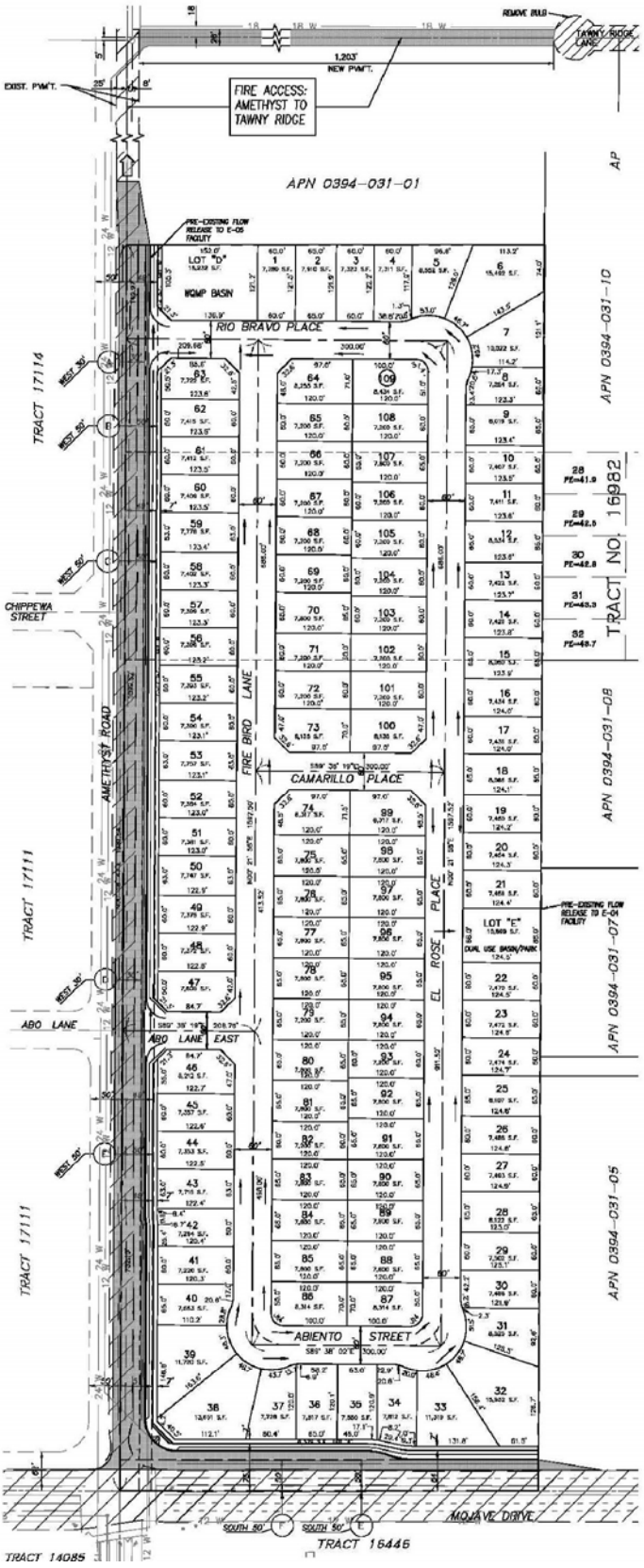
TTM 20525 SINGLE FAMILY RESIDENTIAL
AIR QUALITY AND GREENHOUSE GAS IMPACT STUDY
City of Victorville, California



TTM 20525 SINGLE FAMILY RESIDENTIAL PROJECT AIR QUALITY AND GREENHOUSE IMPACT STUDY City of Victorville, California

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1.0 Introduction

The purpose of this air quality and greenhouse gas (GHG) analysis is to determine whether the estimated criteria air pollutants and greenhouse gas emissions generated from the construction and operation of the proposed TTM 20525 Single Family Residential Development Project (hereinafter referred to as project) would cause significant impacts to air resources.

This assessment was conducted within the context of the California Environmental Quality Act (CEQA, California Public Resources Code Sections 21000, et seq.). The methodology follows the California Air Resources Board (CARB), the Mojave Desert Air Quality Management District (MDAQMD), and City of Victorville recommendations for quantification of emissions and evaluation of potential impacts.

1.1 Site Location

The project site is located at the northeast corner of Amethyst Road and Mojave Drive, in the City of Victorville. The project site is bounded by vacant land to the north, Mojave Road to the south, residential homes and vacant land to the east, and vacant land and the unpaved Amethyst right-of-way to the west.

The project site is located within the Mojave Desert Air Quality Management District (MDAQMD) and the Mojave Desert Air Basin (MDAB). The nearest ambient air quality monitoring station is the Victorville – 14306 Park Avenue station, in the City of Victorville.

The project location map is provided in Exhibit A.

1.2 Project Description

The project proposes to construct and operate 109 dwelling units of single family detached homes on an approximately 30.1 gross acre vacant site. The project will include approximately 9.2 acres of on-site and off-site street improvements as part of the project. The site plan used for this analysis, provided by the LUDWIG ENGINEERING GROUP, is illustrated in Exhibit B.

Table 1 summarizes the proposed project land uses.

Table 1
Land Use Summary

Land Use	Quantity	Metric[1]
Single Family Homes	109	DU
On-Site / Off-Site Street Improvements	9.2	Acres

[1] DU – Dwelling Units;

The project site is currently vacant and requires no demolition. The project site is expected to import approximately 26,913 cubic yards of earthwork material during grading phase.

Construction of the project is estimated to begin in the year 2022 and last approximately 25 months. Construction activities are expected to consist of site preparation, grading, building construction, paving, and architectural coating. The project is expected to be complete and operational in the year 2025.

1.3 Sensitive Receptors

Sensitive receptors are considered land uses or other types of population groups that are more sensitive to air pollution exposure. Sensitive population groups include children, the elderly, the acutely and chronically ill, and those with cardio-respiratory diseases.

Several sensitive land use areas are present surrounding the project site, including;

- Existing residential properties along Valley High Lane, adjacent to the project site to the east (less than 25 meters).

- Existing residential properties located along Summerwind Street, approximately 100 feet from the project site, south of Mojave Road (approximately 30 meters).

1.4 Summary of Analysis Results

Table 2 provides a summary of the CEQA air quality impact analysis results.

Table 2
CEQA Air Quality Impact Criteria

Air Quality Impact Criteria	Potentially Significant	Potentially Significant Unless Mitigated	Less Than Significant Impact	No Impact
Would the project:				
a) Conflict with, or obstruct implementation of, the applicable air quality plan?			X	
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in non-attainment under an applicable Federal or State ambient air quality standard?			X	
d) Expose sensitive receptors to substantial pollutant concentrations?			X	
e) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?			X	

Table 3 provides a summary of the CEQA GHG impact criteria analysis results.

Table 3
CEQA GHG Impact Criteria

GHG Impact Criteria	Potentially Significant	Potentially Significant Unless Mitigated	Less Than Significant Impact	No Impact
Would the project:				
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?			X	
b) Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing emissions of greenhouse gases?			X	

1.5 Recommended Project Design Features

The following recommended project design features include standard rules, requirements, and best practices for reducing air quality and GHG emissions. Design features are assumed to be included as part of the conditions of the project and are not typically considered mitigation under CEQA.

Construction Design Features:

DF-1 Follow the MDAQMD rules and requirements with regards to fugitive dust control, which includes, but is not limited to the following:

1. All active construction areas shall be watered two (2) times daily.
2. Speed on unpaved roads shall be reduced to less than 15 mph.
3. Any visible dirt deposition on any public roadway shall be swept or washed at the site access points within 30 minutes.
4. Any on-site stockpiles of debris, dirt or other dusty material shall be covered or watered twice daily.
5. All operations on any unpaved surface shall be suspended if winds exceed 15 mph.
6. Access points shall be washed or swept daily.
7. Construction sites shall be sandbagged for erosion control.
8. Apply nontoxic chemical soil stabilizers according to manufacturers' specifications to all inactive construction areas (previously graded areas inactive for 10 days or more).
9. Cover all trucks hauling dirt, sand, soil, or other loose materials, and maintain at least 2 feet of freeboard space in accordance with the requirements of California Vehicle Code (CVC) section 23114.
10. Pave or gravel construction access roads at least 100 feet onto the site from the main road and use gravel aprons at truck exits.
11. Replace the ground cover of disturbed areas as quickly possible.

DF-2 Construction equipment should be maintained in proper tune.

DF-3 All construction vehicles should be prohibited from excessive idling. Excessive idling is defined as five (5) minutes or longer.

DF-4 Minimize the simultaneous operation of multiple construction equipment units.

DF-5 Establish an electricity supply to the construction site and use electric powered equipment instead of diesel-powered equipment or generators, where feasible.

DF-6 Establish staging areas for the construction equipment that are as distant as possible from adjacent sensitive receptors (residential land uses).

DF-7 Use haul trucks with on-road engines instead of off-road engines for on-site hauling.

Operational Design Features

DF-8 Prior to issuance of the building permits, and as a condition of approval, the project shall demonstrate that at least 45 points have been achieved through improvements listed in the City of Victorville Climate Action Plan (CAP) Residential Screening Tables.

DF-12 The project will comply with the mandatory requirements of the California Building Standards Code, Title 24, Part 6 (Energy Code) and Part 11 (CALGreen), including, but not limited to:

- Install low flow fixtures and toilets, water efficient irrigation systems, drought tolerant/native landscaping, and reduce the amount of turf.
- Provide the necessary infrastructure to support electric vehicle charging.
- Provide solar installations per the prescribed Energy Design Ratings.

2.0 Air Quality Setting

The Federal Clean Air Act (§ 7602) defines air pollution as any agent or combination of such agents, including any physical, chemical, biological, or radioactive substance which is emitted into or otherwise enters the ambient air. Household combustion devices, motor vehicles, industrial facilities and forest fires are common sources of air pollution. Air pollution can cause disease, allergies and death. It affects soil, water, crops, vegetation, manmade materials, animals, wildlife, weather, visibility, and climate. It can also cause damage to and deterioration of property, present hazards to transportation, and negatively impact the economy.[1]

This section provides background information on criteria air pollutants, the applicable federal, state and local regulations concerning air pollution, and the existing physical setting of the project within the context of local air quality.

2.1 Description of Air Pollutants.

The following section describes the air pollutants of concern related to the project. Criteria air pollutants are defined as those pollutants for which the federal and state governments have established air quality standards for outdoor or ambient concentrations to protect public health.

- **Carbon Monoxide (CO)** is a colorless, odorless, toxic gas produced by incomplete combustion of carbon-containing fuels (e.g., gasoline, diesel fuel, and biomass). Sources include motor vehicle exhaust, industrial processes (metals processing and chemical manufacturing), residential wood burning, and natural sources. CO is somewhat soluble in water; therefore, rainfall and fog can suppress CO conditions. CO enters the body through the lungs, dissolves in the blood, and competes with oxygen, often replacing it in the blood, thus reducing the blood's ability to transport oxygen to vital organs in the body. The ambient air quality standard for carbon monoxide is intended to protect persons whose medical condition already compromises their circulatory system's ability to deliver oxygen. These medical conditions include certain heart ailments, chronic lung diseases, and anemia. Persons with these conditions have reduced exercise capacity even when exposed to relatively low levels of CO. Fetuses are at risk because their blood has an even greater affinity to bind with CO. Smokers are also at risk from ambient CO levels because smoking increases the background level of CO in their blood.

[1] Federal Clean Air Act. 42 U.S.C. §7401 et seq. (1970)

- **Nitrogen Dioxide (NO_2)** is a byproduct of fuel combustion. The principal form of nitrogen oxide produced by combustion is nitric oxide (NO), but NO reacts quickly to form NO_2, creating the mixture of NO and NO_2 commonly called NO_x. NO_2 acts as an acute irritant and, in equal concentrations, is more injurious than NO. At atmospheric concentrations, however, NO_2 is only potentially irritating. There is some indication of a relationship between NO_2 and chronic pulmonary fibrosis. Some increase in bronchitis in young children has also been observed at concentrations below 0.3 parts per million (ppm). NO_2 absorbs blue light which results in a brownish red cast to the atmosphere and reduced visibility. Although NO_2 concentrations have not exceeded national standards since 1991 and the state hourly standard since 1993, NO_x emissions remain of concern because of their contribution to the formation of O_3 and particulate matter.

- **Ozone (O_3)** is one of a number of substances called photochemical oxidants that are formed when volatile organic compounds (VOC) and NO_x react in the presence of ultraviolet sunlight. O_3 concentrations in the South Coast basin are typically among the highest in the nation, and the damaging effects of photochemical smog, which is a popular name for a number of oxidants in combination, are generally related to the concentrations of O_3. Individuals exercising outdoors, children, and people with preexisting lung disease, such as asthma and chronic pulmonary lung disease, are considered to be the subgroups most susceptible to O_3 effects. Short-term exposures (lasting for a few hours) to O_3 at levels typically observed in southern California can result in breathing pattern changes, reduction of breathing capacity, increased susceptibility to infections, inflammation of the lung tissue, and some immunological changes. In recent years, a correlation between elevated ambient O_3 levels and increases in daily hospital admission rates, as well as mortality, has also been reported.

- **Fine Particulate Matter (PM_{10})** consists of extremely small suspended particles or droplets 10 microns or smaller in diameter that can lodge in the lungs, contributing to respiratory problems. PM_{10} arises from such sources as re-entrained road dust, diesel soot, combustion products, tire and brake abrasion, construction operations, and fires. It is also formed in the atmosphere from NO_x and SO_2 reactions with ammonia. PM_{10} scatters light and significantly reduces visibility. Inhalable particulates pose a serious health hazard, alone or in combination with other pollutants. More than half of the smallest particles inhaled will be deposited in the lungs and can cause permanent lung damage. Inhalable particulates can also have a damaging effect on health by interfering with the body's mechanism for clearing the respiratory tract or by acting as a carrier of an absorbed toxic substance.

- **Ultra-Fine Particulate Matter ($PM_{2.5}$)** is defined as particulate matter with a diameter less than 2.5 microns and is a subset of PM_{10}. $PM_{2.5}$ consists mostly of products from the reaction of NO_x and SO_2 with ammonia, secondary organics, finer dust particles, and the combustion of fuels, including diesel soot. $PM_{2.5}$ can cause exacerbation of symptoms in sensitive patients with respiratory or cardiovascular disease, declines in pulmonary function growth in children, and increased risk of premature death from heart or lung diseases in the elderly. Daily fluctuations in $PM_{2.5}$ levels have been related to hospital admissions for acute respiratory conditions, school absences, and increased medication use in children and adults with asthma.

- **Sulfur dioxide (SO_2)** is a colorless, pungent gas formed primarily by the combustion of sulfur-containing fossil fuels. Health effects include acute respiratory symptoms and difficulty in breathing for children. Individuals with asthma may experience constriction of airways with exposure to SO_2. SO_2 is a precursor to sulfate and PM_{10}.

- **Lead (Pb)** is a toxic heavy metal that can be emitted into the air through some industrial processes, burning of leaded gasoline and past use of lead-based consumer products. Lead is a neurotoxin that accumulates in soft tissues and bones, damages the nervous system, and causes blood disorders. It is particularly problematic in children, in that permanent brain damage may result, even if blood levels are promptly normalized with treatment. Concentrations of lead once exceeded the state and federal air quality standards by a wide margin, but as a result of the removal of lead from motor vehicle gasoline, ambient air quality standards for lead have not been exceeded since 1982. Though special monitoring sites immediately downwind of lead sources recorded localized violations of the state standard in 1994, no violations have been recorded since. Consequently, the Mojave Desert basin is designated as an attainment area for lead by both the USEPA and CARB. This report does not analyze lead emissions from the project, as it is not expected to emit lead in any significant measurable quantity.

- **Volatile Organic Compounds (VOC),** are transformed into organic aerosols in the atmosphere, contributing to higher PM_{10} and lower visibility levels. Sources of VOCs include combustion engines, and evaporative emissions associated with fuel, paints and solvents, asphalt paving, and the use of household consumer products such as aerosols. Although health-based standards have not been established for VOCs, health effects can occur from exposures to high concentrations of VOC. Some hydrocarbon components classified as VOC emissions are hazardous air pollutants. Benzene, for example, is a hydrocarbon component of VOC emissions that are known to be a human carcinogen. The term reactive organic gases (ROG) are often used interchangeably with VOC.

- **Toxic Air Contaminants (TACs)** are defined as air pollutants which may cause or contribute to an increase in mortality or serious illness, or which may pose a hazard to human health, and for which there is no concentration that does not present some risk. This contrasts with the criteria pollutants, in that there is no threshold level for TAC exposure below which adverse health impacts are not expected to occur. The majority of the estimated health risk from TACs can be attributed to a relatively few compounds, the most common being diesel particulate matter (DPM) from diesel engine exhaust. In addition to DPM, benzene and 1,3-butadiene are also significant contributors to overall ambient public health risk in California.

2.2 Federal and State Ambient Air Quality Standards

The Federal Clean Air Act, which was last amended in 1990, requires the EPA to set National Ambient Air Quality Standards (NAAQS) for criteria pollutants considered harmful to public health and the environment. The State of California has also established additional and more stringent California Ambient Air Quality Standards (CAAQS) in addition to the seven criteria pollutants designated by the federal government.

AAQS are designed to protect the health and welfare of the populace with a reasonable margin of safety. The standards are divided into two categories, primary standards and secondary standards. Primary standards are implemented to provide protection for the "sensitive" populations such as those with asthma, or the children and elderly. Secondary standards are to provide protection against visible pollution as well as damage to the surrounding environment, including animals, crops, and buildings.

Table 4 shows the Federal and State Ambient Air Quality Standards.

Table 4
Federal and State Ambient Air Quality Standards (AAQS)[1]

Air Pollutant	Averaging Time [2]	Federal Standard (NAAQS)[2]	California Standard (CAAQS)[2]
Ozone	1 Hour	--	0.09 ppm
	8 Hour	0.070 ppm	0.070 ppm
Carbon Monoxide (CO)	1 Hour	35 ppm	20 ppm
	8 Hour	9 ppm	9 ppm
Nitrogen Dioxide (NO_2)	1 Hour	0.100 ppm	0.18 ppm
	Annual	0.053 ppm	0.030 ppm
Sulfur Dioxide (SO_2)	1 Hour	0.075 ppm	0.25 ppm
	3 Hour	0.5 ppm[3]	--
	24 Hour	--	0.04 ppm
Particulate Matter (PM_{10})	24 Hour	150 $\mu g/m^3$	50 $\mu g/m^3$
	Mean	--	20 $\mu g/m^3$
Particulate Matter (PM2.5)	24 Hour	35 $\mu g/m^3$	--
	Annual	12 $\mu g/m^3$	12 $\mu g/m^3$
Lead	30-day	--	1.5 $\mu g/m$
	Quarter	1.5 $\mu g/m$	--
	3-month average	0.15 $\mu g/m$	--
Visibility reducing particles	8 Hour	--	0.23/km extinction coefficient. (10-mile visibility standard)
Sulfates	24 Hour	--	25 $\mu g/m$
Vinyl chloride	24 Hour	--	0.01 ppm
Hydrogen sulfide	24 Hour	--	0.03 ppm

[1] Source: USEPA: https://www.epa.gov/criteria-air-pollutants/naaqs-table and
CARB: https://ww2.arb.ca.gov/resources/california-ambient-air-quality-standards

[2] ppm = parts per million of air, by volume; µg/m3 = micrograms per cubic meter; Annual = Annual Arithmetic Mean; 30-day = 30-day average; Quarter = Calendar quarter.

[3] Secondary standards

Several pollutants listed in Table 4 are not addressed in this analysis. Lead is not included because the project is not anticipated to emit lead. Visibility-reducing particles are not explicitly addressed in this analysis because particulate matter is addressed. The project is not expected to generate or be exposed to vinyl chloride because proposed project uses do not utilize the chemical processes that create this pollutant and there are no such uses in the project vicinity. The proposed project is not expected to cause exposure to hydrogen sulfide because it would not generate hydrogen sulfide in any substantial quantity.

2.3 Attainment Status

The Clean Air Act requires states to prepare a State Implementation Plan (SIP) to ensure air quality meets the NAAQS. The California Air Resources Board (CARB) provides designations of attainment for air basins where AAQS are either met or exceeded. If the AAQS are met, the area is designated as being in "attainment", if the air pollutant concentrations exceed the AAQS, than the area is designated as being "nonattainment". If there is inadequate or inconclusive data to make a definitive attainment designation, the area is considered "unclassified."

National nonattainment areas are further designated as marginal, moderate, serious, severe, or extreme as a function of deviation from standards. Each standard has a different definition, or 'form' of what constitutes attainment, based on specific air quality statistics. For example, the Federal 8-hour CO standard is not to be exceeded more than once per year; therefore, an area is in attainment of the CO standard if no more than one 8-hour ambient air monitoring values exceeds the threshold per year. In contrast, the federal annual $PM_{2.5}$ standard is met if the three-year average of the annual average $PM_{2.5}$ concentration is less than or equal to the standard.

When a state submits a request to the EPA to re-designate a nonattainment area to attainment, the Clean Air Act (CAA) section 175A(a) requires that the state (or states, if the area is a multi-state area) submit a maintenance plan ensuring the area can maintain the air quality standard for which the area is to be re-designated for at least 10 years following the effective date of re-designation.

Table 5 lists the attainment status for the criteria pollutants in the MDAQMD.

Table 5
MDAQMD Attainment Designation[1]

Ambient Air Quality Standard	MDAQMD
One-hour Ozone (Federal) – standard has been revoked, this is historical information only	Proposed attainment in 2014; historical classification Severe-17 (portion of MDAQMD outside of Southeast Desert Modified AQMA is unclassified/attainment)
Eight-hour Ozone (Federal 84 ppb (1997))	Subpart 2 Nonattainment; classified Severe-15 (Portion of MDAQMD outside of Western Mojave Desert Ozone Nonattainment Area is unclassifiable/attainment)
Eight-hour Ozone (Federal 75 ppb (2008))	Nonattainment, classified Severe-15
Eight-hour Ozone (Federal 70 ppb (2015))	Expected nonattainment; classification to be determined
Ozone (State)	Nonattainment; classified Moderate
PM10 24-hour (Federal)	Nonattainment; classified Moderate (portion of MDAQMD in Riverside County is unclassifiable/attainment)
PM2.5 Annual (Federal)	Unclassified/attainment
PM2.5 24-hour (Federal)	Unclassified/attainment
PM2.5 (State)	Nonattainment (portion of MDAQMD outside of Western Mojave Desert Ozone Nonattainment Area is unclassified/attainment)
PM10 (State)	Nonattainment
Carbon Monoxide (State and Federal)	Unclassifiable/Attainment
Nitrogen Dioxide (State and Federal)	Unclassifiable/Attainment
Sulfur Dioxide (State and Federal)	Attainment/unclassified
Lead (State and Federal)	Unclassifiable/Attainment
Particulate Sulfate (State)	Attainment
Hydrogen Sulfide (State)	Unclassified (Searles Valley Planning Area is nonattainment)
Visibility Reducing Particles (State)	Unclassified

[1] Source: MDAQMD CEQA and Federal Conformity Guidelines, August 2016.

2.4 Mojave Desert Air Quality Management District (MDAQMD)[2]

Air districts have the primary responsibility to control air pollution from all sources other than those directly emitted from motor vehicles, which are the responsibility of the CARB and the EPA. Air districts adopt and enforce rules and regulations to achieve State and Federal ambient air quality standards and enforce applicable State and Federal law.

The MDAQMD has jurisdiction over the desert portion of San Bernardino County and the far eastern end of Riverside County. This region includes the incorporated communities of

[2] https://www.mdaqmd.ca.gov/

Adelanto, Apple Valley, Barstow, Blythe, Hesperia, Needles, Twentynine Palms, Victorville, and Yucca Valley. This region also includes the National Training Center at Fort Irwin, the Marine Corps Air Ground Combat Center, the Marine Corps Logistics Base, the eastern portion of Edwards Air Force Base, and a portion of the China Lake Naval Air Weapons Station.

The MDAQMD has prepared CEQA and Federal Conformity guidelines to provide direction on the preferred analysis approach in preparing environmental analysis or document review. The guidelines characterize the topography and climate of the Basin, defines cumulative impacts, and provide emission thresholds for construction and operation.

The MDAQMD adopted the Ozone Attainment Plan in 2014 to develop the methods and reduction measures to ensure applicable ozone attainment goals and standards are met for the area. The attainment plan focuses on pollutants including NOX and VOCs.

The Mojave Desert Air Quality Management District maintains a set of Rules & Regulations to improve and maintain healthy air quality for the entire population within our jurisdiction. The district maintains a set of Rules and Regulations to improve air quality and maintain good air quality (www.mdaqmd.ca.gov), including the following rules:[3]

- **MDAQMD Rule 402**. A person shall not discharge from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance or annoyance to any considerable number of persons or to the public, or which endanger the comfort, repose, health or safety of any such persons or the public, or which cause, or have a natural tendency to cause, injury or damage to business or property.

- **MDAQMD Rule 403**, MDAQMD Rule 403 governs emissions of fugitive dust. The rule states the following:

    - a) A person shall not cause or allow the emissions of fugitive dust from any transport, handling, construction or storage activity so that the presence of such dust remains visible in the atmosphere beyond the property line of the emission source.

    - A person shall take every reasonable precaution to minimize fugitive dust emissions from wrecking, excavation, grading, clearing of land and solid waste disposal operations.

[3] https://www.mdaqmd.ca.gov/rules/rule-book

- A person shall not cause or allow particulate matter to exceed 100 micrograms per cubic meter when determined as the difference between upwind and downwind samples collected on high volume samplers at the property line for a minimum of five hours.

- A person shall take every reasonable precaution to prevent visible particulate matter from being deposited upon public roadways as a direct result of their operations. Reasonable precautions shall include, but are not limited to, the removal of particulate matter from equipment prior to movement on paved streets or the prompt removal of any material from paved streets onto which such material has been deposited.

- Subsections (a) and (c) shall not be applicable when the wind speed instantaneously exceeds 40 kilometers (25 miles) per hour, or when the average wind speed is greater than 24 kilometers (15 miles) per hour. The average wind speed determination shall be on a 15- minute average at the nearest official air-monitoring station or by wind instrument located at the site being checked.

- **MDAQMD Rule 1303**. Rule 1303 indicates that any Permit Unit or Modified Permit Unit that has the potential to emit more than 25 pounds per day of any nonattainment pollutant shall be equipped with Best Available Control Technology. The rule also indicates that any new or modified Facility with the potential to emit more than 25 tons per year of any nonattainment pollutant shall be equipped with Best Available Control Technology. The rule also indicates that any new or modified facility with emissions greater than the following shall obtain offsets as specified in Rule 1304:

  - Hydrogen sulfide - 10 tons per year;
  - PM10 - 15 tons per year;
  - NOx - 25 tons per year;
  - SOx - 25 tons per year; and
  - Reactive organic compounds - 25 tons per year.

The proposed Project will comply with all applicable MDAQMD rules during both the operational and construction phases of the Project.

2.5 Local Climate and Meteorology

The project site is located within the Mojave Desert Air Basin (MDAB), which includes the desert portions of Los Angeles and San Bernardino Counties, the eastern desert portion of Kern County, and the northeastern desert portion of Riverside County. The MDAB is classified as a dry-hot desert climate (BWh), with portions classified as dry-very hot desert (BWhh), to indicate at least three months have maximum average temperatures over 100.4° F. Prevailing winds in the MDAB are out of the west and southwest. The MDAB primarily contains pollutants from other air basins, dust raised by construction, travel on unpaved roads, and paved roads with silty debris.

The weather station closest to the project site is a National Weather Service Cooperative weather station located at Victorville Station (049325). Climatological data from the National Weather Service at this station is summarized in Table 6.

Table 6
Meteorological Summary[1]

Month	Average Temperature (°F)			Mean Precipitation (inches)
	Max.	Min.	Mean	Max.
January	58.8	29.8	44.3	0.50
February	62.1	33.1	47.6	0.58
March	67.0	36.6	51.8	0.30
April	74.2	41.5	57.9	0.22
May	82.7	47.9	65.3	0.07
June	91.6	54.3	72.9	0.05
July	98.1	60.8	79.5	0.10
August	97.2	60.2	78.7	0.19
September	91.3	54.1	72.7	0.47
October	80.2	44.4	62.3	0.16
November	67.3	34.5	50.9	0.56
December	59.4	29.2	44.2	0.44
Annual	**77.5**	**43.9**	**60.7**	**3.64**

[1] Source: Western Regional Climate Center 2012. Temperature and precipitation averages are derived from measurements recorded between 1917 and 2012 at Victorville Station, (049325).

2.6 Local Air Quality

CARB sets State air quality standards and monitors ambient air quality at approximately 250 air monitoring stations across the State. Air quality monitoring stations usually measure pollutant concentrations 10 feet above ground level; therefore, air quality is often referred to in terms of ground-level concentrations. Ambient air pollutant concentrations in the Basin are measured at ten air quality-monitoring stations operated by the CARB and AVAQMD.

The project is located within the Division Street monitoring station area and is located at Victorville – 14306 Park Avenue station is one of the stations in the MDAB and is located within the City of Victorville.

Table 7 summarizes the published air quality monitoring data from 2017 through 2019, which is the most recent 3-year period available. These pollutant levels were used to comprise a "background" for the project location and existing local air quality. Criteria pollutants such as carbon monoxide and sulfur dioxide has not been monitored at the Victorville – 14306 Park Avenue station.

Table 7
Local Air Quality

Air Pollutant Location	Averaging Time	Item	2017	2018	2019
Carbon Monoxide -- Victorville-14306 Park Avenue	1 Hour	Max 1-Hour (ppm)	--	--	--
		Exceeded State Standard (20 ppm)	--	--	--
		Exceeded National Standard (35 ppm)	--	--	--
	8 Hour	Max 8 Hour (ppm)	--	--	--
		Exceeded State Standard (9 ppm)	--	--	--
		Exceeded National Standard (9 ppm)	--	--	--
Ozone -- Victorville-14306 Park Avenue	1 Hour	Max 1-Hour (ppm)	0.088	0.107	0.104
		Days > State Standard (0.10 ppm)	0	5	3
	8 Hour	Max 8 Hour (ppm)	0.082	0.097	0.082
		Days > State Standard (0.07 ppm)	19	56	34
		Days >National Standard (0.070 ppm)	17	55	29
Nitrogen Dioxide -- Victorville-14306 Park Avenue	1 Hour	Max 1-Hour (ppm)	0.061	0.057	0.055
		Exceeded State Standard (0.06 ppm)	Yes	No	No
	Annual	Annual Average (ppm)	0.012	0.011	0.011
		Exceeded >State Standard (0.030 ppm)	No	No	No
		Exceeded >National Standard (0.053 ppm)	No	No	No
Sulfur Dioxide -- Victorville-14306 Park Avenue	1 Hour	Max 1 Hour (ppm)	--	--	--
		Exceed State Standard (0.25 ppm)	--	--	--
		Exceed National Standard (0.075 ppm)	--	--	--
Coarse Particles (PM10) -- Victorville-14306 Park Avenue	24 Hour	Max 24-Hour ($\mu g/m^3$)	182.5	165.2	170.0
		Days > State Standard (50 $\mu g/m^3$)	--	--	--
		Days >National Standard (150 $\mu g/m^3$)	1	1	1.9
	Annual	Annual Average ($\mu g/m^3$)	30.1	29.8	27.2
		Exceeded State Standard (20 $\mu g/m^3$)	Yes	Yes	Yes
Fine Particulates (PM2.5) -- Victorville-14306 Park Avenue	24 Hour	Max 24-Hour ($\mu g/m^3$)	27.2	32.7	17.8
		Days >National Standard (35 $\mu g/m^3$)	0	0	0
	Annual	Annual Average ($\mu g/m^3$)	8.8	8.0	7.1
		Exceeded State Standard (12 $\mu g/m^3$)	No	No	No
		Exceeded National Standard (15 $\mu g/m^3$)	No	No	No

Source: EPA and ARB websites www.epa.gov/air/data.index.html and www.arb.ca.gov/adam/trends/trends1.php
$\mu g/m^3$ = micrograms per cubic meter
ARB = California Air Resource Board
EPA= Environmental Protection Agency
ppm = part per million
(- -) = Data not provided

3.0 Global Climate Change Setting

Global climate change is the change in the average weather of the earth that is measured by such things as alterations in temperature, wind patterns, storms, and precipitation. Current data shows that the recent period of warming is occurring more rapidly than past geological events. The average global surface temperature has increased by approximately 1.4° Fahrenheit since the early 20th Century. 1.4° Fahrenheit may seem like a small change, but it's an unusual event in Earth's recent history, and as we are seeing, even small changes in temperature can cause enormous changes in the environment.

The planet's climate record, preserved in tree rings, ice cores, and coral reefs, shows that the global average temperature has been stable over long periods of time. For example, at the end of the last ice age, when the Northeast United States was covered by more than 3,000 feet of ice, average global temperatures were only 5° to 9° Fahrenheit cooler than today. The Intergovernmental Panel on Climate Change (IPCC), which includes more than 1,300 scientists from the United States and other countries, forecasts a temperature rise of 2.5° to 10° Fahrenheit over the next century. Therefore, significant changes to the environment are expected in the near future.

The consequences of global climate change include more frequent and severe weather, worsening air pollution by increasing ground level ozone, higher rates of plant and animal extinction, more acidic and oxygen depleted oceans, strain on food and water resources, and threats to densely populated coastal and low lying areas from sea level rise.

The impacts of climate change are already visible in the Southwest United States. In California, the consequences of climate change include;

- A rise in sea levels resulting in the displacement of coastal businesses and residencies
- A reduction in the quality and supply of water from the Sierra snowpack
- Increased risk of large wildfires
- Exacerbation of air quality problems
- Reductions in the quality and quantity of agricultural products
- An increased temperature and extreme weather events
- A decrease in the health and productivity of California's forests

3.1 Greenhouse Gases

Most scientists agree the main cause of the current global warming trend is anthropogenic (human-induced) augmentation of the greenhouse effect. The greenhouse effect refers to the way gases in the earth's atmosphere trap and re-emits long wave infrared radiation, acting like a blanket insulating the earth. Activities such as fossil fuel combustion, industrial processes, agriculture, and waste decomposition have elevated the concentration of greenhouse gases in the atmosphere beyond the level of naturally occurring concentrations.

GHGs comprise less than 0.1 percent of the total atmospheric composition, yet they play an essential role in influencing climate. Greenhouse gases include naturally occurring compounds such as carbon dioxide (CO_2), methane (CH_4), water vapor (H_2O), and nitrous oxide (N_2O), while others are synthetic. Man-made GHGs include the chlorofluorocarbons (CFCs), hydrofluorocarbons (HFCs) and Perfluorocarbons (PFCs), as well as sulfur hexafluoride (SF_6). Different GHGs have different effects on the Earth's warming. GHGs differ from each other in their ability to absorb energy (their "radiative efficiency") and how long they stay in the atmosphere, also known as the "lifetime".

The Global Warming Potential (GWP) was developed to allow comparisons of the global warming impacts of different gases. Specifically, it is a measure of how much energy the emissions of 1 ton of a gas will absorb over a given period of time, relative to the emissions of 1 ton of CO_2. The larger the GWP, the more that a given gas warms the Earth compared to CO_2 over that time period. The time period usually used for GWPs is 100 years. GWPs provide a common unit of measure, which allows analysts to add up emissions estimates of different gases and allows policymakers to compare emissions reduction opportunities across sectors and gases.

Table 8 lists the 100-year GWP of GHGs from the Intergovernmental Panel on Climate Change (IPCC) fifth assessment report (AR5).

Table 8
Global Warming Potential of Greenhouse Gases[1, 2]

Gas Name	Formula	Lifetime (years)	GWP
Carbon Dioxide	CO_2		1
Methane	CH_4	12	28
Nitrous Oxide	N_2O	114	265
Sulphur Hexafluoride	SF_6	3200	23,500
Nitrogen Trifluoride	NF_3	740	16,100
Hexafluoroethane (PFC-116)	C_2F_6	10,000	11,100
Octafluoropropane (PFC-218)	C_3F_8	2,600	8,900
Octafluorocyclobutane (PFC-318)	C_4F_8	3,200	9,540
Tetrafluoromethane (PFC-14)	CF_4	50,000	6,630
Hydrofluorocarbon 125	HFC-125	29	3,170
Hydrofluorocarbon 134a	HFC-134a	14	1,300
Hydrofluorocarbon 143a	HFC-143a	52	4,800
Hydrofluorocarbon 152a	HFC-152a	1	138
Hydrofluorocarbon 227ea	HFC-227ea	34	3,350
Hydrofluorocarbon 23	HFC-23	270	12,400
Hydrofluorocarbon 236fa	HFC-236fa	240	8,060
Hydrofluorocarbon 245fa	HFC-245fa	8	858
Hydrofluorocarbon 32	HFC-32	5	677
Hydrofluorocarbon 365mfc	HFC-365mfc	9	804
Hydrofluorocarbon 43-10mee	HFC-43-10mee	16	1,650

[1] Source: IPCC Fifth Assessment Report (AR5)
https://www.ipcc.ch/site/assets/uploads/2018/02/WG1AR5_Chapter08_FINAL.pdf
[2] GWPs are used to convert GHG emission values to "carbon dioxide equivalent" (CO_2e) units

3.2 GHG Regulatory Setting – State of California

The State of California has been a leader in climate change legislation and has passed numerous bills to reduce greenhouse gas emissions across all sectors of the economy. Some of the key climate legislation in the State include the following:

- **Assembly Bill (AB) 32, California Global Warming Solutions Act of 2006.** AB 32 set the stage for the State's transition to a sustainable, low-carbon future. AB 32 was the first program in the country to take a comprehensive, long-term approach to addressing climate change.[4]

- **Senate Bill (SB) 375, Sustainable Communities & Climate Protection Act of 2008.** SB 375 requires the Air Resources Board to develop regional greenhouse gas emission reduction targets for passenger vehicles GHG reduction targets for 2020 and 2035 for each region covered by the State's 18 metropolitan planning organizations.[5]

- **Senate Bill (SB) 100, California Renewables Portfolio Standard Program.** SB 100 established a landmark policy requiring renewable energy and zero-carbon resources supply 100 percent of electric retail sales to end-use customers by 2045.[6]

3.3 GHG Emissions Inventory

Table 9 shows the latest GHG emission inventories at the national, state, regional and local levels.

Table 9
GHG Emissions Inventory[1]

United States (2019)[2]	State of California (2018)[3]	SCAG (2008)[4]	City of Victorville[5]
6,558.3 $MMTCO_2e$	425 $MMTCO_2e$	230.7 $MMTCO_2e$	--

[1] $MMTCO_2e$ = Million Metric Tons of Carbon Dioxide Equivalent
[2] https://www.epa.gov/ghgemissions/inventory-us-greenhouse-gas-emissions-and-sinks
[3] https://www.arb.ca.gov/cc/inventory/data/data.htm
[4] http://www.scag.ca.gov/programs/Pages/GreenhouseGases.aspx
[5] Data not available.

[4] California Air Resources Board. AB 32 Global Warming Solutions Act of 2006. https://ww2.arb.ca.gov/resources/fact-sheets/ab-32-global-warming-solutions-act-2006
[5] California Air Resources Board. Sustainable Communities and Climate Protection Program. https://ww2.arb.ca.gov/our-work/programs/sustainable-communities-climate-protection-program/about
[6] California Energy Commission. SB 100 Joint Agency Report. https://www.energy.ca.gov/sb100

4.0 Modeling Parameters and Assumptions

The California Emissions Estimator Model Version 2020.4.0 (CalEEMod) was used to calculate criteria air pollutants and GHG emissions from the construction and operation of the project. CalEEMod is a statewide land use emissions computer model designed to provide a uniform platform for government agencies, land use planners, and environmental professionals to quantify criteria air pollutant and GHG emissions.

The model quantifies direct emissions from construction and operation activities (including vehicle use), as well as indirect emissions, such as GHG emissions from off-site energy generation, solid waste disposal, vegetation planting and/or removal, and water use. The model also identifies mitigation measures to reduce criteria pollutant and GHG emissions. The model was developed for the California Air Pollution Control Officers Association (CAPCOA) in collaboration with the California air districts.

4.1 Construction Assumptions

Construction of the project is assumed to begin in the year 2022 and last approximately 25 months. Construction phases are assumed to consist of site preparation, grading, building construction, paving and architectural coating. The project is expected to be operational in the year 2025. Construction phases are not expected to overlap.

The project site is currently vacant and requires no demolition. The project site is expected to import approximately 26,913 cubic yards of earthwork material during grading phase.

The CalEEMod default construction equipment list is based on survey data and the size of the site. The parameters used to estimate construction emissions, such as the worker and vendor trips and trip lengths, utilize the CalEEMod defaults.

The project will be required to comply with several standard fugitive dust control measures, per MDAQMD Rule 403. The following key inputs are utilized in CalEEMod and are based upon data provided from MDAQMD[7]:

- Utilize soil stabilizers - 30% PM_{10} and $PM_{2.5}$ reduction.
- Replace ground cover - 15% PM_{10} and $PM_{2.5}$ reduction.
- Water exposed areas 2x per day.

[7] MDAQMD. Fugitive Dust Mitigation Measures. https://www.mdaqmd.ca.gov/home/showpublisheddocument/8482/637393282546170000

- Unpaved road moisture content – 25%.
- Unpaved road vehicle speed – 15 mph.

4.2 Operational Assumptions

Operational emissions occur over the life of the project and are considered "long-term" sources of emissions. Operational emissions include both direct and indirect sources. This section briefly describes the operational sources of emissions analyzed for the project.

4.2.1 Mobile Source Emissions

Mobile source emissions are the largest source of long-term air pollutants from the operation of the project. Mobile sources are direct sources of project emissions that are primarily attributed to tailpipe exhaust and road dust (tire, brake, clutch, and road surface wear) from motor vehicles traveling to and from the site.

Estimates of mobile source emissions require information on four parameters: trip generation, trip length, vehicle/fleet mix, and emission factors (quantity of emission for each mile traveled or time spent idling by each vehicle).

Operational vehicle trip assumptions include trip lengths, trip type, and diverted/pass-by trips and are based of CalEEMod defaults. Trip generation rates are based on the latest ITE Trip Generation Manual, 11th Edition.

The Emission Factors (EMFAC) 2017 model is used to estimate the mobile source emissions are includes the default off-model adjustment factors for gasoline light duty vehicles to account for the SAFE vehicle rule. No adjustments have been made to default emission factors.

The project's total vehicle miles traveled is shown in the Table 10 for this project.

Table 10
Operational Vehicle Miles Traveled

Land Use	Annual Vehicle Miles Traveled (VMT)
Single Family Housing	3,462,371

[1] CalEEMod Unmitigated Defaults

The operational vehicle fleet mix has been adjusted to reflect vehicle types used for the typical home-based trips generated by the project. The Southern California Association of Governments (SCAG) regional travel demand model does not include heavy-duty trucks, buses or other large vehicles that would require passenger car equivalent (PCE) adjustments for residential home-based trips. To be conservative, the Air Quality/GHG analysis has assumed that 2% of the total home-based trips will include trucks with a gross vehicle weight rating (GVWR) of 14,000 pound or greater. This includes LHD2, MHD, HHD, OBUS, UBUS, and SBUS vehicles. The 2% mix is also consistent with the default Highway Capacity Manual (HCM) assumptions.

Table 11 summarizes vehicle mix used for this project.

Table 11
Operational Vehicle Mix[1]

YUY	Vehicle Mix (%)
Light Duty Automobile (LDA)	55.35%
Light Duty Truck (LDTI)	5.74%
Light Duty Truck (LDT2)	17.68%
Medium Duty Truck (MDV)	13.97%
Light Heavy Truck (LHD1)	2.69%
Light Heavy Truck (LHD2)	0.33%
Medium Heavy Truck (MHD)	0.55%
Heavy Heavy Truck (HHD)	0.81%
Other Bus (OBUS)	0.03%
Urban Bus (UBUS)	0.01%
Motorcycle (MCY)	2.57%
School Bus (SBUS)	0.04%
Motor Home (MH)	0.23%
Total	**100.0%**

[1] Adjusted vehicle mix includes 2% total trucks over 14,000 lbs GVWR. (LHD2, MHD, HHD, OBUS, UBUS, SBUS, MH). The adjusted fleet mix has been proportioned according to the default mix.

4.2.2 Energy Source Emissions

Energy usage includes both direct and indirect sources of emissions. Direct sources of emissions include on-site natural gas usage (non-hearth) for heating, while indirect

emissions include electricity generated by offsite power plants. Natural gas use is measured in units of a thousand British Thermal Units (kBTU) per size metric for each land use subtype and electricity use is measured in kilowatt hours (kWh) per size metric for each land use subtype.

CalEEMod divides building electricity and natural gas use into uses that are subject to Title 24 standards and those that are not. Lighting electricity usage is also calculated as a separate category in CalEEMod. For electricity, Title 24 uses include the major building envelope systems covered by Part 6 (California Energy Code) of Title 24, such as space heating, space cooling, water heating, and ventilation. Non-Title 24 uses include all other end uses, such as appliances, electronics, and other miscellaneous plug-in uses. Because some lighting is not considered as part of the building envelope energy budget, and since a separate mitigation measure is applicable to this end use, CalEEMod makes lighting a separate category.

For natural gas, uses are likewise categorized as Title 24 or Non-Title 24. Title 24 uses include building heating and hot water end uses. Non-Title 24 natural gas uses include cooking and appliances (including pool/spa heaters).

The baseline values are based on the California Energy Commission (CEC) sponsored California Commercial End Use Survey (CEUS) and Residential Appliance Saturation Survey (RASS) studies.

The project will be required to provide rooftop solar panels, or sources of on-site renewable energy, per the latest 2019 CA Energy Code requirements. The Energy Code requires all new residential construction to achieve net-zero emissions associated with electricity usage through the use of on-site renewable sources.

Table 12 shows the total annual expected electricity and natural gas usage for the proposed project.

Table 12
Electricity and Natural Gas Usage

Land Use	Electricity Usage[1] (KWhr/yr)[2]	Natural Gas Usage[1] (KBTU/yr)[2]
Single Family Residential	868,148.00	3,083,280.00
Parking Lot (On-site and Off-site Streets)	140,263.00	0
Total	**1,008,411.0**	**3,083,280**

[1] CalEEMod default unmitigated estimates.

[2] KWhr/yr = Kilowatt Hours per Year
KBTU/yr = Thousand British Thermal Units per Year

4.2.3 Area Source Emissions

Area source emissions are direct sources of emissions that fall under four categories; hearths, consumer products, architectural coatings, and landscaping equipment.

Consumer products are various solvents used in non-industrial applications which emit ROGs during their product use. These typically include cleaning supplies, kitchen aerosols, cosmetics and toiletries. It was assumed that any paints used would meet the current MDAQMD Rule 1113 VOC limit of 50 grams per liter (g/L) for flats, 50 g/L for non-flat, and those used for traffic coating would meet the 100 g/L VOC limit.

4.2.4 Other Sources of Operational Emissions

Water. Greenhouse gas emissions are generated from the upstream energy required to supply and treat the water used on the project site. Indirect emissions from water usage are counted as part of the project's overall impact. The estimated water usage for the project is reported in Table 13 and recommendations to reduce water usage are discussed in Section 6.0.

Waste. CalEEMod calculates the indirect GHG emissions associated with waste that is disposed of at a landfill. The program uses annual waste disposal rates from the California Department of Resources Recycling and Recovery (CalRecycle) data for individual land uses. The program quantifies the GHG emissions associated with the decomposition of the waste which generates methane based on the total amount of degradable organic carbon.

The estimated waste generation by the project is reported in Table 13.

Table 13
Operational Water Usage and Waste Generation

Land Use	Water Usage (gallons/year)			Waste Generation (tons/year)[1]
	Indoor	Outdoor	Total	
Single Family Housing	7,101,788.79	4,477,214.67	11,579,003.46	127.92

[1] CalEEMod default estimates.

5.0 Significance Thresholds

5.1 MDAQMD Air Quality and GHG Threshold

The Mojave Desert AQMD California Environmental Quality Act (CEQA) and Federal Conformity Guidelines, August 2016, (MDAQMD Guidelines) establishes air quality and greenhouse gas emissions thresholds for purposes of determining whether a project may have a significant effect on the environment per Section 15002(g) of the Guidelines for implementing CEQA.

According to the MDAQMD Guidelines, any project is significant if it triggers or exceeds the most appropriate evaluation criteria. The District will clarify upon request which threshold is most appropriate for a given project; in general, the emissions comparison (criteria number 1) is sufficient:

1. Generates total emissions (direct and indirect) in excess of the thresholds given in Table 16

2. Generates a violation of any ambient air quality standard when added to the local background

3. Does not conform with the applicable attainment or maintenance plan(s) [8]

4. Exposes sensitive receptors to substantial pollutant concentrations, including those resulting in a cancer risk greater than or equal to 10 in a million and/or a Hazard Index (HI) (non-cancerous) greater than or equal to 1.

A significant project must incorporate mitigation sufficient to reduce its impact to a level that is not significant. A project that cannot be mitigated to a level that is not significant must incorporate all feasible mitigation.

Note that the emission thresholds are given as a daily value and an annual value, so that a multi-phased project (such as a project with a construction phase and a separate operational phase) with phases shorter than one year can be compared to the daily value.

[8] A project is deemed to not exceed this threshold, and hence not be significant, if it is consistent with the existing land use plan. Zoning changes, specific plans, general plan amendments and similar land use plan changes which do not increase dwelling unit density, do not increase vehicle trips, and do not increase vehicle miles traveled are also deemed to not exceed this threshold.

Table 14 lists the significant emissions thresholds for MDAQMD.

Table 14
MDAQMD Significant Emissions Thresholds[1]

Pollutant	Annual Thresholds (tons/year)	Daily Thresholds (lbs/day)
Greenhouse Gases (CO_2e)	100,000	548,000
Carbon Monoxide (CO	100	548
Oxides of Nitrogen (NO_x)	25	137
Volatile Organic Compounds (VOC)	25	137
Oxides of Sulfur (SO_x)	25	137
Particulate Matter (PM_{10})	15	82
Particulate Matter ($PM_{2.5}$)	12	65
Hydrogen Sulfide (H_2S)	10	54
Lead (Pb)	0.6	3

[1] Source: MDAQMD CEQA and Federal Conformity Guidelines, August 2016

Lead is not included as part of this analysis as the project is not expected to emit lead in any significant measurable quantity and neither is Hydrogen Sulifide, as the project does not include oil or natural gas extraction and processing or geothermal fields, which are the common sources of hydrogen sulfide. Other sources of hydrogen sulfide include petrochemical plants, coke oven plants and kraft paper mills.[9]

5.2 City of Victorville Climate Action Plan

The City has prepared a Climate Action Plan (CAP), which provides a framework for reducing GHG emissions and managing resources to best prepare for a changing climate. In order to determine consistency with the CAP, the City of Victorville provided Screening Tables to aid in measuring the reduction of GHG emissions attributable to certain design and construction measures incorporated into development projects. The CAP establishes

[9] California Air Resources Board. Hydrogen Sulfide & Health. Website accessed November 2020. https://ww2.arb.ca.gov/resources/hydrogen-sulfide-and-health

categories of GHG reduction measures to reduce GHG emissions generated by development projects. Projects that yield at least 45 points are determined to be consistent with the CAP and do not require quantification of project specific GHG emissions. The City of Victorville Residential CAP Checklist has been provided in Appendix B.

6.0 Air Quality Impact Analysis

6.1 Air Quality Emissions

Criteria air pollutants during the construction and operation of the project are quantified using CalEEMod software and compared to the MDAQMD annual and daily thresholds of significance. The annual and daily emissions outputs are provided in Appendix A.

6.1.1 Construction Air Quality Emissions

Table 15 shows the annual tons per year (tons/year) of construction emissions and Table 16 shows daily pounds per day (lbs./day) of construction emissions generated by the project.

Table 15
Annual Construction Air Quality Emissions (tons/year)

Year	VOC	NO_x	CO	SO_2	PM_{10}	$PM_{2.5}$
2022	0.04	0.38	0.24	0.00	0.30	0.13
2023	0.34	2.86	3.29	0.01	0.65	0.27
2024	0.91	1.73	2.48	0.01	0.33	0.14
Maximum[1]	**0.91**	**2.86**	**3.29**	**0.01**	**0.65**	**0.27**
MDAQMD Annual Threshold	25	25	100	25	15	12
Exceeds Threshold (?)	No	No	No	No	No	No

[1] Maximum annual emission includes both on-site and off-site emissions.

Table 16
Daily Construction Air Quality Emissions (lbs./day)

Activity	VOC	NO_x	CO	SO_2	PM_{10}	$PM_{2.5}$
Site Preparation	3.25	33.13	20.44	0.04	9.33	5.40
Grading	3.99	49.60	32.52	0.11	6.82	3.43
Building Construction	2.48	17.75	25.22	0.06	3.55	1.45
Paving	1.73	9.56	15.15	0.02	0.64	0.48
Architectural Coating	38.59	1.31	3.29	0.01	0.53	0.19
Maximum[1]	**38.59**	**49.60**	**32.52**	**0.11**	**9.33**	**5.40**
MDAQMD Threshold	137	137	548	137	82	65
Exceeds Threshold (?)	No	No	No	No	No	No

[1] Maximum daily emission during summer and winter; includes both on-site and off-site project emissions.

As shown in Table 15 and Table 16, the project's annual and daily construction emissions will be below the applicable MDAQMD thresholds of significance.

6.1.2 Operational Air Quality Emissions

Table 17 shows the annual tons per year (tons/year) of operational emissions and Table 18 shows daily pounds per day (lbs./day) of operational emissions generated by the project.

Table 17
Annual Operational Air Quality Emissions (tons/year)

Source	VOC	NO_x	CO	SO_2	PM_{10}	$PM_{2.5}$
Area Sources	1.19	0.04	1.82	0.00	0.11	0.11
Energy Sources	0.02	0.14	0.06	0.00	0.01	0.01
Mobile Source	0.53	0.67	5.59	0.01	1.31	0.35
Total	**1.74**	**0.86**	**7.46**	**0.01**	**1.43**	**0.48**
MDAQMD Threshold	25	25	100	25	15	12
Exceeds Threshold (?)	No	No	No	No	No	No

[1] Total annual emission includes both on-site and off-site sources.

Table 18
Daily Operational Air Quality Emissions (lbs./day)

Source	VOC	NO_x	CO	SO_2	PM_{10}	$PM_{2.5}$
Mobile Sources	33.23	2.37	64.42	0.14	8.38	8.38
Energy Sources	0.09	0.78	0.33	0.00	0.06	0.06
Area Sources	3.43	3.66	33.56	0.07	7.43	2.01
Total	**36.75**	**6.80**	**98.32**	**0.22**	**15.87**	**10.45**
MDAQMD Threshold	137	137	548	137	82	65
Exceeds Threshold (?)	No	No	No	No	No	No

[1] Maximum daily emission during summer or winter; includes both on-site and off-site project emissions.

As shown in Table 17 and Table 18, the project's annual and daily operational emissions will be below the applicable MDAQMD thresholds of significance.

6.2 Fugitive Dust Control

The Project is required to comply with regional rules that assist in reducing short-term air pollutant emissions associated with suspended particulate matter, also known as fugitive dust. Fugitive dust emissions are commonly associated with land clearing activities, cut-and-fill grading operations, and exposure of soils to the air and wind. MDAQMD Rule 403 requires that fugitive dust is controlled with best-available control measures so that the presence of such dust does not remain visible in the atmosphere beyond the property line of the emission source. In addition, MDAQMD Rules 403 require implementation of dust suppression techniques to prevent fugitive dust from creating a nuisance off site.

To ensure compliance with the fugitive dust control measures and to reduce potential exposure of sensitive receptors to substantial pollution concentrations, the following project design features are recommended to be included as part of the conditions of the project:

DF-1 Follow the MDAQMD rules and requirements with regards to fugitive dust control, which includes, but is not limited to the following:

1. All active construction areas shall be watered two (2) times daily.
2. Speed on unpaved roads shall be reduced to less than 15 mph.

3. Any visible dirt deposition on any public roadway shall be swept or washed at the site access points within 30 minutes.
4. Any on-site stockpiles of debris, dirt or other dusty material shall be covered or watered twice daily.
5. All operations on any unpaved surface shall be suspended if winds exceed 15 mph.
6. Access points shall be washed or swept daily.
7. Construction sites shall be sandbagged for erosion control.
8. Apply nontoxic chemical soil stabilizers according to manufacturers' specifications to all inactive construction areas (previously graded areas inactive for 10 days or more).
9. Cover all trucks hauling dirt, sand, soil, or other loose materials, and maintain at least 2 feet of freeboard space in accordance with the requirements of California Vehicle Code (CVC) section 23114.
10. Pave or gravel construction access roads at least 100 feet onto the site from the main road and use gravel aprons at truck exits.
11. Replace the ground cover of disturbed areas as quickly possible.

6.3 Toxic Air Contaminants

The primary source of toxic air contaminants (TACs) associated with the project would include diesel particulate matter (DPM) emitted from the use of diesel powered construction equipment and on-road vehicles powered by diesel engines.

MDAQMD Guidelines indicates that a project may result in a significant impact if it exposes sensitive receptors to substantial pollutant concentrations, including those resulting in a cancer risk greater than or equal to 10 in a million and/or a Hazard Index (HI) (non-cancerous) greater than or equal to 1.

The following project types proposed for sites within the specified distance to an existing or planned (zoned) sensitive receptor land use must be evaluated for potential exposure of substantial pollution concentrations.

- Any industrial project within 1,000 feet of a sensitive receptor.
- A distribution center (40 or more trucks per day) within 1,000 feet of a sensitive receptor.

- A major transportation project (50,000 or more vehicles per day) within 1,000 feet of a sensitive receptor.
- A dry cleaner using perchloroethylene within 500 feet of a sensitive receptor.
- A gasoline dispensing facility within 300 feet of a sensitive receptor.

The residential project does not consist of a land use that has been identified by the MDAQMD as potentially significant generator of TACs that could cause the exposure of sensitive receptors to substantial pollutant concentrations. Therefore, since the project is not considered a substation source of stationary pollution, the project's operational impact may be presumed to cause a less than significant impact without the need for further evaluation.

The project will generate DPM during construction from off-road diesel equipment and trucks. The California Office of Environmental Health Hazard Assessment (OEHHA) adopted the Guidance Manual for Preparation of Health Risk Assessments (HRA Guidelines) to provide procedures for use in the Air Toxics Hot Spots Program or for the permitting of existing, new, or modified stationary sources[10]. The HRA Guidelines provide risk factors for DPM based on exposure over a 30-year span. Short-term risk has not been developed for DPM. In addition, MDAQMD does not typically require the evaluation of long-term cancer risk or chronic health impacts for construction operations of a short-term project. Hence, the impacts from short-term exposure to DMP during project construction may be presumed to be less than significant without the need for a detailed HRA study.

To help reduce the potential health risks associated with DPM exposure during construction, the following project design features are recommended.

DF-2 Construction equipment should be maintained in proper tune.

DF-3 All construction vehicles should be prohibited from excessive idling. Excessive idling is defined as five (5) minutes or longer.

DF-4 Minimize the simultaneous operation of multiple construction equipment units.

DF-5 Establish an electricity supply to the construction site and use electric powered equipment instead of diesel-powered equipment or generators, where feasible.

[10] OEHHA. Air Toxics Hot Spots Program. Risk Assessment Guidelines. Guidance for Preparation of Health Risk Assessments. February 2015.

DF-6 Establish staging areas for the construction equipment that are as distant as possible from adjacent sensitive receptors (residential land uses).

DF-7 Use haul trucks with on-road engines instead of off-road engines for on-site hauling.

6.4 Odors

Odors are typically categorized as a nuisance and are regulated under MDAQMD Rule 402. Rule 402 requires that a person shall not discharge from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public, or which endanger the comfort, repose, health or safety of any such persons or the public, or which cause, or have a natural tendency to cause, injury or damage to business or property.

Land uses that commonly receive odor complaints include agricultural uses (farming and livestock), chemical plants, composting operations, dairies, fiberglass molding facilities, food processing plants, landfills, refineries, rail yards, and wastewater treatment plants.

The proposed residential project does not contain land uses that would typically be associated with significant odor emissions. Hence, the project related odors are not expected to meet the criteria of being a nuisance and the impact is considered less than significant.

7.0 Greenhouse Gas Impact Analysis

7.1 Greenhouse Gas Emissions - Construction

Greenhouse gas emissions are estimated for on-site and off-site construction activity using CalEEMod. Table 19 shows the annual construction greenhouse gas emissions in metric tons of carbon dioxide equivalent (MTCO2e/year).

Table 19
Annual Construction Greenhouse Gas Emissions

Year	Annual GHG Emissions ($MTCO_2e$/year)[1]
2022	45.54
2023	815.61
2024	548.97
Maximum	**815.61**

[1] $MTCO_2e$/year = metric tons of carbon dioxide equivalents per year

Table 20 shows the daily construction greenhouse gas emissions in pounds per day of carbon dioxide equivalent (lbs. CO2e/day).

Table 20
Daily Construction Greenhouse Gas Emissions

Year	Daily GHG Emissions (lbs. CO_2e/day)[1]
2022	11,290.68
2023	11,063.34
2024	6,187.72
Maximum	**11,290.68**

[1] lbs. CO_2e/day = pounds of carbon dioxide equivalents per day
[2] Maximum emissions during summer and winter months.

7.2 Greenhouse Gas Emissions - Operation

Greenhouse gas emissions are estimated for on-site and off-site operational activity using CalEEMod. Greenhouse gas emissions from mobile sources, area sources and energy sources are shown in Table 21. CalEEMod report sheets are provided in Appendix A.

Table 21
Annual Operational Greenhouse Gas Emissions

Emission Source	GHG Emissions ($MTCO_2e$/year)[1]
Area	36.80
Energy	345.27
Mobile	1,119.10
Waste	64.33
Water	35.02
Total Annual Emissions	**1,600.52**

[1] $MTCO_2e$/year = metric tons of carbon dioxide equivalents per year

Table 22 shows the daily operational greenhouse gas emissions in pounds per day of carbon dioxide equivalent (lbs. CO2e/day).

Table 22
Daily Operational Greenhouse Gas Emissions

Emission Source	GHG Emissions (lbs. CO_2e/day)[1]
Area	3,096.35
Energy	999.71
Mobile	7,345.31
Waste	388.56
Water	211.52
Total Daily Emissions	**12,041.45**

[1] lbs. CO_2e/day = pounds of carbon dioxide equivalents per day

7.3 Project Consistency with City of Victorville CAP

As shown in Table 21 the project will result in approximately 1,600.52 $MTCO_2e$ per year of operational Greenhouse Gas emissions. The City has prepared a Climate Action Plan (CAP), which provides a framework for reducing GHG emissions and managing resources to best prepare for a changing climate. Projects that yield at least 45 points are determined to be

consistent with the CAP and do not require quantification of project specific GHG emissions.

The screening tables are setup similar to a checklist, with points allocated to certain elements of the project that would contribute to reduced greenhouse gas emissions. If a project garners 45 points (by including enough GHG reducing elements), then the project is consistent with City's plan for reducing emissions. The City of Victorville Residential CAP Checklist has been provided in Appendix B.

Therefore, the project will be required to implement the GHG reduction measures from the CAP Screening Table checklist to ensure it does not conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing emissions of greenhouse gases. The following mitigation measure will be required:

DF-8 Prior to issuance of the building permits, and as a condition of approval, the project shall demonstrate that at least 45 points have been achieved through improvements listed in the City of Victorville Climate Action Plan (CAP) Residential Screening Tables.

The project will also comply with the mandatory requirements of Title 24 part 11 of the California Building Standards Code (CALGreen) and Title 24 Part 6 Building Efficiency Standards to further reduce energy usage and GHG emissions. CALGreen and building code compliance are considered part of the following project's design features:

DF-9 The project will comply with the mandatory requirements of the California Building Standards Code, Title 24, Part 6 (Energy Code) and Part 11 (CALGreen), including, but not limited to:

- Install low flow fixtures and toilets, water efficient irrigation systems, drought tolerant/native landscaping, and reduce the amount of turf.
- Provide the necessary infrastructure to support electric vehicle charging.
- Provide solar installations per the prescribed Energy Design Ratings.

By complying with the goals and policies of the CAP, the project will be compliant with the broader statewide goals for combating climate change, such as those required in the CARB Scoping Plan and SB 32. The purpose of the City's CAP is to ensure compliance with the state's climate initiatives for reducing GHG emissions.

The project will not conflict with an applicable plan, policy or regulation for the purpose of reducing the emissions of greenhouse gases and the impact is considered less than significant.

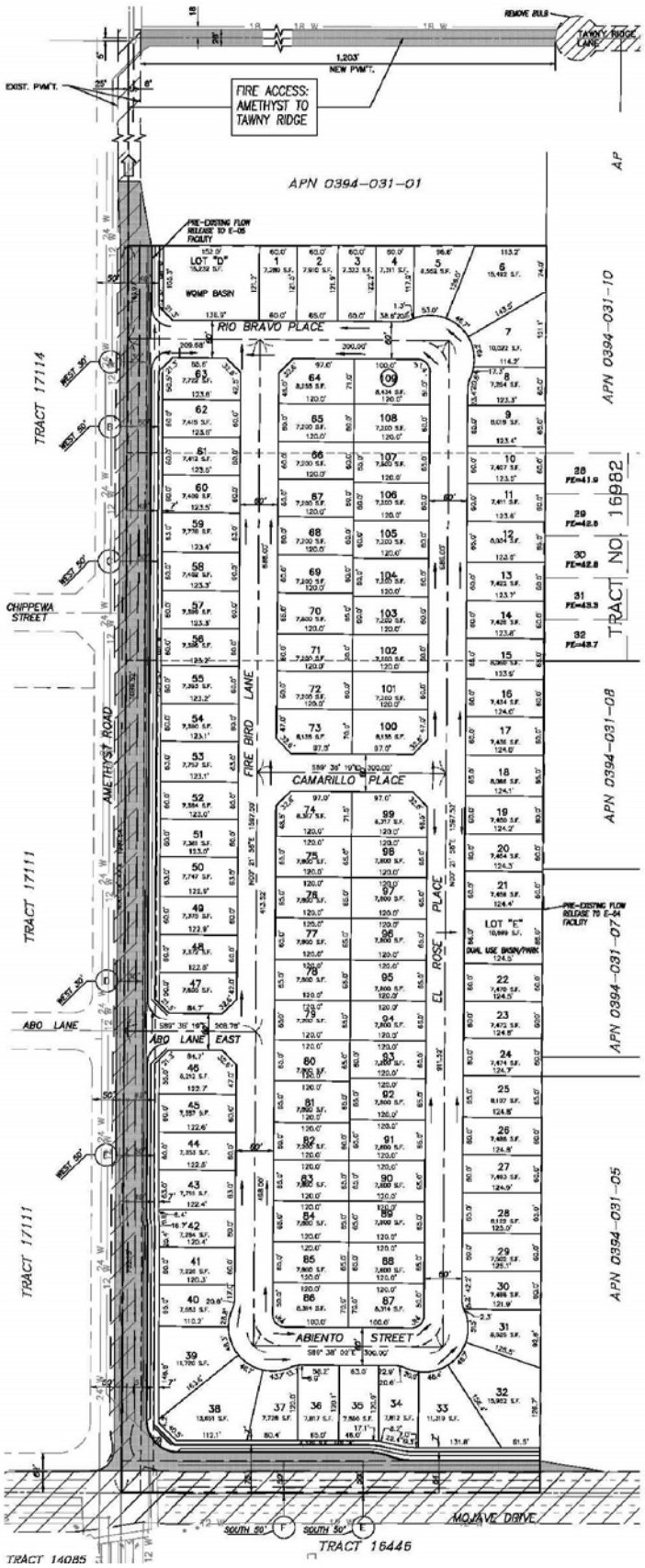
Exhibits

Exhibit A
Location Map

N

Exhibit B

Site Plan



Appendices

Appendix A

CalEEMod Emissions Reports
(Annual, Summer & Winter)

20525 Singe Family Residential Project - San Bernardino-South Coast County, Annual

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

20525 Singe Family Residential Project

San Bernardino-South Coast County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Single Family Housing	109.00	Dwelling Unit	20.90	196,200.00	312
Parking Lot	9.20	Acre	9.20	400,752.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	32
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 - The project consists of constructing 109 single-family residential dwelling units on approximately 30.1 acre site.

Construction Phase - The project site is currently vacant and requires no demolition. Construction phase length has been adjusted to meet opening year 2024.

Grading - The project is expected to export approximately 26,913 CY of earthwork material.

Architectural Coating - The project is required to comply with MDAQMD Rule 1113 VOC limit of 50 grams per liter (g/L) for flats, 50 g/L for non-flat, and those used for traffic coating would meet the 100 g/L VOC limit

Vehicle Trips - Trip generation rates are based on ITE Trip Generation Manual, 11th Edition

Fleet Mix - Operational fleet mix adjusted to equal 2% trucks with GVWR > 10,000 lbs.

Woodstoves -

Construction Off-road Equipment Mitigation - Project will be required to comply with MDAQMD Rule 403 regarding fugitive dust control.Project will be required to comply with MDAQMD Rule 403 regarding fugitive dust control.

20525 Singe Family Residential Project - San Bernardino-South Coast County, Annual

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

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadMoistureContent	0	12
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	500.00	400.00
tblConstructionPhase	PhaseEndDate	5/7/2025	12/18/2024
tblConstructionPhase	PhaseEndDate	1/29/2025	9/11/2024
tblConstructionPhase	PhaseEndDate	3/19/2025	10/30/2024
tblConstructionPhase	PhaseStartDate	3/20/2025	10/31/2024
tblConstructionPhase	PhaseStartDate	1/30/2025	9/12/2024
tblFleetMix	HHD	0.02	8.1500e-003
tblFleetMix	LDA	0.54	0.55
tblFleetMix	LDT1	0.06	0.06
tblFleetMix	LDT2	0.17	0.18
tblFleetMix	LHD1	0.03	0.03
tblFleetMix	LHD2	7.1040e-003	3.3180e-003
tblFleetMix	MCY	0.03	0.03
tblFleetMix	MDV	0.14	0.14
tblFleetMix	MH	4.8300e-003	2.2560e-003
tblFleetMix	MHD	0.01	5.4550e-003
tblFleetMix	OBUS	5.5400e-004	2.5900e-004
tblFleetMix	SBUS	9.5400e-004	4.4600e-004
tblFleetMix	UBUS	2.5100e-004	1.1700e-004
tblGrading	MaterialExported	0.00	26,913.00
tblLandUse	LotAcreage	35.39	20.90
tblVehicleTrips	ST_TR	9.54	9.44
tblVehicleTrips	SU_TR	8.55	8.48
tblVehicleTrips	WD_TR	9.44	9.43

2.0 Emissions Summary

20525 Singe Family Residential Project - San Bernardino-South Coast County, Annual

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

20525 Singe Family Residential Project - San Bernardino-South Coast County, Annual

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

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2022	0.0364	0.3810	0.2358	5.1000e-004	0.2792	0.0179	0.2971	0.1132	0.0165	0.1297	0.0000	44.9967	44.9967	0.0128	7.4000e-004	45.5373
2023	0.3354	2.8578	3.2929	8.7800e-003	0.5351	0.1119	0.6470	0.1689	0.1047	0.2736	0.0000	800.6243	800.6243	0.1105	0.0410	815.6106
2024	0.9094	1.7266	2.4779	5.9600e-003	0.2641	0.0683	0.3323	0.0712	0.0641	0.1353	0.0000	540.6295	540.6295	0.0689	0.0222	548.9698
Maximum	**0.9094**	**2.8578**	**3.2929**	**8.7800e-003**	**0.5351**	**0.1119**	**0.6470**	**0.1689**	**0.1047**	**0.2736**	**0.0000**	**800.6243**	**800.6243**	**0.1105**	**0.0410**	**815.6106**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2022	0.0364	0.3810	0.2358	5.1000e-004	0.1089	0.0179	0.1268	0.0439	0.0165	0.0603	0.0000	44.9967	44.9967	0.0128	7.4000e-004	45.5373
2023	0.3354	2.8578	3.2929	8.7800e-003	0.4100	0.1119	0.5219	0.1201	0.1047	0.2247	0.0000	800.6239	800.6239	0.1105	0.0410	815.6102
2024	0.9094	1.7266	2.4779	5.9600e-003	0.2641	0.0683	0.3323	0.0712	0.0641	0.1353	0.0000	540.6292	540.6292	0.0689	0.0222	548.9695
Maximum	**0.9094**	**2.8578**	**3.2929**	**8.7800e-003**	**0.4100**	**0.1119**	**0.5219**	**0.1201**	**0.1047**	**0.2247**	**0.0000**	**800.6239**	**800.6239**	**0.1105**	**0.0410**	**815.6102**

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

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**27.39**	**0.00**	**23.14**	**33.46**	**0.00**	**21.95**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	**12-1-2022**	**2-28-2023**	1.4072	1.4072
2	**3-1-2023**	**5-31-2023**	0.6699	0.6699
3	**6-1-2023**	**8-31-2023**	0.6589	0.6589
4	**9-1-2023**	**11-30-2023**	0.6548	0.6548
5	**12-1-2023**	**2-29-2024**	0.6321	0.6321
6	**3-1-2024**	**5-31-2024**	0.6232	0.6232
7	**6-1-2024**	**8-31-2024**	0.6216	0.6216
8	**9-1-2024**	**9-30-2024**	0.1509	0.1509
		Highest	1.4072	1.4072

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

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	1.1927	0.0412	1.8166	1.8300e-003		0.1103	0.1103		0.1103	0.1103	11.5779	24.0851	35.6630	0.0363	7.9000e-004	36.8044
Energy	0.0166	0.1421	0.0605	9.1000e-004		0.0115	0.0115		0.0115	0.0115	0.0000	343.3726	343.3726	0.0183	4.8500e-003	345.2729
Mobile	0.5327	0.6725	5.5867	0.0118	1.2981	8.4400e-003	1.3065	0.3458	7.8600e-003	0.3536	0.0000	1,103.4492	1,103.4492	0.0632	0.0472	1,119.0978
Waste						0.0000	0.0000		0.0000	0.0000	25.9666	0.0000	25.9666	1.5346	0.0000	64.3312
Water						0.0000	0.0000		0.0000	0.0000	2.2531	25.2211	27.4741	0.2335	5.7200e-003	35.0179
Total	**1.7420**	**0.8558**	**7.4638**	**0.0145**	**1.2981**	**0.1302**	**1.4283**	**0.3458**	**0.1297**	**0.4754**	**39.7976**	**1,496.1280**	**1,535.9255**	**1.8859**	**0.0586**	**1,600.5242**

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

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	1.1927	0.0412	1.8166	1.8300e-003		0.1103	0.1103		0.1103	0.1103	11.5779	24.0851	35.6630	0.0363	7.9000e-004	36.8044
Energy	0.0166	0.1421	0.0605	9.1000e-004		0.0115	0.0115		0.0115	0.0115	0.0000	343.3726	343.3726	0.0183	4.8500e-003	345.2729
Mobile	0.5327	0.6725	5.5867	0.0118	1.2981	8.4400e-003	1.3065	0.3458	7.8600e-003	0.3536	0.0000	1,103.4492	1,103.4492	0.0632	0.0472	1,119.0978
Waste						0.0000	0.0000		0.0000	0.0000	25.9666	0.0000	25.9666	1.5346	0.0000	64.3312
Water						0.0000	0.0000		0.0000	0.0000	2.2531	25.2211	27.4741	0.2335	5.7200e-003	35.0179
Total	**1.7420**	**0.8558**	**7.4638**	**0.0145**	**1.2981**	**0.1302**	**1.4283**	**0.3458**	**0.1297**	**0.4754**	**39.7976**	**1,496.1280**	**1,535.9255**	**1.8859**	**0.0586**	**1,600.5242**

	ROG	NOx	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	12/1/2022	12/28/2022	5	20	
2	Grading	Grading	12/29/2022	3/1/2023	5	45	
3	Building Construction	Building Construction	3/2/2023	9/11/2024	5	400	

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

4	Paving	Paving	9/12/2024	10/30/2024	5	35	
5	Architectural Coating	Architectural Coating	10/31/2024	12/18/2024	5	35	

Acres of Grading (Site Preparation Phase): 30

Acres of Grading (Grading Phase): 135

Acres of Paving: 9.2

Residential Indoor: 397,305; Residential Outdoor: 132,435; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 24,045 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Building Construction	Cranes	1	7.00	231	0.29
Grading	Excavators	2	8.00	158	0.38
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Grading	Graders	1	8.00	187	0.41
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Grading	Scrapers	2	8.00	367	0.48
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45

Trips and VMT

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

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	3,364.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	208.00	77.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	42.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Soil Stabilizer

Replace Ground Cover

Water Exposed Area

Water Unpaved Roads

Reduce Vehicle Speed on Unpaved Roads

3.2 Site Preparation - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1966	0.0000	0.1966	0.1010	0.0000	0.1010	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0317	0.3308	0.1970	3.8000e-004		0.0161	0.0161		0.0148	0.0148	0.0000	33.4394	33.4394	0.0108	0.0000	33.7098
Total	**0.0317**	**0.3308**	**0.1970**	**3.8000e-004**	**0.1966**	**0.0161**	**0.2127**	**0.1010**	**0.0148**	**0.1159**	**0.0000**	**33.4394**	**33.4394**	**0.0108**	**0.0000**	**33.7098**

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

3.2 Site Preparation - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.8000e-004	5.3000e-004	6.3900e-003	2.0000e-005	1.9700e-003	1.0000e-005	1.9800e-003	5.2000e-004	1.0000e-005	5.3000e-004	0.0000	1.5832	1.5832	5.0000e-005	5.0000e-005	1.5978
Total	**6.8000e-004**	**5.3000e-004**	**6.3900e-003**	**2.0000e-005**	**1.9700e-003**	**1.0000e-005**	**1.9800e-003**	**5.2000e-004**	**1.0000e-005**	**5.3000e-004**	**0.0000**	**1.5832**	**1.5832**	**5.0000e-005**	**5.0000e-005**	**1.5978**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0752	0.0000	0.0752	0.0386	0.0000	0.0386	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0317	0.3308	0.1970	3.8000e-004		0.0161	0.0161		0.0148	0.0148	0.0000	33.4394	33.4394	0.0108	0.0000	33.7097
Total	**0.0317**	**0.3308**	**0.1970**	**3.8000e-004**	**0.0752**	**0.0161**	**0.0913**	**0.0386**	**0.0148**	**0.0535**	**0.0000**	**33.4394**	**33.4394**	**0.0108**	**0.0000**	**33.7097**

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

3.2 Site Preparation - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.8000e-004	5.3000e-004	6.3900e-003	2.0000e-005	1.9700e-003	1.0000e-005	1.9800e-003	5.2000e-004	1.0000e-005	5.3000e-004	0.0000	1.5832	1.5832	5.0000e-005	5.0000e-005	1.5978
Total	**6.8000e-004**	**5.3000e-004**	**6.3900e-003**	**2.0000e-005**	**1.9700e-003**	**1.0000e-005**	**1.9800e-003**	**5.2000e-004**	**1.0000e-005**	**5.3000e-004**	**0.0000**	**1.5832**	**1.5832**	**5.0000e-005**	**5.0000e-005**	**1.5978**

3.3 Grading - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0791	0.0000	0.0791	0.0113	0.0000	0.0113	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.6200e-003	0.0388	0.0290	6.0000e-005		1.6300e-003	1.6300e-003		1.5000e-003	1.5000e-003	0.0000	5.4535	5.4535	1.7600e-003	0.0000	5.4976
Total	**3.6200e-003**	**0.0388**	**0.0290**	**6.0000e-005**	**0.0791**	**1.6300e-003**	**0.0808**	**0.0113**	**1.5000e-003**	**0.0128**	**0.0000**	**5.4535**	**5.4535**	**1.7600e-003**	**0.0000**	**5.4976**

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

3.3 Grading - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	2.8000e-004	0.0108	2.6800e-003	4.0000e-005	1.2900e-003	1.1000e-004	1.3900e-003	3.5000e-004	1.0000e-004	4.6000e-004	0.0000	4.3448	4.3448	1.9000e-004	6.9000e-004	4.5546
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	8.0000e-005	6.0000e-005	7.1000e-004	0.0000	2.2000e-004	0.0000	2.2000e-004	6.0000e-005	0.0000	6.0000e-005	0.0000	0.1759	0.1759	1.0000e-005	1.0000e-005	0.1775
Total	**3.6000e-004**	**0.0108**	**3.3900e-003**	**4.0000e-005**	**1.5100e-003**	**1.1000e-004**	**1.6100e-003**	**4.1000e-004**	**1.0000e-004**	**5.2000e-004**	**0.0000**	**4.5207**	**4.5207**	**2.0000e-004**	**7.0000e-004**	**4.7322**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0303	0.0000	0.0303	4.3100e-003	0.0000	4.3100e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.6200e-003	0.0388	0.0290	6.0000e-005		1.6300e-003	1.6300e-003		1.5000e-003	1.5000e-003	0.0000	5.4535	5.4535	1.7600e-003	0.0000	5.4976
Total	**3.6200e-003**	**0.0388**	**0.0290**	**6.0000e-005**	**0.0303**	**1.6300e-003**	**0.0319**	**4.3100e-003**	**1.5000e-003**	**5.8100e-003**	**0.0000**	**5.4535**	**5.4535**	**1.7600e-003**	**0.0000**	**5.4976**

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3.3 Grading - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	2.8000e-004	0.0108	2.6800e-003	4.0000e-005	1.2900e-003	1.1000e-004	1.3900e-003	3.5000e-004	1.0000e-004	4.6000e-004	0.0000	4.3448	4.3448	1.9000e-004	6.9000e-004	4.5546
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	8.0000e-005	6.0000e-005	7.1000e-004	0.0000	2.2000e-004	0.0000	2.2000e-004	6.0000e-005	0.0000	6.0000e-005	0.0000	0.1759	0.1759	1.0000e-005	1.0000e-005	0.1775
Total	**3.6000e-004**	**0.0108**	**3.3900e-003**	**4.0000e-005**	**1.5100e-003**	**1.1000e-004**	**1.6100e-003**	**4.1000e-004**	**1.0000e-004**	**5.2000e-004**	**0.0000**	**4.5207**	**4.5207**	**2.0000e-004**	**7.0000e-004**	**4.7322**

3.3 Grading - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.2026	0.0000	0.2026	0.0791	0.0000	0.0791	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0714	0.7421	0.6031	1.3300e-003		0.0306	0.0306		0.0282	0.0282	0.0000	117.2507	117.2507	0.0379	0.0000	118.1987
Total	**0.0714**	**0.7421**	**0.6031**	**1.3300e-003**	**0.2026**	**0.0306**	**0.2332**	**0.0791**	**0.0282**	**0.1073**	**0.0000**	**117.2507**	**117.2507**	**0.0379**	**0.0000**	**118.1987**

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3.3 Grading - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	3.7500e-003	0.1869	0.0542	9.0000e-004	0.0277	1.8600e-003	0.0295	7.6000e-003	1.7800e-003	9.3800e-003	0.0000	89.3154	89.3154	3.8000e-003	0.0142	93.6292
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.5000e-003	1.1200e-003	0.0140	4.0000e-005	4.7100e-003	2.0000e-005	4.7400e-003	1.2500e-003	2.0000e-005	1.2700e-003	0.0000	3.6823	3.6823	1.0000e-004	1.0000e-004	3.7145
Total	**5.2500e-003**	**0.1881**	**0.0682**	**9.4000e-004**	**0.0324**	**1.8800e-003**	**0.0343**	**8.8500e-003**	**1.8000e-003**	**0.0107**	**0.0000**	**92.9977**	**92.9977**	**3.9000e-003**	**0.0143**	**97.3438**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0775	0.0000	0.0775	0.0303	0.0000	0.0303	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0714	0.7421	0.6031	1.3300e-003		0.0306	0.0306		0.0282	0.0282	0.0000	117.2506	117.2506	0.0379	0.0000	118.1986
Total	**0.0714**	**0.7421**	**0.6031**	**1.3300e-003**	**0.0775**	**0.0306**	**0.1081**	**0.0303**	**0.0282**	**0.0585**	**0.0000**	**117.2506**	**117.2506**	**0.0379**	**0.0000**	**118.1986**

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

3.3 Grading - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	3.7500e-003	0.1869	0.0542	9.0000e-004	0.0277	1.8600e-003	0.0295	7.6000e-003	1.7800e-003	9.3800e-003	0.0000	89.3154	89.3154	3.8000e-003	0.0142	93.6292
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.5000e-003	1.1200e-003	0.0140	4.0000e-005	4.7100e-003	2.0000e-005	4.7400e-003	1.2500e-003	2.0000e-005	1.2700e-003	0.0000	3.6823	3.6823	1.0000e-004	1.0000e-004	3.7145
Total	**5.2500e-003**	**0.1881**	**0.0682**	**9.4000e-004**	**0.0324**	**1.8800e-003**	**0.0343**	**8.8500e-003**	**1.8000e-003**	**0.0107**	**0.0000**	**92.9977**	**92.9977**	**3.9000e-003**	**0.0143**	**97.3438**

3.4 Building Construction - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1706	1.5608	1.7625	2.9200e-003		0.0759	0.0759		0.0714	0.0714	0.0000	251.5082	251.5082	0.0598	0.0000	253.0039
Total	**0.1706**	**1.5608**	**1.7625**	**2.9200e-003**		**0.0759**	**0.0759**		**0.0714**	**0.0714**	**0.0000**	**251.5082**	**251.5082**	**0.0598**	**0.0000**	**253.0039**

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

3.4 Building Construction - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	9.4200e-003	0.3082	0.1248	1.5000e-003	0.0527	2.2100e-003	0.0549	0.0152	2.1100e-003	0.0173	0.0000	145.6047	145.6047	3.7900e-003	0.0215	152.1118
Worker	0.0786	0.0587	0.7343	2.0800e-003	0.2475	1.2500e-003	0.2487	0.0657	1.1500e-003	0.0669	0.0000	193.2630	193.2630	5.0700e-003	5.2400e-003	194.9524
Total	**0.0881**	**0.3669**	**0.8591**	**3.5800e-003**	**0.3001**	**3.4600e-003**	**0.3036**	**0.0809**	**3.2600e-003**	**0.0842**	**0.0000**	**338.8678**	**338.8678**	**8.8600e-003**	**0.0268**	**347.0642**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1706	1.5608	1.7625	2.9200e-003		0.0759	0.0759		0.0714	0.0714	0.0000	251.5079	251.5079	0.0598	0.0000	253.0036
Total	**0.1706**	**1.5608**	**1.7625**	**2.9200e-003**		**0.0759**	**0.0759**		**0.0714**	**0.0714**	**0.0000**	**251.5079**	**251.5079**	**0.0598**	**0.0000**	**253.0036**

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

3.4 Building Construction - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	9.4200e-003	0.3082	0.1248	1.5000e-003	0.0527	2.2100e-003	0.0549	0.0152	2.1100e-003	0.0173	0.0000	145.6047	145.6047	3.7900e-003	0.0215	152.1118
Worker	0.0786	0.0587	0.7343	2.0800e-003	0.2475	1.2500e-003	0.2487	0.0657	1.1500e-003	0.0669	0.0000	193.2630	193.2630	5.0700e-003	5.2400e-003	194.9524
Total	**0.0881**	**0.3669**	**0.8591**	**3.5800e-003**	**0.3001**	**3.4600e-003**	**0.3036**	**0.0809**	**3.2600e-003**	**0.0842**	**0.0000**	**338.8678**	**338.8678**	**8.8600e-003**	**0.0268**	**347.0642**

3.4 Building Construction - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1347	1.2301	1.4793	2.4700e-003		0.0561	0.0561		0.0528	0.0528	0.0000	212.1419	212.1419	0.0502	0.0000	213.3961
Total	**0.1347**	**1.2301**	**1.4793**	**2.4700e-003**		**0.0561**	**0.0561**		**0.0528**	**0.0528**	**0.0000**	**212.1419**	**212.1419**	**0.0502**	**0.0000**	**213.3961**

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3.4 Building Construction - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	7.7600e-003	0.2623	0.1035	1.2400e-003	0.0444	1.8300e-003	0.0463	0.0128	1.7500e-003	0.0146	0.0000	121.1005	121.1005	3.1000e-003	0.0179	126.5101
Worker	0.0617	0.0439	0.5773	1.7000e-003	0.2087	1.0100e-003	0.2097	0.0554	9.3000e-004	0.0564	0.0000	159.5121	159.5121	3.8800e-003	4.1000e-003	160.8299
Total	**0.0694**	**0.3062**	**0.6808**	**2.9400e-003**	**0.2531**	**2.8400e-003**	**0.2560**	**0.0682**	**2.6800e-003**	**0.0709**	**0.0000**	**280.6127**	**280.6127**	**6.9800e-003**	**0.0220**	**287.3401**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1347	1.2301	1.4793	2.4700e-003		0.0561	0.0561		0.0528	0.0528	0.0000	212.1417	212.1417	0.0502	0.0000	213.3958
Total	**0.1347**	**1.2301**	**1.4793**	**2.4700e-003**		**0.0561**	**0.0561**		**0.0528**	**0.0528**	**0.0000**	**212.1417**	**212.1417**	**0.0502**	**0.0000**	**213.3958**

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

3.4 Building Construction - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	7.7600e-003	0.2623	0.1035	1.2400e-003	0.0444	1.8300e-003	0.0463	0.0128	1.7500e-003	0.0146	0.0000	121.1005	121.1005	3.1000e-003	0.0179	126.5101
Worker	0.0617	0.0439	0.5773	1.7000e-003	0.2087	1.0100e-003	0.2097	0.0554	9.3000e-004	0.0564	0.0000	159.5121	159.5121	3.8800e-003	4.1000e-003	160.8299
Total	**0.0694**	**0.3062**	**0.6808**	**2.9400e-003**	**0.2531**	**2.8400e-003**	**0.2560**	**0.0682**	**2.6800e-003**	**0.0709**	**0.0000**	**280.6127**	**280.6127**	**6.9800e-003**	**0.0220**	**287.3401**

3.5 Paving - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0173	0.1667	0.2560	4.0000e-004		8.2000e-003	8.2000e-003		7.5400e-003	7.5400e-003	0.0000	35.0464	35.0464	0.0113	0.0000	35.3298
Paving	0.0121					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0293**	**0.1667**	**0.2560**	**4.0000e-004**		**8.2000e-003**	**8.2000e-003**		**7.5400e-003**	**7.5400e-003**	**0.0000**	**35.0464**	**35.0464**	**0.0113**	**0.0000**	**35.3298**

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3.5 Paving - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	8.5000e-004	6.1000e-004	7.9600e-003	2.0000e-005	2.8800e-003	1.0000e-005	2.8900e-003	7.6000e-004	1.0000e-005	7.8000e-004	0.0000	2.2001	2.2001	5.0000e-005	6.0000e-005	2.2183
Total	**8.5000e-004**	**6.1000e-004**	**7.9600e-003**	**2.0000e-005**	**2.8800e-003**	**1.0000e-005**	**2.8900e-003**	**7.6000e-004**	**1.0000e-005**	**7.8000e-004**	**0.0000**	**2.2001**	**2.2001**	**5.0000e-005**	**6.0000e-005**	**2.2183**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0173	0.1667	0.2560	4.0000e-004		8.2000e-003	8.2000e-003		7.5400e-003	7.5400e-003	0.0000	35.0464	35.0464	0.0113	0.0000	35.3298
Paving	0.0121					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0293**	**0.1667**	**0.2560**	**4.0000e-004**		**8.2000e-003**	**8.2000e-003**		**7.5400e-003**	**7.5400e-003**	**0.0000**	**35.0464**	**35.0464**	**0.0113**	**0.0000**	**35.3298**

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3.5 Paving - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	8.5000e-004	6.1000e-004	7.9600e-003	2.0000e-005	2.8800e-003	1.0000e-005	2.8900e-003	7.6000e-004	1.0000e-005	7.8000e-004	0.0000	2.2001	2.2001	5.0000e-005	6.0000e-005	2.2183
Total	**8.5000e-004**	**6.1000e-004**	**7.9600e-003**	**2.0000e-005**	**2.8800e-003**	**1.0000e-005**	**2.8900e-003**	**7.6000e-004**	**1.0000e-005**	**7.8000e-004**	**0.0000**	**2.2001**	**2.2001**	**5.0000e-005**	**6.0000e-005**	**2.2183**

3.6 Architectural Coating - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.6696					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.1600e-003	0.0213	0.0317	5.0000e-005		1.0700e-003	1.0700e-003		1.0700e-003	1.0700e-003	0.0000	4.4682	4.4682	2.5000e-004	0.0000	4.4745
Total	**0.6727**	**0.0213**	**0.0317**	**5.0000e-005**		**1.0700e-003**	**1.0700e-003**		**1.0700e-003**	**1.0700e-003**	**0.0000**	**4.4682**	**4.4682**	**2.5000e-004**	**0.0000**	**4.4745**

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3.6 Architectural Coating - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.3800e-003	1.7000e-003	0.0223	7.0000e-005	8.0600e-003	4.0000e-005	8.1000e-003	2.1400e-003	4.0000e-005	2.1800e-003	0.0000	6.1602	6.1602	1.5000e-004	1.6000e-004	6.2111
Total	**2.3800e-003**	**1.7000e-003**	**0.0223**	**7.0000e-005**	**8.0600e-003**	**4.0000e-005**	**8.1000e-003**	**2.1400e-003**	**4.0000e-005**	**2.1800e-003**	**0.0000**	**6.1602**	**6.1602**	**1.5000e-004**	**1.6000e-004**	**6.2111**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.6696					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.1600e-003	0.0213	0.0317	5.0000e-005		1.0700e-003	1.0700e-003		1.0700e-003	1.0700e-003	0.0000	4.4682	4.4682	2.5000e-004	0.0000	4.4745
Total	**0.6727**	**0.0213**	**0.0317**	**5.0000e-005**		**1.0700e-003**	**1.0700e-003**		**1.0700e-003**	**1.0700e-003**	**0.0000**	**4.4682**	**4.4682**	**2.5000e-004**	**0.0000**	**4.4745**

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3.6 Architectural Coating - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.3800e-003	1.7000e-003	0.0223	7.0000e-005	8.0600e-003	4.0000e-005	8.1000e-003	2.1400e-003	4.0000e-005	2.1800e-003	0.0000	6.1602	6.1602	1.5000e-004	1.6000e-004	6.2111
Total	**2.3800e-003**	**1.7000e-003**	**0.0223**	**7.0000e-005**	**8.0600e-003**	**4.0000e-005**	**8.1000e-003**	**2.1400e-003**	**4.0000e-005**	**2.1800e-003**	**0.0000**	**6.1602**	**6.1602**	**1.5000e-004**	**1.6000e-004**	**6.2111**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

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

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.5327	0.6725	5.5867	0.0118	1.2981	8.4400e-003	1.3065	0.3458	7.8600e-003	0.3536	0.0000	1,103.4492	1,103.4492	0.0632	0.0472	1,119.0978
Unmitigated	0.5327	0.6725	5.5867	0.0118	1.2981	8.4400e-003	1.3065	0.3458	7.8600e-003	0.3536	0.0000	1,103.4492	1,103.4492	0.0632	0.0472	1,119.0978

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Parking Lot	0.00	0.00	0.00		
Single Family Housing	1,027.87	1,028.96	924.32	3,462,371	3,462,371
Total	1,027.87	1,028.96	924.32	3,462,371	3,462,371

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
Parking Lot	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
Single Family Housing	14.70	5.90	8.70	40.20	19.20	40.60	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Parking Lot	0.540566	0.056059	0.172680	0.136494	0.026304	0.007104	0.011680	0.017449	0.000554	0.000251	0.025076	0.000954	0.004830
Single Family Housing	0.553454	0.057396	0.176797	0.139748	0.026931	0.003318	0.005455	0.008150	0.000259	0.000117	0.025674	0.000446	0.002256

5.0 Energy Detail

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

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	178.8372	178.8372	0.0151	1.8300e-003	179.7598
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	178.8372	178.8372	0.0151	1.8300e-003	179.7598
NaturalGas Mitigated	0.0166	0.1421	0.0605	9.1000e-004		0.0115	0.0115		0.0115	0.0115	0.0000	164.5354	164.5354	3.1500e-003	3.0200e-003	165.5131
NaturalGas Unmitigated	0.0166	0.1421	0.0605	9.1000e-004		0.0115	0.0115		0.0115	0.0115	0.0000	164.5354	164.5354	3.1500e-003	3.0200e-003	165.5131

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

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Single Family Housing	3.08328e+006	0.0166	0.1421	0.0605	9.1000e-004		0.0115	0.0115		0.0115	0.0115	0.0000	164.5354	164.5354	3.1500e-003	3.0200e-003	165.5131
Total		**0.0166**	**0.1421**	**0.0605**	**9.1000e-004**		**0.0115**	**0.0115**		**0.0115**	**0.0115**	**0.0000**	**164.5354**	**164.5354**	**3.1500e-003**	**3.0200e-003**	**165.5131**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Single Family Housing	3.08328e+006	0.0166	0.1421	0.0605	9.1000e-004		0.0115	0.0115		0.0115	0.0115	0.0000	164.5354	164.5354	3.1500e-003	3.0200e-003	165.5131
Total		**0.0166**	**0.1421**	**0.0605**	**9.1000e-004**		**0.0115**	**0.0115**		**0.0115**	**0.0115**	**0.0000**	**164.5354**	**164.5354**	**3.1500e-003**	**3.0200e-003**	**165.5131**

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

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Parking Lot	140263	24.8751	2.1000e-003	2.5000e-004	25.0034
Single Family Housing	868148	153.9622	0.0130	1.5800e-003	154.7564
Total		**178.8372**	**0.0151**	**1.8300e-003**	**179.7598**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Parking Lot	140263	24.8751	2.1000e-003	2.5000e-004	25.0034
Single Family Housing	868148	153.9622	0.0130	1.5800e-003	154.7564
Total		**178.8372**	**0.0151**	**1.8300e-003**	**179.7598**

6.0 Area Detail

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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	tons/yr										MT/yr					
Mitigated	1.1927	0.0412	1.8166	1.8300e-003		0.1103	0.1103		0.1103	0.1103	11.5779	24.0851	35.6630	0.0363	7.9000e-004	36.8044
Unmitigated	1.1927	0.0412	1.8166	1.8300e-003		0.1103	0.1103		0.1103	0.1103	11.5779	24.0851	35.6630	0.0363	7.9000e-004	36.8044

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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	tons/yr										MT/yr					
Architectural Coating	0.0670					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.7349					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.3570	0.0283	0.6929	1.7700e-003		0.1041	0.1041		0.1041	0.1041	11.5779	22.2487	33.8266	0.0345	7.9000e-004	34.9240
Landscaping	0.0338	0.0130	1.1237	6.0000e-005		6.2300e-003	6.2300e-003		6.2300e-003	6.2300e-003	0.0000	1.8364	1.8364	1.7600e-003	0.0000	1.8805
Total	**1.1927**	**0.0412**	**1.8166**	**1.8300e-003**		**0.1103**	**0.1103**		**0.1103**	**0.1103**	**11.5779**	**24.0851**	**35.6630**	**0.0363**	**7.9000e-004**	**36.8044**

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

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0670					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.7349					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.3570	0.0283	0.6929	1.7700e-003		0.1041	0.1041		0.1041	0.1041	11.5779	22.2487	33.8266	0.0345	7.9000e-004	34.9240
Landscaping	0.0338	0.0130	1.1237	6.0000e-005		6.2300e-003	6.2300e-003		6.2300e-003	6.2300e-003	0.0000	1.8364	1.8364	1.7600e-003	0.0000	1.8805
Total	**1.1927**	**0.0412**	**1.8166**	**1.8300e-003**		**0.1103**	**0.1103**		**0.1103**	**0.1103**	**11.5779**	**24.0851**	**35.6630**	**0.0363**	**7.9000e-004**	**36.8044**

7.0 Water Detail

7.1 Mitigation Measures Water

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

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	27.4741	0.2335	5.7200e-003	35.0179
Unmitigated	27.4741	0.2335	5.7200e-003	35.0179

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	7.10179 / 4.47721	27.4741	0.2335	5.7200e-003	35.0179
Total		**27.4741**	**0.2335**	**5.7200e-003**	**35.0179**

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

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	7.10179 / 4.47721	27.4741	0.2335	5.7200e-003	35.0179
Total		**27.4741**	**0.2335**	**5.7200e-003**	**35.0179**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	25.9666	1.5346	0.0000	64.3312
Unmitigated	25.9666	1.5346	0.0000	64.3312

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

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	127.92	25.9666	1.5346	0.0000	64.3312
Total		**25.9666**	**1.5346**	**0.0000**	**64.3312**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	127.92	25.9666	1.5346	0.0000	64.3312
Total		**25.9666**	**1.5346**	**0.0000**	**64.3312**

9.0 Operational Offroad

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

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

20525 Singe Family Residential Project - San Bernardino-South Coast County, Summer

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

20525 Singe Family Residential Project

San Bernardino-South Coast County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Single Family Housing	109.00	Dwelling Unit	20.90	196,200.00	312
Parking Lot	9.20	Acre	9.20	400,752.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	32
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 - The project consists of constructing 109 single-family residential dwelling units on approximately 30.1 acre site.

Construction Phase - The project site is currently vacant and requires no demolition. Construction phase length has been adjusted to meet opening year 2024.

Grading - The project is expected to export approximately 26,913 CY of earthwork material.

Architectural Coating - The project is required to comply with MDAQMD Rule 1113 VOC limit of 50 grams per liter (g/L) for flats, 50 g/L for non-flat, and those used for traffic coating would meet the 100 g/L VOC limit

Vehicle Trips - Trip generation rates are based on ITE Trip Generation Manual, 11th Edition

Fleet Mix - Operational fleet mix adjusted to equal 2% trucks with GVWR > 10,000 lbs.

Woodstoves -

Construction Off-road Equipment Mitigation - Project will be required to comply with MDAQMD Rule 403 regarding fugitive dust control.Project will be required to comply with MDAQMD Rule 403 regarding fugitive dust control.

20525 Singe Family Residential Project - San Bernardino-South Coast County, Summer

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

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadMoistureContent	0	12
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	500.00	400.00
tblConstructionPhase	PhaseEndDate	5/7/2025	12/18/2024
tblConstructionPhase	PhaseEndDate	1/29/2025	9/11/2024
tblConstructionPhase	PhaseEndDate	3/19/2025	10/30/2024
tblConstructionPhase	PhaseStartDate	3/20/2025	10/31/2024
tblConstructionPhase	PhaseStartDate	1/30/2025	9/12/2024
tblFleetMix	HHD	0.02	8.1500e-003
tblFleetMix	LDA	0.54	0.55
tblFleetMix	LDT1	0.06	0.06
tblFleetMix	LDT2	0.17	0.18
tblFleetMix	LHD1	0.03	0.03
tblFleetMix	LHD2	7.1040e-003	3.3180e-003
tblFleetMix	MCY	0.03	0.03
tblFleetMix	MDV	0.14	0.14
tblFleetMix	MH	4.8300e-003	2.2560e-003
tblFleetMix	MHD	0.01	5.4550e-003
tblFleetMix	OBUS	5.5400e-004	2.5900e-004
tblFleetMix	SBUS	9.5400e-004	4.4600e-004
tblFleetMix	UBUS	2.5100e-004	1.1700e-004
tblGrading	MaterialExported	0.00	26,913.00
tblLandUse	LotAcreage	35.39	20.90
tblVehicleTrips	ST_TR	9.54	9.44
tblVehicleTrips	SU_TR	8.55	8.48
tblVehicleTrips	WD_TR	9.44	9.43

2.0 Emissions Summary

20525 Singe Family Residential Project - San Bernardino-South Coast County, Summer

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

20525 Singe Family Residential Project - San Bernardino-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					
2022	3.9922	49.0857	32.5238	0.1081	19.8582	1.7431	21.4718	10.1558	1.6076	11.6404	0.0000	11,009.1564	11,009.1564	2.1547	0.7639	11,290.6780
2023	3.5800	42.7847	31.3097	0.1061	10.8039	1.5121	12.3160	4.0823	1.3943	5.4765	0.0000	10,792.1361	10,792.1361	2.1444	0.7302	11,063.3383
2024	38.5939	16.6043	24.5858	0.0607	2.8183	0.6443	3.4626	0.7586	0.6062	1.3648	0.0000	6,092.5910	6,092.5910	0.7173	0.2615	6,187.7155
Maximum	**38.5939**	**49.0857**	**32.5238**	**0.1081**	**19.8582**	**1.7431**	**21.4718**	**10.1558**	**1.6076**	**11.6404**	**0.0000**	**11,009.1564**	**11,009.1564**	**2.1547**	**0.7639**	**11,290.6780**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2022	3.9922	49.0857	32.5238	0.1081	7.7200	1.7431	9.3336	3.9176	1.6076	5.4021	0.0000	11,009.1564	11,009.1564	2.1547	0.7639	11,290.6780
2023	3.5800	42.7847	31.3097	0.1061	5.0789	1.5121	6.5910	1.8197	1.3943	3.2140	0.0000	10,792.1361	10,792.1361	2.1444	0.7302	11,063.3382
2024	38.5939	16.6043	24.5858	0.0607	2.8183	0.6443	3.4626	0.7586	0.6062	1.3648	0.0000	6,092.5910	6,092.5910	0.7173	0.2615	6,187.7155
Maximum	**38.5939**	**49.0857**	**32.5238**	**0.1081**	**7.7200**	**1.7431**	**9.3336**	**3.9176**	**1.6076**	**5.4021**	**0.0000**	**11,009.1564**	**11,009.1564**	**2.1547**	**0.7639**	**11,290.6780**

20525 Singe Family Residential Project - San Bernardino-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	53.35	0.00	47.95	56.68	0.00	46.00	0.00	0.00	0.00	0.00	0.00	0.00

20525 Singe Family Residential Project - San Bernardino-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	33.2259	2.3651	64.4220	0.1419		8.3762	8.3762		8.3762	8.3762	1,020.9941	1,978.1942	2,999.1883	3.0603	0.0693	3,096.3477
Energy	0.0911	0.7785	0.3313	4.9700e-003		0.0629	0.0629		0.0629	0.0629		993.8039	993.8039	0.0191	0.0182	999.7095
Mobile	3.4303	3.4367	33.5648	0.0702	7.3831	0.0471	7.4302	1.9636	0.0439	2.0075		7,253.4284	7,253.4284	0.3750	0.2769	7,345.3079
Total	**36.7473**	**6.5803**	**98.3180**	**0.2170**	**7.3831**	**8.4862**	**15.8693**	**1.9636**	**8.4830**	**10.4466**	**1,020.9941**	**10,225.4264**	**11,246.4206**	**3.4544**	**0.3644**	**11,441.3651**

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	33.2259	2.3651	64.4220	0.1419		8.3762	8.3762		8.3762	8.3762	1,020.9941	1,978.1942	2,999.1883	3.0603	0.0693	3,096.3477
Energy	0.0911	0.7785	0.3313	4.9700e-003		0.0629	0.0629		0.0629	0.0629		993.8039	993.8039	0.0191	0.0182	999.7095
Mobile	3.4303	3.4367	33.5648	0.0702	7.3831	0.0471	7.4302	1.9636	0.0439	2.0075		7,253.4284	7,253.4284	0.3750	0.2769	7,345.3079
Total	**36.7473**	**6.5803**	**98.3180**	**0.2170**	**7.3831**	**8.4862**	**15.8693**	**1.9636**	**8.4830**	**10.4466**	**1,020.9941**	**10,225.4264**	**11,246.4206**	**3.4544**	**0.3644**	**11,441.3651**

20525 Singe Family Residential Project - San Bernardino-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	12/1/2022	12/28/2022	5	20	
2	Grading	Grading	12/29/2022	3/1/2023	5	45	
3	Building Construction	Building Construction	3/2/2023	9/11/2024	5	400	
4	Paving	Paving	9/12/2024	10/30/2024	5	35	
5	Architectural Coating	Architectural Coating	10/31/2024	12/18/2024	5	35	

Acres of Grading (Site Preparation Phase): 30

Acres of Grading (Grading Phase): 135

Acres of Paving: 9.2

Residential Indoor: 397,305; Residential Outdoor: 132,435; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 24,045 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Building Construction	Cranes	1	7.00	231	0.29
Grading	Excavators	2	8.00	158	0.38
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Grading	Graders	1	8.00	187	0.41

20525 Singe Family Residential Project - San Bernardino-South Coast County, Summer

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

Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Grading	Scrapers	2	8.00	367	0.48
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	3,364.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	208.00	77.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	42.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Soil Stabilizer

Replace Ground Cover

Water Exposed Area

Water Unpaved Roads

Reduce Vehicle Speed on Unpaved Roads

20525 Singe Family Residential Project - San Bernardino-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 - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					19.6570	0.0000	19.6570	10.1025	0.0000	10.1025			0.0000			0.0000
Off-Road	3.1701	33.0835	19.6978	0.0380		1.6126	1.6126		1.4836	1.4836		3,686.0619	3,686.0619	1.1922		3,715.8655
Total	**3.1701**	**33.0835**	**19.6978**	**0.0380**	**19.6570**	**1.6126**	**21.2696**	**10.1025**	**1.4836**	**11.5860**		**3,686.0619**	**3,686.0619**	**1.1922**		**3,715.8655**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0762	0.0483	0.7415	1.8600e-003	0.2012	1.0600e-003	0.2023	0.0534	9.7000e-004	0.0543		188.9222	188.9222	4.9100e-003	4.7000e-003	190.4461
Total	**0.0762**	**0.0483**	**0.7415**	**1.8600e-003**	**0.2012**	**1.0600e-003**	**0.2023**	**0.0534**	**9.7000e-004**	**0.0543**		**188.9222**	**188.9222**	**4.9100e-003**	**4.7000e-003**	**190.4461**

20525 Singe Family Residential Project - San Bernardino-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 - 2022

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					7.5188	0.0000	7.5188	3.8642	0.0000	3.8642			0.0000			0.0000
Off-Road	3.1701	33.0835	19.6978	0.0380		1.6126	1.6126		1.4836	1.4836	0.0000	3,686.0619	3,686.0619	1.1922		3,715.8655
Total	**3.1701**	**33.0835**	**19.6978**	**0.0380**	**7.5188**	**1.6126**	**9.1314**	**3.8642**	**1.4836**	**5.3478**	**0.0000**	**3,686.0619**	**3,686.0619**	**1.1922**		**3,715.8655**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0762	0.0483	0.7415	1.8600e-003	0.2012	1.0600e-003	0.2023	0.0534	9.7000e-004	0.0543		188.9222	188.9222	4.9100e-003	4.7000e-003	190.4461
Total	**0.0762**	**0.0483**	**0.7415**	**1.8600e-003**	**0.2012**	**1.0600e-003**	**0.2023**	**0.0534**	**9.7000e-004**	**0.0543**		**188.9222**	**188.9222**	**4.9100e-003**	**4.7000e-003**	**190.4461**

20525 Singe Family Residential Project - San Bernardino-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 - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					9.2712	0.0000	9.2712	3.6640	0.0000	3.6640			0.0000			0.0000
Off-Road	3.6248	38.8435	29.0415	0.0621		1.6349	1.6349		1.5041	1.5041		6,011.4105	6,011.4105	1.9442		6,060.0158
Total	**3.6248**	**38.8435**	**29.0415**	**0.0621**	**9.2712**	**1.6349**	**10.9061**	**3.6640**	**1.5041**	**5.1681**		**6,011.4105**	**6,011.4105**	**1.9442**		**6,060.0158**

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	0.2827	10.1886	2.6584	0.0440	1.3092	0.1070	1.4162	0.3590	0.1024	0.4614		4,787.8323	4,787.8323	0.2050	0.7587	5,019.0554
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	0.0847	0.0537	0.8239	2.0600e-003	0.2236	1.1700e-003	0.2247	0.0593	1.0800e-003	0.0604		209.9136	209.9136	5.4600e-003	5.2200e-003	211.6067
Total	**0.3674**	**10.2422**	**3.4823**	**0.0460**	**1.5327**	**0.1082**	**1.6409**	**0.4183**	**0.1035**	**0.5218**		**4,997.7459**	**4,997.7459**	**0.2105**	**0.7639**	**5,230.6621**

20525 Singe Family Residential Project - San Bernardino-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 - 2022

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					3.5462	0.0000	3.5462	1.4015	0.0000	1.4015			0.0000			0.0000
Off-Road	3.6248	38.8435	29.0415	0.0621		1.6349	1.6349		1.5041	1.5041	0.0000	6,011.4105	6,011.4105	1.9442		6,060.0158
Total	**3.6248**	**38.8435**	**29.0415**	**0.0621**	**3.5462**	**1.6349**	**5.1811**	**1.4015**	**1.5041**	**2.9056**	**0.0000**	**6,011.4105**	**6,011.4105**	**1.9442**		**6,060.0158**

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	0.2827	10.1886	2.6584	0.0440	1.3092	0.1070	1.4162	0.3590	0.1024	0.4614		4,787.8323	4,787.8323	0.2050	0.7587	5,019.0554
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	0.0847	0.0537	0.8239	2.0600e-003	0.2236	1.1700e-003	0.2247	0.0593	1.0800e-003	0.0604		209.9136	209.9136	5.4600e-003	5.2200e-003	211.6067
Total	**0.3674**	**10.2422**	**3.4823**	**0.0460**	**1.5327**	**0.1082**	**1.6409**	**0.4183**	**0.1035**	**0.5218**		**4,997.7459**	**4,997.7459**	**0.2105**	**0.7639**	**5,230.6621**

20525 Singe Family Residential Project - San Bernardino-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					9.2712	0.0000	9.2712	3.6640	0.0000	3.6640			0.0000			0.0000
Off-Road	3.3217	34.5156	28.0512	0.0621		1.4245	1.4245		1.3105	1.3105		6,011.4777	6,011.4777	1.9442		6,060.0836
Total	**3.3217**	**34.5156**	**28.0512**	**0.0621**	**9.2712**	**1.4245**	**10.6957**	**3.6640**	**1.3105**	**4.9745**		**6,011.4777**	**6,011.4777**	**1.9442**		**6,060.0836**

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	0.1801	8.2219	2.5043	0.0420	1.3091	0.0865	1.3956	0.3590	0.0827	0.4417		4,576.3247	4,576.3247	0.1953	0.7254	4,797.3671
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	0.0782	0.0472	0.7542	2.0000e-003	0.2236	1.1000e-003	0.2247	0.0593	1.0200e-003	0.0603		204.3337	204.3337	4.8800e-003	4.8000e-003	205.8876
Total	**0.2583**	**8.2691**	**3.2585**	**0.0440**	**1.5327**	**0.0876**	**1.6203**	**0.4183**	**0.0838**	**0.5020**		**4,780.6584**	**4,780.6584**	**0.2001**	**0.7302**	**5,003.2547**

20525 Singe Family Residential Project - San Bernardino-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					3.5462	0.0000	3.5462	1.4015	0.0000	1.4015			0.0000			0.0000
Off-Road	3.3217	34.5156	28.0512	0.0621		1.4245	1.4245		1.3105	1.3105	0.0000	6,011.4777	6,011.4777	1.9442		6,060.0836
Total	**3.3217**	**34.5156**	**28.0512**	**0.0621**	**3.5462**	**1.4245**	**4.9707**	**1.4015**	**1.3105**	**2.7120**	**0.0000**	**6,011.4777**	**6,011.4777**	**1.9442**		**6,060.0836**

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	0.1801	8.2219	2.5043	0.0420	1.3091	0.0865	1.3956	0.3590	0.0827	0.4417		4,576.3247	4,576.3247	0.1953	0.7254	4,797.3671
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	0.0782	0.0472	0.7542	2.0000e-003	0.2236	1.1000e-003	0.2247	0.0593	1.0200e-003	0.0603		204.3337	204.3337	4.8800e-003	4.8000e-003	205.8876
Total	**0.2583**	**8.2691**	**3.2585**	**0.0440**	**1.5327**	**0.0876**	**1.6203**	**0.4183**	**0.0838**	**0.5020**		**4,780.6584**	**4,780.6584**	**0.2001**	**0.7302**	**5,003.2547**

20525 Singe Family Residential Project - San Bernardino-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	0.0901	2.7008	1.1333	0.0138	0.4933	0.0203	0.5136	0.1421	0.0194	0.1615		1,477.7700	1,477.7700	0.0386	0.2182	1,543.7670
Worker	0.8133	0.4908	7.8439	0.0208	2.3250	0.0115	2.3364	0.6166	0.0106	0.6272		2,125.0706	2,125.0706	0.0508	0.0500	2,141.2309
Total	**0.9035**	**3.1916**	**8.9772**	**0.0345**	**2.8183**	**0.0318**	**2.8501**	**0.7586**	**0.0300**	**0.7886**		**3,602.8406**	**3,602.8406**	**0.0894**	**0.2682**	**3,684.9978**

20525 Singe Family Residential Project - San Bernardino-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	1.5728	14.3849	16.2440	0.0269		0.6997	0.6997		0.6584	0.6584	0.0000	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**	**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	0.0901	2.7008	1.1333	0.0138	0.4933	0.0203	0.5136	0.1421	0.0194	0.1615		1,477.7700	1,477.7700	0.0386	0.2182	1,543.7670
Worker	0.8133	0.4908	7.8439	0.0208	2.3250	0.0115	2.3364	0.6166	0.0106	0.6272		2,125.0706	2,125.0706	0.0508	0.0500	2,141.2309
Total	**0.9035**	**3.1916**	**8.9772**	**0.0345**	**2.8183**	**0.0318**	**2.8501**	**0.7586**	**0.0300**	**0.7886**		**3,602.8406**	**3,602.8406**	**0.0894**	**0.2682**	**3,684.9978**

20525 Singe Family Residential Project - San Bernardino-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	0.0881	2.7249	1.1145	0.0136	0.4933	0.0200	0.5133	0.1421	0.0191	0.1612		1,457.4127	1,457.4127	0.0375	0.2152	1,522.4761
Worker	0.7556	0.4357	7.3045	0.0202	2.3250	0.0110	2.3360	0.6166	0.0102	0.6268		2,079.4794	2,079.4794	0.0459	0.0463	2,094.4317
Total	**0.8436**	**3.1605**	**8.4190**	**0.0338**	**2.8183**	**0.0310**	**2.8493**	**0.7586**	**0.0293**	**0.7879**		**3,536.8921**	**3,536.8921**	**0.0834**	**0.2615**	**3,616.9078**

20525 Singe Family Residential Project - San Bernardino-South Coast County, Summer

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

3.4 Building Construction - 2024

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.4716	13.4438	16.1668	0.0270		0.6133	0.6133		0.5769	0.5769	0.0000	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**	**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	0.0881	2.7249	1.1145	0.0136	0.4933	0.0200	0.5133	0.1421	0.0191	0.1612		1,457.4127	1,457.4127	0.0375	0.2152	1,522.4761
Worker	0.7556	0.4357	7.3045	0.0202	2.3250	0.0110	2.3360	0.6166	0.0102	0.6268		2,079.4794	2,079.4794	0.0459	0.0463	2,094.4317
Total	**0.8436**	**3.1605**	**8.4190**	**0.0338**	**2.8183**	**0.0310**	**2.8493**	**0.7586**	**0.0293**	**0.7879**		**3,536.8921**	**3,536.8921**	**0.0834**	**0.2615**	**3,616.9078**

20525 Singe Family Residential Project - San Bernardino-South Coast County, Summer

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

3.5 Paving - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.9882	9.5246	14.6258	0.0228		0.4685	0.4685		0.4310	0.4310		2,207.5472	2,207.5472	0.7140		2,225.3963
Paving	0.6887					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.6769**	**9.5246**	**14.6258**	**0.0228**		**0.4685**	**0.4685**		**0.4310**	**0.4310**		**2,207.5472**	**2,207.5472**	**0.7140**		**2,225.3963**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0545	0.0314	0.5268	1.4500e-003	0.1677	8.0000e-004	0.1685	0.0445	7.3000e-004	0.0452		149.9625	149.9625	3.3100e-003	3.3400e-003	151.0408
Total	**0.0545**	**0.0314**	**0.5268**	**1.4500e-003**	**0.1677**	**8.0000e-004**	**0.1685**	**0.0445**	**7.3000e-004**	**0.0452**		**149.9625**	**149.9625**	**3.3100e-003**	**3.3400e-003**	**151.0408**

20525 Singe Family Residential Project - San Bernardino-South Coast County, Summer

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

3.5 Paving - 2024

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.9882	9.5246	14.6258	0.0228		0.4685	0.4685		0.4310	0.4310	0.0000	2,207.5472	2,207.5472	0.7140		2,225.3963
Paving	0.6887					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.6769**	**9.5246**	**14.6258**	**0.0228**		**0.4685**	**0.4685**		**0.4310**	**0.4310**	**0.0000**	**2,207.5472**	**2,207.5472**	**0.7140**		**2,225.3963**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0545	0.0314	0.5268	1.4500e-003	0.1677	8.0000e-004	0.1685	0.0445	7.3000e-004	0.0452		149.9625	149.9625	3.3100e-003	3.3400e-003	151.0408
Total	**0.0545**	**0.0314**	**0.5268**	**1.4500e-003**	**0.1677**	**8.0000e-004**	**0.1685**	**0.0445**	**7.3000e-004**	**0.0452**		**149.9625**	**149.9625**	**3.3100e-003**	**3.3400e-003**	**151.0408**

20525 Singe Family Residential Project - San Bernardino-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	38.2606					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	**38.4414**	**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	0.1526	0.0880	1.4750	4.0700e-003	0.4695	2.2300e-003	0.4717	0.1245	2.0500e-003	0.1266		419.8949	419.8949	9.2700e-003	9.3500e-003	422.9141
Total	**0.1526**	**0.0880**	**1.4750**	**4.0700e-003**	**0.4695**	**2.2300e-003**	**0.4717**	**0.1245**	**2.0500e-003**	**0.1266**		**419.8949**	**419.8949**	**9.2700e-003**	**9.3500e-003**	**422.9141**

20525 Singe Family Residential Project - San Bernardino-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	38.2606					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	0.0000	281.4481	281.4481	0.0159		281.8443
Total	**38.4414**	**1.2188**	**1.8101**	**2.9700e-003**		**0.0609**	**0.0609**		**0.0609**	**0.0609**	**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	0.1526	0.0880	1.4750	4.0700e-003	0.4695	2.2300e-003	0.4717	0.1245	2.0500e-003	0.1266		419.8949	419.8949	9.2700e-003	9.3500e-003	422.9141
Total	**0.1526**	**0.0880**	**1.4750**	**4.0700e-003**	**0.4695**	**2.2300e-003**	**0.4717**	**0.1245**	**2.0500e-003**	**0.1266**		**419.8949**	**419.8949**	**9.2700e-003**	**9.3500e-003**	**422.9141**

20525 Singe Family Residential Project - San Bernardino-South Coast County, Summer

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

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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	3.4303	3.4367	33.5648	0.0702	7.3831	0.0471	7.4302	1.9636	0.0439	2.0075		7,253.4284	7,253.4284	0.3750	0.2769	7,345.3079
Unmitigated	3.4303	3.4367	33.5648	0.0702	7.3831	0.0471	7.4302	1.9636	0.0439	2.0075		7,253.4284	7,253.4284	0.3750	0.2769	7,345.3079

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Parking Lot	0.00	0.00	0.00		
Single Family Housing	1,027.87	1,028.96	924.32	3,462,371	3,462,371
Total	1,027.87	1,028.96	924.32	3,462,371	3,462,371

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
Parking Lot	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
Single Family Housing	14.70	5.90	8.70	40.20	19.20	40.60	86	11	3

4.4 Fleet Mix

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
Parking Lot	0.540566	0.056059	0.172680	0.136494	0.026304	0.007104	0.011680	0.017449	0.000554	0.000251	0.025076	0.000954	0.004830
Single Family Housing	0.553454	0.057396	0.176797	0.139748	0.026931	0.003318	0.005455	0.008150	0.000259	0.000117	0.025674	0.000446	0.002256

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	0.0911	0.7785	0.3313	4.9700e-003		0.0629	0.0629		0.0629	0.0629		993.8039	993.8039	0.0191	0.0182	999.7095
NaturalGas Unmitigated	0.0911	0.7785	0.3313	4.9700e-003		0.0629	0.0629		0.0629	0.0629		993.8039	993.8039	0.0191	0.0182	999.7095

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					
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
Single Family Housing	8447.33	0.0911	0.7785	0.3313	4.9700e-003		0.0629	0.0629		0.0629	0.0629		993.8039	993.8039	0.0191	0.0182	999.7095
Total		**0.0911**	**0.7785**	**0.3313**	**4.9700e-003**		**0.0629**	**0.0629**		**0.0629**	**0.0629**		**993.8039**	**993.8039**	**0.0191**	**0.0182**	**999.7095**

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					
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
Single Family Housing	8.44733	0.0911	0.7785	0.3313	4.9700e-003		0.0629	0.0629		0.0629	0.0629		993.8039	993.8039	0.0191	0.0182	999.7095
Total		**0.0911**	**0.7785**	**0.3313**	**4.9700e-003**		**0.0629**	**0.0629**		**0.0629**	**0.0629**		**993.8039**	**993.8039**	**0.0191**	**0.0182**	**999.7095**

6.0 Area Detail

20525 Singe Family Residential Project - San Bernardino-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	33.2259	2.3651	64.4220	0.1419		8.3762	8.3762		8.3762	8.3762	1,020.9941	1,978.1942	2,999.1883	3.0603	0.0693	3,096.3477
Unmitigated	33.2259	2.3651	64.4220	0.1419		8.3762	8.3762		8.3762	8.3762	1,020.9941	1,978.1942	2,999.1883	3.0603	0.0693	3,096.3477

20525 Singe Family Residential Project - San Bernardino-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	0.3669					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	4.0267					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	28.5619	2.2616	55.4322	0.1414		8.3263	8.3263		8.3263	8.3263	1,020.9941	1,962.0000	2,982.9941	3.0448	0.0693	3,079.7649
Landscaping	0.2704	0.1036	8.9898	4.7000e-004		0.0498	0.0498		0.0498	0.0498		16.1942	16.1942	0.0155		16.5828
Total	**33.2259**	**2.3652**	**64.4219**	**0.1419**		**8.3762**	**8.3762**		**8.3762**	**8.3762**	**1,020.9941**	**1,978.1942**	**2,999.1883**	**3.0603**	**0.0693**	**3,096.3477**

20525 Singe Family Residential Project - San Bernardino-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

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	0.3669					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	4.0267					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	28.5619	2.2616	55.4322	0.1414		8.3263	8.3263		8.3263	8.3263	1,020.9941	1,962.0000	2,982.9941	3.0448	0.0693	3,079.7649
Landscaping	0.2704	0.1036	8.9898	4.7000e-004		0.0498	0.0498		0.0498	0.0498		16.1942	16.1942	0.0155		16.5828
Total	**33.2259**	**2.3652**	**64.4219**	**0.1419**		**8.3762**	**8.3762**		**8.3762**	**8.3762**	**1,020.9941**	**1,978.1942**	**2,999.1883**	**3.0603**	**0.0693**	**3,096.3477**

7.0 Water Detail

7.1 Mitigation Measures Water

20525 Singe Family Residential Project - San Bernardino-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

20525 Singe Family Residential Project - San Bernardino-South Coast County, Winter

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

20525 Singe Family Residential Project

San Bernardino-South Coast County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Single Family Housing	109.00	Dwelling Unit	20.90	196,200.00	312
Parking Lot	9.20	Acre	9.20	400,752.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	32
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 - The project consists of constructing 109 single-family residential dwelling units on approximately 30.1 acre site.

Construction Phase - The project site is currently vacant and requires no demolition. Construction phase length has been adjusted to meet opening year 2024.

Grading - The project is expected to export approximately 26,913 CY of earthwork material.

Architectural Coating - The project is required to comply with MDAQMD Rule 1113 VOC limit of 50 grams per liter (g/L) for flats, 50 g/L for non-flat, and those used for traffic coating would meet the 100 g/L VOC limit

Vehicle Trips - Trip generation rates are based on ITE Trip Generation Manual, 11th Edition

Fleet Mix - Operational fleet mix adjusted to equal 2% trucks with GVWR > 10,000 lbs.

Woodstoves -

Construction Off-road Equipment Mitigation - Project will be required to comply with MDAQMD Rule 403 regarding fugitive dust control.Project will be required to comply with MDAQMD Rule 403 regarding fugitive dust control.

20525 Singe Family Residential Project - San Bernardino-South Coast County, Winter

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

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadMoistureContent	0	12
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	500.00	400.00
tblConstructionPhase	PhaseEndDate	5/7/2025	12/18/2024
tblConstructionPhase	PhaseEndDate	1/29/2025	9/11/2024
tblConstructionPhase	PhaseEndDate	3/19/2025	10/30/2024
tblConstructionPhase	PhaseStartDate	3/20/2025	10/31/2024
tblConstructionPhase	PhaseStartDate	1/30/2025	9/12/2024
tblFleetMix	HHD	0.02	8.1500e-003
tblFleetMix	LDA	0.54	0.55
tblFleetMix	LDT1	0.06	0.06
tblFleetMix	LDT2	0.17	0.18
tblFleetMix	LHD1	0.03	0.03
tblFleetMix	LHD2	7.1040e-003	3.3180e-003
tblFleetMix	MCY	0.03	0.03
tblFleetMix	MDV	0.14	0.14
tblFleetMix	MH	4.8300e-003	2.2560e-003
tblFleetMix	MHD	0.01	5.4550e-003
tblFleetMix	OBUS	5.5400e-004	2.5900e-004
tblFleetMix	SBUS	9.5400e-004	4.4600e-004
tblFleetMix	UBUS	2.5100e-004	1.1700e-004
tblGrading	MaterialExported	0.00	26,913.00
tblLandUse	LotAcreage	35.39	20.90
tblVehicleTrips	ST_TR	9.54	9.44
tblVehicleTrips	SU_TR	8.55	8.48
tblVehicleTrips	WD_TR	9.44	9.43

2.0 Emissions Summary

20525 Singe Family Residential Project - San Bernardino-South Coast County, Winter

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

20525 Singe Family Residential Project - San Bernardino-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					
2022	3.9773	49.5974	32.4367	0.1080	19.8582	1.7433	21.4718	10.1558	1.6077	11.6404	0.0000	10,992.9354	10,992.9354	2.1541	0.7647	11,274.6619
2023	3.5636	43.2325	31.2214	0.1060	10.8039	1.5122	12.3161	4.0823	1.3944	5.4767	0.0000	10,779.8290	10,779.8290	2.1437	0.7314	11,051.3858
2024	38.5887	16.7795	23.3347	0.0588	2.8183	0.6444	3.4627	0.7586	0.6063	1.3649	0.0000	5,901.0397	5,901.0397	0.7173	0.2637	5,996.7966
Maximum	**38.5887**	**49.5974**	**32.4367**	**0.1080**	**19.8582**	**1.7433**	**21.4718**	**10.1558**	**1.6077**	**11.6404**	**0.0000**	**10,992.9354**	**10,992.9354**	**2.1541**	**0.7647**	**11,274.6619**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2022	3.9773	49.5974	32.4367	0.1080	7.7200	1.7433	9.3336	3.9176	1.6077	5.4021	0.0000	10,992.9354	10,992.9354	2.1541	0.7647	11,274.6619
2023	3.5636	43.2325	31.2214	0.1060	5.0789	1.5122	6.5911	1.8197	1.3944	3.2142	0.0000	10,779.8290	10,779.8290	2.1437	0.7314	11,051.3858
2024	38.5887	16.7795	23.3347	0.0588	2.8183	0.6444	3.4627	0.7586	0.6063	1.3649	0.0000	5,901.0397	5,901.0397	0.7173	0.2637	5,996.7966
Maximum	**38.5887**	**49.5974**	**32.4367**	**0.1080**	**7.7200**	**1.7433**	**9.3336**	**3.9176**	**1.6077**	**5.4021**	**0.0000**	**10,992.9354**	**10,992.9354**	**2.1541**	**0.7647**	**11,274.6619**

20525 Singe Family Residential Project - San Bernardino-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	53.35	0.00	47.95	56.68	0.00	46.00	0.00	0.00	0.00	0.00	0.00	0.00

20525 Singe Family Residential Project - San Bernardino-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	33.2259	2.3651	64.4220	0.1419		8.3762	8.3762		8.3762	8.3762	1,020.9941	1,978.1942	2,999.1883	3.0603	0.0693	3,096.3477
Energy	0.0911	0.7785	0.3313	4.9700e-003		0.0629	0.0629		0.0629	0.0629		993.8039	993.8039	0.0191	0.0182	999.7095
Mobile	2.9946	3.6582	29.8982	0.0647	7.3831	0.0472	7.4302	1.9636	0.0439	2.0075		6,686.0820	6,686.0820	0.3843	0.2853	6,780.7206
Total	**36.3116**	**6.8018**	**94.6514**	**0.2115**	**7.3831**	**8.4863**	**15.8693**	**1.9636**	**8.4830**	**10.4466**	**1,020.9941**	**9,658.0801**	**10,679.0742**	**3.4637**	**0.3729**	**10,876.7778**

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	33.2259	2.3651	64.4220	0.1419		8.3762	8.3762		8.3762	8.3762	1,020.9941	1,978.1942	2,999.1883	3.0603	0.0693	3,096.3477
Energy	0.0911	0.7785	0.3313	4.9700e-003		0.0629	0.0629		0.0629	0.0629		993.8039	993.8039	0.0191	0.0182	999.7095
Mobile	2.9946	3.6582	29.8982	0.0647	7.3831	0.0472	7.4302	1.9636	0.0439	2.0075		6,686.0820	6,686.0820	0.3843	0.2853	6,780.7206
Total	**36.3116**	**6.8018**	**94.6514**	**0.2115**	**7.3831**	**8.4863**	**15.8693**	**1.9636**	**8.4830**	**10.4466**	**1,020.9941**	**9,658.0801**	**10,679.0742**	**3.4637**	**0.3729**	**10,876.7778**

20525 Singe Family Residential Project - San Bernardino-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	12/1/2022	12/28/2022	5	20	
2	Grading	Grading	12/29/2022	3/1/2023	5	45	
3	Building Construction	Building Construction	3/2/2023	9/11/2024	5	400	
4	Paving	Paving	9/12/2024	10/30/2024	5	35	
5	Architectural Coating	Architectural Coating	10/31/2024	12/18/2024	5	35	

Acres of Grading (Site Preparation Phase): 30

Acres of Grading (Grading Phase): 135

Acres of Paving: 9.2

Residential Indoor: 397,305; Residential Outdoor: 132,435; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 24,045 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Building Construction	Cranes	1	7.00	231	0.29
Grading	Excavators	2	8.00	158	0.38
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Grading	Graders	1	8.00	187	0.41

20525 Singe Family Residential Project - San Bernardino-South Coast County, Winter

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

Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Grading	Scrapers	2	8.00	367	0.48
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	3,364.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	208.00	77.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	42.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Soil Stabilizer

Replace Ground Cover

Water Exposed Area

Water Unpaved Roads

Reduce Vehicle Speed on Unpaved Roads

20525 Singe Family Residential Project - San Bernardino-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 - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					19.6570	0.0000	19.6570	10.1025	0.0000	10.1025			0.0000			0.0000
Off-Road	3.1701	33.0835	19.6978	0.0380		1.6126	1.6126		1.4836	1.4836		3,686.0619	3,686.0619	1.1922		3,715.8655
Total	**3.1701**	**33.0835**	**19.6978**	**0.0380**	**19.6570**	**1.6126**	**21.2696**	**10.1025**	**1.4836**	**11.5860**		**3,686.0619**	**3,686.0619**	**1.1922**		**3,715.8655**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0732	0.0508	0.6091	1.6800e-003	0.2012	1.0600e-003	0.2023	0.0534	9.7000e-004	0.0543		171.1060	171.1060	4.9000e-003	4.8500e-003	172.6750
Total	**0.0732**	**0.0508**	**0.6091**	**1.6800e-003**	**0.2012**	**1.0600e-003**	**0.2023**	**0.0534**	**9.7000e-004**	**0.0543**		**171.1060**	**171.1060**	**4.9000e-003**	**4.8500e-003**	**172.6750**

20525 Singe Family Residential Project - San Bernardino-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 - 2022

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					7.5188	0.0000	7.5188	3.8642	0.0000	3.8642			0.0000			0.0000
Off-Road	3.1701	33.0835	19.6978	0.0380		1.6126	1.6126		1.4836	1.4836	0.0000	3,686.0619	3,686.0619	1.1922		3,715.8655
Total	**3.1701**	**33.0835**	**19.6978**	**0.0380**	**7.5188**	**1.6126**	**9.1314**	**3.8642**	**1.4836**	**5.3478**	**0.0000**	**3,686.0619**	**3,686.0619**	**1.1922**		**3,715.8655**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0732	0.0508	0.6091	1.6800e-003	0.2012	1.0600e-003	0.2023	0.0534	9.7000e-004	0.0543		171.1060	171.1060	4.9000e-003	4.8500e-003	172.6750
Total	**0.0732**	**0.0508**	**0.6091**	**1.6800e-003**	**0.2012**	**1.0600e-003**	**0.2023**	**0.0534**	**9.7000e-004**	**0.0543**		**171.1060**	**171.1060**	**4.9000e-003**	**4.8500e-003**	**172.6750**

20525 Singe Family Residential Project - San Bernardino-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 - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					9.2712	0.0000	9.2712	3.6640	0.0000	3.6640			0.0000			0.0000
Off-Road	3.6248	38.8435	29.0415	0.0621		1.6349	1.6349		1.5041	1.5041		6,011.4105	6,011.4105	1.9442		6,060.0158
Total	**3.6248**	**38.8435**	**29.0415**	**0.0621**	**9.2712**	**1.6349**	**10.9061**	**3.6640**	**1.5041**	**5.1681**		**6,011.4105**	**6,011.4105**	**1.9442**		**6,060.0158**

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	0.2711	10.6975	2.7184	0.0440	1.3092	0.1072	1.4163	0.3590	0.1026	0.4615		4,791.4070	4,791.4070	0.2044	0.7593	5,022.7849
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	0.0814	0.0564	0.6768	1.8700e-003	0.2236	1.1700e-003	0.2247	0.0593	1.0800e-003	0.0604		190.1178	190.1178	5.4400e-003	5.3900e-003	191.8611
Total	**0.3524**	**10.7540**	**3.3952**	**0.0459**	**1.5327**	**0.1084**	**1.6411**	**0.4183**	**0.1036**	**0.5219**		**4,981.5248**	**4,981.5248**	**0.2099**	**0.7647**	**5,214.6460**

20525 Singe Family Residential Project - San Bernardino-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 - 2022

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					3.5462	0.0000	3.5462	1.4015	0.0000	1.4015			0.0000			0.0000
Off-Road	3.6248	38.8435	29.0415	0.0621		1.6349	1.6349		1.5041	1.5041	0.0000	6,011.4105	6,011.4105	1.9442		6,060.0158
Total	**3.6248**	**38.8435**	**29.0415**	**0.0621**	**3.5462**	**1.6349**	**5.1811**	**1.4015**	**1.5041**	**2.9056**	**0.0000**	**6,011.4105**	**6,011.4105**	**1.9442**		**6,060.0158**

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	0.2711	10.6975	2.7184	0.0440	1.3092	0.1072	1.4163	0.3590	0.1026	0.4615		4,791.4070	4,791.4070	0.2044	0.7593	5,022.7849
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	0.0814	0.0564	0.6768	1.8700e-003	0.2236	1.1700e-003	0.2247	0.0593	1.0800e-003	0.0604		190.1178	190.1178	5.4400e-003	5.3900e-003	191.8611
Total	**0.3524**	**10.7540**	**3.3952**	**0.0459**	**1.5327**	**0.1084**	**1.6411**	**0.4183**	**0.1036**	**0.5219**		**4,981.5248**	**4,981.5248**	**0.2099**	**0.7647**	**5,214.6460**

20525 Singe Family Residential Project - San Bernardino-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					9.2712	0.0000	9.2712	3.6640	0.0000	3.6640			0.0000			0.0000
Off-Road	3.3217	34.5156	28.0512	0.0621		1.4245	1.4245		1.3105	1.3105		6,011.4777	6,011.4777	1.9442		6,060.0836
Total	**3.3217**	**34.5156**	**28.0512**	**0.0621**	**9.2712**	**1.4245**	**10.6957**	**3.6640**	**1.3105**	**4.9745**		**6,011.4777**	**6,011.4777**	**1.9442**		**6,060.0836**

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	0.1665	8.6672	2.5495	0.0421	1.3091	0.0866	1.3957	0.3590	0.0829	0.4418		4,583.2301	4,583.2301	0.1946	0.7265	4,804.5810
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	0.0753	0.0496	0.6208	1.8100e-003	0.2236	1.1000e-003	0.2247	0.0593	1.0200e-003	0.0603		185.1212	185.1212	4.8900e-003	4.9600e-003	186.7212
Total	**0.2419**	**8.7169**	**3.1703**	**0.0439**	**1.5327**	**0.0877**	**1.6204**	**0.4183**	**0.0839**	**0.5021**		**4,768.3513**	**4,768.3513**	**0.1995**	**0.7314**	**4,991.3022**

20525 Singe Family Residential Project - San Bernardino-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					3.5462	0.0000	3.5462	1.4015	0.0000	1.4015			0.0000			0.0000
Off-Road	3.3217	34.5156	28.0512	0.0621		1.4245	1.4245		1.3105	1.3105	0.0000	6,011.4777	6,011.4777	1.9442		6,060.0836
Total	**3.3217**	**34.5156**	**28.0512**	**0.0621**	**3.5462**	**1.4245**	**4.9707**	**1.4015**	**1.3105**	**2.7120**	**0.0000**	**6,011.4777**	**6,011.4777**	**1.9442**		**6,060.0836**

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	0.1665	8.6672	2.5495	0.0421	1.3091	0.0866	1.3957	0.3590	0.0829	0.4418		4,583.2301	4,583.2301	0.1946	0.7265	4,804.5810
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	0.0753	0.0496	0.6208	1.8100e-003	0.2236	1.1000e-003	0.2247	0.0593	1.0200e-003	0.0603		185.1212	185.1212	4.8900e-003	4.9600e-003	186.7212
Total	**0.2419**	**8.7169**	**3.1703**	**0.0439**	**1.5327**	**0.0877**	**1.6204**	**0.4183**	**0.0839**	**0.5021**		**4,768.3513**	**4,768.3513**	**0.1995**	**0.7314**	**4,991.3022**

20525 Singe Family Residential Project - San Bernardino-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	0.0839	2.8528	1.1683	0.0138	0.4933	0.0204	0.5137	0.1421	0.0195	0.1616		1,481.3537	1,481.3537	0.0383	0.2189	1,547.5450
Worker	0.7835	0.5160	6.4559	0.0188	2.3250	0.0115	2.3364	0.6166	0.0106	0.6272		1,925.2599	1,925.2599	0.0508	0.0516	1,941.9005
Total	**0.8673**	**3.3688**	**7.6242**	**0.0326**	**2.8183**	**0.0319**	**2.8501**	**0.7586**	**0.0301**	**0.7887**		**3,406.6137**	**3,406.6137**	**0.0891**	**0.2705**	**3,489.4455**

20525 Singe Family Residential Project - San Bernardino-South Coast County, Winter

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

3.4 Building Construction - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.5728	14.3849	16.2440	0.0269		0.6997	0.6997		0.6584	0.6584	0.0000	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**	**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	0.0839	2.8528	1.1683	0.0138	0.4933	0.0204	0.5137	0.1421	0.0195	0.1616		1,481.3537	1,481.3537	0.0383	0.2189	1,547.5450
Worker	0.7835	0.5160	6.4559	0.0188	2.3250	0.0115	2.3364	0.6166	0.0106	0.6272		1,925.2599	1,925.2599	0.0508	0.0516	1,941.9005
Total	**0.8673**	**3.3688**	**7.6242**	**0.0326**	**2.8183**	**0.0319**	**2.8501**	**0.7586**	**0.0301**	**0.7887**		**3,406.6137**	**3,406.6137**	**0.0891**	**0.2705**	**3,489.4455**

20525 Singe Family Residential Project - San Bernardino-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	0.0818	2.8778	1.1491	0.0136	0.4933	0.0201	0.5134	0.1421	0.0192	0.1612		1,460.9747	1,460.9747	0.0371	0.2159	1,526.2279
Worker	0.7296	0.4579	6.0187	0.0183	2.3250	0.0110	2.3360	0.6166	0.0102	0.6268		1,884.3662	1,884.3662	0.0461	0.0478	1,899.7611
Total	**0.8114**	**3.3357**	**7.1679**	**0.0319**	**2.8183**	**0.0311**	**2.8494**	**0.7586**	**0.0294**	**0.7880**		**3,345.3408**	**3,345.3408**	**0.0832**	**0.2637**	**3,425.9890**

20525 Singe Family Residential Project - San Bernardino-South Coast County, Winter

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

3.4 Building Construction - 2024

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.4716	13.4438	16.1668	0.0270		0.6133	0.6133		0.5769	0.5769	0.0000	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**	**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	0.0818	2.8778	1.1491	0.0136	0.4933	0.0201	0.5134	0.1421	0.0192	0.1612		1,460.9747	1,460.9747	0.0371	0.2159	1,526.2279
Worker	0.7296	0.4579	6.0187	0.0183	2.3250	0.0110	2.3360	0.6166	0.0102	0.6268		1,884.3662	1,884.3662	0.0461	0.0478	1,899.7611
Total	**0.8114**	**3.3357**	**7.1679**	**0.0319**	**2.8183**	**0.0311**	**2.8494**	**0.7586**	**0.0294**	**0.7880**		**3,345.3408**	**3,345.3408**	**0.0832**	**0.2637**	**3,425.9890**

20525 Singe Family Residential Project - San Bernardino-South Coast County, Winter

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

3.5 Paving - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.9882	9.5246	14.6258	0.0228		0.4685	0.4685		0.4310	0.4310		2,207.5472	2,207.5472	0.7140		2,225.3963
Paving	0.6887					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.6769**	**9.5246**	**14.6258**	**0.0228**		**0.4685**	**0.4685**		**0.4310**	**0.4310**		**2,207.5472**	**2,207.5472**	**0.7140**		**2,225.3963**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0526	0.0330	0.4340	1.3200e-003	0.1677	8.0000e-004	0.1685	0.0445	7.3000e-004	0.0452		135.8918	135.8918	3.3200e-003	3.4500e-003	137.0020
Total	**0.0526**	**0.0330**	**0.4340**	**1.3200e-003**	**0.1677**	**8.0000e-004**	**0.1685**	**0.0445**	**7.3000e-004**	**0.0452**		**135.8918**	**135.8918**	**3.3200e-003**	**3.4500e-003**	**137.0020**

20525 Singe Family Residential Project - San Bernardino-South Coast County, Winter

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

3.5 Paving - 2024

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.9882	9.5246	14.6258	0.0228		0.4685	0.4685		0.4310	0.4310	0.0000	2,207.5472	2,207.5472	0.7140		2,225.3963
Paving	0.6887					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.6769**	**9.5246**	**14.6258**	**0.0228**		**0.4685**	**0.4685**		**0.4310**	**0.4310**	**0.0000**	**2,207.5472**	**2,207.5472**	**0.7140**		**2,225.3963**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0526	0.0330	0.4340	1.3200e-003	0.1677	8.0000e-004	0.1685	0.0445	7.3000e-004	0.0452		135.8918	135.8918	3.3200e-003	3.4500e-003	137.0020
Total	**0.0526**	**0.0330**	**0.4340**	**1.3200e-003**	**0.1677**	**8.0000e-004**	**0.1685**	**0.0445**	**7.3000e-004**	**0.0452**		**135.8918**	**135.8918**	**3.3200e-003**	**3.4500e-003**	**137.0020**

20525 Singe Family Residential Project - San Bernardino-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	38.2606					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	**38.4414**	**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	0.1473	0.0925	1.2153	3.6900e-003	0.4695	2.2300e-003	0.4717	0.1245	2.0500e-003	0.1266		380.4970	380.4970	9.3000e-003	9.6500e-003	383.6056
Total	**0.1473**	**0.0925**	**1.2153**	**3.6900e-003**	**0.4695**	**2.2300e-003**	**0.4717**	**0.1245**	**2.0500e-003**	**0.1266**		**380.4970**	**380.4970**	**9.3000e-003**	**9.6500e-003**	**383.6056**

20525 Singe Family Residential Project - San Bernardino-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	38.2606					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	0.0000	281.4481	281.4481	0.0159		281.8443
Total	**38.4414**	**1.2188**	**1.8101**	**2.9700e-003**		**0.0609**	**0.0609**		**0.0609**	**0.0609**	**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	0.1473	0.0925	1.2153	3.6900e-003	0.4695	2.2300e-003	0.4717	0.1245	2.0500e-003	0.1266		380.4970	380.4970	9.3000e-003	9.6500e-003	383.6056
Total	**0.1473**	**0.0925**	**1.2153**	**3.6900e-003**	**0.4695**	**2.2300e-003**	**0.4717**	**0.1245**	**2.0500e-003**	**0.1266**		**380.4970**	**380.4970**	**9.3000e-003**	**9.6500e-003**	**383.6056**

20525 Singe Family Residential Project - San Bernardino-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	2.9946	3.6582	29.8982	0.0647	7.3831	0.0472	7.4302	1.9636	0.0439	2.0075		6,686.0820	6,686.0820	0.3843	0.2853	6,780.7206
Unmitigated	2.9946	3.6582	29.8982	0.0647	7.3831	0.0472	7.4302	1.9636	0.0439	2.0075		6,686.0820	6,686.0820	0.3843	0.2853	6,780.7206

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Parking Lot	0.00	0.00	0.00		
Single Family Housing	1,027.87	1,028.96	924.32	3,462,371	3,462,371
Total	1,027.87	1,028.96	924.32	3,462,371	3,462,371

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
Parking Lot	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
Single Family Housing	14.70	5.90	8.70	40.20	19.20	40.60	86	11	3

4.4 Fleet Mix

20525 Singe Family Residential Project - San Bernardino-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
Parking Lot	0.540566	0.056059	0.172680	0.136494	0.026304	0.007104	0.011680	0.017449	0.000554	0.000251	0.025076	0.000954	0.004830
Single Family Housing	0.553454	0.057396	0.176797	0.139748	0.026931	0.003318	0.005455	0.008150	0.000259	0.000117	0.025674	0.000446	0.002256

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	0.0911	0.7785	0.3313	4.9700e-003		0.0629	0.0629		0.0629	0.0629		993.8039	993.8039	0.0191	0.0182	999.7095
NaturalGas Unmitigated	0.0911	0.7785	0.3313	4.9700e-003		0.0629	0.0629		0.0629	0.0629		993.8039	993.8039	0.0191	0.0182	999.7095

20525 Singe Family Residential Project - San Bernardino-South Coast County, Winter

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

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
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
Single Family Housing	8447.33	0.0911	0.7785	0.3313	4.9700e-003		0.0629	0.0629		0.0629	0.0629		993.8039	993.8039	0.0191	0.0182	999.7095
Total		**0.0911**	**0.7785**	**0.3313**	**4.9700e-003**		**0.0629**	**0.0629**		**0.0629**	**0.0629**		**993.8039**	**993.8039**	**0.0191**	**0.0182**	**999.7095**

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					
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
Single Family Housing	8.44733	0.0911	0.7785	0.3313	4.9700e-003		0.0629	0.0629		0.0629	0.0629		993.8039	993.8039	0.0191	0.0182	999.7095
Total		**0.0911**	**0.7785**	**0.3313**	**4.9700e-003**		**0.0629**	**0.0629**		**0.0629**	**0.0629**		**993.8039**	**993.8039**	**0.0191**	**0.0182**	**999.7095**

6.0 Area Detail

20525 Singe Family Residential Project - San Bernardino-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	33.2259	2.3651	64.4220	0.1419		8.3762	8.3762		8.3762	8.3762	1,020.9941	1,978.1942	2,999.1883	3.0603	0.0693	3,096.3477
Unmitigated	33.2259	2.3651	64.4220	0.1419		8.3762	8.3762		8.3762	8.3762	1,020.9941	1,978.1942	2,999.1883	3.0603	0.0693	3,096.3477

20525 Singe Family Residential Project - San Bernardino-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	0.3669					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	4.0267					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	28.5619	2.2616	55.4322	0.1414		8.3263	8.3263		8.3263	8.3263	1,020.9941	1,962.0000	2,982.9941	3.0448	0.0693	3,079.7649
Landscaping	0.2704	0.1036	8.9898	4.7000e-004		0.0498	0.0498		0.0498	0.0498		16.1942	16.1942	0.0155		16.5828
Total	**33.2259**	**2.3652**	**64.4219**	**0.1419**		**8.3762**	**8.3762**		**8.3762**	**8.3762**	**1,020.9941**	**1,978.1942**	**2,999.1883**	**3.0603**	**0.0693**	**3,096.3477**

20525 Singe Family Residential Project - San Bernardino-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

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	0.3669					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	4.0267					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	28.5619	2.2616	55.4322	0.1414		8.3263	8.3263		8.3263	8.3263	1,020.9941	1,962.0000	2,982.9941	3.0448	0.0693	3,079.7649
Landscaping	0.2704	0.1036	8.9898	4.7000e-004		0.0498	0.0498		0.0498	0.0498		16.1942	16.1942	0.0155		16.5828
Total	**33.2259**	**2.3652**	**64.4219**	**0.1419**		**8.3762**	**8.3762**		**8.3762**	**8.3762**	**1,020.9941**	**1,978.1942**	**2,999.1883**	**3.0603**	**0.0693**	**3,096.3477**

7.0 Water Detail

7.1 Mitigation Measures Water

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

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Appendix B

City of Victorville Climate Action Plan -
Residential Checklist

City of Victorville

Department of Development

Planning ◆ Building ◆ Code Enforcement

14343 Civic Drive
PO Box 5001
Victorville, CA 92393-5001
(760) 955-5135
Fax (760) 269-0070
planning@victorvilleca.gov

Greenhouse Gas Emissions Screening Table Review

Note: This form is to be used only for projects which are subject to CEQA and not exempt from CEQA (i.e. Negative Declaration, Mitigated Negative Declaration or Environmental Impact Report).

GENERAL INFORMATION

Applicant: _____ Contact Name: _____

_____

Address: _____

_____

Telephone No.: _____ Email Address: _____

TYPE OF PROJECT

☐ Residential (Single-Family or Multi-Family) ☐ Commercial or Industrial

PROJECT LOCATION

General Location/Address of Project: _____

Name of Business (if applicable):

Assessor's Parcel No(s): _____

Existing Zoning: _____

PROJECT DESCRIPTION:

_____

_____

_____

Instructions

1. Fill out the appropriate section below for either Residential or Commercial/Industrial.
2. Choose items which the proposed project will incorporate into the development to reach a minimum of 45 points.
3. Do not chose items which are independently required by other laws, codes or the VVMC, such as the California Building Green Code, the Civic Center Sustainability Plan or required infrastructure improvements.
4. For those items listed with a TBD point value, please provide specific information and background studies (i.e. traffic study) for Staff to determine an assigned point value.
5. Submit the Screening Table along with the Planning Commission Review Application.

Residential Section

Feature	Description	Assigned Point Values	Project Points
Reduction Measure PS E1: Residential Energy Efficiency			
Building Envelope			
Insulation	2008 Baseline (walls R-13:, roof/attic: R-30)	0 points	
	Modestly Enhanced Insulation (walls R-13:, roof/attic: R-38)	12 points	
	Enhanced Insulation (rigid wall insulation R-13, roof/attic: R-38)	15 points	
	Greatly Enhanced Insulation (spray foam wall insulated walls R-15 or higher, roof/attic R-38 or higher)	18 points	
Windows	2008 Baseline Windows (0.57 U-factor, 0.4 solar heat gain coefficient (SHGC)	0 points	
	Modestly Enhanced Window Insulation (0.4 U-Factor, 0.32 SHGC)	6 points	
	Enhanced Window Insulation (0.32 U-Factor, 0.25 SHGC)	7 points	
	Greatly Enhanced Window Insulation (0.28 or less U-Factor, 0.22 or less SHGC)	9 points	
Cool Roof	Modest Cool Roof (CRRC Rated 0.15 aged solar reflectance, 0.75 thermal emittance)	10 points	
	Enhanced Cool Roof(CRRC Rated 0.2 aged solar reflectance, 0.75 thermal emittance)	12 points	
	Greatly Enhanced Cool Roof (CRRC Rated 0.35 aged solar reflectance, 0.75 thermal emittance)	14 points	
Air Infiltration	Minimizing leaks in the building envelope is as important as the insulation properties of the building. Insulation does not work effectively if there is excess air leakage.		
	Air barrier applied to exterior walls, calking, and visual inspection such as the HERS Verified Quality Insulation Installation (QII or equivalent)	10 points	
	Blower Door HERS Verified Envelope Leakage or equivalent	8 points	
Thermal Storage of Building	Thermal storage is a design characteristic that helps keep a constant temperature in the building. Common thermal storage devices include strategically placed water filled columns, water storage tanks, and thick masonry walls.		
	Modest Thermal Mass (10% of floor or 10% of walls: 12” or more thick exposed concrete or masonry. No permanently installed floor covering such as carpet, linoleum, wood or other insulating materials)	2 points	
	Enhanced Thermal Mass (20% of floor or 20% of walls: 12” or more thick exposed concrete or masonry. No permanently installed floor covering such as carpet, linoleum, wood or other insulating materials)	4 points	

Feature	Description	Assigned Point Values	Project Points
Indoor Space Efficiencies			
Heating/ Cooling Distribution System	Minimum Duct Insulation (R-4.2 required)	0 points	
	Modest Duct insulation (R-6)	7 points	
	Enhanced Duct Insulation (R-8)	8 points	
	Distribution loss reduction with inspection (HERS Verified Duct Leakage or equivalent)	12 points	
Space Heating/ Cooling Equipment	2008 Minimum HVAC Efficiency (SEER 13/75% AFUE or 7.7 HSPF)	0 points	
	Improved Efficiency HVAC (SEER 14/78% AFUE or 8 HSPF)	4 points	
	High Efficiency HVAC (SEER 15/80% AFUE or 8.5 HSPF)	7 points	
	Very High Efficiency HVAC (SEER 16/82% AFUE or 9 HSPF)	9 points	
Water Heaters	2008 Minimum Efficiency (0.57 Energy Factor)	0 points	
	Improved Efficiency Water Heater (0.675 Energy Factor)	12 points	
	High Efficiency Water Heater (0.72 Energy Factor)	15 points	
	Very High Efficiency Water Heater (0.92 Energy Factor)	18 points	
	Solar Pre-heat System (0.2 Net Solar Fraction)	4 points	
	Enhanced Solar Pre-heat System (0.35 Net Solar Fraction)	8 points	
Daylighting	Daylighting is the ability of each room within the building to provide outside light during the day reducing the need for artificial lighting during daylight hours.		
	All peripheral rooms within the living space have at least one window (required)	0 points	
	All rooms within the living space have daylight (through use of windows, solar tubes, skylights, etc.)	1 points	
	All rooms daylighted	2 points	
Artificial Lighting	2008 Minimum (required)	0 points	
	Efficient Lights (25% of in-unit fixtures considered high efficacy. High efficacy is defined as 40 lumens/watt for 15 watt or less fixtures; 50 lumens/watt for 15-40 watt fixtures, 60 lumens/watt for fixtures >40watt)	8 points	
	High Efficiency Lights (50% of in-unit fixtures are high efficacy)	10 points	
	Very High Efficiency Lights (100% of in-unit fixtures are high efficacy)	12 points	
Appliances	Energy Star Refrigerator (new)	1 points	
	Energy Star Dish Washer (new)	1 points	

Feature	Description	Assigned Point Values	Project Points
	Energy Star Washing Machine (new)	1 points	
Miscellaneous Residential Building Efficiencies			
Building Placement	North/South alignment of building or other building placement such that the orientation of the buildings optimizes natural heating, cooling, and lighting.	5 point	
Shading	At least 90% of south-facing glazing will be shaded by vegetation or overhangs at noon on Jun 21st.	4 Points	
Energy Star Homes	EPA Energy Star for Homes (version 3 or above)	25 points	
Independent Energy Efficiency Calculations	Provide point values based upon energy efficiency modeling of the Project. Note that engineering data will be required documenting the energy efficiency and point values based upon the proven efficiency beyond Title 24 Energy Efficiency Standards.	TBD	
Other	This allows innovation by the applicant to provide design features that increases the energy efficiency of the project not provided in the table. Note that engineering data will be required documenting the energy efficiency of innovative designs and point values given based upon the proven efficiency beyond Title 24 Energy Efficiency Standards.	TBD	
Existing Residential Retrofits	The applicant may wish to provide energy efficiency retrofit projects to existing residential dwelling units to further the point value of their project. Retrofitting existing residential dwelling units within the City is a key reduction measure that is needed to reach the reduction goal. The potential for an applicant to take advantage of this program will be decided on a case by case basis and must have the approval of the City Planning Department. The decision to allow applicants to ability to participate in this program will be evaluated based upon, but not limited to the following; Will the energy efficiency retrofit project benefit low income or disadvantaged residents? Does the energy efficiency retrofit project fit within the overall assumptions in reduction measures associated with existing residential retrofits? Does the energy efficiency retrofit project provide co-benefits important to the City? Point value will be determined based upon engineering and design criteria of the energy efficiency retrofit project.	TBD	
Reduction Measure PS E2: Residential Renewable Energy Generation			
Photovoltaic	Solar Photovoltaic panels installed on individual homes or in collective neighborhood arrangements such that the total power provided augments:		
	Solar Ready Homes (sturdy roof and solar ready service panel)	2 points	
	10 percent of the power needs of the project	10 points	
	20 percent of the power needs of the project	15 points	
	30 percent of the power needs of the project	20 points	
	40 percent of the power needs of the project	28 points	

Feature	Description	Assigned Point Values	Project Points
	50 percent of the power needs of the project	35 points	
	60 percent of the power needs of the project	38 points	
	70 percent of the power needs of the project	42 points	
	80 percent of the power needs of the project	46 points	
	90 percent of the power needs of the project	52 points	
	100 percent of the power needs of the project	58 points	
Wind turbines	Some areas of the City lend themselves to wind turbine applications. Analysis of the area's capability to support wind turbines should be evaluated prior to choosing this feature. Individual wind turbines at homes or collective neighborhood arrangements of wind turbines such that the total power provided augments:		
	10 percent of the power needs of the project	10 points	
	20 percent of the power needs of the project	15 points	
	30 percent of the power needs of the project	20 points	
	40 percent of the power needs of the project	28 points	
	50 percent of the power needs of the project	35 points	
	60 percent of the power needs of the project	38 points	
	70 percent of the power needs of the project	42 points	
	80 percent of the power needs of the project	46 points	
	90 percent of the power needs of the project	52 points	
	100 percent of the power needs of the project	58 points	
Off-site renewable energy project	The applicant may submit a proposal to supply an off-site renewable energy project such as renewable energy retrofits of existing homes that will help implement renewable energy within the City. These off-site renewable energy retrofit project proposals will be determined on a case by case basis and must be accompanied by a detailed plan that documents the quantity of renewable energy the proposal will generate. Point values will be determined based upon the energy generated by the proposal.	TBD	
Other Renewable Energy Generation	The applicant may have innovative designs or unique site circumstances (such as geothermal) that allow the project to generate electricity from renewable energy not provided in the table. The ability to supply other renewable energy and the point values allowed will be decided based upon engineering data documenting the ability to generate electricity.	TBD	

Feature	Description	Assigned Point Values	Project Points
Reduction Measure PS W1: Residential Water Conservation			
Irrigation and Landscaping			
Water Efficient Landscaping	Limit conventional turf to < 50% of required landscape area	0 points	
	Limit conventional turf to < 25% of required landscape area	4 points	
	No conventional turf (warm season turf to < 50% of required landscape area and/or low water using plants are allowed)	6 points	
	Only California Native Plants that requires no irrigation or some supplemental irrigation	8 points	
Water Efficient irrigation systems	Low precipitation spray heads < .75”/hr or drip irrigation	2 point	
	Weather based irrigation control systems or moisture sensors (demonstrate 20% reduced water use)	3 points	
Recycled Water	Recycled connections (purple pipe) to irrigation system on site	6 points	
Water Reuse	Gray water Reuse System collects Gray water from clothes washers, showers and faucets for irrigation use,	12 points	
Storm water Reuse Systems	Innovative on-site stormwater collection, filtration and reuse systems are being developed that provide supplemental irrigation water and provide vector control. These systems can greatly reduce the irrigation needs of a project. Point values for these types of systems will be determined based upon design and engineering data documenting the water savings.	TBD	
Potable Water			
Showers	Water Efficient Showerheads (2.0 gpm)	3 points	
Toilets	Water Efficient Toilets (1.5 gpm)	3 points	
Faucets	Water Efficient faucets (1.28 gpm)	3 points	
Dishwasher	Water Efficient Dishwasher (6 gallons per cycle or less)	1	
Washing Machine	Water Efficient Washing Machine (Water factor <5.5)	1	
WaterSense	EPA WaterSense Certification	12 points	
Reduction Measure PS T1: Land Use Based Trips and VMT Reduction			
Mixed Use	Mixes of land uses that complement one another in a way that reduces the need for vehicle trips can greatly reduce GHG emissions. The point value of mixed use projects will be determined based upon a Transportation Impact Analysis (TIA) demonstrating trip reductions and/or reductions in vehicle	TBD	

Feature	Description	Assigned Point Values	Project Points
	miles traveled. Suggested ranges: Diversity of land uses complementing each other (2-28 points) Increased destination accessibility other than transit (1-18 points) Increased transit accessibility (1-25 points) Infill location that reduces vehicle trips or VMT beyond the measures described above (points TBD based on traffic data).		
Residential Near Local Retail (Residential only Projects)	Having residential developments within walking and biking distance of local retail helps to reduce vehicle trips and/or vehicle miles traveled. The point value of residential projects in close proximity to local retail will be determined based upon traffic studies that demonstrate trip reductions and/or reductions in vehicle miles traveled (VMT)	TBD	
Other Trip Reduction Measures	Other trip or VMT reduction measures not listed above with TIA and/or other traffic data supporting the trip and/or VMT for the project.	TBD	
Reduction Measure PS T2: Bicycle Infrastructure			
Bicycle Infrastructure	. Provide bicycle paths within project boundaries. Provide bicycle path linkages between residential and other land uses. Provide bicycle path linkages between residential and transit.	 TBD 2 points 5 points	
Reduction Measure PS T3: Neighborhood Electric Vehicle Infrastructure			
Electric Vehicle Recharging	Provide circuit and capacity in garages of residential units for use by an electric vehicle. Charging stations are for on-road electric vehicles legally able to drive on all roadways including Interstate Highways and freeways. Install electric vehicle charging stations in the garages of residential units	1 point 8 points	
Total Points Earned by Residential Project:			

-Residential Section Ends-