapers	2	8	367	0.41	35	84263	0.024988526	2106
	Crawler Tractors	2	8	212	0.43	35	51050	0.022175849	1132
Building Construction	Cranes	1	8	231	0.29	370	198290	0.014895293	2954
	Forklifts	3	8	89	0.2	370	158064	0.010444403	1651
	Generator Sets	1	8	84	0.74	370	183994	0.058038694	10679
	Tractors/Loaders/Backhoes	3	8	97	0.37	370	318703	0.019146832	6102
	Welders	1	8	46	0.45	370	61272	0.028435649	1742
Paving	Pavers	2	8	130	0.42	20	17472	0.021532281	376
	Paving Equipment	2	8	132	0.36	20	15206	0.018464524	281
	Rollers	2	8	80	0.38	20	9728	0.019836075	193
Architectural Coating	Air Compressors	1	8	78	0.48	20	5990	0.028657099	172
								Total	30,215

Source: CalEEmod Output Sheets, Fuel Calculation Sheet

Table 14. Estimated Project Construction Vehicle Fuel Usage

Construction Source	Number	VMT	Fuel Rate	Gallons of Diesel Fuel	Gallons of Gasoline Fuel
Haul Trucks	1,346	26,920	5.98	4,498	0
Vendor Trucks	59	150,627	8.93	16,876	0
Worker Vehicles	243	886,116	25.94	0	34,156
Total				21,375	34,156

Source: CalEEmod Output Sheets, Fuel Calculation Sheet

Table 15. Total Construction Fuel Usage

Construction Source	Gallons of Diesel Fuel	Gallons of Gasoline Fuel
Construction Vehicles	21,375	34,156
Off-road Construction Equipment	30,215	0
Total	51,590	34,156

Construction Energy Efficiency

The CARB regulates emissions from construction equipment and the equipment used for project construction would comply with CARB regulations and California fuel economy/emissions standards, which would be verified through the City's construction permitting process. The project does not include any unusual construction processes that would require a substantial increased need for energy resources. The construction equipment and methods used by the project would not be more energy intensive than typical construction activities.

Construction contractors would be required to comply with applicable CARB regulation regarding retrofitting, repowering, or replacement of diesel off-road construction equipment. Additionally, CCR Title 13, Motor Vehicles, section 2449(d)(3) Idling, limits idling times of construction vehicles to no more than five minutes, thereby precluding unnecessary and wasteful consumption of fuel due to unproductive idling of construction equipment. Section 2449(d)(3) requires that "grading plans shall reference the requirement that a sign shall be posted on-site stating that construction workers need to shut off engines at or before five minutes of idling." In this manner, construction equipment operators are required to be informed that engines are to be turned off at or prior to five minutes of idling. Idling restrictions and the use of newer engines and equipment would result in less fuel consumption and wasteful or unnecessary consumption of energy would not occur. Overall, project construction would not result in inefficient wasteful, or unnecessary consumption of energy.

7.5 Operational Consumption

The operation of the proposed project would consume electricity, natural gas, and petroleum. The net energy consumption is provided in Table 16: Project Annual Operational Energy Requirements. Electricity and Natural Gas consumption were determined by the results in the Annual CalEEMod Output Sheets in Appendix A.

The gasoline consumption rates utilize the same assumptions that were used for the worker vehicles, and can be found in Appendix B.

Table 16. Project Annual Operational Energy Requirements

Operational Source	Energy Usage	
Electricity (Kilowatt-Hours)		
Total	**477,880**	
Natural Gas (Thousands British Thermal Units)		
Total	**1,697,220**	
Petroleum (gasoline) Consumption		
	Annual VMT	Gallons of Gasoline Fuel
Total	**1,907,064**	**73,508**

Source: CalEEmod Output Sheets, Fuel Calculation Sheet

7.6 Conclusion

The project's energy consumption for construction activities related to development of the site for new residential uses would be permitted to require compliance with existing fuel standards, machinery efficiency standards, and CARB requirements that limit idling of trucks. Through compliance with existing standards the Project would not result in demand for fuel greater on a per-development basis than other development projects in Southern California. Operation of the project would comply with all the energy efficiency requirements under Title 24 and all applicable City business and energy regulations, as verified by the City through the permitting processes. Therefore, the construction and operation of the project would not result in inefficient, wasteful, or unnecessary energy use, and impacts would be less than significant.

8 GREENHOUSE GAS EMISSIONS

8.1 Environmental Setting

Gases that trap heat in the atmosphere are often referred to as GHGs. GHGs are released into the atmosphere by both natural and anthropogenic activity. The primary GHGs from development projects are CO_2, CH_4, and N_2O.

- CO_2 is an odorless and colorless GHG that is emitted from natural and manmade sources. Natural sources include: the decomposition of dead organic matter; respiration of bacteria, plants, animals and fungus; evaporation from oceans; and volcanic outgassing. Anthropogenic sources include: burning of coal, oil, natural gas, and wood.
- CH_4 is reactive with oxidizers, halogens, and other halogen-containing compounds and is released as part of the biological processes such as growing rice, raising cattle, fossil-fuel combustion and biomass burning have added to the atmospheric concentration of CH4.
- N_2O is produced by microbial processes in soil and water, fossil fuel-fired power plants, nylon production, nitric acid production, and vehicle emissions. It is used as an aerosol spray propellant in whipped cream cans, used in potato chip bags to keep chips fresh, and used in rocket engines and in race cars.

The California Air Resource Board (CARB) compiles GHG inventories for the State of California. Based upon the 2021 GHG inventory data for the 2000-2019 GHG emissions period, California emitted an average 418.2 million metric tons of CO_2e, CO_2 and other GHG emissions converted into CO_2 by impact on global warming, per year ($MMTCO_2e$) [9]. This accounts for 6.99% of total U.S. emissions (5,981 $MMTCO_2e$)[10].

The Southern California Association of Governments (SCAG) prepared a report to analyze GHG emissions and project GHG emissions to 2035[11]. The last year of historical emissions data available was 2008, where California Emissions were 480.9 $MMTCO_2e$ and SCAG GHG emissions were 230.2 $MMTCO_2e$, 48% of California's GHG emissions. The report projected by 2020, SCAG would emit 215.8 $MMTCO_2e$, a reduction of 6.26%, and using the CARB 2019 GHG inventory data, would comprise of 51.6% of California's GHG emissions.

The cumulative effects of GHGs is global climate change that has the potential to cause adverse effects to human health. Increases in the Earth's ambient temperatures are anticipated to result in shifts in weather patterns such as more intense heat waves, greater droughts and wildfires in areas, and flooding in others. Higher ambient temperatures can cause more heat-related deaths, increase disease survival rates, and result in food shortages from agricultural losses.

[9] Air Resources Board, 2021 GHG Inventory: *California Greenhouse Gas Emission Inventory 2000-2019 Edition*

[10] United States Environmental Protection Agency: Inventory of U.S. Greenhouse Gas Emissions and Sinks

[11] Final Southern California Association of Governments Regional Greenhouse Gas Emissions Inventory and Reference Case Projections 1990-2035, May 2012

8.2 Regulatory Setting

State

California Assembly Bill 1493 - Pavley

The California Legislature adopted AB 1493 requiring the adoption of regulations to reduce GHG emissions in the transportation sector. CARB, EPA, and the U.S. Department of Transportation's National Highway Traffic and Safety Administration (NHTSA) have coordinated efforts to develop fuel economy and GHG standards for model 2017-2025 vehicles. The GHG standards are incorporated into the "Low Emission Vehicle" (LEV) Regulations.

The regulation reduces GHGs from new cars by 34% from 2016 levels by 2025. The regulation improves emissions and fuel economy of gasoline and diesel-powered cars, and provides for zero-emission technologies, such as full battery electric cars, plug-in hybrid electric vehicles (EV), and hydrogen fuel cell cars.

California Executive Order S-3-05 – Statewide Emission Reduction Targets

Executive Order S-3-05 was signed by Governor Arnold Schwarzenegger in June 2005. Executive Order S-3-05 establishes statewide emission reduction targets through the year 2050:

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

California Assembly Bill 32 (AB 32), Global Warming Solutions Act of 2006 (Chapter 488, Statutes of 2006)

In 2006, the Legislature passed the California Global Warming Solutions Act of 2006 [Assembly Bill 32 (AB 32)], which created a comprehensive, multi-year program to reduce GHG emissions in California. AB 32 required CARB to develop a Scoping Plan that describes the approach California will take to reduce GHGs. The 2017 Scoping Plan identifies how the State will reach the 2030 climate target to reduce GHG emissions by 40 percent from 1990 levels, and substantially advance toward the 2050 climate goal to reduce GHG emissions by 80 percent below 1990 levels.

The AB 32 Scoping Plan also anticipates that local government actions will result in reduced GHG emissions because local governments have the primary authority to plan, zone, approve, and permit development to accommodate population growth and the changing needs of their jurisdictions. The Scoping Plan also relies on the requirements of Senate Bill 375 (discussed below) to align local land use and transportation planning for achieving GHG reductions.

SB 375 – Sustainable Communities and Climate Protection Act of 2008.

According to SB 375, the transportation sector is the largest contributor of GHG emissions, which emits over 40% of the total GHG emissions in California. SB 375 states, "Without improved land use and transportation policy, California will not be able to achieve the goals of AB 32." SB 375 does the following: it (1) requires metropolitan planning organizations to include sustainable community strategies in their regional transportation plans for reducing GHG emissions, (2) aligns planning for transportation and housing, and (3) creates specified incentives for the implementation of the strategies.

Executive Order B-30-15 – 2030 Statewide Emission Reduction Target

Executive Order B-30-15 established an interim statewide GHG reduction target of 40 percent below 1990 levels by 2030. Under this Executive Order, all state agencies with jurisdiction over sources of GHG emissions are required to continue to develop and implement emissions reduction programs to reach the state's 2050 target. According to the Governor's Office, this Executive Order is in line with the scientifically established levels needed in the United States to limit global warming below 2°C - the warming threshold at which scientists say there will likely be major climate disruptions such as super droughts and rising sea levels.

Senate Bill 32 (Chapter 249, Statutes of 2016)

SB 32 requires the state to reduce statewide GHG emissions to 40 percent below 1990 levels by 2030, a reduction target that was first introduced in Executive Order B-30-15. The new legislation builds upon the AB 32 goal of 1990 levels by 2020 and provides an intermediate goal to achieving S-3-05, which sets a statewide GHG reduction target of 80 percent below 1990 levels by 2050. A related bill that was also approved in 2016, AB 197 (Chapter 250, Statutes of 2016) creates a legislative committee to oversee regulators to ensure that ARB is not only responsive to the Governor, but also the Legislature.

Executive Order B-55-18 and SB 100.

SB 100 raises California's Renewable Portfolio Standards requirement to 50% renewable resources by December 31, 2026, and to achieve 60% by December 31, 2030. SB 100 also requires that retail sellers and local publicly owned electric utilities procure a minimum quantity of electricity products from eligible renewable energy resources so that the total amount sold to their retail end-use customers achieve 44% of retail sales by December 31, 2024, 52% by December 31, 2027, and 60% by December 31, 2030. Executive Order B-55-18 establishes a carbon neutrality goal for the state of California by 2045, and sets a goal to maintain net negative emissions thereafter.

Title 24 Requirement

The measures required by residential development projects in Title 24: Part 6 that are required, but not limited to, the following:

- Ceiling and Rafter Roof Insulation
- Loose-fill Insulation
- Wall Insulation
- Raised-floor Insulation
- Installation of Fireplaces, decorative Gas, Appliances, and Gas Logs that have a closable metal or glass door covering the entire opening of the firebox and combustion air intake to draw air from the outside.
- Slab Edge Insulation that is protected from water damage, physical damage, and ultraviolet light deterioration
- Space conditioning equipment (HVAC) system with indoor design temperatures be 68°F for heating and 75°F for cooling
- Thermostats for all heating and cooling systems not controlled by a central energy management control system
- Insulation for Piping and Tanks
- Residential Lighting that meets luminaire requirements and are airtight

- Air-Distribution and Ventilation System Ducts, Plenums, and Fans that meet CMC compliance, Insulation requirements, and efficiency requirements
- Water Heating Systems that meet energy and gas capacity requirements
- Ventilation and Indoor Air Quality that meet the requirements of ASHRAE standards
- Fenestration Products, including skylight products, meet U-factor standards
- Solar Ready Buildings must be built to allow rooftop solar

City

City of Moreno Valley Climate Action Plan

The City of Moreno Valley adopted the *City of Moreno Valley Climate Action Plan* on June 15, 2021. The Climate Action Plan (CAP) is designed to reinforce the City's commitment to reducing GHG emissions and provide mitigation to avoid GHG emissions associated with community activities within the City. The CAP states that state and local regulation would not be enough to meet the goals set by the 2017 Scoping Plan and Statewide goals. With strategies laid out within the CAP the GHG reduction Targets would be met. The strategies laid out within the CAP for residential land uses include:

- R-1: Provide incentives such as streamlined permitting or bonus density for new multi-family buildings and reroofing projects to install "cool" roofs consistent with the current California Green Building Code (CALGreen) standards for commercial and industrial buildings.
- R-2: Require new construction and major remodels to install interior real-time energy smart meters in line with current utility provider (e.g. MVU, SCE) efforts.
- R-3: Develop and implement program to incentivize single family residential efficiency retrofits and participation in Moreno Valley Utility direct install program with the goal of a 50 percent energy reduction compared to baseline in 30 percent of the total single-family homes citywide by 2040.
- R-4: Prioritize cap and trade funds to assist low-income homeowners achieve energy-efficient improvements and fund weatherization programs.
- R-5: Apply for and prioritize Community Block Development Grant funds to assist low-income homeowners achieve energy-efficient improvements.
- R-6: Develop program and funding strategy to incentivize conversion of natural gas heated homes and nonresidential buildings to electricity.
- R-7: Develop and implement program to incentivize multi-family residential efficiency audits and participation in Moreno Valley Utility direct install program with the goal of a 50 percent energy reduction in 30 percent of the projected amount of multi-family homes citywide by 2035.
- R-8: Provide a toolkit of resources, including web-based efficiency calculators, for residents and businesses to analyze their greenhouse gas emissions in comparison to their neighborhood, the city, and the region.
- R-9: Develop and implement a competitive greenhouse gas reduction program with an award component between groups of citizens in the city.

8.3 Significance Threshold

The SCAQMD Greenhouse Gas Emissions (GHG) CEQA Significance Threshold Working Group has identified GHG emissions thresholds for land use projects in the SCAQMD Draft Guidance Document

– Interim CEQA GHG Significance Threshold that could be used by lead agencies.[12] The Guidance Document provides substantial evidence supporting the approaches to significance of GHG emissions that can be considered by the lead agency in adopting its own threshold. This includes a tiered approach to evaluate potential GHG impacts from various uses.

The City of Moreno Valley utilizes the Tier 3: Numerical Screening Thresholds approach. Tier three consists of screening values. A project's construction emissions are averaged over 30 years and are added to the project's operational emissions. If a project's emissions are below the applicable screening threshold, then the project GHG impact would be is less than significant:

- Option 1: All land use types: 3,000 MT CO_2e per year
- Option 2: Based on land use type: residential: 3,500 MT CO_2e per year; commercial: 1,400 $MTCO_2e$ per year; or mixed use: 3,000 MT CO_2e per year

The City of Moreno Valley utilizes option 1, and therefore the threshold for development projects is 3,000 $MTCO_2e$ per year.

Executive Order S-3-05's year 2050 goal is the basis of SCAQMD' draft Tier 3 screening level thresholds. The objective of the Executive Order is to contribute to capping worldwide CO_2 concentrations at 450 ppm, stabilizing global climate change.

8.4 Project Emissions

To analyze the GHG impacts of the proposed project, CalEEMod Version 2020.4.0 was used. The project's construction GHG emissions are shown in Table 17: Project Construction GHG Emissions, and the overall construction and operational emissions are shown in Table 18: Project GHG Emissions. The CalEEMod outputs are attached in Appendix A. The construction emissions are amortized over 30 years pursuant to SCAQMD methodology.

Table 17 shows that the project would emit a total of 1,105 Annual $MTCO_2e$ in over the duration of construction, with 2023 having the highest emission (702 $MTCO_2e$). Amortized over 30 years, the project's construction emissions would be 37 $MTCO_2e$ per year.

As shown in Table 18, the amortized construction emissions added to the operational emissions (area, energy, mobile, waste, and water) would add up to a total of 922 $MTCO_2e$. The major source of emissions generated by the proposed project is mobile emissions, at 648 $MTCO_2e$. As seen in Table 18, the project generated GHG emissions would not exceed the 3,000 $MTCO_2e$ threshold.

[12] SCAQMD 2010. Minutes of the GHG CEQA Significance Threshold Stakeholder Working Group #15. Referenced at: http://www.aqmd.gov/docs/default-source/ceqa/handbook/greenhouse-gases-(ghg)-ceqa-significance-thresholds/year-2008-2009/ghg-meeting-15/ghg-meeting-15-minutes.pdf

Table 17. Project Construction GHG Emissions

Activity	Annual GHG Emissions ($MTCO_2e$)
2023	703
2024	402
Total Emissions	1,105
Total Emissions Amortized Over 30 Years	37

Source: CalEEmod Output Sheets

Table 18. Project GHG Emissions

Activity	Annual GHG Emissions ($MTCO_2e$)
Project Operational Emissions	
Area	1
Energy	176
Mobile	648
Waste	36
Water	24
Total Project Gross Operation Emissions	885
Project Construction Emissions	37
Total Emissions	922
Significance Threshold	3,000
Threshold Exceeded?	**No**

Source: CalEEmod Output Sheets

8.5 Project Consistency With SB 32/2017 Scoping Plan and Moreno Valley CAP

The 2017 Scoping Plan Update sets the reduction target for 2030 at 40% below 1990 levels, which was codified by SB 32. Table 18: 2017 Scoping Plan Consistency Summary and Table 19: Moreno Valley CAP Consistency Summary shows consistency with both statewide and citywide plans to reduce GHG emissions. As seen in Table 19 and Table 20, the project would be consistent with the 2017 Scoping Plan and Moreno Valley CAP actions and goals.

Table 19. 2017 Scoping Plan Consistency Summary

Action	Consistency
Increase the Renewables Portfolio Standard to 50% of retail sales by 2030 and ensure grid reliability.	Consistent. The project is consistent with Title 24 2019 requirements for use of solar on residential structures and would utilize energy from Moreno Valley Electric Utility (MUV). Title 24 and MVU's commitment to diversify its portfolio would help increase the Renewables Portfolio and satisfy this action.
Establish Annual Targets for Statewide energy efficiency savings and demand reduction that will achieve a cumulative doubling of statewide energy efficiency savings in electricity and natural gas end uses by 2030.	Consistent. The project would be constructed in accordance with Title 24 "CalGreen" requirements. This would help achieve statewide energy efficiency savings and satisfy this action.
Reduce GHG emissions in the electricity sector though the implementation of the above measures and other actions as modeled in Integrated Resource Planning (IRP) to meet GHG emissions reductions planning targets in the IRP process. Load-serving entities and publicly-owned utilities meet GHG emissions reductions planning targets through a combination of measures as described in IRPS.	Consistent. The proposed project would be designed and constructed in accordance with Title 24 "CalGreen" requirements. This would implement the energy efficiency measures that would reduce emissions in the electricity sector. Therefore, the project would satisfy this action.
At least 1.5 million zero emission and plug in hybrid light-duty EVs by 2025.	Consistent. The project would not interfere with the implementation of this action, as homeowners could choose to utilize plug in or hybrid vehicles.
At least 4.2 million zero emission and plug-in hybrid light-duty EVs by 2030	Consistent. The project would not interfere with the implementation of this action, as homeowners could choose to utilize plug in or hybrid vehicles.
Further increase GHG stringency on all light-duty vehicles beyond existing Advanced Clean cars regulations.	Consistent. The single-family residential project would not interfere with the implementation of this action.
Medium-Duty and Heavy-Duty GHG Phase 2.	Consistent. Operation of the project does not generate a substantial volume of medium-duty and heavy-duty trips, and does not interfere with the implementation of this action.
Innovative Clean Transit: Transition to a suite of to-be-determined innovative clean transit options. Assumed 20% of new urban buses purchased beginning in 2018 will be zero emission buses with the penetration of zero-emission technology ramped up to 100% of new sales in 2030. Also, new natural gas buses, starting in 2018, and diesel buses, starting in 2020, meet the optional heavy-duty low-NO_x standard.	Consistent. The proposed single-family residential project would not interfere with the implementation of this action related to transit busses.
Last Mile Delivery: New regulation that would result in the use of low NOX or cleaner engines and the deployment of increasing numbers of zero-emission trucks primarily for class 3-7 last mile delivery trucks in California. This measure assumes ZEVs comprise 2.5% of new Class 3–7 truck sales in local fleets starting in 2020, increasing to 10% in 2025 and remaining flat through 2030.	Consistent. The single-family residential project does not have regular delivery truck trips associated with it and would not interfere with the implementation of this action.
Further reduce VMT through continued implementation of SB 375 and regional Sustainable Communities Strategies;	Consistent. The project would not interfere with the implementation of SB 375 and would be consistent with the SCAG RTP/SCS.

forthcoming statewide implementation of SB 743; and potential additional VMT reduction strategies not specified in the Mobile Source Strategy but included in the document "Potential VMT Reduction Strategies for Discussion."	
Increase stringency of SB 375 Sustainable Communities Strategy (2035 targets)	Consistent. The single-family residential project would not interfere with efforts to increase stringency of SB 375 Sustainable Communities Strategy (2035 targets).
Harmonize project performance with emissions reductions and increase competitiveness of transit and active transportation modes (e.g. via guideline documents, funding programs, project selection, etc.)	Consistent. The single-family residential project would not interfere with agency efforts to increase competitiveness of transit and active transportation modes, and would contribute to them by connecting pedestrian and bike transportation infrastructure to existing pedestrian and bike transportation infrastructure, which would connect to bus transit.
By 2019, develop pricing policies to support low-GHG transportation (e.g. low-emission vehicle zones for heavy duty, road user, parking pricing, transit discounts).	Consistent. The single-family residential project would not interfere with plans to develop pricing policies to support low-GHG transportation.
Improve freight system efficiency.	Consistent. The single-family residential project would not be associated with freight system uses and would not interfere with efforts to improve freight system efficiency.
Increase the long-term resilience of carbon storage in the land base and enhance sequestration capacity.	Consistent. The single-family residential project proposes landscaping, which would enhance sequestration as compared to the vacant land currently onsite. In addition, the project would not interfere with additional efforts to increase the long-term resiliency of carbon storage in the land base.
Utilize wood and agricultural products to increase the amount of carbon stored in the natural and built environments.	Consistent. The project would not interfere with the action to encourage wood and agricultural products to increase stored carbon in the natural and built environments, and where applicable the project would utilize wood and agricultural products in the design of the project.
Establish scenario projections to serve as the foundation for the implementation plan.	Consistent. The single-family residential project would not interfere with the establishment scenario projections to serve as the foundation for the implementation plan.
Establish a carbon accounting framework for natural and working lands as described in SB 859 by 2018.	Consistent. The single-family residential project would not interfere with the establishment of a carbon accounting framework for natural and working lands as described in SB 859.
Implement Forest Carbon Plan.	Consistent. The project site does not include a forest and the single-family residential project would not interfere with the implementation of a Forest Carbon Plan.
Identify and expand funding and financing mechanisms to support GHG reductions across all sectors.	Consistent. The single-family residential project would not interfere with the expansion of funding and financing mechanisms to support GHG reductions across all sectors.

Source: California's 2017 Climate Change Scoping Plan Table 17: Climate Change Policies and Measures

Table 20. Moreno Valley CAP Consistency Summary

Measure	Consistency
R-1: Provide incentives such as streamlined permitting or bonus density for new multi-family buildings and reroofing projects to install "cool" roofs consistent with the current California Green Building Code (CALGreen) standards for commercial and industrial buildings.	Consistent. The single-family residential project would be consistent with the CALGreen standards, in addition would not interfere with incentives to streamline permitting or bonus density for new multi-family buildings.
R-2: Require new construction and major remodels to install interior real-time energy smart meters in line with current utility provider (e.g. MVU, SCE) efforts.	Consistent. The single-family residential project would be constructed in accordance with the requirement to install interior real-time energy smart meters in line with MVU efforts.
R-3: Develop and implement program to incentivize single family residential efficiency retrofits and participation in Moreno Valley Utility direct install program with the goal of a 50 percent energy reduction compared to baseline in 30 percent of the total single-family homes citywide by 2040.	Consistent. The single-family residential project would be constructed in accordance to Title 24 "CALGreen" requirements and would not interfere with the retrofits to existing single-family housing in the city of Moreno Valley.
R-4: Prioritize cap and trade funds to assist low-income homeowners achieve energy-efficient improvements and fund weatherization programs.	Consistent. The single-family residential project would not interfere with the prioritization of cap and trade funds to assist low-income homeowners.
R-5: Apply for and prioritize Community Block Development Grant funds to assist low-income homeowners achieve energy-efficient improvements.	Consistent. The single-family residential project would not interfere with the application or prioritization of Community Block Development Grant funds to assist low-income homeowners achieve energy-efficient improvements.
R-6: Develop program and funding strategy to incentivize conversion of natural gas heated homes and nonresidential buildings to electricity.	Consistent. The single-family residential project would not interfere with the development of a program and funding strategy to incentivize conversion of natural gas heated homes and nonresidential buildings to electricity.
R-7: Develop and implement program to incentivize multi-family residential efficiency audits and participation in Moreno Valley Utility direct install program with the goal of a 50 percent energy reduction in 30 percent of the projected amount of multi-family homes citywide by 2035.	Consistent. The single-family residential project does not interfere with the development and implementation of a program to incentivize multi-family residential efficiency audits and participation in the Moreno Valley Utility direct install program.
R-8: Provide a toolkit of resources, including web-based efficiency calculators, for residents and businesses to analyze their greenhouse gas emissions in comparison to their neighborhood, the city, and the region.	Consistent. The single-family residential project would not interfere with the implementation of a tooklit of resources for residents and businesses to analyze their greenhouse gas emissions in comparison to their neighborhood, the city, and the region.
R-9: Develop and implement a competitive greenhouse gas reduction program with an award component between groups of citizens in the city.	Consistent. The single-family residential project would not interfere with the implementation of a competitive GHG reduction program with an award component between groups of citizens int the city.

Source: City of Moreno Valley Climate Action Plan Table 4-3: Residential CAP Strategies

8.6 Conclusion

The project is consistent with the actions and measures of the 2017 Scoping Plan and Moreno Valley CAP respectively and would not interfere with the policies and goals set within those plans. In Addition, the proposed project's GHG emissions of 922 $MTCO_2e$ per year is below the SCAQMD Significance threshold of 3,000 $MTCO_2e$ per year. Therefore, the project would have a less than significant impact related to GHG emissions.

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APPENDIX A – CALEEMOD OUTPUT SHEETS

Pacifica Cottonwood - Riverside-South Coast County, Annual

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

Pacifica Cottonwood

Riverside-South Coast County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Asphalt Surfaces	5.51	Acre	5.51	240,015.60	0
City Park	1.92	Acre	1.92	83,635.20	0
Single Family Housing	60.00	Dwelling Unit	12.60	108,000.00	172

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.4	**Precipitation Freq (Days)**	28
Climate Zone	10			**Operational Year**	2024
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	390.98	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Lot acreage based on TTM 38264.

Construction Phase -

Off-road Equipment - Crawler Tractors in place of Tractors/Loaders/Backhoes

Off-road Equipment - Crawler Tractors in place of Tractors/Loaders/Backhoes

Off-road Equipment - Assumed 8hr work day

Off-road Equipment -

Off-road Equipment - Assumed 8hr work day

Grading - 10,767 Cubic Yards of Import from TTM 38264.

Architectural Coating - SCAQMD Rule 1113

Pacifica Cottonwood - Riverside-South Coast County, Annual

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

Vehicle Trips - Used ITE 11ed Rates for Single Family Housing (LU Code 210)

Woodstoves - SCAQMD Rule 445. No Fireplaces Proposed

Construction Off-road Equipment Mitigation - SCAQMD Rule 403

Area Mitigation - SCAQMD Rule 1113

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	100.00	50.00
tblArchitecturalCoating	EF_Nonresidential_Interior	100.00	50.00
tblArchitecturalCoating	EF_Parking	100.00	50.00
tblAreaMitigation	UseLowVOCPaintNonresidentialExteriorValue	100	50
tblAreaMitigation	UseLowVOCPaintNonresidentialInteriorValue	100	50
tblAreaMitigation	UseLowVOCPaintParkingCheck	False	True
tblAreaMitigation	UseLowVOCPaintParkingValue	100	50
tblConstDustMitigation	WaterUnpavedRoadMoistureContent	0	12
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblFireplaces	FireplaceDayYear	25.00	0.00
tblFireplaces	FireplaceHourDay	3.00	0.00
tblFireplaces	FireplaceWoodMass	1,019.20	0.00
tblFireplaces	NumberGas	51.00	0.00
tblFireplaces	NumberNoFireplace	6.00	60.00
tblFireplaces	NumberWood	3.00	0.00
tblGrading	MaterialImported	0.00	10,767.00
tblLandUse	LotAcreage	19.48	12.60
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	0.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblVehicleTrips	ST_TR	1.96	0.00

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

tblVehicleTrips	ST_TR	9.54	9.48
tblVehicleTrips	SU_TR	2.19	0.00
tblVehicleTrips	SU_TR	8.55	8.48
tblVehicleTrips	WD_TR	0.78	0.00
tblVehicleTrips	WD_TR	9.44	9.43
tblWoodstoves	NumberCatalytic	3.00	0.00
tblWoodstoves	NumberNoncatalytic	3.00	0.00
tblWoodstoves	WoodstoveDayYear	25.00	0.00
tblWoodstoves	WoodstoveWoodMass	999.60	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					
2023	0.3323	2.9289	3.0959	7.7000e-003	0.5324	0.1220	0.6544	0.1833	0.1139	0.2972	0.0000	692.0157	692.0157	0.1139	0.0253	702.4016
2024	0.5390	1.4134	1.9412	4.4100e-003	0.1686	0.0583	0.2269	0.0454	0.0547	0.1002	0.0000	396.7611	396.7611	0.0565	0.0138	402.2880
Maximum	**0.5390**	**2.9289**	**3.0959**	**7.7000e-003**	**0.5324**	**0.1220**	**0.6544**	**0.1833**	**0.1139**	**0.2972**	**0.0000**	**692.0157**	**692.0157**	**0.1139**	**0.0253**	**702.4016**

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					
2023	0.3323	2.9289	3.0959	7.7000e-003	0.3560	0.1220	0.4780	0.1115	0.1139	0.2254	0.0000	692.0152	692.0152	0.1139	0.0253	702.4011
2024	0.5390	1.4134	1.9412	4.4100e-003	0.1686	0.0583	0.2269	0.0454	0.0547	0.1002	0.0000	396.7609	396.7609	0.0565	0.0138	402.2877
Maximum	**0.5390**	**2.9289**	**3.0959**	**7.7000e-003**	**0.3560**	**0.1220**	**0.4780**	**0.1115**	**0.1139**	**0.2254**	**0.0000**	**692.0152**	**692.0152**	**0.1139**	**0.0253**	**702.4011**

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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	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**25.16**	**0.00**	**20.02**	**31.39**	**0.00**	**18.07**	**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)
6	**10-23-2022**	**1-22-2023**	0.3730	0.3730
7	**1-23-2023**	**4-22-2023**	1.0711	1.0711
8	**4-23-2023**	**7-22-2023**	0.6513	0.6513
9	**7-23-2023**	**10-22-2023**	0.6591	0.6591
10	**10-23-2023**	**1-22-2024**	0.6520	0.6520
11	**1-23-2024**	**4-22-2024**	0.6146	0.6146
12	**4-23-2024**	**7-22-2024**	0.6123	0.6123
13	**7-23-2024**	**9-30-2024**	0.5622	0.5622
		Highest	1.0711	1.0711

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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

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	0.4623	7.1300e-003	0.6186	3.0000e-005		3.4300e-003	3.4300e-003		3.4300e-003	3.4300e-003	0.0000	1.0109	1.0109	9.7000e-004	0.0000	1.0352
Energy	9.1500e-003	0.0782	0.0333	5.0000e-004		6.3200e-003	6.3200e-003		6.3200e-003	6.3200e-003	0.0000	175.3198	175.3198	8.8900e-003	2.5300e-003	176.2952
Mobile	0.2728	0.4410	2.8403	6.7900e-003	0.7213	5.4900e-003	0.7268	0.1927	5.1500e-003	0.1978	0.0000	637.6141	637.6141	0.0324	0.0312	647.7255
Waste						0.0000	0.0000		0.0000	0.0000	14.3494	0.0000	14.3494	0.8480	0.0000	35.5501
Water						0.0000	0.0000		0.0000	0.0000	1.2402	18.3905	19.6307	0.1289	3.2000e-003	23.8065
Total	**0.7442**	**0.5264**	**3.4922**	**7.3200e-003**	**0.7213**	**0.0152**	**0.7365**	**0.1927**	**0.0149**	**0.2076**	**15.5897**	**832.3353**	**847.9249**	**1.0192**	**0.0369**	**884.4124**

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	0.4606	7.1300e-003	0.6186	3.0000e-005		3.4300e-003	3.4300e-003		3.4300e-003	3.4300e-003	0.0000	1.0109	1.0109	9.7000e-004	0.0000	1.0352
Energy	9.1500e-003	0.0782	0.0333	5.0000e-004		6.3200e-003	6.3200e-003		6.3200e-003	6.3200e-003	0.0000	175.3198	175.3198	8.8900e-003	2.5300e-003	176.2952
Mobile	0.2728	0.4410	2.8403	6.7900e-003	0.7213	5.4900e-003	0.7268	0.1927	5.1500e-003	0.1978	0.0000	637.6141	637.6141	0.0324	0.0312	647.7255
Waste						0.0000	0.0000		0.0000	0.0000	14.3494	0.0000	14.3494	0.8480	0.0000	35.5501
Water						0.0000	0.0000		0.0000	0.0000	1.2402	18.3905	19.6307	0.1289	3.2000e-003	23.8065
Total	**0.7426**	**0.5264**	**3.4922**	**7.3200e-003**	**0.7213**	**0.0152**	**0.7365**	**0.1927**	**0.0149**	**0.2076**	**15.5897**	**832.3353**	**847.9249**	**1.0192**	**0.0369**	**884.4124**

	ROG	NOx	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	**0.22**	**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	1/1/2023	1/13/2023	5	10	
2	Grading	Grading	1/14/2023	3/3/2023	5	35	
3	Building Construction	Building Construction	3/4/2023	8/2/2024	5	370	

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

4	Paving	Paving	8/3/2024	8/30/2024	5	20	
5	Architectural Coating	Architectural Coating	8/31/2024	9/27/2024	5	20	

Acres of Grading (Site Preparation Phase): 35

Acres of Grading (Grading Phase): 140

Acres of Paving: 5.51

Residential Indoor: 218,700; Residential Outdoor: 72,900; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 14,401 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Crawler Tractors	4	8.00	212	0.43
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Grading	Crawler Tractors	2	8.00	212	0.43
Grading	Excavators	2	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Scrapers	2	8.00	367	0.48
Grading	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Building Construction	Cranes	1	8.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
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
Architectural Coating	Air Compressors	1	8.00	78	0.48

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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	8	20.00	0.00	1,346.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	158.00	59.00	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	32.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Water Unpaved Roads

Reduce Vehicle Speed on Unpaved Roads

3.2 Site Preparation - 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					
Fugitive Dust					0.1089	0.0000	0.1089	0.0517	0.0000	0.0517	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0192	0.2094	0.0915	2.8000e-004		8.7900e-003	8.7900e-003		8.0900e-003	8.0900e-003	0.0000	25.0115	25.0115	8.0900e-003	0.0000	25.2137
Total	**0.0192**	**0.2094**	**0.0915**	**2.8000e-004**	**0.1089**	**8.7900e-003**	**0.1177**	**0.0517**	**8.0900e-003**	**0.0598**	**0.0000**	**25.0115**	**25.0115**	**8.0900e-003**	**0.0000**	**25.2137**

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

3.2 Site Preparation - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.9000e-004	2.2000e-004	2.8300e-003	1.0000e-005	9.9000e-004	0.0000	9.9000e-004	2.6000e-004	0.0000	2.7000e-004	0.0000	0.7617	0.7617	2.0000e-005	2.0000e-005	0.7681
Total	**2.9000e-004**	**2.2000e-004**	**2.8300e-003**	**1.0000e-005**	**9.9000e-004**	**0.0000**	**9.9000e-004**	**2.6000e-004**	**0.0000**	**2.7000e-004**	**0.0000**	**0.7617**	**0.7617**	**2.0000e-005**	**2.0000e-005**	**0.7681**

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					0.0425	0.0000	0.0425	0.0202	0.0000	0.0202	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0192	0.2094	0.0915	2.8000e-004		8.7900e-003	8.7900e-003		8.0900e-003	8.0900e-003	0.0000	25.0115	25.0115	8.0900e-003	0.0000	25.2137
Total	**0.0192**	**0.2094**	**0.0915**	**2.8000e-004**	**0.0425**	**8.7900e-003**	**0.0513**	**0.0202**	**8.0900e-003**	**0.0282**	**0.0000**	**25.0115**	**25.0115**	**8.0900e-003**	**0.0000**	**25.2137**

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

3.2 Site Preparation - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.9000e-004	2.2000e-004	2.8300e-003	1.0000e-005	9.9000e-004	0.0000	9.9000e-004	2.6000e-004	0.0000	2.7000e-004	0.0000	0.7617	0.7617	2.0000e-005	2.0000e-005	0.7681
Total	**2.9000e-004**	**2.2000e-004**	**2.8300e-003**	**1.0000e-005**	**9.9000e-004**	**0.0000**	**9.9000e-004**	**2.6000e-004**	**0.0000**	**2.7000e-004**	**0.0000**	**0.7617**	**0.7617**	**2.0000e-005**	**2.0000e-005**	**0.7681**

3.3 Grading - 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					
Fugitive Dust					0.1803	0.0000	0.1803	0.0661	0.0000	0.0661	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0684	0.7296	0.4913	1.2500e-003		0.0292	0.0292		0.0269	0.0269	0.0000	109.9374	109.9374	0.0356	0.0000	110.8263
Total	**0.0684**	**0.7296**	**0.4913**	**1.2500e-003**	**0.1803**	**0.0292**	**0.2095**	**0.0661**	**0.0269**	**0.0929**	**0.0000**	**109.9374**	**109.9374**	**0.0356**	**0.0000**	**110.8263**

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

3.3 Grading - 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	1.4200e-003	0.0709	0.0186	3.7000e-004	0.0116	8.1000e-004	0.0124	3.1900e-003	7.8000e-004	3.9600e-003	0.0000	35.8495	35.8495	5.1000e-004	5.6500e-003	37.5455
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.1400e-003	8.4000e-004	0.0110	3.0000e-005	3.8500e-003	2.0000e-005	3.8700e-003	1.0200e-003	2.0000e-005	1.0400e-003	0.0000	2.9622	2.9622	7.0000e-005	8.0000e-005	2.9871
Total	**2.5600e-003**	**0.0717**	**0.0296**	**4.0000e-004**	**0.0155**	**8.3000e-004**	**0.0163**	**4.2100e-003**	**8.0000e-004**	**5.0000e-003**	**0.0000**	**38.8116**	**38.8116**	**5.8000e-004**	**5.7300e-003**	**40.5327**

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					0.0703	0.0000	0.0703	0.0258	0.0000	0.0258	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0684	0.7296	0.4913	1.2500e-003		0.0292	0.0292		0.0269	0.0269	0.0000	109.9372	109.9372	0.0356	0.0000	110.8261
Total	**0.0684**	**0.7296**	**0.4913**	**1.2500e-003**	**0.0703**	**0.0292**	**0.0996**	**0.0258**	**0.0269**	**0.0527**	**0.0000**	**109.9372**	**109.9372**	**0.0356**	**0.0000**	**110.8261**

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

3.3 Grading - 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	1.4200e-003	0.0709	0.0186	3.7000e-004	0.0116	8.1000e-004	0.0124	3.1900e-003	7.8000e-004	3.9600e-003	0.0000	35.8495	35.8495	5.1000e-004	5.6500e-003	37.5455
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.1400e-003	8.4000e-004	0.0110	3.0000e-005	3.8500e-003	2.0000e-005	3.8700e-003	1.0200e-003	2.0000e-005	1.0400e-003	0.0000	2.9622	2.9622	7.0000e-005	8.0000e-005	2.9871
Total	**2.5600e-003**	**0.0717**	**0.0296**	**4.0000e-004**	**0.0155**	**8.3000e-004**	**0.0163**	**4.2100e-003**	**8.0000e-004**	**5.0000e-003**	**0.0000**	**38.8116**	**38.8116**	**5.8000e-004**	**5.7300e-003**	**40.5327**

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	0.1799	1.6596	1.8608	3.1000e-003		0.0804	0.0804		0.0756	0.0756	0.0000	267.0312	267.0312	0.0651	0.0000	268.6574
Total	**0.1799**	**1.6596**	**1.8608**	**3.1000e-003**		**0.0804**	**0.0804**		**0.0756**	**0.0756**	**0.0000**	**267.0312**	**267.0312**	**0.0651**	**0.0000**	**268.6574**

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

3.4 Building Construction - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	6.8700e-003	0.2175	0.0866	1.1100e-003	0.0401	1.8100e-003	0.0419	0.0116	1.7300e-003	0.0133	0.0000	106.7129	106.7129	1.0800e-003	0.0158	111.4420
Worker	0.0551	0.0408	0.5332	1.5500e-003	0.1867	8.9000e-004	0.1876	0.0496	8.2000e-004	0.0504	0.0000	143.7494	143.7494	3.5400e-003	3.7700e-003	144.9614
Total	**0.0620**	**0.2583**	**0.6199**	**2.6600e-003**	**0.2268**	**2.7000e-003**	**0.2295**	**0.0611**	**2.5500e-003**	**0.0637**	**0.0000**	**250.4623**	**250.4623**	**4.6200e-003**	**0.0196**	**256.4034**

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	0.1799	1.6596	1.8608	3.1000e-003		0.0804	0.0804		0.0756	0.0756	0.0000	267.0309	267.0309	0.0651	0.0000	268.6571
Total	**0.1799**	**1.6596**	**1.8608**	**3.1000e-003**		**0.0804**	**0.0804**		**0.0756**	**0.0756**	**0.0000**	**267.0309**	**267.0309**	**0.0651**	**0.0000**	**268.6571**

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

3.4 Building Construction - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	6.8700e-003	0.2175	0.0866	1.1100e-003	0.0401	1.8100e-003	0.0419	0.0116	1.7300e-003	0.0133	0.0000	106.7129	106.7129	1.0800e-003	0.0158	111.4420
Worker	0.0551	0.0408	0.5332	1.5500e-003	0.1867	8.9000e-004	0.1876	0.0496	8.2000e-004	0.0504	0.0000	143.7494	143.7494	3.5400e-003	3.7700e-003	144.9614
Total	**0.0620**	**0.2583**	**0.6199**	**2.6600e-003**	**0.2268**	**2.7000e-003**	**0.2295**	**0.0611**	**2.5500e-003**	**0.0637**	**0.0000**	**250.4623**	**250.4623**	**4.6200e-003**	**0.0196**	**256.4034**

3.4 Building Construction - 2024

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	0.1214	1.1179	1.3351	2.2400e-003		0.0509	0.0509		0.0478	0.0478	0.0000	192.5502	192.5502	0.0467	0.0000	193.7164
Total	**0.1214**	**1.1179**	**1.3351**	**2.2400e-003**		**0.0509**	**0.0509**		**0.0478**	**0.0478**	**0.0000**	**192.5502**	**192.5502**	**0.0467**	**0.0000**	**193.7164**

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

3.4 Building Construction - 2024

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	4.8800e-003	0.1568	0.0618	7.9000e-004	0.0289	1.2900e-003	0.0302	8.3300e-003	1.2400e-003	9.5700e-003	0.0000	75.7474	75.7474	8.1000e-004	0.0112	79.1001
Worker	0.0371	0.0262	0.3601	1.0800e-003	0.1346	6.1000e-004	0.1352	0.0357	5.6000e-004	0.0363	0.0000	101.1503	101.1503	2.3200e-003	2.5200e-003	101.9603
Total	**0.0420**	**0.1830**	**0.4219**	**1.8700e-003**	**0.1635**	**1.9000e-003**	**0.1654**	**0.0441**	**1.8000e-003**	**0.0459**	**0.0000**	**176.8977**	**176.8977**	**3.1300e-003**	**0.0137**	**181.0604**

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	0.1214	1.1179	1.3351	2.2400e-003		0.0509	0.0509		0.0478	0.0478	0.0000	192.5499	192.5499	0.0467	0.0000	193.7162
Total	**0.1214**	**1.1179**	**1.3351**	**2.2400e-003**		**0.0509**	**0.0509**		**0.0478**	**0.0478**	**0.0000**	**192.5499**	**192.5499**	**0.0467**	**0.0000**	**193.7162**

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

3.4 Building Construction - 2024

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	4.8800e-003	0.1568	0.0618	7.9000e-004	0.0289	1.2900e-003	0.0302	8.3300e-003	1.2400e-003	9.5700e-003	0.0000	75.7474	75.7474	8.1000e-004	0.0112	79.1001
Worker	0.0371	0.0262	0.3601	1.0800e-003	0.1346	6.1000e-004	0.1352	0.0357	5.6000e-004	0.0363	0.0000	101.1503	101.1503	2.3200e-003	2.5200e-003	101.9603
Total	**0.0420**	**0.1830**	**0.4219**	**1.8700e-003**	**0.1635**	**1.9000e-003**	**0.1654**	**0.0441**	**1.8000e-003**	**0.0459**	**0.0000**	**176.8977**	**176.8977**	**3.1300e-003**	**0.0137**	**181.0604**

3.5 Paving - 2024

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	9.8800e-003	0.0953	0.1463	2.3000e-004		4.6900e-003	4.6900e-003		4.3100e-003	4.3100e-003	0.0000	20.0265	20.0265	6.4800e-003	0.0000	20.1885
Paving	7.2200e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0171**	**0.0953**	**0.1463**	**2.3000e-004**		**4.6900e-003**	**4.6900e-003**		**4.3100e-003**	**4.3100e-003**	**0.0000**	**20.0265**	**20.0265**	**6.4800e-003**	**0.0000**	**20.1885**

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

3.5 Paving - 2024

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	4.5000e-004	3.2000e-004	4.4100e-003	1.0000e-005	1.6500e-003	1.0000e-005	1.6600e-003	4.4000e-004	1.0000e-005	4.4000e-004	0.0000	1.2391	1.2391	3.0000e-005	3.0000e-005	1.2490
Total	**4.5000e-004**	**3.2000e-004**	**4.4100e-003**	**1.0000e-005**	**1.6500e-003**	**1.0000e-005**	**1.6600e-003**	**4.4000e-004**	**1.0000e-005**	**4.4000e-004**	**0.0000**	**1.2391**	**1.2391**	**3.0000e-005**	**3.0000e-005**	**1.2490**

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	9.8800e-003	0.0953	0.1463	2.3000e-004		4.6900e-003	4.6900e-003		4.3100e-003	4.3100e-003	0.0000	20.0265	20.0265	6.4800e-003	0.0000	20.1884
Paving	7.2200e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0171**	**0.0953**	**0.1463**	**2.3000e-004**		**4.6900e-003**	**4.6900e-003**		**4.3100e-003**	**4.3100e-003**	**0.0000**	**20.0265**	**20.0265**	**6.4800e-003**	**0.0000**	**20.1884**

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

3.5 Paving - 2024

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	4.5000e-004	3.2000e-004	4.4100e-003	1.0000e-005	1.6500e-003	1.0000e-005	1.6600e-003	4.4000e-004	1.0000e-005	4.4000e-004	0.0000	1.2391	1.2391	3.0000e-005	3.0000e-005	1.2490
Total	**4.5000e-004**	**3.2000e-004**	**4.4100e-003**	**1.0000e-005**	**1.6500e-003**	**1.0000e-005**	**1.6600e-003**	**4.4000e-004**	**1.0000e-005**	**4.4000e-004**	**0.0000**	**1.2391**	**1.2391**	**3.0000e-005**	**3.0000e-005**	**1.2490**

3.6 Architectural Coating - 2024

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	0.3546					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.4100e-003	0.0163	0.0241	4.0000e-005		8.1000e-004	8.1000e-004		8.1000e-004	8.1000e-004	0.0000	3.4043	3.4043	1.9000e-004	0.0000	3.4091
Total	**0.3570**	**0.0163**	**0.0241**	**4.0000e-005**		**8.1000e-004**	**8.1000e-004**		**8.1000e-004**	**8.1000e-004**	**0.0000**	**3.4043**	**3.4043**	**1.9000e-004**	**0.0000**	**3.4091**

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

3.6 Architectural Coating - 2024

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	9.7000e-004	6.9000e-004	9.4100e-003	3.0000e-005	3.5200e-003	2.0000e-005	3.5300e-003	9.3000e-004	1.0000e-005	9.5000e-004	0.0000	2.6434	2.6434	6.0000e-005	7.0000e-005	2.6645
Total	**9.7000e-004**	**6.9000e-004**	**9.4100e-003**	**3.0000e-005**	**3.5200e-003**	**2.0000e-005**	**3.5300e-003**	**9.3000e-004**	**1.0000e-005**	**9.5000e-004**	**0.0000**	**2.6434**	**2.6434**	**6.0000e-005**	**7.0000e-005**	**2.6645**

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	0.3546					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.4100e-003	0.0163	0.0241	4.0000e-005		8.1000e-004	8.1000e-004		8.1000e-004	8.1000e-004	0.0000	3.4043	3.4043	1.9000e-004	0.0000	3.4091
Total	**0.3570**	**0.0163**	**0.0241**	**4.0000e-005**		**8.1000e-004**	**8.1000e-004**		**8.1000e-004**	**8.1000e-004**	**0.0000**	**3.4043**	**3.4043**	**1.9000e-004**	**0.0000**	**3.4091**

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

3.6 Architectural Coating - 2024

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	9.7000e-004	6.9000e-004	9.4100e-003	3.0000e-005	3.5200e-003	2.0000e-005	3.5300e-003	9.3000e-004	1.0000e-005	9.5000e-004	0.0000	2.6434	2.6434	6.0000e-005	7.0000e-005	2.6645
Total	**9.7000e-004**	**6.9000e-004**	**9.4100e-003**	**3.0000e-005**	**3.5200e-003**	**2.0000e-005**	**3.5300e-003**	**9.3000e-004**	**1.0000e-005**	**9.5000e-004**	**0.0000**	**2.6434**	**2.6434**	**6.0000e-005**	**7.0000e-005**	**2.6645**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

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	0.2728	0.4410	2.8403	6.7900e-003	0.7213	5.4900e-003	0.7268	0.1927	5.1500e-003	0.1978	0.0000	637.6141	637.6141	0.0324	0.0312	647.7255
Unmitigated	0.2728	0.4410	2.8403	6.7900e-003	0.7213	5.4900e-003	0.7268	0.1927	5.1500e-003	0.1978	0.0000	637.6141	637.6141	0.0324	0.0312	647.7255

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		
Other Asphalt Surfaces	0.00	0.00	0.00		
Single Family Housing	565.80	568.80	508.80	1,907,064	1,907,064
Total	565.80	568.80	508.80	1,907,064	1,907,064

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
Other Asphalt Surfaces	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
Single Family Housing	14.70	5.90	8.70	40.20	19.20	40.60	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
City Park	0.537845	0.056225	0.173186	0.138405	0.025906	0.007191	0.011447	0.018769	0.000611	0.000309	0.023821	0.001097	0.005189
Other Asphalt Surfaces	0.537845	0.056225	0.173186	0.138405	0.025906	0.007191	0.011447	0.018769	0.000611	0.000309	0.023821	0.001097	0.005189

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

Single Family Housing	0.537845	0.056225	0.173186	0.138405	0.025906	0.007191	0.011447	0.018769	0.000611	0.000309	0.023821	0.001097	0.005189

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	84.7498	84.7498	7.1500e-003	8.7000e-004	85.1870
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	84.7498	84.7498	7.1500e-003	8.7000e-004	85.1870
NaturalGas Mitigated	9.1500e-003	0.0782	0.0333	5.0000e-004		6.3200e-003	6.3200e-003		6.3200e-003	6.3200e-003	0.0000	90.5699	90.5699	1.7400e-003	1.6600e-003	91.1081
NaturalGas Unmitigated	9.1500e-003	0.0782	0.0333	5.0000e-004		6.3200e-003	6.3200e-003		6.3200e-003	6.3200e-003	0.0000	90.5699	90.5699	1.7400e-003	1.6600e-003	91.1081

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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
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Single Family Housing	1.69722e+006	9.1500e-003	0.0782	0.0333	5.0000e-004		6.3200e-003	6.3200e-003		6.3200e-003	6.3200e-003	0.0000	90.5699	90.5699	1.7400e-003	1.6600e-003	91.1081
Total		**9.1500e-003**	**0.0782**	**0.0333**	**5.0000e-004**		**6.3200e-003**	**6.3200e-003**		**6.3200e-003**	**6.3200e-003**	**0.0000**	**90.5699**	**90.5699**	**1.7400e-003**	**1.6600e-003**	**91.1081**

Pacifica Cottonwood - Riverside-South Coast County, Annual

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

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
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
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Single Family Housing	1.69722e+006	9.1500e-003	0.0782	0.0333	5.0000e-004		6.3200e-003	6.3200e-003		6.3200e-003	6.3200e-003	0.0000	90.5699	90.5699	1.7400e-003	1.6600e-003	91.1081
Total		**9.1500e-003**	**0.0782**	**0.0333**	**5.0000e-004**		**6.3200e-003**	**6.3200e-003**		**6.3200e-003**	**6.3200e-003**	**0.0000**	**90.5699**	**90.5699**	**1.7400e-003**	**1.6600e-003**	**91.1081**

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
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	477880	84.7498	7.1500e-003	8.7000e-004	85.1870
Total		**84.7498**	**7.1500e-003**	**8.7000e-004**	**85.1870**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	477880	84.7498	7.1500e-003	8.7000e-004	85.1870
Total		**84.7498**	**7.1500e-003**	**8.7000e-004**	**85.1870**

6.0 Area Detail

6.1 Mitigation Measures Area

Use Low VOC Paint - Residential Interior

Use Low VOC Paint - Residential Exterior

Use Low VOC Paint - Non-Residential Interior

Use Low VOC Paint - Non-Residential Exterior

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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	0.4606	7.1300e-003	0.6186	3.0000e-005		3.4300e-003	3.4300e-003		3.4300e-003	3.4300e-003	0.0000	1.0109	1.0109	9.7000e-004	0.0000	1.0352
Unmitigated	0.4623	7.1300e-003	0.6186	3.0000e-005		3.4300e-003	3.4300e-003		3.4300e-003	3.4300e-003	0.0000	1.0109	1.0109	9.7000e-004	0.0000	1.0352

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	0.0371					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.4066					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0186	7.1300e-003	0.6186	3.0000e-005		3.4300e-003	3.4300e-003		3.4300e-003	3.4300e-003	0.0000	1.0109	1.0109	9.7000e-004	0.0000	1.0352
Total	**0.4623**	**7.1300e-003**	**0.6186**	**3.0000e-005**		**3.4300e-003**	**3.4300e-003**		**3.4300e-003**	**3.4300e-003**	**0.0000**	**1.0109**	**1.0109**	**9.7000e-004**	**0.0000**	**1.0352**

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	0.0355					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.4066					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0186	7.1300e-003	0.6186	3.0000e-005		3.4300e-003	3.4300e-003		3.4300e-003	3.4300e-003	0.0000	1.0109	1.0109	9.7000e-004	0.0000	1.0352
Total	**0.4606**	**7.1300e-003**	**0.6186**	**3.0000e-005**		**3.4300e-003**	**3.4300e-003**		**3.4300e-003**	**3.4300e-003**	**0.0000**	**1.0109**	**1.0109**	**9.7000e-004**	**0.0000**	**1.0352**

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	19.6307	0.1289	3.2000e-003	23.8065
Unmitigated	19.6307	0.1289	3.2000e-003	23.8065

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 2.28764	4.5074	3.8000e-004	5.0000e-005	4.5306
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	3.90924 / 2.46452	15.1234	0.1286	3.1500e-003	19.2759
Total		**19.6308**	**0.1289**	**3.2000e-003**	**23.8065**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 2.28764	4.5074	3.8000e-004	5.0000e-005	4.5306
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	3.90924 / 2.46452	15.1234	0.1286	3.1500e-003	19.2759
Total		**19.6308**	**0.1289**	**3.2000e-003**	**23.8065**

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	14.3494	0.8480	0.0000	35.5501
Unmitigated	14.3494	0.8480	0.0000	35.5501

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0.17	0.0345	2.0400e-003	0.0000	0.0855
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	70.52	14.3149	0.8460	0.0000	35.4646
Total		**14.3494**	**0.8480**	**0.0000**	**35.5501**

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	0.17	0.0345	2.0400e-003	0.0000	0.0855
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	70.52	14.3149	0.8460	0.0000	35.4646
Total		**14.3494**	**0.8480**	**0.0000**	**35.5501**

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

Pacifica Cottonwood - Riverside-South Coast County, Summer

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

Pacifica Cottonwood

Riverside-South Coast County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Asphalt Surfaces	5.51	Acre	5.51	240,015.60	0
City Park	1.92	Acre	1.92	83,635.20	0
Single Family Housing	60.00	Dwelling Unit	12.60	108,000.00	172

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.4	**Precipitation Freq (Days)**	28
Climate Zone	10			**Operational Year**	2024
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	390.98	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Lot acreage based on TTM 38264.

Construction Phase -

Off-road Equipment - Crawler Tractors in place of Tractors/Loaders/Backhoes

Off-road Equipment - Crawler Tractors in place of Tractors/Loaders/Backhoes

Off-road Equipment - Assumed 8hr work day

Off-road Equipment -

Off-road Equipment - Assumed 8hr work day

Grading - 10,767 Cubic Yards of Import from TTM 38264.

Architectural Coating - SCAQMD Rule 1113

Pacifica Cottonwood - Riverside-South Coast County, Summer

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

Vehicle Trips - Used ITE 11ed Rates for Single Family Housing (LU Code 210)

Woodstoves - SCAQMD Rule 445. No Fireplaces Proposed

Construction Off-road Equipment Mitigation - SCAQMD Rule 403

Area Mitigation - SCAQMD Rule 1113

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	100.00	50.00
tblArchitecturalCoating	EF_Nonresidential_Interior	100.00	50.00
tblArchitecturalCoating	EF_Parking	100.00	50.00
tblAreaMitigation	UseLowVOCPaintNonresidentialExteriorValue	100	50
tblAreaMitigation	UseLowVOCPaintNonresidentialInteriorValue	100	50
tblAreaMitigation	UseLowVOCPaintParkingCheck	False	True
tblAreaMitigation	UseLowVOCPaintParkingValue	100	50
tblConstDustMitigation	WaterUnpavedRoadMoistureContent	0	12
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblFireplaces	FireplaceDayYear	25.00	0.00
tblFireplaces	FireplaceHourDay	3.00	0.00
tblFireplaces	FireplaceWoodMass	1,019.20	0.00
tblFireplaces	NumberGas	51.00	0.00
tblFireplaces	NumberNoFireplace	6.00	60.00
tblFireplaces	NumberWood	3.00	0.00
tblGrading	MaterialImported	0.00	10,767.00
tblLandUse	LotAcreage	19.48	12.60
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	0.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblVehicleTrips	ST_TR	1.96	0.00

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

tblVehicleTrips	ST_TR	9.54	9.48
tblVehicleTrips	SU_TR	2.19	0.00
tblVehicleTrips	SU_TR	8.55	8.48
tblVehicleTrips	WD_TR	0.78	0.00
tblVehicleTrips	WD_TR	9.44	9.43
tblWoodstoves	NumberCatalytic	3.00	0.00
tblWoodstoves	NumberNoncatalytic	3.00	0.00
tblWoodstoves	WoodstoveDayYear	25.00	0.00
tblWoodstoves	WoodstoveWoodMass	999.60	0.00

2.0 Emissions Summary

Pacifica Cottonwood - Riverside-South Coast County, Summer

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

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2023	4.0646	45.5790	29.8656	0.0946	21.9792	1.7587	23.7379	10.3848	1.6180	12.0028	0.0000	9,382.7574	9,382.7574	2.2762	0.3603	9,547.0274
2024	35.8079	16.6705	23.4391	0.0540	2.1440	0.6811	2.8250	0.5772	0.6398	1.2170	0.0000	5,366.4065	5,366.4065	0.7171	0.1932	5,441.6895
Maximum	**35.8079**	**45.5790**	**29.8656**	**0.0946**	**21.9792**	**1.7587**	**23.7379**	**10.3848**	**1.6180**	**12.0028**	**0.0000**	**9,382.7574**	**9,382.7574**	**2.2762**	**0.3603**	**9,547.0274**

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					
2023	4.0646	45.5790	29.8656	0.0946	8.6946	1.7587	10.4533	4.0826	1.6180	5.7006	0.0000	9,382.7574	9,382.7574	2.2762	0.3603	9,547.0274
2024	35.8079	16.6705	23.4391	0.0540	2.1440	0.6811	2.8250	0.5772	0.6398	1.2170	0.0000	5,366.4065	5,366.4065	0.7171	0.1932	5,441.6895
Maximum	**35.8079**	**45.5790**	**29.8656**	**0.0946**	**8.6946**	**1.7587**	**10.4533**	**4.0826**	**1.6180**	**5.7006**	**0.0000**	**9,382.7574**	**9,382.7574**	**2.2762**	**0.3603**	**9,547.0274**

Pacifica Cottonwood - Riverside-South Coast County, Summer

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

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	55.07	0.00	50.01	57.49	0.00	47.67	0.00	0.00	0.00	0.00	0.00	0.00

Pacifica Cottonwood - Riverside-South Coast County, Summer

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

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	2.5800	0.0570	4.9488	2.6000e-004		0.0274	0.0274		0.0274	0.0274	0.0000	8.9148	8.9148	8.5600e-003	0.0000	9.1287
Energy	0.0502	0.4285	0.1824	2.7400e-003		0.0347	0.0347		0.0347	0.0347		547.0480	547.0480	0.0105	0.0100	550.2988
Mobile	1.7715	2.3149	17.4243	0.0403	4.1067	0.0308	4.1375	1.0956	0.0289	1.1245		4,172.7927	4,172.7927	0.1960	0.1877	4,233.6395
Total	**4.4017**	**2.8005**	**22.5554**	**0.0433**	**4.1067**	**0.0929**	**4.1996**	**1.0956**	**0.0909**	**1.1865**	**0.0000**	**4,728.7554**	**4,728.7554**	**0.2150**	**0.1978**	**4,793.0670**

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	2.5709	0.0570	4.9488	2.6000e-004		0.0274	0.0274		0.0274	0.0274	0.0000	8.9148	8.9148	8.5600e-003	0.0000	9.1287
Energy	0.0502	0.4285	0.1824	2.7400e-003		0.0347	0.0347		0.0347	0.0347		547.0480	547.0480	0.0105	0.0100	550.2988
Mobile	1.7715	2.3149	17.4243	0.0403	4.1067	0.0308	4.1375	1.0956	0.0289	1.1245		4,172.7927	4,172.7927	0.1960	0.1877	4,233.6395
Total	**4.3925**	**2.8005**	**22.5554**	**0.0433**	**4.1067**	**0.0929**	**4.1996**	**1.0956**	**0.0909**	**1.1865**	**0.0000**	**4,728.7554**	**4,728.7554**	**0.2150**	**0.1978**	**4,793.0670**

Pacifica Cottonwood - Riverside-South Coast County, Summer

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

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	0.21	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	1/1/2023	1/13/2023	5	10	
2	Grading	Grading	1/14/2023	3/3/2023	5	35	
3	Building Construction	Building Construction	3/4/2023	8/2/2024	5	370	
4	Paving	Paving	8/3/2024	8/30/2024	5	20	
5	Architectural Coating	Architectural Coating	8/31/2024	9/27/2024	5	20	

Acres of Grading (Site Preparation Phase): 35

Acres of Grading (Grading Phase): 140

Acres of Paving: 5.51

Residential Indoor: 218,700; Residential Outdoor: 72,900; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 14,401 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Crawler Tractors	4	8.00	212	0.43
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Grading	Crawler Tractors	2	8.00	212	0.43
Grading	Excavators	2	8.00	158	0.38
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

Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Scrapers	2	8.00	367	0.48
Grading	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Building Construction	Cranes	1	8.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
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
Architectural Coating	Air Compressors	1	8.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	1,346.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	158.00	59.00	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	32.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Water Unpaved Roads

Reduce Vehicle Speed on Unpaved Roads

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

3.2 Site Preparation - 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					
Fugitive Dust					21.7780	0.0000	21.7780	10.3315	0.0000	10.3315			0.0000			0.0000
Off-Road	3.8307	41.8798	18.2937	0.0569		1.7577	1.7577		1.6171	1.6171		5,514.0891	5,514.0891	1.7834		5,558.6733
Total	**3.8307**	**41.8798**	**18.2937**	**0.0569**	**21.7780**	**1.7577**	**23.5357**	**10.3315**	**1.6171**	**11.9486**		**5,514.0891**	**5,514.0891**	**1.7834**		**5,558.6733**

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	0.0658	0.0406	0.6603	1.7700e-003	0.2012	9.4000e-004	0.2021	0.0534	8.7000e-004	0.0542		181.1165	181.1165	4.1400e-003	4.2200e-003	182.4783
Total	**0.0658**	**0.0406**	**0.6603**	**1.7700e-003**	**0.2012**	**9.4000e-004**	**0.2021**	**0.0534**	**8.7000e-004**	**0.0542**		**181.1165**	**181.1165**	**4.1400e-003**	**4.2200e-003**	**182.4783**

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

3.2 Site Preparation - 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					
Fugitive Dust					8.4934	0.0000	8.4934	4.0293	0.0000	4.0293			0.0000			0.0000
Off-Road	3.8307	41.8798	18.2937	0.0569		1.7577	1.7577		1.6171	1.6171	0.0000	5,514.0891	5,514.0891	1.7834		5,558.6733
Total	**3.8307**	**41.8798**	**18.2937**	**0.0569**	**8.4934**	**1.7577**	**10.2511**	**4.0293**	**1.6171**	**5.6464**	**0.0000**	**5,514.0891**	**5,514.0891**	**1.7834**		**5,558.6733**

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	0.0658	0.0406	0.6603	1.7700e-003	0.2012	9.4000e-004	0.2021	0.0534	8.7000e-004	0.0542		181.1165	181.1165	4.1400e-003	4.2200e-003	182.4783
Total	**0.0658**	**0.0406**	**0.6603**	**1.7700e-003**	**0.2012**	**9.4000e-004**	**0.2021**	**0.0534**	**8.7000e-004**	**0.0542**		**181.1165**	**181.1165**	**4.1400e-003**	**4.2200e-003**	**182.4783**

Pacifica Cottonwood - Riverside-South Coast County, Summer

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

3.3 Grading - 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					
Fugitive Dust					10.3030	0.0000	10.3030	3.7742	0.0000	3.7742			0.0000			0.0000
Off-Road	3.9073	41.6934	28.0758	0.0715		1.6703	1.6703		1.5367	1.5367		6,924.8682	6,924.8682	2.2396		6,980.8593
Total	**3.9073**	**41.6934**	**28.0758**	**0.0715**	**10.3030**	**1.6703**	**11.9734**	**3.7742**	**1.5367**	**5.3109**		**6,924.8682**	**6,924.8682**	**2.2396**		**6,980.8593**

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	0.0842	3.8405	1.0561	0.0211	0.6731	0.0464	0.7194	0.1845	0.0444	0.2289		2,256.6486	2,256.6486	0.0320	0.3556	2,363.4144
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	0.0731	0.0452	0.7337	1.9700e-003	0.2236	1.0500e-003	0.2246	0.0593	9.7000e-004	0.0603		201.2406	201.2406	4.5900e-003	4.6900e-003	202.7537
Total	**0.1572**	**3.8856**	**1.7898**	**0.0231**	**0.8966**	**0.0474**	**0.9440**	**0.2438**	**0.0453**	**0.2891**		**2,457.8892**	**2,457.8892**	**0.0366**	**0.3603**	**2,566.1681**

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

3.3 Grading - 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					
Fugitive Dust					4.0182	0.0000	4.0182	1.4719	0.0000	1.4719			0.0000			0.0000
Off-Road	3.9073	41.6934	28.0758	0.0715		1.6703	1.6703		1.5367	1.5367	0.0000	6,924.8682	6,924.8682	2.2396		6,980.8593
Total	**3.9073**	**41.6934**	**28.0758**	**0.0715**	**4.0182**	**1.6703**	**5.6885**	**1.4719**	**1.5367**	**3.0086**	**0.0000**	**6,924.8682**	**6,924.8682**	**2.2396**		**6,980.8593**

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	0.0842	3.8405	1.0561	0.0211	0.6731	0.0464	0.7194	0.1845	0.0444	0.2289		2,256.6486	2,256.6486	0.0320	0.3556	2,363.4144
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	0.0731	0.0452	0.7337	1.9700e-003	0.2236	1.0500e-003	0.2246	0.0593	9.7000e-004	0.0603		201.2406	201.2406	4.5900e-003	4.6900e-003	202.7537
Total	**0.1572**	**3.8856**	**1.7898**	**0.0231**	**0.8966**	**0.0474**	**0.9440**	**0.2438**	**0.0453**	**0.2891**		**2,457.8892**	**2,457.8892**	**0.0366**	**0.3603**	**2,566.1681**

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	1.6735	15.4377	17.3101	0.0288		0.7481	0.7481		0.7029	0.7029		2,738.1535	2,738.1535	0.6670		2,754.8288
Total	**1.6735**	**15.4377**	**17.3101**	**0.0288**		**0.7481**	**0.7481**		**0.7029**	**0.7029**		**2,738.1535**	**2,738.1535**	**0.6670**		**2,754.8288**

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	0.0665	1.9276	0.7937	0.0103	0.3779	0.0168	0.3947	0.1088	0.0161	0.1249		1,093.0989	1,093.0989	0.0112	0.1615	1,141.5127
Worker	0.5773	0.3567	5.7964	0.0155	1.7661	8.2800e-003	1.7744	0.4684	7.6300e-003	0.4760		1,589.8008	1,589.8008	0.0363	0.0371	1,601.7541
Total	**0.6438**	**2.2843**	**6.5900**	**0.0258**	**2.1440**	**0.0251**	**2.1690**	**0.5772**	**0.0237**	**0.6009**		**2,682.8997**	**2,682.8997**	**0.0475**	**0.1986**	**2,743.2668**

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	1.6735	15.4377	17.3101	0.0288		0.7481	0.7481		0.7029	0.7029	0.0000	2,738.1535	2,738.1535	0.6670		2,754.8288
Total	**1.6735**	**15.4377**	**17.3101**	**0.0288**		**0.7481**	**0.7481**		**0.7029**	**0.7029**	**0.0000**	**2,738.1535**	**2,738.1535**	**0.6670**		**2,754.8288**

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	0.0665	1.9276	0.7937	0.0103	0.3779	0.0168	0.3947	0.1088	0.0161	0.1249		1,093.0989	1,093.0989	0.0112	0.1615	1,141.5127
Worker	0.5773	0.3567	5.7964	0.0155	1.7661	8.2800e-003	1.7744	0.4684	7.6300e-003	0.4760		1,589.8008	1,589.8008	0.0363	0.0371	1,601.7541
Total	**0.6438**	**2.2843**	**6.5900**	**0.0258**	**2.1440**	**0.0251**	**2.1690**	**0.5772**	**0.0237**	**0.6009**		**2,682.8997**	**2,682.8997**	**0.0475**	**0.1986**	**2,743.2668**

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

3.4 Building Construction - 2024

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	1.5670	14.4249	17.2270	0.0288		0.6565	0.6565		0.6166	0.6166		2,738.7124	2,738.7124	0.6635		2,755.3009
Total	**1.5670**	**14.4249**	**17.2270**	**0.0288**		**0.6565**	**0.6565**		**0.6166**	**0.6166**		**2,738.7124**	**2,738.7124**	**0.6635**		**2,755.3009**

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	0.0655	1.9277	0.7846	0.0102	0.3779	0.0167	0.3946	0.1088	0.0160	0.1248		1,076.2519	1,076.2519	0.0115	0.1588	1,123.8623
Worker	0.5382	0.3179	5.4275	0.0150	1.7661	7.9200e-003	1.7740	0.4684	7.2900e-003	0.4757		1,551.4422	1,551.4422	0.0329	0.0344	1,562.5264
Total	**0.6036**	**2.2456**	**6.2121**	**0.0252**	**2.1440**	**0.0246**	**2.1686**	**0.5772**	**0.0232**	**0.6004**		**2,627.6942**	**2,627.6942**	**0.0444**	**0.1932**	**2,686.3887**

Pacifica Cottonwood - Riverside-South Coast County, Summer

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

3.4 Building Construction - 2024

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	1.5670	14.4249	17.2270	0.0288		0.6565	0.6565		0.6166	0.6166	0.0000	2,738.7123	2,738.7123	0.6635		2,755.3009
Total	**1.5670**	**14.4249**	**17.2270**	**0.0288**		**0.6565**	**0.6565**		**0.6166**	**0.6166**	**0.0000**	**2,738.7123**	**2,738.7123**	**0.6635**		**2,755.3009**

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	0.0655	1.9277	0.7846	0.0102	0.3779	0.0167	0.3946	0.1088	0.0160	0.1248		1,076.2519	1,076.2519	0.0115	0.1588	1,123.8623
Worker	0.5382	0.3179	5.4275	0.0150	1.7661	7.9200e-003	1.7740	0.4684	7.2900e-003	0.4757		1,551.4422	1,551.4422	0.0329	0.0344	1,562.5264
Total	**0.6036**	**2.2456**	**6.2121**	**0.0252**	**2.1440**	**0.0246**	**2.1686**	**0.5772**	**0.0232**	**0.6004**		**2,627.6942**	**2,627.6942**	**0.0444**	**0.1932**	**2,686.3887**

Pacifica Cottonwood - Riverside-South Coast County, Summer

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

3.5 Paving - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.9882	9.5246	14.6258	0.0228		0.4685	0.4685		0.4310	0.4310		2,207.5472	2,207.5472	0.7140		2,225.3963
Paving	0.7218					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.7100**	**9.5246**	**14.6258**	**0.0228**		**0.4685**	**0.4685**		**0.4310**	**0.4310**		**2,207.5472**	**2,207.5472**	**0.7140**		**2,225.3963**

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	0.0511	0.0302	0.5153	1.4300e-003	0.1677	7.5000e-004	0.1684	0.0445	6.9000e-004	0.0452		147.2888	147.2888	3.1200e-003	3.2700e-003	148.3411
Total	**0.0511**	**0.0302**	**0.5153**	**1.4300e-003**	**0.1677**	**7.5000e-004**	**0.1684**	**0.0445**	**6.9000e-004**	**0.0452**		**147.2888**	**147.2888**	**3.1200e-003**	**3.2700e-003**	**148.3411**

Pacifica Cottonwood - Riverside-South Coast County, Summer

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

3.5 Paving - 2024

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	0.9882	9.5246	14.6258	0.0228		0.4685	0.4685		0.4310	0.4310	0.0000	2,207.5472	2,207.5472	0.7140		2,225.3963
Paving	0.7218					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.7100**	**9.5246**	**14.6258**	**0.0228**		**0.4685**	**0.4685**		**0.4310**	**0.4310**	**0.0000**	**2,207.5472**	**2,207.5472**	**0.7140**		**2,225.3963**

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	0.0511	0.0302	0.5153	1.4300e-003	0.1677	7.5000e-004	0.1684	0.0445	6.9000e-004	0.0452		147.2888	147.2888	3.1200e-003	3.2700e-003	148.3411
Total	**0.0511**	**0.0302**	**0.5153**	**1.4300e-003**	**0.1677**	**7.5000e-004**	**0.1684**	**0.0445**	**6.9000e-004**	**0.0452**		**147.2888**	**147.2888**	**3.1200e-003**	**3.2700e-003**	**148.3411**

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

3.6 Architectural Coating - 2024

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	35.4579					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2410	1.6251	2.4135	3.9600e-003		0.0812	0.0812		0.0812	0.0812		375.2641	375.2641	0.0211		375.7923
Total	**35.6989**	**1.6251**	**2.4135**	**3.9600e-003**		**0.0812**	**0.0812**		**0.0812**	**0.0812**		**375.2641**	**375.2641**	**0.0211**		**375.7923**

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	0.1090	0.0644	1.0992	3.0500e-003	0.3577	1.6000e-003	0.3593	0.0949	1.4800e-003	0.0963		314.2162	314.2162	6.6600e-003	6.9700e-003	316.4611
Total	**0.1090**	**0.0644**	**1.0992**	**3.0500e-003**	**0.3577**	**1.6000e-003**	**0.3593**	**0.0949**	**1.4800e-003**	**0.0963**		**314.2162**	**314.2162**	**6.6600e-003**	**6.9700e-003**	**316.4611**

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

3.6 Architectural Coating - 2024

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	35.4579					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2410	1.6251	2.4135	3.9600e-003		0.0812	0.0812		0.0812	0.0812	0.0000	375.2641	375.2641	0.0211		375.7923
Total	**35.6989**	**1.6251**	**2.4135**	**3.9600e-003**		**0.0812**	**0.0812**		**0.0812**	**0.0812**	**0.0000**	**375.2641**	**375.2641**	**0.0211**		**375.7923**

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	0.1090	0.0644	1.0992	3.0500e-003	0.3577	1.6000e-003	0.3593	0.0949	1.4800e-003	0.0963		314.2162	314.2162	6.6600e-003	6.9700e-003	316.4611
Total	**0.1090**	**0.0644**	**1.0992**	**3.0500e-003**	**0.3577**	**1.6000e-003**	**0.3593**	**0.0949**	**1.4800e-003**	**0.0963**		**314.2162**	**314.2162**	**6.6600e-003**	**6.9700e-003**	**316.4611**

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	1.7715	2.3149	17.4243	0.0403	4.1067	0.0308	4.1375	1.0956	0.0289	1.1245		4,172.7927	4,172.7927	0.1960	0.1877	4,233.6395
Unmitigated	1.7715	2.3149	17.4243	0.0403	4.1067	0.0308	4.1375	1.0956	0.0289	1.1245		4,172.7927	4,172.7927	0.1960	0.1877	4,233.6395

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		
Other Asphalt Surfaces	0.00	0.00	0.00		
Single Family Housing	565.80	568.80	508.80	1,907,064	1,907,064
Total	565.80	568.80	508.80	1,907,064	1,907,064

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
Other Asphalt Surfaces	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
Single Family Housing	14.70	5.90	8.70	40.20	19.20	40.60	86	11	3

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	0.537845	0.056225	0.173186	0.138405	0.025906	0.007191	0.011447	0.018769	0.000611	0.000309	0.023821	0.001097	0.005189
Other Asphalt Surfaces	0.537845	0.056225	0.173186	0.138405	0.025906	0.007191	0.011447	0.018769	0.000611	0.000309	0.023821	0.001097	0.005189
Single Family Housing	0.537845	0.056225	0.173186	0.138405	0.025906	0.007191	0.011447	0.018769	0.000611	0.000309	0.023821	0.001097	0.005189

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0502	0.4285	0.1824	2.7400e-003		0.0347	0.0347		0.0347	0.0347		547.0480	547.0480	0.0105	0.0100	550.2988
NaturalGas Unmitigated	0.0502	0.4285	0.1824	2.7400e-003		0.0347	0.0347		0.0347	0.0347		547.0480	547.0480	0.0105	0.0100	550.2988

Pacifica Cottonwood - Riverside-South Coast County, Summer

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

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
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
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Single Family Housing	4649.91	0.0502	0.4285	0.1824	2.7400e-003		0.0347	0.0347		0.0347	0.0347		547.0480	547.0480	0.0105	0.0100	550.2988
Total		**0.0502**	**0.4285**	**0.1824**	**2.7400e-003**		**0.0347**	**0.0347**		**0.0347**	**0.0347**		**547.0480**	**547.0480**	**0.0105**	**0.0100**	**550.2988**

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
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Single Family Housing	4.64991	0.0502	0.4285	0.1824	2.7400e-003		0.0347	0.0347		0.0347	0.0347		547.0480	547.0480	0.0105	0.0100	550.2988
Total		**0.0502**	**0.4285**	**0.1824**	**2.7400e-003**		**0.0347**	**0.0347**		**0.0347**	**0.0347**		**547.0480**	**547.0480**	**0.0105**	**0.0100**	**550.2988**

6.0 Area Detail

6.1 Mitigation Measures Area

Use Low VOC Paint - Residential Interior

Use Low VOC Paint - Residential Exterior

Use Low VOC Paint - Non-Residential Interior

Use Low VOC Paint - Non-Residential Exterior

Pacifica Cottonwood - Riverside-South Coast County, Summer

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

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	2.5709	0.0570	4.9488	2.6000e-004		0.0274	0.0274		0.0274	0.0274	0.0000	8.9148	8.9148	8.5600e-003	0.0000	9.1287
Unmitigated	2.5800	0.0570	4.9488	2.6000e-004		0.0274	0.0274		0.0274	0.0274	0.0000	8.9148	8.9148	8.5600e-003	0.0000	9.1287

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	0.2034					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	2.2277					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.1489	0.0570	4.9488	2.6000e-004		0.0274	0.0274		0.0274	0.0274		8.9148	8.9148	8.5600e-003		9.1287
Total	**2.5800**	**0.0570**	**4.9488**	**2.6000e-004**		**0.0274**	**0.0274**		**0.0274**	**0.0274**	**0.0000**	**8.9148**	**8.9148**	**8.5600e-003**	**0.0000**	**9.1287**

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	0.1943					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	2.2277					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.1489	0.0570	4.9488	2.6000e-004		0.0274	0.0274		0.0274	0.0274		8.9148	8.9148	8.5600e-003		9.1287
Total	**2.5709**	**0.0570**	**4.9488**	**2.6000e-004**		**0.0274**	**0.0274**		**0.0274**	**0.0274**	**0.0000**	**8.9148**	**8.9148**	**8.5600e-003**	**0.0000**	**9.1287**

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

Pacifica Cottonwood - Riverside-South Coast County, Winter

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

Pacifica Cottonwood

Riverside-South Coast County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Asphalt Surfaces	5.51	Acre	5.51	240,015.60	0
City Park	1.92	Acre	1.92	83,635.20	0
Single Family Housing	60.00	Dwelling Unit	12.60	108,000.00	172

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.4	**Precipitation Freq (Days)**	28
Climate Zone	10			**Operational Year**	2024
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	390.98	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Lot acreage based on TTM 38264.

Construction Phase -

Off-road Equipment - Crawler Tractors in place of Tractors/Loaders/Backhoes

Off-road Equipment - Crawler Tractors in place of Tractors/Loaders/Backhoes

Off-road Equipment - Assumed 8hr work day

Off-road Equipment -

Off-road Equipment - Assumed 8hr work day

Grading - 10,767 Cubic Yards of Import from TTM 38264.

Architectural Coating - SCAQMD Rule 1113

Pacifica Cottonwood - Riverside-South Coast County, Winter

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

Vehicle Trips - Used ITE 11ed Rates for Single Family Housing (LU Code 210)

Woodstoves - SCAQMD Rule 445. No Fireplaces Proposed

Construction Off-road Equipment Mitigation - SCAQMD Rule 403

Area Mitigation - SCAQMD Rule 1113

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	100.00	50.00
tblArchitecturalCoating	EF_Nonresidential_Interior	100.00	50.00
tblArchitecturalCoating	EF_Parking	100.00	50.00
tblAreaMitigation	UseLowVOCPaintNonresidentialExteriorValue	100	50
tblAreaMitigation	UseLowVOCPaintNonresidentialInteriorValue	100	50
tblAreaMitigation	UseLowVOCPaintParkingCheck	False	True
tblAreaMitigation	UseLowVOCPaintParkingValue	100	50
tblConstDustMitigation	WaterUnpavedRoadMoistureContent	0	12
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblFireplaces	FireplaceDayYear	25.00	0.00
tblFireplaces	FireplaceHourDay	3.00	0.00
tblFireplaces	FireplaceWoodMass	1,019.20	0.00
tblFireplaces	NumberGas	51.00	0.00
tblFireplaces	NumberNoFireplace	6.00	60.00
tblFireplaces	NumberWood	3.00	0.00
tblGrading	MaterialImported	0.00	10,767.00
tblLandUse	LotAcreage	19.48	12.60
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	0.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblVehicleTrips	ST_TR	1.96	0.00

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

tblVehicleTrips	ST_TR	9.54	9.48
tblVehicleTrips	SU_TR	2.19	0.00
tblVehicleTrips	SU_TR	8.55	8.48
tblVehicleTrips	WD_TR	0.78	0.00
tblVehicleTrips	WD_TR	9.44	9.43
tblWoodstoves	NumberCatalytic	3.00	0.00
tblWoodstoves	NumberNoncatalytic	3.00	0.00
tblWoodstoves	WoodstoveDayYear	25.00	0.00
tblWoodstoves	WoodstoveWoodMass	999.60	0.00

2.0 Emissions Summary

Pacifica Cottonwood - Riverside-South Coast County, Winter

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

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2023	4.0532	45.8096	29.7500	0.0945	21.9792	1.7587	23.7379	10.3848	1.6180	12.0028	0.0000	9,367.3880	9,367.3880	2.2759	0.3610	9,531.8486
2024	35.8014	16.7991	22.4475	0.0526	2.1440	0.6811	2.8251	0.5772	0.6399	1.2171	0.0000	5,223.6620	5,223.6620	0.7171	0.1946	5,299.3328
Maximum	**35.8014**	**45.8096**	**29.7500**	**0.0945**	**21.9792**	**1.7587**	**23.7379**	**10.3848**	**1.6180**	**12.0028**	**0.0000**	**9,367.3880**	**9,367.3880**	**2.2759**	**0.3610**	**9,531.8486**

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					
2023	4.0532	45.8096	29.7500	0.0945	8.6946	1.7587	10.4533	4.0826	1.6180	5.7006	0.0000	9,367.3880	9,367.3880	2.2759	0.3610	9,531.8486
2024	35.8014	16.7991	22.4475	0.0526	2.1440	0.6811	2.8251	0.5772	0.6399	1.2171	0.0000	5,223.6620	5,223.6620	0.7171	0.1946	5,299.3328
Maximum	**35.8014**	**45.8096**	**29.7500**	**0.0945**	**8.6946**	**1.7587**	**10.4533**	**4.0826**	**1.6180**	**5.7006**	**0.0000**	**9,367.3880**	**9,367.3880**	**2.2759**	**0.3610**	**9,531.8486**

Pacifica Cottonwood - Riverside-South Coast County, Winter

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

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	55.07	0.00	50.01	57.49	0.00	47.67	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	2.5800	0.0570	4.9488	2.6000e-004		0.0274	0.0274		0.0274	0.0274	0.0000	8.9148	8.9148	8.5600e-003	0.0000	9.1287
Energy	0.0502	0.4285	0.1824	2.7400e-003		0.0347	0.0347		0.0347	0.0347		547.0480	547.0480	0.0105	0.0100	550.2988
Mobile	1.5104	2.4552	15.3901	0.0374	4.1067	0.0308	4.1375	1.0956	0.0289	1.1245		3,874.3611	3,874.3611	0.2003	0.1917	3,936.4856
Total	**4.1405**	**2.9408**	**20.5212**	**0.0404**	**4.1067**	**0.0929**	**4.1996**	**1.0956**	**0.0910**	**1.1866**	**0.0000**	**4,430.3238**	**4,430.3238**	**0.2194**	**0.2017**	**4,495.9131**

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	2.5709	0.0570	4.9488	2.6000e-004		0.0274	0.0274		0.0274	0.0274	0.0000	8.9148	8.9148	8.5600e-003	0.0000	9.1287
Energy	0.0502	0.4285	0.1824	2.7400e-003		0.0347	0.0347		0.0347	0.0347		547.0480	547.0480	0.0105	0.0100	550.2988
Mobile	1.5104	2.4552	15.3901	0.0374	4.1067	0.0308	4.1375	1.0956	0.0289	1.1245		3,874.3611	3,874.3611	0.2003	0.1917	3,936.4856
Total	**4.1314**	**2.9408**	**20.5212**	**0.0404**	**4.1067**	**0.0929**	**4.1996**	**1.0956**	**0.0910**	**1.1866**	**0.0000**	**4,430.3238**	**4,430.3238**	**0.2194**	**0.2017**	**4,495.9131**

Pacifica Cottonwood - Riverside-South Coast County, Winter

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

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	0.22	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	1/1/2023	1/13/2023	5	10	
2	Grading	Grading	1/14/2023	3/3/2023	5	35	
3	Building Construction	Building Construction	3/4/2023	8/2/2024	5	370	
4	Paving	Paving	8/3/2024	8/30/2024	5	20	
5	Architectural Coating	Architectural Coating	8/31/2024	9/27/2024	5	20	

Acres of Grading (Site Preparation Phase): 35

Acres of Grading (Grading Phase): 140

Acres of Paving: 5.51

Residential Indoor: 218,700; Residential Outdoor: 72,900; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 14,401 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Crawler Tractors	4	8.00	212	0.43
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Grading	Crawler Tractors	2	8.00	212	0.43
Grading	Excavators	2	8.00	158	0.38
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

Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Scrapers	2	8.00	367	0.48
Grading	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Building Construction	Cranes	1	8.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
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
Architectural Coating	Air Compressors	1	8.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	1,346.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	158.00	59.00	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	32.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Water Unpaved Roads

Reduce Vehicle Speed on Unpaved Roads

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

3.2 Site Preparation - 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					
Fugitive Dust					21.7780	0.0000	21.7780	10.3315	0.0000	10.3315			0.0000			0.0000
Off-Road	3.8307	41.8798	18.2937	0.0569		1.7577	1.7577		1.6171	1.6171		5,514.0891	5,514.0891	1.7834		5,558.6733
Total	**3.8307**	**41.8798**	**18.2937**	**0.0569**	**21.7780**	**1.7577**	**23.5357**	**10.3315**	**1.6171**	**11.9486**		**5,514.0891**	**5,514.0891**	**1.7834**		**5,558.6733**

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	0.0616	0.0422	0.5362	1.6000e-003	0.2012	9.4000e-004	0.2021	0.0534	8.7000e-004	0.0542		164.1079	164.1079	4.1200e-003	4.3200e-003	165.4988
Total	**0.0616**	**0.0422**	**0.5362**	**1.6000e-003**	**0.2012**	**9.4000e-004**	**0.2021**	**0.0534**	**8.7000e-004**	**0.0542**		**164.1079**	**164.1079**	**4.1200e-003**	**4.3200e-003**	**165.4988**

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

3.2 Site Preparation - 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					
Fugitive Dust					8.4934	0.0000	8.4934	4.0293	0.0000	4.0293			0.0000			0.0000
Off-Road	3.8307	41.8798	18.2937	0.0569		1.7577	1.7577		1.6171	1.6171	0.0000	5,514.0891	5,514.0891	1.7834		5,558.6733
Total	**3.8307**	**41.8798**	**18.2937**	**0.0569**	**8.4934**	**1.7577**	**10.2511**	**4.0293**	**1.6171**	**5.6464**	**0.0000**	**5,514.0891**	**5,514.0891**	**1.7834**		**5,558.6733**

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	0.0616	0.0422	0.5362	1.6000e-003	0.2012	9.4000e-004	0.2021	0.0534	8.7000e-004	0.0542		164.1079	164.1079	4.1200e-003	4.3200e-003	165.4988
Total	**0.0616**	**0.0422**	**0.5362**	**1.6000e-003**	**0.2012**	**9.4000e-004**	**0.2021**	**0.0534**	**8.7000e-004**	**0.0542**		**164.1079**	**164.1079**	**4.1200e-003**	**4.3200e-003**	**165.4988**

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

3.3 Grading - 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					
Fugitive Dust					10.3030	0.0000	10.3030	3.7742	0.0000	3.7742			0.0000			0.0000
Off-Road	3.9073	41.6934	28.0758	0.0715		1.6703	1.6703		1.5367	1.5367		6,924.8682	6,924.8682	2.2396		6,980.8593
Total	**3.9073**	**41.6934**	**28.0758**	**0.0715**	**10.3030**	**1.6703**	**11.9734**	**3.7742**	**1.5367**	**5.3109**		**6,924.8682**	**6,924.8682**	**2.2396**		**6,980.8593**

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	0.0774	4.0693	1.0783	0.0212	0.6731	0.0464	0.7195	0.1845	0.0444	0.2289		2,260.1777	2,260.1777	0.0317	0.3562	2,367.1017
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	0.0685	0.0469	0.5958	1.7800e-003	0.2236	1.0500e-003	0.2246	0.0593	9.7000e-004	0.0603		182.3421	182.3421	4.5800e-003	4.8000e-003	183.8876
Total	**0.1459**	**4.1162**	**1.6741**	**0.0229**	**0.8966**	**0.0475**	**0.9441**	**0.2438**	**0.0454**	**0.2892**		**2,442.5198**	**2,442.5198**	**0.0363**	**0.3610**	**2,550.9893**

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

3.3 Grading - 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					
Fugitive Dust					4.0182	0.0000	4.0182	1.4719	0.0000	1.4719			0.0000			0.0000
Off-Road	3.9073	41.6934	28.0758	0.0715		1.6703	1.6703		1.5367	1.5367	0.0000	6,924.8682	6,924.8682	2.2396		6,980.8593
Total	**3.9073**	**41.6934**	**28.0758**	**0.0715**	**4.0182**	**1.6703**	**5.6885**	**1.4719**	**1.5367**	**3.0086**	**0.0000**	**6,924.8682**	**6,924.8682**	**2.2396**		**6,980.8593**

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	0.0774	4.0693	1.0783	0.0212	0.6731	0.0464	0.7195	0.1845	0.0444	0.2289		2,260.1777	2,260.1777	0.0317	0.3562	2,367.1017
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	0.0685	0.0469	0.5958	1.7800e-003	0.2236	1.0500e-003	0.2246	0.0593	9.7000e-004	0.0603		182.3421	182.3421	4.5800e-003	4.8000e-003	183.8876
Total	**0.1459**	**4.1162**	**1.6741**	**0.0229**	**0.8966**	**0.0475**	**0.9441**	**0.2438**	**0.0454**	**0.2892**		**2,442.5198**	**2,442.5198**	**0.0363**	**0.3610**	**2,550.9893**

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	1.6735	15.4377	17.3101	0.0288		0.7481	0.7481		0.7029	0.7029		2,738.1535	2,738.1535	0.6670		2,754.8288
Total	**1.6735**	**15.4377**	**17.3101**	**0.0288**		**0.7481**	**0.7481**		**0.7029**	**0.7029**		**2,738.1535**	**2,738.1535**	**0.6670**		**2,754.8288**

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	0.0616	2.0442	0.8204	0.0103	0.3779	0.0169	0.3947	0.1088	0.0161	0.1249		1,095.8117	1,095.8117	0.0109	0.1621	1,144.3803
Worker	0.5411	0.3701	4.7068	0.0141	1.7661	8.2800e-003	1.7744	0.4684	7.6300e-003	0.4760		1,440.5023	1,440.5023	0.0362	0.0379	1,452.7117
Total	**0.6026**	**2.4143**	**5.5272**	**0.0244**	**2.1440**	**0.0251**	**2.1691**	**0.5772**	**0.0238**	**0.6009**		**2,536.3140**	**2,536.3140**	**0.0471**	**0.2000**	**2,597.0920**

Pacifica Cottonwood - Riverside-South Coast County, Winter

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

3.4 Building Construction - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.6735	15.4377	17.3101	0.0288		0.7481	0.7481		0.7029	0.7029	0.0000	2,738.1535	2,738.1535	0.6670		2,754.8288
Total	**1.6735**	**15.4377**	**17.3101**	**0.0288**		**0.7481**	**0.7481**		**0.7029**	**0.7029**	**0.0000**	**2,738.1535**	**2,738.1535**	**0.6670**		**2,754.8288**

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	0.0616	2.0442	0.8204	0.0103	0.3779	0.0169	0.3947	0.1088	0.0161	0.1249		1,095.8117	1,095.8117	0.0109	0.1621	1,144.3803
Worker	0.5411	0.3701	4.7068	0.0141	1.7661	8.2800e-003	1.7744	0.4684	7.6300e-003	0.4760		1,440.5023	1,440.5023	0.0362	0.0379	1,452.7117
Total	**0.6026**	**2.4143**	**5.5272**	**0.0244**	**2.1440**	**0.0251**	**2.1691**	**0.5772**	**0.0238**	**0.6009**		**2,536.3140**	**2,536.3140**	**0.0471**	**0.2000**	**2,597.0920**

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

3.4 Building Construction - 2024

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	1.5670	14.4249	17.2270	0.0288		0.6565	0.6565		0.6166	0.6166		2,738.7124	2,738.7124	0.6635		2,755.3009
Total	**1.5670**	**14.4249**	**17.2270**	**0.0288**		**0.6565**	**0.6565**		**0.6166**	**0.6166**		**2,738.7124**	**2,738.7124**	**0.6635**		**2,755.3009**

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	0.0606	2.0445	0.8112	0.0102	0.3779	0.0167	0.3946	0.1088	0.0160	0.1248		1,078.9416	1,078.9416	0.0113	0.1593	1,126.7030
Worker	0.5060	0.3297	4.4093	0.0136	1.7661	7.9200e-003	1.7740	0.4684	7.2900e-003	0.4757		1,406.0081	1,406.0081	0.0328	0.0352	1,417.3289
Total	**0.5665**	**2.3742**	**5.2205**	**0.0238**	**2.1440**	**0.0247**	**2.1686**	**0.5772**	**0.0233**	**0.6005**		**2,484.9497**	**2,484.9497**	**0.0442**	**0.1946**	**2,544.0319**

Pacifica Cottonwood - Riverside-South Coast County, Winter

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

3.4 Building Construction - 2024

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	1.5670	14.4249	17.2270	0.0288		0.6565	0.6565		0.6166	0.6166	0.0000	2,738.7123	2,738.7123	0.6635		2,755.3009
Total	**1.5670**	**14.4249**	**17.2270**	**0.0288**		**0.6565**	**0.6565**		**0.6166**	**0.6166**	**0.0000**	**2,738.7123**	**2,738.7123**	**0.6635**		**2,755.3009**

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	0.0606	2.0445	0.8112	0.0102	0.3779	0.0167	0.3946	0.1088	0.0160	0.1248		1,078.9416	1,078.9416	0.0113	0.1593	1,126.7030
Worker	0.5060	0.3297	4.4093	0.0136	1.7661	7.9200e-003	1.7740	0.4684	7.2900e-003	0.4757		1,406.0081	1,406.0081	0.0328	0.0352	1,417.3289
Total	**0.5665**	**2.3742**	**5.2205**	**0.0238**	**2.1440**	**0.0247**	**2.1686**	**0.5772**	**0.0233**	**0.6005**		**2,484.9497**	**2,484.9497**	**0.0442**	**0.1946**	**2,544.0319**

Pacifica Cottonwood - Riverside-South Coast County, Winter

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

3.5 Paving - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.9882	9.5246	14.6258	0.0228		0.4685	0.4685		0.4310	0.4310		2,207.5472	2,207.5472	0.7140		2,225.3963
Paving	0.7218					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.7100**	**9.5246**	**14.6258**	**0.0228**		**0.4685**	**0.4685**		**0.4310**	**0.4310**		**2,207.5472**	**2,207.5472**	**0.7140**		**2,225.3963**

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	0.0480	0.0313	0.4186	1.2900e-003	0.1677	7.5000e-004	0.1684	0.0445	6.9000e-004	0.0452		133.4818	133.4818	3.1200e-003	3.3500e-003	134.5565
Total	**0.0480**	**0.0313**	**0.4186**	**1.2900e-003**	**0.1677**	**7.5000e-004**	**0.1684**	**0.0445**	**6.9000e-004**	**0.0452**		**133.4818**	**133.4818**	**3.1200e-003**	**3.3500e-003**	**134.5565**

Pacifica Cottonwood - Riverside-South Coast County, Winter

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

3.5 Paving - 2024

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	0.9882	9.5246	14.6258	0.0228		0.4685	0.4685		0.4310	0.4310	0.0000	2,207.5472	2,207.5472	0.7140		2,225.3963
Paving	0.7218					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.7100**	**9.5246**	**14.6258**	**0.0228**		**0.4685**	**0.4685**		**0.4310**	**0.4310**	**0.0000**	**2,207.5472**	**2,207.5472**	**0.7140**		**2,225.3963**

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	0.0480	0.0313	0.4186	1.2900e-003	0.1677	7.5000e-004	0.1684	0.0445	6.9000e-004	0.0452		133.4818	133.4818	3.1200e-003	3.3500e-003	134.5565
Total	**0.0480**	**0.0313**	**0.4186**	**1.2900e-003**	**0.1677**	**7.5000e-004**	**0.1684**	**0.0445**	**6.9000e-004**	**0.0452**		**133.4818**	**133.4818**	**3.1200e-003**	**3.3500e-003**	**134.5565**

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

3.6 Architectural Coating - 2024

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	35.4579					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2410	1.6251	2.4135	3.9600e-003		0.0812	0.0812		0.0812	0.0812		375.2641	375.2641	0.0211		375.7923
Total	**35.6989**	**1.6251**	**2.4135**	**3.9600e-003**		**0.0812**	**0.0812**		**0.0812**	**0.0812**		**375.2641**	**375.2641**	**0.0211**		**375.7923**

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	0.1025	0.0668	0.8930	2.7600e-003	0.3577	1.6000e-003	0.3593	0.0949	1.4800e-003	0.0963		284.7611	284.7611	6.6500e-003	7.1400e-003	287.0540
Total	**0.1025**	**0.0668**	**0.8930**	**2.7600e-003**	**0.3577**	**1.6000e-003**	**0.3593**	**0.0949**	**1.4800e-003**	**0.0963**		**284.7611**	**284.7611**	**6.6500e-003**	**7.1400e-003**	**287.0540**

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

3.6 Architectural Coating - 2024

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	35.4579					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2410	1.6251	2.4135	3.9600e-003		0.0812	0.0812		0.0812	0.0812	0.0000	375.2641	375.2641	0.0211		375.7923
Total	**35.6989**	**1.6251**	**2.4135**	**3.9600e-003**		**0.0812**	**0.0812**		**0.0812**	**0.0812**	**0.0000**	**375.2641**	**375.2641**	**0.0211**		**375.7923**

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	0.1025	0.0668	0.8930	2.7600e-003	0.3577	1.6000e-003	0.3593	0.0949	1.4800e-003	0.0963		284.7611	284.7611	6.6500e-003	7.1400e-003	287.0540
Total	**0.1025**	**0.0668**	**0.8930**	**2.7600e-003**	**0.3577**	**1.6000e-003**	**0.3593**	**0.0949**	**1.4800e-003**	**0.0963**		**284.7611**	**284.7611**	**6.6500e-003**	**7.1400e-003**	**287.0540**

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	1.5104	2.4552	15.3901	0.0374	4.1067	0.0308	4.1375	1.0956	0.0289	1.1245		3,874.3611	3,874.3611	0.2003	0.1917	3,936.4856
Unmitigated	1.5104	2.4552	15.3901	0.0374	4.1067	0.0308	4.1375	1.0956	0.0289	1.1245		3,874.3611	3,874.3611	0.2003	0.1917	3,936.4856

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		
Other Asphalt Surfaces	0.00	0.00	0.00		
Single Family Housing	565.80	568.80	508.80	1,907,064	1,907,064
Total	565.80	568.80	508.80	1,907,064	1,907,064

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
Other Asphalt Surfaces	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
Single Family Housing	14.70	5.90	8.70	40.20	19.20	40.60	86	11	3

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	0.537845	0.056225	0.173186	0.138405	0.025906	0.007191	0.011447	0.018769	0.000611	0.000309	0.023821	0.001097	0.005189
Other Asphalt Surfaces	0.537845	0.056225	0.173186	0.138405	0.025906	0.007191	0.011447	0.018769	0.000611	0.000309	0.023821	0.001097	0.005189
Single Family Housing	0.537845	0.056225	0.173186	0.138405	0.025906	0.007191	0.011447	0.018769	0.000611	0.000309	0.023821	0.001097	0.005189

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0502	0.4285	0.1824	2.7400e-003		0.0347	0.0347		0.0347	0.0347		547.0480	547.0480	0.0105	0.0100	550.2988
NaturalGas Unmitigated	0.0502	0.4285	0.1824	2.7400e-003		0.0347	0.0347		0.0347	0.0347		547.0480	547.0480	0.0105	0.0100	550.2988

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
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Single Family Housing	4649.91	0.0502	0.4285	0.1824	2.7400e-003		0.0347	0.0347		0.0347	0.0347		547.0480	547.0480	0.0105	0.0100	550.2988
Total		**0.0502**	**0.4285**	**0.1824**	**2.7400e-003**		**0.0347**	**0.0347**		**0.0347**	**0.0347**		**547.0480**	**547.0480**	**0.0105**	**0.0100**	**550.2988**

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
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Single Family Housing	4.64991	0.0502	0.4285	0.1824	2.7400e-003		0.0347	0.0347		0.0347	0.0347		547.0480	547.0480	0.0105	0.0100	550.2988
Total		**0.0502**	**0.4285**	**0.1824**	**2.7400e-003**		**0.0347**	**0.0347**		**0.0347**	**0.0347**		**547.0480**	**547.0480**	**0.0105**	**0.0100**	**550.2988**

6.0 Area Detail

6.1 Mitigation Measures Area

Use Low VOC Paint - Residential Interior

Use Low VOC Paint - Residential Exterior

Use Low VOC Paint - Non-Residential Interior

Use Low VOC Paint - Non-Residential Exterior

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	2.5709	0.0570	4.9488	2.6000e-004		0.0274	0.0274		0.0274	0.0274	0.0000	8.9148	8.9148	8.5600e-003	0.0000	9.1287
Unmitigated	2.5800	0.0570	4.9488	2.6000e-004		0.0274	0.0274		0.0274	0.0274	0.0000	8.9148	8.9148	8.5600e-003	0.0000	9.1287

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	0.2034					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	2.2277					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.1489	0.0570	4.9488	2.6000e-004		0.0274	0.0274		0.0274	0.0274		8.9148	8.9148	8.5600e-003		9.1287
Total	**2.5800**	**0.0570**	**4.9488**	**2.6000e-004**		**0.0274**	**0.0274**		**0.0274**	**0.0274**	**0.0000**	**8.9148**	**8.9148**	**8.5600e-003**	**0.0000**	**9.1287**

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	0.1943					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	2.2277					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.1489	0.0570	4.9488	2.6000e-004		0.0274	0.0274		0.0274	0.0274		8.9148	8.9148	8.5600e-003		9.1287
Total	**2.5709**	**0.0570**	**4.9488**	**2.6000e-004**		**0.0274**	**0.0274**		**0.0274**	**0.0274**	**0.0000**	**8.9148**	**8.9148**	**8.5600e-003**	**0.0000**	**9.1287**

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

APPENDIX B – FUEL CALCULATIONS

Model Output: OFFROAD2021 (v1.0.2) Emissions Inventory
Region Type: Sub-Area
Region: Riverside (SC)
Calendar Year: 2022
Scenario: All Adopted Rules - Exhaust
Vehicle Classification: OFFROAD2021 Equipment Types
Units: tons/day for Emissions, gallons/year for Fuel, hours/year for Activity, Horsepower-hours/year for Horsepower-hours

Region	Calendar Year	VehClass	MdlYr	HP_Bin	Fuel	Fuel Consumption	Horsepower Hours	Fuel Rate
Riverside (SC)	2022	Construction and Mining - Crawler Tractors	Aggregate	Aggregate	Diesel	1768141.724	79732765.11	0.022176
Riverside (SC)	2022	Construction and Mining - Rubber Tired Dozers	Aggregate	Aggregate	Diesel	353190.7526	17144087.9	0.020601
Riverside (SC)	2022	Construction and Mining - Excavators	Aggregate	Aggregate	Diesel	3182947.177	160301933.5	0.019856
Riverside (SC)	2022	Construction and Mining - Graders	Aggregate	Aggregate	Diesel	1196401.41	56537153.42	0.021161
Riverside (SC)	2022	Construction and Mining - Scrapers	Aggregate	Aggregate	Diesel	3165608.764	126682492.6	0.024989
Riverside (SC)	2022	Construction and Mining - Cranes	Aggregate	Aggregate	Diesel	715948.1693	48065398.1	0.014895
Riverside (SC)	2022	Industrial - Forklifts	Aggregate	Aggregate	Diesel	322691.2028	30896088.4	0.010444
Riverside (SC)	2022	Light Commercial - Misc - Generator Sets	Aggregate	Aggregate	Diesel	102190.9402	1760738.1	0.058039
Riverside (SC)	2022	Construction and Mining - Tractors/Loaders/Backhoes	Aggregate	Aggregate	Diesel	4427933.693	231261946.7	0.019147
Riverside (SC)	2022	Light Commercial - Misc - Welders	Aggregate	Aggregate	Diesel	136703.8358	4807480.7	0.028436
Riverside (SC)	2022	Construction and Mining - Pavers	Aggregate	Aggregate	Diesel	212316.5969	9860385.59	0.021532
Riverside (SC)	2022	Construction and Mining - Paving Equipment	Aggregate	Aggregate	Diesel	123567.6955	6692167.895	0.018465
Riverside (SC)	2022	Construction and Mining - Rollers	Aggregate	Aggregate	Diesel	550676.7499	27761376.32	0.019836
Riverside (SC)	2022	Light Commercial - Misc - Air Compressors	Aggregate	Aggregate	Diesel	28108.83587	980868.15	0.028657

Source: EMFAC2021 (v1.0.1) Emissions Inventory
Region Type: Sub-Area
Region: Riverside (SC)
Calendar Year: 2022
Season: Annual
Vehicle Classification: EMFAC2007 Categories
Units: miles/year for CVMT and EVMT, trips/year for Trips, kWh/year for Energy Consumption, tons/year for Emissions, 1000 gallons/year for Fuel Consumption

Region	Calendar Year	Vehicle Category	Model Year	Speed	Fuel	VMT	Fuel Consumption	Fuel Rate
Riverside (SC)	2022	HHDT	Aggregate	Aggregate	Diesel	568203903.1	94947.16235	5.98
Riverside (SC)	2022	MHDT	Aggregate	Aggregate	Diesel	170546769.2	19108.08372	8.93
Riverside (SC)	2022	LDA	Aggregate	Aggregate	Gasoline	7015416450	245558.6535	28.57
Riverside (SC)	2022	LDT1	Aggregate	Aggregate	Gasoline	540270192.3	22818.86858	23.68
Riverside (SC)	2022	LDT2	Aggregate	Aggregate	Gasoline	2805656640	122202.406	22.96
					Passenger Car MPG:		50/25/25 Split	25.94