AIR QUALITY ASSESSMENT

Serrano Oaks Multi-Family Development
City of Jurupa Valley, CA

Prepared By:

Ldn Consulting, Inc.

42428 Chisolm Trail
Murrieta, CA 92562

Project For:

Rexco Development
1285 Corona Pointe Court Suite 102
Corona, CA 92879

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EXECUTIVE SUMMARY

This air quality impact study has been completed to determine the air quality impacts associated with the development of the proposed Serrano Oaks Multi-Family residential project. The proposed Project site is located within the City of Jurupa Valley. The Project proposes to construct 66 multi-family residential units on approximately 4.13 acres. This air quality impact study has been completed to determine the air quality impacts associated with the development of the proposed light industrial development. The proposed Project site is located within the City of Jurupa Valley which is located within the South Coast Air Basin (SCAB) within the County Riverside.

The proposed project would implement design features consistent with South Coast Air Quality Management District (SCAQMD) Rule 403 (SCAQMD, 2005). which requires wetting of the site during earth moving activities. Emissions associated with earthwork activities and construction were found to generate less than significant impacts.

Additionally, emissions will be generated from both project area and operational sources once the project is fully operational in 2023 though less than significant air quality impacts would be expected. The project would include design features such as natural gas or electric hearth options within all units. The project was analyzed under localized significance thresholds for both construction and operations and less than significant impacts would be expected. The proposed Project would not be expected to generate offensive odors and would therefore not impact any sensitive receptors.

The project seeks a rezone from industrial park to residential. Industrial uses are generally more intense with respect to Air Quality emissions since heavy trucks are typical to operations of this type. The project would be residential and would be designed in conjunction with the City of Jurupa's general plan. Since no direct impacts are expected from the proposed project, and since the proposed Project will be consistent with the City's General Plan, no cumulative impacts would be expected for air quality.

The Project would include air quality design features and were assumed within all air quality modeling in this assessment. Based on this, these design features will be a condition of this project:

1. All diesel equipment will be Tier 3 and include DPF or operate with similar air quality efficiencies as defined by the United States Environmental Protection Agency (EPA).
2. In accordance with SCAQMDs Rule 403, all soil will be wetted twice daily during earthwork.
3. The project would not include wood burning hearth options. All hearth options would be either electric or natural gas.

1.0 INTRODUCTION

1.1 Purpose of this Study

The purpose of this Air Quality study is to determine potential air quality impacts (if any) that may be created by construction, area or operational emissions (short term or long term) from the proposed Project. Should impacts be determined, the intent of this study would be to recommend suitable mitigation measures to bring those impacts to a level that would be considered less than significant.

1.2 Project Location

The proposed development is located in the City of Jurupa Valley which is located within the boundaries of the County of Riverside California within the South Coast Air Basin (SCAB). The project is located just east of Clay Street with the nearest cross street of Linares Avenue to the south. A general project vicinity map is shown in Figure 1-A.

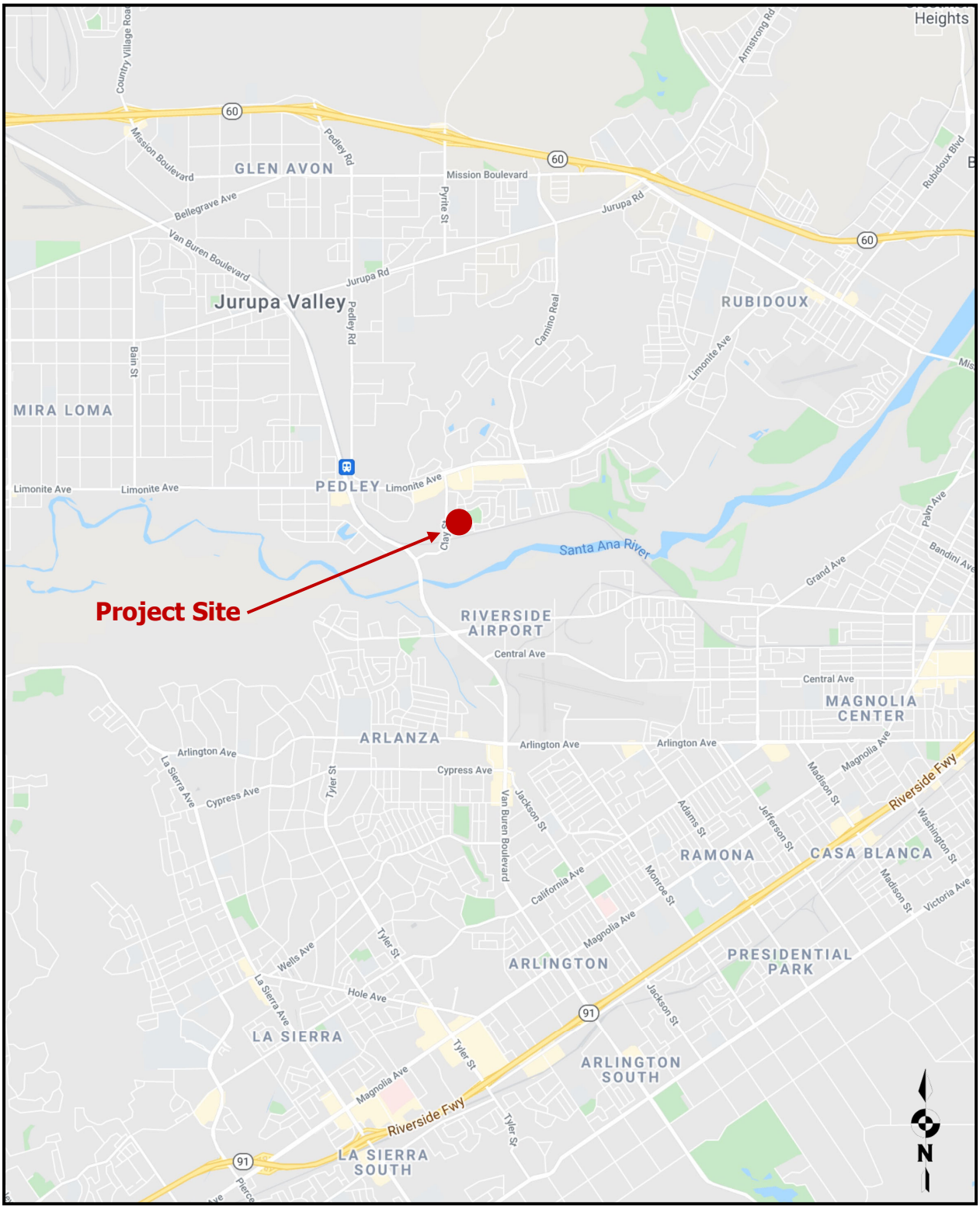
1.3 Project Description

The Project proposes to construct 66 multi-family residential units on approximately 4.13 acres. It is expected that the project would start construction in 2023 and be completed in about one year. The project would be fully operational in the year 2024. Access is planned via Clay Street. The site is currently zoned as industrial park with an existing land use of Commercial Neighborhood. The proposed Project would be General Residential with 15.9 dwelling units per acre in the City of Jurupa Valley General Plan Land Use Plan. The project site is currently vacant.

A site development plan is shown in Figure 1-B. It should be noted that the following air quality design features were assumed and are a condition of this project:

1. All diesel equipment will be Tier 3 and include DPF or operate with similar air quality efficiencies as defined by the United States Environmental Protection Agency (EPA).
2. In accordance with SCAQMDs Rule 403, all soil will be wetted twice daily during earthwork activities (SCAQMD, 2005).
3. The project would not include wood burning hearth options. All hearth options would be either electric or natural gas.

Figure 1-A: Project Vicinity Map



Source: (Google, 2021)

Figure 1-B: Site Plan Map

Source: (Summa Architecture, 2022)

2.0 EXISTING ENVIRONMENTAL SETTING

2.1 Existing Setting

The existing Project site is currently vacant. Adjacent surrounding land uses are agricultural to the west, a golf course to the north and residential to the south and east. The site topography is relatively flat onsite with elevations at around 775 feet above mean sea level.

2.2 Climate and Meteorology

Climate within the SCAB area often varies dramatically over short geographical distances due to the size and topography. Most of southern California is dominated by high-pressure systems for much of the year, which keeps Jurupa Valley mostly sunny and warm. Typically, during the winter months, the high-pressure system drops to the south and brings cooler, moister weather from the north.

It is common for inversion layers to develop within high-pressure areas, which mostly define pressure patterns over the SCAB. These inversions are caused when a thin layer of the atmosphere increases in temperature with height. An inversion acts like a lid preventing vertical mixing of air through convective overturning.

Daytime temperature highs within the City of Jurupa Valley typically range between 68 ºF in the winter to approximately 95 ºF in the summer with the month of August usually being the hottest month. Jurupa Valley usually receives an average seasonal precipitation of 10.32 inches of rain per year with the month of February usually being the wettest month of the year (U.S. Climate Data, 2018).

2.3 Regulatory Standards

2.3.1 Federal Standards and Definitions

The Federal Air Quality Standards were developed per the requirements of The Federal Clean Air Act, which is a federal law that was passed in 1970 and further amended in 1990. This law provides the basis for the national air pollution control effort. An important element of the act included the development of national ambient air quality standards (NAAQS) for major air pollutants. The Clean Air Act established two types of air quality standards otherwise known as primary and secondary standards. ***Primary Standards*** set limits for the intention of protecting public health, which includes sensitive populations such as asthmatics, children and elderly. ***Secondary Standards*** set limits to protect public welfare to include the protection against decreased visibility, damage to animals, crops, vegetation and buildings.

The EPA Office of Air Quality Planning and Standards (OAQPS) has set National Ambient Air Quality Standards for principal pollutants, which are called "criteria" pollutants. These pollutants are defined below:

1. ***Carbon Monoxide (CO):*** *is a colorless, odorless, and tasteless gas and is produced from the partial combustion of carbon-containing compounds, notably in internal-combustion engines. Carbon monoxide usually forms when there is a reduced availability of oxygen present during the combustion process. Exposure to CO near the levels of the ambient air quality standards can lead to fatigue, headaches, confusion, and dizziness. CO interferes with the blood's ability to carry oxygen.*
2. ***Lead (Pb):*** *is a potent neurotoxin that accumulates in soft tissues and bone over time. The major sources of lead emissions have historically been motor vehicles (such as cars and trucks) and industrial sources. Because lead is only slowly excreted, exposures to small amounts of lead from a variety of sources can accumulate to harmful levels. Effects from inhalation of lead near the level of the ambient air quality standard include impaired blood formation and nerve conduction. Lead can adversely affect the nervous, reproductive, digestive, immune, and blood-forming systems. Symptoms can include fatigue, anxiety, short-term memory loss, depression, weakness in the extremities, and learning disabilities in children.*
3. ***Nitrogen Dioxide (NO_2):*** *is a reactive, oxidizing gas capable of damaging cells lining the respiratory tract and is one of the nitrogen oxides emitted from high-temperature combustion, such as those occurring in trucks, cars, power plants, home heaters, and gas stoves. In the presence of other air contaminants, NO_2 is usually visible as a reddish-brown air layer over urban areas. NO_2 along with other traffic-related pollutants is associated with respiratory symptoms, respiratory illness and respiratory impairment. Studies in animals have reported biochemical, structural, and cellular changes in the lung when exposed to NO_2 above the level of the current state air quality standard. Clinical studies of human subjects suggest that NO_2 exposure to levels near the current standard may worsen the effect of allergens in allergic asthmatics, especially in children.*
4. ***Particulate Matter (PM_{10} or $PM_{2.5}$):*** *is a complex mixture of tiny particles that consists of dry solid fragments, solid cores with liquid coatings, and small droplets of liquid. These particles vary in shape, size and chemical composition, and can be made up of multiple materials such as metal, soot, soil, and dust. PM_{10} particles are 10 microns (µm) or less and $PM_{2.5}$ particles are 2.5 (µm) or less. These particles can contribute significantly to regional haze and reduction of visibility in California. Exposure to PM levels exceeding current air quality standards increases the risk of allergies such as asthma and respiratory illness.*
5. ***Ozone (O_3)****: is a highly oxidative unstable gas capable of damaging the linings of the respiratory tract. This pollutant forms in the atmosphere through reactions between chemicals directly emitted from vehicles, industrial plants, and many other sources. Exposure to ozone above ambient air quality standards can lead to human health effects such as lung*

inflammation, tissue damage and impaired lung functioning. Ozone can also damage materials such as rubber, fabrics and plastics.

6. ***Sulfur Dioxide (SO_2)**: is a gaseous compound of sulfur and oxygen and is formed when sulfur-containing fuel is burned by mobile sources, such as locomotives, ships, and off-road diesel equipment. SO_2 is also emitted from several industrial processes, such as petroleum refining and metal processing. Effects from SO_2 exposures at levels near the one-hour standard include bronchoconstriction accompanied by symptoms, which may include wheezing, shortness of breath and chest tightness, especially during exercise or physical activity. Children, the elderly, and people with asthma, cardiovascular disease or chronic lung disease (such as bronchitis or emphysema) are most susceptible to these symptoms. Continued exposure at elevated levels of SO_2 results in increased incidence of pulmonary symptoms and disease, decreased pulmonary function, and increased risk of mortality.*

2.3.2 State Standards and Definitions

The State of California Air Resources Board (ARB) sets the laws and regulations for air quality on the state level. The California Ambient Air Quality Standards (CAAQS) are either the same as or more restrictive than the NAAQS and also restrict four additional contaminants. Table 2.1 on the following page identifies both the NAAQS and CAAQS. The additional contaminants as regulated by the CAAQS are defined below:

1. ***Visibility Reducing Particles**: Particles in the Air that obstruct the visibility.*
2. ***Sulfates**: are salts of Sulfuric Acid. Sulfates occur as microscopic particles (aerosols) resulting from fossil fuel and biomass combustion. They increase the acidity of the atmosphere and form acid rain.*
3. ***Hydrogen Sulfide (H_2S)**: is a colorless, toxic and flammable gas with a recognizable smell of rotten eggs or flatulence. H_2S occurs naturally in crude petroleum, natural gas, volcanic gases, and hot springs. Usually, H_2S is formed from bacterial breakdown of organic matter. Exposure to low concentrations of hydrogen sulfide may cause irritation to the eyes, nose, or throat. It may also cause difficulty in breathing for some asthmatics. Brief exposures to high concentrations of hydrogen sulfide (greater than 500 ppm) can cause a loss of consciousness and possibly death.*
4. ***Vinyl Chloride**: also known as chloroethene and is a toxic, carcinogenic, colorless gas with a sweet odor. It is an industrial chemical mainly used to produce its polymer, polyvinyl chloride (PVC).*

Table 2.1: Ambient Air Quality Standards

Ambient Air Quality Standards						
Pollutant	**Average Time**	**California Standards[1]**		**Federal 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/m3)	Ultraviolet Photometry	-	Same as Primary Standard	Ultraviolet Photometry
	8 Hour	0.070 ppm (137 µg/m3)		0.070 ppm (137 µg/m3)		
Respirable Particulate Matter (PM10)[9]	24 Hour	50 µg/m3	Gravimetric or Beta Attenuation	150 µg/m3	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	20 µg/m3		-		
Fine Particulate Matter (PM2.5)[9]	24 Hour	No Separate State Standard		35 µg/m3	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	12 µg/m3	Gravimetric or Beta Attenuation	12.0 µg/m3	15 µg/m3	
Carbon Monoxide (CO)	8 hour	9.0 ppm (10mg/m3)	Non-Dispersive Infrared Photometry (NDIR)	9 ppm (10 mg/m3)	-	Non-Dispersive Infrared Photometry
	1 hour	20 ppm (23 mg/m3)		35 ppm (40 mg/m3)		
	8 Hour (Lake Tahoe)	6 ppm (7 mg/m3)		-	-	-
Nitrogen Dioxide (NO_2)[10]	Annual Arithmetic Mean	0.030 ppm (57 µg/m3)	Gas Phase Chemiluminescence	0.053 ppm (100 µg/m3)[8]	Same as Primary Standard	Gas Phase Chemiluminescence
	1 Hour	0.18 ppm (339 µg/m3)		0.100 ppm[8] (188/ µg/m3)	-	
Sulfur Dioxide (SO_2)[11]	Annual Arithmetic Mean	-	Ultraviolet Fluorescence	0.030 ppm[10] (for Certain Areas)	-	Ultraviolet Flourescence; Spectrophotometry (Pararoosaniline Method)[9]
	24 Hour	0.04 ppm (105 µg/m3)		0.14 ppm[10] (for Certain Areas) (See Footnote 9)	-	
	3 Hour	-		-	0.5 ppm (1300 µg/m3)	
	1 Hour	0.25 ppm (655 µg/m3)		75 ppb (196 µg/m3)	-	
Lead[12,13]	30 Day Average	1.5 µg/m3	Atomic Absorption	-		-
	Calendar Quarter	-		1.5 µg/m3	Same as Primary Standard	High Volume Sampler and Atomic Absorption
	Rolling 3-Month Average	-		0.15 µg/m3		
Visibility Reducing Particles	8 Hour	See footnote 14				
Sulfates	24 Hour	25 µg/m3	Ion Chromatography			
Hydrogen Sulfide	1 Hour	0.03 ppm (42 µg/m3)	Ultraviolet Fluorescence			
Vinyl Chloride[12]	24 Hour	0.01 ppm (26 µg/m3)	Gas Chromatography			

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 µg/m3 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 procedure which can be shown to the satisfaction of the CARB to give equivalent results at or near the level of the air quality standard may be used.
5. National Primary Standards: The levels of air quality necessary, with an adequate margin of safety to protect the public health.
6. National Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.
7. Reference method as described by the EPA. An "equivalent method" of measurement may be used but must have a "consistent relationship to the reference method" and must be approved by the EPA.
8. On October 1, 2015, the national 8-hour 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 µg/m3 to 12.0 µg/m3 . The existing national 24- hour PM2.5 standards (primary and secondary) were retained at 35 µg/m3 , as was the annual secondary standard of 15 µg/m3 . The existing 24-hour PM10 standards (primary and secondary) of 150 µg/m3 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 SO2 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 SO2 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.
12. The CARB has identified lead and vinyl chloride as 'toxic air contaminants' with no threshold level of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants.
13. The national standard for lead was revised on October 15, 2008 to a rolling 3-month average. The 1978 lead standard (1.5 µg/m3 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 CARB 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.

Source: (California Air Resources Board, 5/4/2016)

2.3.3 Regional Standards

The State of California has 35 specific air districts, which are each responsible for ensuring that the criteria pollutants are below the NAAQS and CAAQS. Air basins that exceed either the NAAQS or the CAAQS for any criteria pollutants for designated periods defined in the footnote of Table 2.1 above are designated as "non-attainment areas" for that pollutant. Currently, there are 15 non-attainment areas for the federal ozone standard and two non-attainment areas for the $PM_{2.5}$ standard. The state therefore created the California State Implementation Plan (SIP), which is designed to provide control measures needed for California Air basins to attain ambient air quality standards.

The SCAQMD has jurisdiction over an area of approximately 10,743 square miles, consisting of the SCAB, and the Riverside County portions of the Salton Sea Air Basin (SSAB) and Mojave Desert Air Basin (MDAB). The district prepares Air Quality Management Plans (AQMP) to demonstrate how the region will reduce air pollution emissions to meet the federal and state health-based standards to comply with Clean Air Act requirements and will be ultimately a part of the SIP. Currently the SCAQMD is in the process of updating the latest adopted Air Quality Management Plan (signed December 7, 2012) and is expected to be signed mid to late 2016 (SCAQMD, 2016).

More specifically, the AQMP identifies the path South Coast Air Basin must take for the attainment of federal PM and ozone standards and highlights the significant amount of reductions needed and the urgent need to engage in interagency coordinated planning to identify additional strategies, especially in the area of mobile sources, to meet all federal criteria pollutant standards within the timeframes allowed under the federal Clean Air Act.

The City of Jurupa Valley lies within the SCAB. The SCAQMD is the government agency, which regulates sources of air pollution within the City of Jurupa Valley. A complete listing of the current attainment status by pollutants for the SCAB is shown on Table 2.2.

Table 2.2: South Coast Air Basin Attainment Status by Pollutant

County Air Basin Attainment Status by Pollutant			
Pollutant	Average Time	California Standards	Federal Standards
Ozone (O_3)	1 Hour	Non-attainment	No Federal Standard
	8 Hour		Extreme Nonattainment
Respirable Particulate Matter (PM10)	24 Hour	Non-attainment	Serious Nonattainment
	Annual Arithmetic Mean	No State Standard	Serious Nonattainment
Fine Particulate Matter PM2.5	24 Hour	No State Standard	Non-attainment
	Annual Arithmetic Mean	Non-attainment	Non-attainment
Carbon Monoxide (CO)	8 hour	Attainment	Attainment Maintenance[1]
	1 hour		
Nitrogen Dioxide (NO_2)	Annual Arithmetic Mean	No State Standard	Attainment
	1 Hour	Non-attainment	No Federal Standard
Sulfur Dioxide (SO_2)	Annual Arithmetic Mean	No State Standard	Attainment
	24 Hour	Attainment	Attainment
	1 Hour	Attainment	No Federal Standard
Lead	30 Day Average	Attainment	No Federal Standard
	Calendar Quarter	No State Standard	Attainment

1. Maintenance Area (defined by U.S. Department of Transportation) is any geographic region of the United States previously designated nonattainment pursuant to the CAA Amendments of 1990 and subsequently redesignated to attainment subject to the requirement to develop a maintenance plan under section 175A of the CAA, as amended.

2.4 California Environmental Quality Act (CEQA) Significance Thresholds

The California Environmental Quality Act has provided a checklist to identify the significance of air quality impacts. These guidelines are found in a 2018 updated Appendix G of the CEQA guidelines (California, 2018) :

AIR QUALITY -- Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the Project:

A: Conflict with or obstruct implementation of the SCAQMD AQMP or applicable portions of the State Implementation Plan (SIP)?

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

C: Expose sensitive receptors (including, but not limited to, schools, hospitals, resident care facilities, or day-care centers) to substantial pollutant concentrations?

D: Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?

2.5 Air Quality Impact Assessment Screening Thresholds

To determine whether a project would create potential air quality impacts, the City of Jurupa Valley uses South Coast Air Quality Management District's (SQAQMD) Air Quality Thresholds. The screening thresholds for construction and daily operations are shown in Table 2.3 below. Demonstrating a projects compliance with SCAQMD Screening thresholds are a significant part of demonstrating compliance with SCAQMDs AQMP and is critical to insuring less than significant impacts to questions A and B identified in section 2.4 above.

Table 2.3: Screening Threshold for Criteria Pollutants

Pollutant	Total Emissions (Pounds per Day)
Construction Emissions	
Respirable Particulate Matter (PM_{10} and $PM_{2.5}$)	150 and 55
Nitrogen Oxide (NO_x)	100
Sulfur Oxide (SO_x)	150
Carbon Monoxide (CO)	550
Volatile Organic Compounds (VOCs)	75
Operational Emissions	
Respirable Particulate Matter (PM_{10} and $PM_{2.5}$)	150 and 55
Nitrogen Oxide (NO_x)	55
Sulfur Oxide (SO_x)	150
Carbon Monoxide (CO)	550
Lead and Lead Compounds	3.2
Volatile Organic Compounds (VOCs)	55

2.6 Local Air Quality

Criteria pollutants are measured continuously throughout the SCAB. This data is used to track ambient air quality patterns throughout the surrounding area. As mentioned earlier, this data is also used to determine attainment status when compared to the NAAQS and CAAQS. The SCAPCD is responsible for monitoring and reporting monitoring data. The District operates approximately 30 monitoring sites that collected data on criteria pollutants within the SCAB.

Ambient Data was obtained from the California Environmental Protection Agency's Air Resources Board Website (California Air Resources Board, 2021). Table 2.4 identifies the closest criteria pollutants monitored to the project as well as identifies the relative distance to

the project site. The Riverside-Rubidoux monitoring station is located approximately 3.3 miles from the proposed project site.

Table 2.4: Three-Year Ambient Air Quality Summary near the Project Site

Pollutant	Ambient Monitoring Site	Averaging Time	CAAQS	NAAQS	2018	2019	2020
O_3 (ppm)	Riverside - Rubidoux	1 Hour	0.09 ppm	-	0.123	0.123	0.143
		8 Hour	0.070 ppm	0.075 ppm	0.101	0.096	0.115
PM_{10} (µg/m^3)		24 Hour	50 µg/m^3	150 µg/m^3	126.0	182.4	142.1
		Annual Arithmetic Mean	20 µg/m^3	-	43.9	40.9	No Data Available
$PM_{2.5}$ (µg/m^3)		24 Hour	-	35 µg/m^3	66.3	55.7	59.9
		Annual Arithmetic Mean	12 µg/m^3	15 µg/m^3	12.6	11.2	14.1
NO_2 (ppm)		Annual Arithmetic Mean	0.030 ppm	0.053 ppm	0.014	0.014	0.014
		1 Hour	0.18 ppm	-	0.055	0.056	0.062

All ambient emissions reported are assumed to be taken by the district in compliance with both the NAAQS and CAAQS. Methodologies for those measurements are discussed in Table 2.1 of this report.

2.7 Localized Significance Thresholds

In June 2003 the SCAQMD proposed a methodology for calculating Localized Significance Thresholds (LSTs) for NO_2, CO, $PM_{2.5}$ and PM_{10}. The LST methodology was developed to be used as a tool to assist lead agencies to analyze localized impacts associated with project-specific level proposed projects and would not be applicable to regional projects such as general plans. The LST methodology was last updated to incorporate the most recent ambient air quality standards (South Coast Air Quality Management District, 2008). The LST methodology is often utilized by most agencies governed under SCAQMD CEQA review.

SCAQMD developed mass rate look-up tables for projects less than five acres to assist agencies with development of LSTs (SCAQMD, 2009) and will be used for this project which is just under 5 acres. The site is 4.13 acres which is between lookup tables for a 2 and 5- acre site. Per recommendations of SCAQMD (SCAQMD, 2005) it's appropriate to use linear regression for the site size being less than 5 acres.

Per the requirements of SCAQMDs LSTs methodology, emissions for gases in attainment such as NO_2 and CO are calculated by adding emission impacts from the project development to

the peak background ambient NO_2 and CO concentrations and comparing the total concentration to the most stringent ambient air quality standards. Also, according to SCAQMD Rule 403, emissions for non-attainment particulate matter such as PM 10 and PM 2.5 can produce no more than 10.4 µg/m^3. The LSTs derived by SCAQMD differentiated by Source Receptor area for which the proposed project is would be represented by SRA #23 within the Jurupa Valley area (SCAQMD, 2009). Based on the lookup tables, thresholds for the 2 and 5 acre site were utilized to establish LSTs via linear regression for the 4.13 acre site. Table 2.5 shows both the 2 and -5 acre LSTs as well as the calculated LST for the site. The 25-meter distance was utilized as it is the worst-case LST.

Table 2.5: LST Emission Thresholds at 25 Meters

Pollutant	2 acres site (lb/day)	5 acres site (lb/day)	4.13 acres site (lb/day)
CO	883	1,577	1,375.7
PM_{10} (Construction)	7	13	11.3
PM_{10} (Operation)	2	4	3.4
$PM_{2.5}$ (Construction)	4	8	6.8
$PM_{2.5}$ (Operation)	1	2	1.7
NO_2 (Corrected utilizing NO_2/NO_x Ratio) Construction and Operation	170	270	241.0

3.0 METHODOLOGY

3.1 Construction Assumptions

The Project construction dates were estimated based on a construction kickoff starting in 2022 and completing the project roughly 12 months later. As a design feature the project would utilize Tier 3 diesel equipment with DPF and will wet the construction site three times daily. Table 3.1 shows the expected timeframes for the construction processes as well as the expected number of pieces of equipment to complete the project.

Table 3.1: Expected Construction Equipment

Equipment Identification	Start Dates	Completion Dates	Quantity
Site Preparation	06/01/2023	06/07/2023	
Rubber Tired Dozers			3
Tractors/Loaders/Backhoes			4
Grading	06/08/2023	06/19/2023	
Excavators			1
Graders			1
Rubber Tired Dozers			1
Tractors/Loaders/Backhoes			3
Building Construction	06/20/2023	05/06/2024	
Cranes			1
Forklifts			3
Generator Sets			1
Tractors/Loaders/Backhoes			3
Welders			1
Paving	05/07/2024	05/30/2024	
Cement and Mortar Mixers			2
Pavers			1
Paving Equipment			2
Rollers			2
Tractors/Loaders/Backhoes			1
Architectural Coating	05/31/2024	06/25/2024	
Air Compressors			1
This equipment list is based upon equipment inventory within CALLEEMOD 2020.4.0. The quantity and types are based upon discussions with the project applicant.			

Air Quality impacts related to construction and daily operations were calculated using the latest CalEEMod air quality model, which was developed by Breeze Software for SCAQMD.

The construction module in CalEEMod is used to calculate the emissions associated with the construction of the project and uses methodologies presented in the US EPA AP-42 document with emphasis on Chapter 11.9. The CalEEMod input/output model is shown in ***Attachment A*** to this report.

3.2 Operational Emissions

Once construction is completed the proposed project would generate air quality emissions from daily operations which would include sources such as Area, Energy, Mobile uses, which are also calculated within CalEEMod. Area Sources include consumer products, landscaping and architectural coatings as part of regular maintenance. Energy sources would be from uses such as natural gas. Finally, mobile or transportation related emissions are calculated in CalEEMod through the use of EMFAC2017 and is also shown in ***Attachment A*** to this report. The project would not use wood burning hearth options but would include either electric or natural gas hearth options. CalEEMod was manually updated to only include natural gas hearths for purposes of this analysis.

3.3 Odor Impacts

Potential onsite odor generators would include short term construction odors from activities such as paving and possibly painting. The construction odors would be considered short term and would not be considered an impact. Given this the Project will not have a potential to create offensive odors and would therefore not be considered an impact under CEQA.

4.0 FINDINGS

4.1 Construction Findings

Based on the input parameters identified in Section 3.2 of this report, no significant construction impacts are expected. Table 4.1 shows the calculated emissions from construction.

Table 4.1: Expected Construction Emissions Summary

Year	ROG	NO_x	CO	SO_2	PM_{10} (Dust)	PM_{10} (Exhaust)	PM_{10} (Total)	$PM_{2.5}$ (Dust)	$PM_{2.5}$ (Exhaust)	$PM_{2.5}$ (Total)
Summer										
2023 (lb/day)	1.00	19.11	23.62	0.04	7.87	0.15	8.01	3.99	0.14	4.14
2024 (lb/day)	24.18	15.00	20.81	0.04	0.99	0.14	1.14	0.27	0.14	0.41
Winter										
2023 (lb/day)	0.99	19.11	23.50	0.04	7.87	0.15	8.01	3.99	0.14	4.14
2024 (lb/day)	24.18	15.05	20.31	0.04	0.99	0.14	1.14	0.27	0.14	0.41
Maximum (Summer/Winter)	24.18	15.05	23.62	0.04	7.87	0.15	8.01	3.99	0.14	4.14
Significance Threshold (lb/day)	**75**	**100**	**550**	**150**	**-**	**-**	**150**	**-**	**-**	**55**
Exceeds Screening Threshold	**No**	**No**	**No**	**No**	**-**	**-**	**No**	**-**	**-**	**No**

4.2 Operational Findings

Once construction is completed the proposed project would generate air quality emissions from daily operations which would include sources such as Area, Energy, Mobile, Solid Waste and Water uses, which are calculated within CalEEMod. Area sources are from consumer products, landscaping and architectural coatings which can be attributed to regular maintenance. Energy sources would be from uses such as electricity and natural gas. Based on the input parameters identified in Section 3.2 of this report, no operational impacts would be expected. Operational emissions are shown in Table 4.2.

Table 4.2: Expected Daily Pollutant Generation

	ROG	NO_x	CO	SO_x	PM_{10}	$PM_{2.5}$
Summer Scenario						
Area Source Emission Estimates (Lb/Day)	1.74	1.16	5.93	0.01	0.12	0.12
Energy Source Emissions (Lb/Day)	0.04	0.35	0.15	0.00	0.03	0.03
Operational Vehicle Emissions (Lb/Day)	1.39	1.81	13.63	0.03	3.24	0.88
Total with Design Features (Lb/Day)	**3.17**	**3.32**	**19.70**	**0.04**	**3.38**	**1.03**
SCAQMD Thresholds	**55**	**55**	**550**	**150**	**150**	**55**
Significant?	**Yes**	**No**	**No**	**No**	**No**	**No**
Winter Scenario						
Area Source Emission Estimates (Lb/Day)	1.74	1.16	5.93	0.01	0.12	0.12
Energy Source Emissions (Lb/Day)	0.04	0.35	0.15	0.00	0.03	0.03
Operational Vehicle Emissions (Lb/Day)	1.18	1.92	12.04	0.03	3.24	0.88
Total with Design Features (Lb/Day)	**2.97**	**3.43**	**18.11**	**0.04**	**3.38**	**1.03**
SCAQMD Thresholds	**55**	**55**	**550**	**150**	**150**	**55**
Significant?	**No**	**No**	**No**	**No**	**No**	**No**
Daily pollutant generation assumes trip distances within CALLEEMOD 2020.4.0						

4.3 Localized Significance Thresholds

Table 4.3 shows the modeled estimates for both construction and operations excluding offsite mobile emissions. Furthermore, the worst case LST is at 25 meters from the project perimeter and will be utilized for this project. Since this is worst case, if the project complies at 25 meters, it will comply at all locations beyond this distance. Based on the modeling results, no LST impacts are expected for the 4.13 acre site.

Table 4.3: On-Site Daily Emissions for Comparison to LSTs

Pollutant	Project (lb/day)	LST at 25 meters 4.13-Acre Site (lb/day)	Significant?
CO (Construction)	23.62	1,375.7	No
CO (Operation)	6.08	1,375.7	No
PM_{10} (Construction)	8.01	11.3	No
PM_{10} (Operation)	0.15	3.4	No
$PM_{2.5}$ (Construction)	4.14	6.8	No
$PM_{2.5}$ (Operation)	0.15	1.7	No
NO_x (Construction)	15.05	241.0	No
NO_x (Operation)	1.51	241.0	No

4.4 Odor Impact Findings

Odor impacts from construction operations would be considered short term events and would not be considered an impact. Long term operations will not create offensive odors and would not create any operational odor impacts.

4.5 Odor Impact Findings

The project seeks a rezone from industrial park to residential. Industrial uses are generally more intense with respect to Air Quality emissions since heavy trucks are typical to operations of this type. The project would be residential and would be designed in conjunction with the City of Jurupa's general plan. Since no direct impacts are expected from the proposed project, and since the proposed Project will be consistent with the City's General Plan, no cumulative impacts would be expected for air quality.

4.6 Conclusion of Findings

The proposed project would implement design features consistent with South Coast Air Quality Management District (SCAQMD) Rule 403 which requires wetting of the site during earth moving activities. Emissions associated with earthwork activities and construction were found to generate less than significant impacts.

Additionally, emissions will be generated from both project area and operational sources once the project is fully operational in 2023 though less than significant air quality impacts would be expected. The project would include design features such as natural gas or electric hearth options within all units.

The project was analyzed under localized significance thresholds for both construction and operations and less than significant impacts would be expected. The proposed Project would not be expected to generate offensive odors and would therefore not impact any sensitive receptors.

The project seeks a rezone from industrial park to residential. Industrial uses are generally more intense with respect to Air Quality emissions since heavy trucks are typical to operations of this type. The project would be residential and would be designed in conjunction with the City of Jurupa's general plan. Since no direct impacts are expected from the proposed project, and since the proposed Project will be consistent with the City's General Plan, no cumulative impacts would be expected for air quality.

As noted, the Project would include air quality design features and were assumed within all air quality modeling in this assessment. Based on this, these design features will be a condition of this project:

1. All diesel equipment will be Tier 3 and include DPF or operate with similar air quality efficiencies as defined by the United States Environmental Protection Agency (EPA).
2. In accordance with SCAQMDs Rule 403, all soil will be wetted twice daily during earthwork activities (SCAQMD, 2005).
3. The project would not include wood burning hearth options. All hearth options would be either electric or natural gas.

5.0 REFERENCES

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ATTACHMENT A

CALLEEMOD 2020.4.0

Serrano Oaks Multi-Family 66 units - Riverside-South Coast County, Summer

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

Serrano Oaks Multi-Family 66 units

Riverside-South Coast County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Parking Lot	182.00	Space	1.64	72,800.00	0
Condo/Townhouse	66.00	Dwelling Unit	2.49	66,000.00	189

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 - Total site acreage is 4.13 acres

Construction Phase -

Vehicle Trips - Per TS

Vehicle Emission Factors -

Woodstoves - All NG Hearths

Construction Off-road Equipment Mitigation - T3 with DPF or equiv

Table Name	Column Name	Default Value	New Value
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3

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

tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	11.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3

Serrano Oaks Multi-Family 66 units - Riverside-South Coast County, Summer

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

tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblFireplaces	NumberGas	56.10	66.00
tblFireplaces	NumberNoFireplace	6.60	0.00
tblFireplaces	NumberWood	3.30	0.00
tblLandUse	LotAcreage	4.13	2.49
tblVehicleTrips	ST_TR	8.14	6.74
tblVehicleTrips	SU_TR	6.28	6.74
tblVehicleTrips	WD_TR	7.32	6.74
tblWoodstoves	NumberCatalytic	3.30	0.00
tblWoodstoves	NumberNoncatalytic	3.30	0.00

2.0 Emissions Summary

Serrano Oaks Multi-Family 66 units - 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	2.7252	27.5648	19.3611	0.0398	19.8582	1.2670	21.1252	10.1558	1.1656	11.3214	0.0000	3,868.4246	3,868.4246	1.1967	0.0703	3,899.6002
2024	24.3033	14.2215	19.0989	0.0376	0.9936	0.6226	1.6161	0.2663	0.5856	0.8519	0.0000	3,668.1904	3,668.1904	0.6243	0.0681	3,704.1032
Maximum	**24.3033**	**27.5648**	**19.3611**	**0.0398**	**19.8582**	**1.2670**	**21.1252**	**10.1558**	**1.1656**	**11.3214**	**0.0000**	**3,868.4246**	**3,868.4246**	**1.1967**	**0.0703**	**3,899.6002**

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	0.9969	19.1063	23.6204	0.0398	7.8674	0.1450	8.0103	3.9933	0.1445	4.1361	0.0000	3,868.4246	3,868.4246	1.1967	0.0703	3,899.6002
2024	24.1819	15.0038	20.8058	0.0376	0.9936	0.1448	1.1384	0.2663	0.1443	0.4105	0.0000	3,668.1904	3,668.1904	0.6243	0.0681	3,704.1032
Maximum	**24.1819**	**19.1063**	**23.6204**	**0.0398**	**7.8674**	**0.1450**	**8.0103**	**3.9933**	**0.1445**	**4.1361**	**0.0000**	**3,868.4246**	**3,868.4246**	**1.1967**	**0.0703**	**3,899.6002**

Serrano Oaks Multi-Family 66 units - 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	6.84	18.37	-15.51	0.00	57.50	84.66	59.77	59.13	83.51	62.65	0.00	0.00	0.00	0.00	0.00	0.00

Serrano Oaks Multi-Family 66 units - 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	1.7448	1.1577	5.9272	7.2800e-003		0.1188	0.1188		0.1188	0.1188	0.0000	1,407.4913	1,407.4913	0.0363	0.0256	1,416.0346
Energy	0.0412	0.3516	0.1496	2.2400e-003		0.0284	0.0284		0.0284	0.0284		448.8632	448.8632	8.6000e-003	8.2300e-003	451.5306
Mobile	1.3854	1.8104	13.6270	0.0315	3.2117	0.0241	3.2358	0.8568	0.0226	0.8794		3,263.4056	3,263.4056	0.1533	0.1468	3,310.9919
Total	**3.1714**	**3.3197**	**19.7038**	**0.0410**	**3.2117**	**0.1713**	**3.3830**	**0.8568**	**0.1697**	**1.0266**	**0.0000**	**5,119.7601**	**5,119.7601**	**0.1982**	**0.1807**	**5,178.5571**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	1.7448	1.1577	5.9272	7.2800e-003		0.1188	0.1188		0.1188	0.1188	0.0000	1,407.4913	1,407.4913	0.0363	0.0256	1,416.0346
Energy	0.0412	0.3516	0.1496	2.2400e-003		0.0284	0.0284		0.0284	0.0284		448.8632	448.8632	8.6000e-003	8.2300e-003	451.5306
Mobile	1.3854	1.8104	13.6270	0.0315	3.2117	0.0241	3.2358	0.8568	0.0226	0.8794		3,263.4056	3,263.4056	0.1533	0.1468	3,310.9919
Total	**3.1714**	**3.3197**	**19.7038**	**0.0410**	**3.2117**	**0.1713**	**3.3830**	**0.8568**	**0.1697**	**1.0266**	**0.0000**	**5,119.7601**	**5,119.7601**	**0.1982**	**0.1807**	**5,178.5571**

Serrano Oaks Multi-Family 66 units - 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	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	6/1/2023	6/7/2023	5	5	
2	Grading	Grading	6/8/2023	6/19/2023	5	8	
3	Building Construction	Building Construction	6/20/2023	5/6/2024	5	230	
4	Paving	Paving	5/7/2024	5/30/2024	5	18	
5	Architectural Coating	Architectural Coating	5/31/2024	6/25/2024	5	18	

Acres of Grading (Site Preparation Phase): 7.5

Acres of Grading (Grading Phase): 8

Acres of Paving: 1.64

Residential Indoor: 133,650; Residential Outdoor: 44,550; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 4,368 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	1	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Tractors/Loaders/Backhoes	3	8.00	97	0.37

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

Building Construction	Cranes	1	7.00	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	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Paving	Cement and Mortar Mixers	2	6.00	9	0.56
Paving	Pavers	1	8.00	130	0.42
Paving	Paving Equipment	2	6.00	132	0.36
Paving	Rollers	2	6.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	6	15.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	78.00	19.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	8	20.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	16.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Use DPF for Construction Equipment

Water Exposed Area

Serrano Oaks Multi-Family 66 units - Riverside-South Coast County, Summer

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					19.6570	0.0000	19.6570	10.1025	0.0000	10.1025			0.0000			0.0000
Off-Road	2.6595	27.5242	18.2443	0.0381		1.2660	1.2660		1.1647	1.1647		3,687.3081	3,687.3081	1.1926		3,717.1219
Total	**2.6595**	**27.5242**	**18.2443**	**0.0381**	**19.6570**	**1.2660**	**20.9230**	**10.1025**	**1.1647**	**11.2672**		**3,687.3081**	**3,687.3081**	**1.1926**		**3,717.1219**

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**

Serrano Oaks Multi-Family 66 units - Riverside-South Coast County, Summer

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					7.6662	0.0000	7.6662	3.9400	0.0000	3.9400			0.0000			0.0000
Off-Road	0.9312	19.0656	22.9600	0.0381		0.1419	0.1419		0.1419	0.1419	0.0000	3,687.3081	3,687.3081	1.1926		3,717.1219
Total	**0.9312**	**19.0656**	**22.9600**	**0.0381**	**7.6662**	**0.1419**	**7.8082**	**3.9400**	**0.1419**	**4.0819**	**0.0000**	**3,687.3081**	**3,687.3081**	**1.1926**		**3,717.1219**

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**

Serrano Oaks Multi-Family 66 units - 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					7.0826	0.0000	7.0826	3.4247	0.0000	3.4247			0.0000			0.0000
Off-Road	1.7109	17.9359	14.7507	0.0297		0.7749	0.7749		0.7129	0.7129		2,872.6910	2,872.6910	0.9291		2,895.9182
Total	**1.7109**	**17.9359**	**14.7507**	**0.0297**	**7.0826**	**0.7749**	**7.8575**	**3.4247**	**0.7129**	**4.1377**		**2,872.6910**	**2,872.6910**	**0.9291**		**2,895.9182**

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	0.0548	0.0339	0.5503	1.4700e-003	0.1677	7.9000e-004	0.1685	0.0445	7.2000e-004	0.0452		150.9305	150.9305	3.4500e-003	3.5200e-003	152.0653
Total	**0.0548**	**0.0339**	**0.5503**	**1.4700e-003**	**0.1677**	**7.9000e-004**	**0.1685**	**0.0445**	**7.2000e-004**	**0.0452**		**150.9305**	**150.9305**	**3.4500e-003**	**3.5200e-003**	**152.0653**

Serrano Oaks Multi-Family 66 units - 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

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.7622	0.0000	2.7622	1.3357	0.0000	1.3357			0.0000			0.0000
Off-Road	0.7263	14.8397	18.9906	0.0297		0.1133	0.1133		0.1133	0.1133	0.0000	2,872.6910	2,872.6910	0.9291		2,895.9182
Total	**0.7263**	**14.8397**	**18.9906**	**0.0297**	**2.7622**	**0.1133**	**2.8755**	**1.3357**	**0.1133**	**1.4490**	**0.0000**	**2,872.6910**	**2,872.6910**	**0.9291**		**2,895.9182**

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	0.0548	0.0339	0.5503	1.4700e-003	0.1677	7.9000e-004	0.1685	0.0445	7.2000e-004	0.0452		150.9305	150.9305	3.4500e-003	3.5200e-003	152.0653
Total	**0.0548**	**0.0339**	**0.5503**	**1.4700e-003**	**0.1677**	**7.9000e-004**	**0.1685**	**0.0445**	**7.2000e-004**	**0.0452**		**150.9305**	**150.9305**	**3.4500e-003**	**3.5200e-003**	**152.0653**

Serrano Oaks Multi-Family 66 units - 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 - 2023

Unmitigated Construction On-Site

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

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0214	0.6207	0.2556	3.3200e-003	0.1217	5.4100e-003	0.1271	0.0350	5.1700e-003	0.0402		352.0149	352.0149	3.5900e-003	0.0520	367.6058
Worker	0.2850	0.1761	2.8615	7.6700e-003	0.8719	4.0900e-003	0.8760	0.2312	3.7700e-003	0.2350		784.8384	784.8384	0.0179	0.0183	790.7394
Total	**0.3064**	**0.7968**	**3.1171**	**0.0110**	**0.9936**	**9.5000e-003**	**1.0031**	**0.2663**	**8.9400e-003**	**0.2752**		**1,136.8533**	**1,136.8533**	**0.0215**	**0.0703**	**1,158.3452**

Serrano Oaks Multi-Family 66 units - 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 - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.6739	14.2261	17.8738	0.0269		0.1355	0.1355		0.1355	0.1355	0.0000	2,555.2099	2,555.2099	0.6079		2,570.4061
Total	**0.6739**	**14.2261**	**17.8738**	**0.0269**		**0.1355**	**0.1355**		**0.1355**	**0.1355**	**0.0000**	**2,555.2099**	**2,555.2099**	**0.6079**		**2,570.4061**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0214	0.6207	0.2556	3.3200e-003	0.1217	5.4100e-003	0.1271	0.0350	5.1700e-003	0.0402		352.0149	352.0149	3.5900e-003	0.0520	367.6058
Worker	0.2850	0.1761	2.8615	7.6700e-003	0.8719	4.0900e-003	0.8760	0.2312	3.7700e-003	0.2350		784.8384	784.8384	0.0179	0.0183	790.7394
Total	**0.3064**	**0.7968**	**3.1171**	**0.0110**	**0.9936**	**9.5000e-003**	**1.0031**	**0.2663**	**8.9400e-003**	**0.2752**		**1,136.8533**	**1,136.8533**	**0.0215**	**0.0703**	**1,158.3452**

Serrano Oaks Multi-Family 66 units - 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

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	1.4716	13.4438	16.1668	0.0270		0.6133	0.6133		0.5769	0.5769		2,555.6989	2,555.6989	0.6044		2,570.8077
Total	**1.4716**	**13.4438**	**16.1668**	**0.0270**		**0.6133**	**0.6133**		**0.5769**	**0.5769**		**2,555.6989**	**2,555.6989**	**0.6044**		**2,570.8077**

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	0.0211	0.6208	0.2527	3.2700e-003	0.1217	5.3700e-003	0.1271	0.0350	5.1400e-003	0.0402		346.5896	346.5896	3.7200e-003	0.0511	361.9217
Worker	0.2657	0.1569	2.6794	7.4200e-003	0.8719	3.9100e-003	0.8758	0.2312	3.6000e-003	0.2348		765.9019	765.9019	0.0162	0.0170	771.3738
Total	**0.2868**	**0.7777**	**2.9321**	**0.0107**	**0.9936**	**9.2800e-003**	**1.0028**	**0.2663**	**8.7400e-003**	**0.2750**		**1,112.4915**	**1,112.4915**	**0.0200**	**0.0681**	**1,133.2955**

Serrano Oaks Multi-Family 66 units - 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	0.6739	14.2261	17.8738	0.0270		0.1355	0.1355		0.1355	0.1355	0.0000	2,555.6989	2,555.6989	0.6044		2,570.8077
Total	**0.6739**	**14.2261**	**17.8738**	**0.0270**		**0.1355**	**0.1355**		**0.1355**	**0.1355**	**0.0000**	**2,555.6989**	**2,555.6989**	**0.6044**		**2,570.8077**

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	0.0211	0.6208	0.2527	3.2700e-003	0.1217	5.3700e-003	0.1271	0.0350	5.1400e-003	0.0402		346.5896	346.5896	3.7200e-003	0.0511	361.9217
Worker	0.2657	0.1569	2.6794	7.4200e-003	0.8719	3.9100e-003	0.8758	0.2312	3.6000e-003	0.2348		765.9019	765.9019	0.0162	0.0170	771.3738
Total	**0.2868**	**0.7777**	**2.9321**	**0.0107**	**0.9936**	**9.2800e-003**	**1.0028**	**0.2663**	**8.7400e-003**	**0.2750**		**1,112.4915**	**1,112.4915**	**0.0200**	**0.0681**	**1,133.2955**

Serrano Oaks Multi-Family 66 units - 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	0.8814	8.2730	12.2210	0.0189		0.3987	0.3987		0.3685	0.3685		1,805.6205	1,805.6205	0.5673		1,819.8039
Paving	0.2387					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.1201**	**8.2730**	**12.2210**	**0.0189**		**0.3987**	**0.3987**		**0.3685**	**0.3685**		**1,805.6205**	**1,805.6205**	**0.5673**		**1,819.8039**

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	0.0681	0.0402	0.6870	1.9000e-003	0.2236	1.0000e-003	0.2246	0.0593	9.2000e-004	0.0602		196.3851	196.3851	4.1600e-003	4.3600e-003	197.7882
Total	**0.0681**	**0.0402**	**0.6870**	**1.9000e-003**	**0.2236**	**1.0000e-003**	**0.2246**	**0.0593**	**9.2000e-004**	**0.0602**		**196.3851**	**196.3851**	**4.1600e-003**	**4.3600e-003**	**197.7882**

Serrano Oaks Multi-Family 66 units - 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	0.4389	9.0888	13.5323	0.0189		0.0787	0.0787		0.0787	0.0787	0.0000	1,805.6205	1,805.6205	0.5673		1,819.8039
Paving	0.2387					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.6776**	**9.0888**	**13.5323**	**0.0189**		**0.0787**	**0.0787**		**0.0787**	**0.0787**	**0.0000**	**1,805.6205**	**1,805.6205**	**0.5673**		**1,819.8039**

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	0.0681	0.0402	0.6870	1.9000e-003	0.2236	1.0000e-003	0.2246	0.0593	9.2000e-004	0.0602		196.3851	196.3851	4.1600e-003	4.3600e-003	197.7882
Total	**0.0681**	**0.0402**	**0.6870**	**1.9000e-003**	**0.2236**	**1.0000e-003**	**0.2246**	**0.0593**	**9.2000e-004**	**0.0602**		**196.3851**	**196.3851**	**4.1600e-003**	**4.3600e-003**	**197.7882**

Serrano Oaks Multi-Family 66 units - Riverside-South Coast County, Summer

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	24.0680					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1808	1.2188	1.8101	2.9700e-003		0.0609	0.0609		0.0609	0.0609		281.4481	281.4481	0.0159		281.8443
Total	**24.2488**	**1.2188**	**1.8101**	**2.9700e-003**		**0.0609**	**0.0609**		**0.0609**	**0.0609**		**281.4481**	**281.4481**	**0.0159**		**281.8443**

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	0.0545	0.0322	0.5496	1.5200e-003	0.1788	8.0000e-004	0.1796	0.0474	7.4000e-004	0.0482		157.1081	157.1081	3.3300e-003	3.4900e-003	158.2305
Total	**0.0545**	**0.0322**	**0.5496**	**1.5200e-003**	**0.1788**	**8.0000e-004**	**0.1796**	**0.0474**	**7.4000e-004**	**0.0482**		**157.1081**	**157.1081**	**3.3300e-003**	**3.4900e-003**	**158.2305**

Serrano Oaks Multi-Family 66 units - Riverside-South Coast County, Summer

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	24.0680					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.0594	1.3570	1.8324	2.9700e-003		0.0143	0.0143		0.0143	0.0143	0.0000	281.4481	281.4481	0.0159		281.8443
Total	**24.1274**	**1.3570**	**1.8324**	**2.9700e-003**		**0.0143**	**0.0143**		**0.0143**	**0.0143**	**0.0000**	**281.4481**	**281.4481**	**0.0159**		**281.8443**

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	0.0545	0.0322	0.5496	1.5200e-003	0.1788	8.0000e-004	0.1796	0.0474	7.4000e-004	0.0482		157.1081	157.1081	3.3300e-003	3.4900e-003	158.2305
Total	**0.0545**	**0.0322**	**0.5496**	**1.5200e-003**	**0.1788**	**8.0000e-004**	**0.1796**	**0.0474**	**7.4000e-004**	**0.0482**		**157.1081**	**157.1081**	**3.3300e-003**	**3.4900e-003**	**158.2305**

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	1.3854	1.8104	13.6270	0.0315	3.2117	0.0241	3.2358	0.8568	0.0226	0.8794		3,263.4056	3,263.4056	0.1533	0.1468	3,310.9919
Unmitigated	1.3854	1.8104	13.6270	0.0315	3.2117	0.0241	3.2358	0.8568	0.0226	0.8794		3,263.4056	3,263.4056	0.1533	0.1468	3,310.9919

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Condo/Townhouse	444.84	444.84	444.84	1,520,086	1,520,086
Parking Lot	0.00	0.00	0.00		
Total	444.84	444.84	444.84	1,520,086	1,520,086

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
Condo/Townhouse	14.70	5.90	8.70	40.20	19.20	40.60	86	11	3
Parking Lot	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

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

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Condo/Townhouse	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
Parking Lot	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	0.0412	0.3516	0.1496	2.2400e-003		0.0284	0.0284		0.0284	0.0284		448.8632	448.8632	8.6000e-003	8.2300e-003	451.5306
NaturalGas Unmitigated	0.0412	0.3516	0.1496	2.2400e-003		0.0284	0.0284		0.0284	0.0284		448.8632	448.8632	8.6000e-003	8.2300e-003	451.5306

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					
Condo/Townhouse	3815.34	0.0412	0.3516	0.1496	2.2400e-003		0.0284	0.0284		0.0284	0.0284		448.8632	448.8632	8.6000e-003	8.2300e-003	451.5306
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0412**	**0.3516**	**0.1496**	**2.2400e-003**		**0.0284**	**0.0284**		**0.0284**	**0.0284**		**448.8632**	**448.8632**	**8.6000e-003**	**8.2300e-003**	**451.5306**

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					
Condo/Townhouse	3.81534	0.0412	0.3516	0.1496	2.2400e-003		0.0284	0.0284		0.0284	0.0284		448.8632	448.8632	8.6000e-003	8.2300e-003	451.5306
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0412**	**0.3516**	**0.1496**	**2.2400e-003**		**0.0284**	**0.0284**		**0.0284**	**0.0284**		**448.8632**	**448.8632**	**8.6000e-003**	**8.2300e-003**	**451.5306**

6.0 Area Detail

Serrano Oaks Multi-Family 66 units - Riverside-South Coast County, Summer

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

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive 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	1.7448	1.1577	5.9272	7.2800e-003		0.1188	0.1188		0.1188	0.1188	0.0000	1,407.4913	1,407.4913	0.0363	0.0256	1,416.0346
Unmitigated	1.7448	1.1577	5.9272	7.2800e-003		0.1188	0.1188		0.1188	0.1188	0.0000	1,407.4913	1,407.4913	0.0363	0.0256	1,416.0346

Serrano Oaks Multi-Family 66 units - Riverside-South Coast County, Summer

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

6.2 Area by SubCategory

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	0.1187					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	1.3326					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.1281	1.0948	0.4659	6.9900e-003		0.0885	0.0885		0.0885	0.0885	0.0000	1,397.6471	1,397.6471	0.0268	0.0256	1,405.9526
Landscaping	0.1654	0.0629	5.4614	2.9000e-004		0.0302	0.0302		0.0302	0.0302		9.8443	9.8443	9.5100e-003		10.0821
Total	**1.7448**	**1.1577**	**5.9272**	**7.2800e-003**		**0.1188**	**0.1188**		**0.1188**	**0.1188**	**0.0000**	**1,407.4913**	**1,407.4913**	**0.0363**	**0.0256**	**1,416.0346**

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	0.1187					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	1.3326					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.1281	1.0948	0.4659	6.9900e-003		0.0885	0.0885		0.0885	0.0885	0.0000	1,397.6471	1,397.6471	0.0268	0.0256	1,405.9526
Landscaping	0.1654	0.0629	5.4614	2.9000e-004		0.0302	0.0302		0.0302	0.0302		9.8443	9.8443	9.5100e-003		10.0821
Total	**1.7448**	**1.1577**	**5.9272**	**7.2800e-003**		**0.1188**	**0.1188**		**0.1188**	**0.1188**	**0.0000**	**1,407.4913**	**1,407.4913**	**0.0363**	**0.0256**	**1,416.0346**

7.0 Water Detail

7.1 Mitigation Measures Water

Serrano Oaks Multi-Family 66 units - Riverside-South Coast County, Summer

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

8.0 Waste Detail

8.1 Mitigation Measures Waste

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

Serrano Oaks Multi-Family 66 units - Riverside-South Coast County, Winter

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

Serrano Oaks Multi-Family 66 units

Riverside-South Coast County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Parking Lot	182.00	Space	1.64	72,800.00	0
Condo/Townhouse	66.00	Dwelling Unit	2.49	66,000.00	189

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 - Total site acreage is 4.13 acres

Construction Phase -

Vehicle Trips - Per TS

Vehicle Emission Factors -

Woodstoves - All NG Hearths

Construction Off-road Equipment Mitigation - T3 with DPF or equiv

Table Name	Column Name	Default Value	New Value
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3

Serrano Oaks Multi-Family 66 units - Riverside-South Coast County, Winter

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

tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	11.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3

Serrano Oaks Multi-Family 66 units - Riverside-South Coast County, Winter

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

tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblFireplaces	NumberGas	56.10	66.00
tblFireplaces	NumberNoFireplace	6.60	0.00
tblFireplaces	NumberWood	3.30	0.00
tblLandUse	LotAcreage	4.13	2.49
tblVehicleTrips	ST_TR	8.14	6.74
tblVehicleTrips	SU_TR	6.28	6.74
tblVehicleTrips	WD_TR	7.32	6.74
tblWoodstoves	NumberCatalytic	3.30	0.00
tblWoodstoves	NumberNoncatalytic	3.30	0.00

2.0 Emissions Summary

Serrano Oaks Multi-Family 66 units - 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	2.7211	27.5663	18.8318	0.0397	19.8582	1.2670	21.1252	10.1558	1.1656	11.3214	0.0000	3,851.4160	3,851.4160	1.1967	0.0709	3,882.6207
2024	24.3000	14.2649	18.6048	0.0370	0.9936	0.6226	1.6162	0.2663	0.5857	0.8519	0.0000	3,597.2599	3,597.2599	0.6242	0.0687	3,633.3382
Maximum	**24.3000**	**27.5663**	**18.8318**	**0.0397**	**19.8582**	**1.2670**	**21.1252**	**10.1558**	**1.1656**	**11.3214**	**0.0000**	**3,851.4160**	**3,851.4160**	**1.1967**	**0.0709**	**3,882.6207**

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	0.9928	19.1078	23.4962	0.0397	7.8674	0.1451	8.0103	3.9933	0.1445	4.1361	0.0000	3,851.4160	3,851.4160	1.1967	0.0709	3,882.6207
2024	24.1787	15.0472	20.3118	0.0370	0.9936	0.1448	1.1384	0.2663	0.1443	0.4105	0.0000	3,597.2599	3,597.2599	0.6242	0.0687	3,633.3382
Maximum	**24.1787**	**19.1078**	**23.4962**	**0.0397**	**7.8674**	**0.1451**	**8.0103**	**3.9933**	**0.1445**	**4.1361**	**0.0000**	**3,851.4160**	**3,851.4160**	**1.1967**	**0.0709**	**3,882.6207**

Serrano Oaks Multi-Family 66 units - 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	6.85	18.35	-17.02	0.00	57.50	84.66	59.77	59.13	83.51	62.65	0.00	0.00	0.00	0.00	0.00	0.00

Serrano Oaks Multi-Family 66 units - Riverside-South Coast County, Winter

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

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	1.7448	1.1577	5.9272	7.2800e-003		0.1188	0.1188		0.1188	0.1188	0.0000	1,407.4913	1,407.4913	0.0363	0.0256	1,416.0346
Energy	0.0412	0.3516	0.1496	2.2400e-003		0.0284	0.0284		0.0284	0.0284		448.8632	448.8632	8.6000e-003	8.2300e-003	451.5306
Mobile	1.1812	1.9202	12.0361	0.0293	3.2117	0.0241	3.2358	0.8568	0.0226	0.8794		3,030.0119	3,030.0119	0.1567	0.1499	3,078.5975
Total	**2.9671**	**3.4295**	**18.1130**	**0.0388**	**3.2117**	**0.1713**	**3.3830**	**0.8568**	**0.1698**	**1.0266**	**0.0000**	**4,886.3664**	**4,886.3664**	**0.2016**	**0.1838**	**4,946.1627**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	1.7448	1.1577	5.9272	7.2800e-003		0.1188	0.1188		0.1188	0.1188	0.0000	1,407.4913	1,407.4913	0.0363	0.0256	1,416.0346
Energy	0.0412	0.3516	0.1496	2.2400e-003		0.0284	0.0284		0.0284	0.0284		448.8632	448.8632	8.6000e-003	8.2300e-003	451.5306
Mobile	1.1812	1.9202	12.0361	0.0293	3.2117	0.0241	3.2358	0.8568	0.0226	0.8794		3,030.0119	3,030.0119	0.1567	0.1499	3,078.5975
Total	**2.9671**	**3.4295**	**18.1130**	**0.0388**	**3.2117**	**0.1713**	**3.3830**	**0.8568**	**0.1698**	**1.0266**	**0.0000**	**4,886.3664**	**4,886.3664**	**0.2016**	**0.1838**	**4,946.1627**

Serrano Oaks Multi-Family 66 units - 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	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	6/1/2023	6/7/2023	5	5	
2	Grading	Grading	6/8/2023	6/19/2023	5	8	
3	Building Construction	Building Construction	6/20/2023	5/6/2024	5	230	
4	Paving	Paving	5/7/2024	5/30/2024	5	18	
5	Architectural Coating	Architectural Coating	5/31/2024	6/25/2024	5	18	

Acres of Grading (Site Preparation Phase): 7.5

Acres of Grading (Grading Phase): 8

Acres of Paving: 1.64

Residential Indoor: 133,650; Residential Outdoor: 44,550; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 4,368 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	1	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Tractors/Loaders/Backhoes	3	8.00	97	0.37

Serrano Oaks Multi-Family 66 units - Riverside-South Coast County, Winter

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

Building Construction	Cranes	1	7.00	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	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Paving	Cement and Mortar Mixers	2	6.00	9	0.56
Paving	Pavers	1	8.00	130	0.42
Paving	Paving Equipment	2	6.00	132	0.36
Paving	Rollers	2	6.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	6	15.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	78.00	19.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	8	20.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	16.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Use DPF for Construction Equipment

Water Exposed Area

Serrano Oaks Multi-Family 66 units - Riverside-South Coast County, Winter

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					19.6570	0.0000	19.6570	10.1025	0.0000	10.1025			0.0000			0.0000
Off-Road	2.6595	27.5242	18.2443	0.0381		1.2660	1.2660		1.1647	1.1647		3,687.3081	3,687.3081	1.1926		3,717.1219
Total	**2.6595**	**27.5242**	**18.2443**	**0.0381**	**19.6570**	**1.2660**	**20.9230**	**10.1025**	**1.1647**	**11.2672**		**3,687.3081**	**3,687.3081**	**1.1926**		**3,717.1219**

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**

Serrano Oaks Multi-Family 66 units - Riverside-South Coast County, Winter

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					7.6662	0.0000	7.6662	3.9400	0.0000	3.9400			0.0000			0.0000
Off-Road	0.9312	19.0656	22.9600	0.0381		0.1419	0.1419		0.1419	0.1419	0.0000	3,687.3081	3,687.3081	1.1926		3,717.1219
Total	**0.9312**	**19.0656**	**22.9600**	**0.0381**	**7.6662**	**0.1419**	**7.8082**	**3.9400**	**0.1419**	**4.0819**	**0.0000**	**3,687.3081**	**3,687.3081**	**1.1926**		**3,717.1219**

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**

Serrano Oaks Multi-Family 66 units - Riverside-South Coast County, Winter

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					7.0826	0.0000	7.0826	3.4247	0.0000	3.4247			0.0000			0.0000
Off-Road	1.7109	17.9359	14.7507	0.0297		0.7749	0.7749		0.7129	0.7129		2,872.6910	2,872.6910	0.9291		2,895.9182
Total	**1.7109**	**17.9359**	**14.7507**	**0.0297**	**7.0826**	**0.7749**	**7.8575**	**3.4247**	**0.7129**	**4.1377**		**2,872.6910**	**2,872.6910**	**0.9291**		**2,895.9182**

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	0.0514	0.0351	0.4468	1.3400e-003	0.1677	7.9000e-004	0.1685	0.0445	7.2000e-004	0.0452		136.7566	136.7566	3.4300e-003	3.6000e-003	137.9157
Total	**0.0514**	**0.0351**	**0.4468**	**1.3400e-003**	**0.1677**	**7.9000e-004**	**0.1685**	**0.0445**	**7.2000e-004**	**0.0452**		**136.7566**	**136.7566**	**3.4300e-003**	**3.6000e-003**	**137.9157**

Serrano Oaks Multi-Family 66 units - Riverside-South Coast County, Winter

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					2.7622	0.0000	2.7622	1.3357	0.0000	1.3357			0.0000			0.0000
Off-Road	0.7263	14.8397	18.9906	0.0297		0.1133	0.1133		0.1133	0.1133	0.0000	2,872.6910	2,872.6910	0.9291		2,895.9182
Total	**0.7263**	**14.8397**	**18.9906**	**0.0297**	**2.7622**	**0.1133**	**2.8755**	**1.3357**	**0.1133**	**1.4490**	**0.0000**	**2,872.6910**	**2,872.6910**	**0.9291**		**2,895.9182**

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	0.0514	0.0351	0.4468	1.3400e-003	0.1677	7.9000e-004	0.1685	0.0445	7.2000e-004	0.0452		136.7566	136.7566	3.4300e-003	3.6000e-003	137.9157
Total	**0.0514**	**0.0351**	**0.4468**	**1.3400e-003**	**0.1677**	**7.9000e-004**	**0.1685**	**0.0445**	**7.2000e-004**	**0.0452**		**136.7566**	**136.7566**	**3.4300e-003**	**3.6000e-003**	**137.9157**

Serrano Oaks Multi-Family 66 units - 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

Unmitigated Construction On-Site

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

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0198	0.6583	0.2642	3.3300e-003	0.1217	5.4300e-003	0.1271	0.0350	5.1900e-003	0.0402		352.8885	352.8885	3.5200e-003	0.0522	368.5293
Worker	0.2671	0.1827	2.3236	6.9500e-003	0.8719	4.0900e-003	0.8760	0.2312	3.7700e-003	0.2350		711.1341	711.1341	0.0179	0.0187	717.1615
Total	**0.2869**	**0.8410**	**2.5878**	**0.0103**	**0.9936**	**9.5200e-003**	**1.0031**	**0.2663**	**8.9600e-003**	**0.2752**		**1,064.0226**	**1,064.0226**	**0.0214**	**0.0709**	**1,085.6907**

Serrano Oaks Multi-Family 66 units - 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	0.6739	14.2261	17.8738	0.0269		0.1355	0.1355		0.1355	0.1355	0.0000	2,555.2099	2,555.2099	0.6079		2,570.4061
Total	**0.6739**	**14.2261**	**17.8738**	**0.0269**		**0.1355**	**0.1355**		**0.1355**	**0.1355**	**0.0000**	**2,555.2099**	**2,555.2099**	**0.6079**		**2,570.4061**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0198	0.6583	0.2642	3.3300e-003	0.1217	5.4300e-003	0.1271	0.0350	5.1900e-003	0.0402		352.8885	352.8885	3.5200e-003	0.0522	368.5293
Worker	0.2671	0.1827	2.3236	6.9500e-003	0.8719	4.0900e-003	0.8760	0.2312	3.7700e-003	0.2350		711.1341	711.1341	0.0179	0.0187	717.1615
Total	**0.2869**	**0.8410**	**2.5878**	**0.0103**	**0.9936**	**9.5200e-003**	**1.0031**	**0.2663**	**8.9600e-003**	**0.2752**		**1,064.0226**	**1,064.0226**	**0.0214**	**0.0709**	**1,085.6907**

Serrano Oaks Multi-Family 66 units - 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

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	1.4716	13.4438	16.1668	0.0270		0.6133	0.6133		0.5769	0.5769		2,555.6989	2,555.6989	0.6044		2,570.8077
Total	**1.4716**	**13.4438**	**16.1668**	**0.0270**		**0.6133**	**0.6133**		**0.5769**	**0.5769**		**2,555.6989**	**2,555.6989**	**0.6044**		**2,570.8077**

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	0.0195	0.6584	0.2612	3.2800e-003	0.1217	5.3900e-003	0.1271	0.0350	5.1500e-003	0.0402		347.4558	347.4558	3.6500e-003	0.0513	362.8366
Worker	0.2498	0.1628	2.1767	6.7300e-003	0.8719	3.9100e-003	0.8758	0.2312	3.6000e-003	0.2348		694.1053	694.1053	0.0162	0.0174	699.6940
Total	**0.2693**	**0.8212**	**2.4380**	**0.0100**	**0.9936**	**9.3000e-003**	**1.0028**	**0.2663**	**8.7500e-003**	**0.2750**		**1,041.5610**	**1,041.5610**	**0.0199**	**0.0687**	**1,062.5306**

Serrano Oaks Multi-Family 66 units - 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	0.6739	14.2261	17.8738	0.0270		0.1355	0.1355		0.1355	0.1355	0.0000	2,555.6989	2,555.6989	0.6044		2,570.8077
Total	**0.6739**	**14.2261**	**17.8738**	**0.0270**		**0.1355**	**0.1355**		**0.1355**	**0.1355**	**0.0000**	**2,555.6989**	**2,555.6989**	**0.6044**		**2,570.8077**

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	0.0195	0.6584	0.2612	3.2800e-003	0.1217	5.3900e-003	0.1271	0.0350	5.1500e-003	0.0402		347.4558	347.4558	3.6500e-003	0.0513	362.8366
Worker	0.2498	0.1628	2.1767	6.7300e-003	0.8719	3.9100e-003	0.8758	0.2312	3.6000e-003	0.2348		694.1053	694.1053	0.0162	0.0174	699.6940
Total	**0.2693**	**0.8212**	**2.4380**	**0.0100**	**0.9936**	**9.3000e-003**	**1.0028**	**0.2663**	**8.7500e-003**	**0.2750**		**1,041.5610**	**1,041.5610**	**0.0199**	**0.0687**	**1,062.5306**

Serrano Oaks Multi-Family 66 units - 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	0.8814	8.2730	12.2210	0.0189		0.3987	0.3987		0.3685	0.3685		1,805.6205	1,805.6205	0.5673		1,819.8039
Paving	0.2387					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.1201**	**8.2730**	**12.2210**	**0.0189**		**0.3987**	**0.3987**		**0.3685**	**0.3685**		**1,805.6205**	**1,805.6205**	**0.5673**		**1,819.8039**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0641	0.0417	0.5581	1.7300e-003	0.2236	1.0000e-003	0.2246	0.0593	9.2000e-004	0.0602		177.9757	177.9757	4.1600e-003	4.4600e-003	179.4087
Total	**0.0641**	**0.0417**	**0.5581**	**1.7300e-003**	**0.2236**	**1.0000e-003**	**0.2246**	**0.0593**	**9.2000e-004**	**0.0602**		**177.9757**	**177.9757**	**4.1600e-003**	**4.4600e-003**	**179.4087**

Serrano Oaks Multi-Family 66 units - 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	0.4389	9.0888	13.5323	0.0189		0.0787	0.0787		0.0787	0.0787	0.0000	1,805.6205	1,805.6205	0.5673		1,819.8039
Paving	0.2387					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.6776**	**9.0888**	**13.5323**	**0.0189**		**0.0787**	**0.0787**		**0.0787**	**0.0787**	**0.0000**	**1,805.6205**	**1,805.6205**	**0.5673**		**1,819.8039**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0641	0.0417	0.5581	1.7300e-003	0.2236	1.0000e-003	0.2246	0.0593	9.2000e-004	0.0602		177.9757	177.9757	4.1600e-003	4.4600e-003	179.4087
Total	**0.0641**	**0.0417**	**0.5581**	**1.7300e-003**	**0.2236**	**1.0000e-003**	**0.2246**	**0.0593**	**9.2000e-004**	**0.0602**		**177.9757**	**177.9757**	**4.1600e-003**	**4.4600e-003**	**179.4087**

Serrano Oaks Multi-Family 66 units - Riverside-South Coast County, Winter

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	24.0680					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1808	1.2188	1.8101	2.9700e-003		0.0609	0.0609		0.0609	0.0609		281.4481	281.4481	0.0159		281.8443
Total	**24.2488**	**1.2188**	**1.8101**	**2.9700e-003**		**0.0609**	**0.0609**		**0.0609**	**0.0609**		**281.4481**	**281.4481**	**0.0159**		**281.8443**

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	0.0512	0.0334	0.4465	1.3800e-003	0.1788	8.0000e-004	0.1796	0.0474	7.4000e-004	0.0482		142.3806	142.3806	3.3200e-003	3.5700e-003	143.5270
Total	**0.0512**	**0.0334**	**0.4465**	**1.3800e-003**	**0.1788**	**8.0000e-004**	**0.1796**	**0.0474**	**7.4000e-004**	**0.0482**		**142.3806**	**142.3806**	**3.3200e-003**	**3.5700e-003**	**143.5270**

Serrano Oaks Multi-Family 66 units - Riverside-South Coast County, Winter

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	24.0680					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.0594	1.3570	1.8324	2.9700e-003		0.0143	0.0143		0.0143	0.0143	0.0000	281.4481	281.4481	0.0159		281.8443
Total	**24.1274**	**1.3570**	**1.8324**	**2.9700e-003**		**0.0143**	**0.0143**		**0.0143**	**0.0143**	**0.0000**	**281.4481**	**281.4481**	**0.0159**		**281.8443**

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	0.0512	0.0334	0.4465	1.3800e-003	0.1788	8.0000e-004	0.1796	0.0474	7.4000e-004	0.0482		142.3806	142.3806	3.3200e-003	3.5700e-003	143.5270
Total	**0.0512**	**0.0334**	**0.4465**	**1.3800e-003**	**0.1788**	**8.0000e-004**	**0.1796**	**0.0474**	**7.4000e-004**	**0.0482**		**142.3806**	**142.3806**	**3.3200e-003**	**3.5700e-003**	**143.5270**

Serrano Oaks Multi-Family 66 units - Riverside-South Coast County, Winter

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

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive 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	1.1812	1.9202	12.0361	0.0293	3.2117	0.0241	3.2358	0.8568	0.0226	0.8794		3,030.0119	3,030.0119	0.1567	0.1499	3,078.5975
Unmitigated	1.1812	1.9202	12.0361	0.0293	3.2117	0.0241	3.2358	0.8568	0.0226	0.8794		3,030.0119	3,030.0119	0.1567	0.1499	3,078.5975

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Condo/Townhouse	444.84	444.84	444.84	1,520,086	1,520,086
Parking Lot	0.00	0.00	0.00		
Total	444.84	444.84	444.84	1,520,086	1,520,086

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
Condo/Townhouse	14.70	5.90	8.70	40.20	19.20	40.60	86	11	3
Parking Lot	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Serrano Oaks Multi-Family 66 units - Riverside-South Coast County, Winter

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

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Condo/Townhouse	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
Parking Lot	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	0.0412	0.3516	0.1496	2.2400e-003		0.0284	0.0284		0.0284	0.0284		448.8632	448.8632	8.6000e-003	8.2300e-003	451.5306
NaturalGas Unmitigated	0.0412	0.3516	0.1496	2.2400e-003		0.0284	0.0284		0.0284	0.0284		448.8632	448.8632	8.6000e-003	8.2300e-003	451.5306

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					
Condo/Townhouse	3815.34	0.0412	0.3516	0.1496	2.2400e-003		0.0284	0.0284		0.0284	0.0284		448.8632	448.8632	8.6000e-003	8.2300e-003	451.5306
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0412**	**0.3516**	**0.1496**	**2.2400e-003**		**0.0284**	**0.0284**		**0.0284**	**0.0284**		**448.8632**	**448.8632**	**8.6000e-003**	**8.2300e-003**	**451.5306**

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					
Condo/Townhouse	3.81534	0.0412	0.3516	0.1496	2.2400e-003		0.0284	0.0284		0.0284	0.0284		448.8632	448.8632	8.6000e-003	8.2300e-003	451.5306
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0412**	**0.3516**	**0.1496**	**2.2400e-003**		**0.0284**	**0.0284**		**0.0284**	**0.0284**		**448.8632**	**448.8632**	**8.6000e-003**	**8.2300e-003**	**451.5306**

6.0 Area Detail

Serrano Oaks Multi-Family 66 units - Riverside-South Coast County, Winter

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

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive 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	1.7448	1.1577	5.9272	7.2800e-003		0.1188	0.1188		0.1188	0.1188	0.0000	1,407.4913	1,407.4913	0.0363	0.0256	1,416.0346
Unmitigated	1.7448	1.1577	5.9272	7.2800e-003		0.1188	0.1188		0.1188	0.1188	0.0000	1,407.4913	1,407.4913	0.0363	0.0256	1,416.0346

Serrano Oaks Multi-Family 66 units - Riverside-South Coast County, Winter

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

6.2 Area by SubCategory

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	0.1187					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	1.3326					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.1281	1.0948	0.4659	6.9900e-003		0.0885	0.0885		0.0885	0.0885	0.0000	1,397.6471	1,397.6471	0.0268	0.0256	1,405.9526
Landscaping	0.1654	0.0629	5.4614	2.9000e-004		0.0302	0.0302		0.0302	0.0302		9.8443	9.8443	9.5100e-003		10.0821
Total	**1.7448**	**1.1577**	**5.9272**	**7.2800e-003**		**0.1188**	**0.1188**		**0.1188**	**0.1188**	**0.0000**	**1,407.4913**	**1,407.4913**	**0.0363**	**0.0256**	**1,416.0346**

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	0.1187					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	1.3326					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.1281	1.0948	0.4659	6.9900e-003		0.0885	0.0885		0.0885	0.0885	0.0000	1,397.6471	1,397.6471	0.0268	0.0256	1,405.9526
Landscaping	0.1654	0.0629	5.4614	2.9000e-004		0.0302	0.0302		0.0302	0.0302		9.8443	9.8443	9.5100e-003		10.0821
Total	**1.7448**	**1.1577**	**5.9272**	**7.2800e-003**		**0.1188**	**0.1188**		**0.1188**	**0.1188**	**0.0000**	**1,407.4913**	**1,407.4913**	**0.0363**	**0.0256**	**1,416.0346**

7.0 Water Detail

7.1 Mitigation Measures Water

Serrano Oaks Multi-Family 66 units - Riverside-South Coast County, Winter

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

8.0 Waste Detail

8.1 Mitigation Measures Waste

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