

901 E KATELLA AVE IN-FILL RESIDENTIAL DEVELOPMENT AIR QUALITY AND GREENHOUSE GAS IMPACT STUDY City of Orange, California



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1.0 Introduction

The purpose of this air quality and greenhouse gas (GHG) impact study is to determine whether the estimated criteria air pollutants and greenhouse gas emissions generated from the proposed construction and operation of the 901 E. Katella Avenue In-Fill Residential Development Project (hereinafter referred to as "Project") would cause a significant effect on the environment.

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 South Coast Air Quality Management District (SCAQMD), and the City of Orange's recommendations for the quantification and evaluation of air quality and GHG emissions.

1.1 Site Location

The project site is located at 901 E. Katella Ave., on the northeast corner of the intersection at Cambridge Street and Katella Avenue, in the City of Orange, California. The project site is currently developed with an approximately 20,820 square foot vacant AT&T call center office building and a paved parking lot.

The project site is located within the South Coast Air Basin (SCAB), the SCAQMD Inland Orange County General Forecast Area, and the Central Orange County Air Monitoring Area - 17.

The project location map is provided in Exhibit A.

1.2 Project Description

The proposed project consists of razing the existing vacant AT&T call center and constructing forty-nine (49) residential units with a density of 18.1 DU/AC. The site plan used for this analysis, provided by BASSENIAN LAGONI ARCHITECTS, is illustrated in Exhibit B.

Table 1 summarizes the proposed project land uses.

Table 1
Land Use Summary

Project Land Use	CalEEMod Land Use Category	Amount	Metric
Residential	Condo/Townhouse	49	Dwelling Units
Paved Surfaces	Parking Lot	128	Spaces

Construction of the project is expected to begin in the year 2023 and consist of demolition, site preparation, grading, building construction, paving, and architectural coating. The project is estimated to be open in the year 2024.

The project is expected to require the total import of approximately 962 cubic yards of earthwork material during the grading phase.

It should be noted that this study was conducted in November 2022 based on the proposed project including 52 residential dwelling units and 117 parking spaces. The project site plan has since been revised to include 49 dwelling units and 128 parking spaces. No significant changes or new sources of emissions have been added to the proposed project. Therefore, this report conservatively impacts based on the original site plan.

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. For CEQA purposes, the SCAQMD considers a sensitive receptor to be a location where a sensitive individual could remain for 24 hours or longer, such as residences, hospitals, and schools (etc), as described in the Localized Significance Threshold Methodology (SCAQMD 2008a, page 3-2).

Several sensitive land uses are present surrounding the project site including the following:

- Existing adjacent residential land uses directly north of the project site.
- Existing adjacent residential land use to the northwest of the project site, approximately 125 feet from the centerline of N. Cambridge Street.

1.4 Summary of Air Quality and GHG Impacts

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
<i>Would the project:</i>				
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
<i>Would the project:</i>				
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 project design features include standard rules and requirements, best practices, and recognized design guidelines for addressing air quality and greenhouse gas. Design features are assumed to be part of the project for purposes of the impact analysis in this study and will be incorporated into the conditions of approval for the project.

Construction Design Features:

DF-1 The project must follow the standard SCAQMD rules and requirements with regards to fugitive dust control, which include, but are 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. Use gravel aprons and track out grates at all truck exits
11. Replace the ground cover of disturbed areas as quickly as possible.

DF-2 All diesel construction equipment should have Tier 4 low emission "clean diesel" engines (OEM or retrofit) that include diesel oxidation catalysts and diesel particulate filters that meet the latest CARB best available control technology.

DF-3 Construction equipment should be maintained in proper tune.

- DF-4** All construction vehicles should be prohibited from excessive idling. Excessive idling is defined as five (5) minutes or longer.
- DF-5** Minimize the simultaneous operation of multiple construction equipment units, to the maximum extent feasible.
- DF-6** The use of heavy construction equipment and earthmoving activity should be suspended during Air Alerts when the Air Quality Index reaches the “Unhealthy” level.
- DF-7** Establish an electricity supply to the construction site and use electric-powered equipment instead of diesel-powered equipment or generators, where feasible.
- DF-8** Establish staging areas for the construction equipment that are as far from adjacent residential homes, as feasible.
- DF-9** Use haul trucks with on-road engines instead of off-road engines for on-site hauling.

Operational Design Features:

- DF-10** The project must 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 (or other sources of on-site renewable energy) per the prescribed Energy Design Ratings.
- DF-11** Participate in the local waste management recycling and composting programs.

2.0 Air Quality Setting

The Federal Clean Air Act (42 U.S.C. § 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 even 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.

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 Pollutants¹.

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. The following descriptions of criteria air pollutants have been provided by the SCAQMD.

- **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

¹ SCAQMD. Guidance Document for Addressing Air Quality Issues in General Plans and Local Planning (May 6, 2005)

increases the background level of CO in their blood. The South Coast basin has recently achieved attainment status for carbon monoxide by both USEPA and CARB.

- **Nitrogen Dioxide (NO₂)** 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 NO₂, creating the mixture of NO and NO₂ commonly called NO_x. NO₂ acts as an acute irritant and, in equal concentrations, is more injurious than NO. At atmospheric concentrations, however, NO₂ is only potentially irritating. There is some indication of a relationship between NO₂ and chronic pulmonary fibrosis. Some increase in bronchitis in young children has also been observed at concentrations below 0.3 parts per million (ppm). NO₂ absorbs blue light which results in a brownish red cast to the atmosphere and reduced visibility. Although NO₂ 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 O₃ and particulate matter.
- **Ozone (O₃)** is one of several substances called photochemical oxidants that are formed when volatile organic compounds (VOC) and NO_x react in the presence of ultraviolet sunlight. O₃ 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 O₃. 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 O₃ effects. Short-term exposures (lasting for a few hours) to O₃ 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 O₃ levels and increases in daily hospital admission rates, as well as mortality, has also been reported. The South Coast Air Basin is designated by the USEPA as an extreme non-attainment area for ozone. Although O₃ concentrations have declined substantially since the early 1990s, the South Coast basin continues to have peak O₃ levels that exceed both state and federal standards.
- **Fine Particulate Matter (PM₁₀)** consists of extremely small, suspended particles or droplets 10 microns or smaller in diameter that can lodge in the lungs, contributing to respiratory problems. PM₁₀ 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 SO₂ reactions with ammonia. PM₁₀ 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. The South Coast basin has recently achieved federal attainment status for PM_{10} , but is non-attainment based on state requirements.

- **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. The South Coast basin is designated as non-attainment for $PM_{2.5}$ by both federal and state standards.
- **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 . Though SO_2 concentrations have been reduced to levels well below state and federal standards, further reductions in SO_2 emissions are needed because SO_2 is a precursor to sulfate and PM_{10} . The South Coast basin is considered a SO_2 attainment area by USEPA and CARB.
- **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 South Coast 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)**, although not actually a criteria air pollutant, VOCs are regulated by the SCAQMD because they cause chemical reactions which contribute to the formation of ozone. VOCs are also transformed into organic aerosols in the atmosphere, contributing to higher PM₁₀ 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 µg/m ³	50 µg/m ³
	Mean	--	20 µg/m ³
Particulate Matter (PM _{2.5})	24 Hour	35 µg/m ³	--
	Annual	12 µg/m ³	12 µg/m ³
Lead	30-day	--	1.5 µg/m
	Quarter	1.5 µg/m	--
	3-month average	0.15 µg/m	--
Visibility reducing particles	8 Hour	--	0.23/km extinction coefficient. (10-mile visibility standard)
Sulfates	24 Hour	--	25 µg/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://www2.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 the 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 (H_2S) because it would not generate hydrogen sulfide in any substantial quantity. The most common sources of H_2S emissions are oil and natural gas extraction and processing, and natural emissions from geothermal fields. It is also formed during the bacterial decomposition of human and animal wastes and is present in emissions from sewage treatment facilities and landfills. Industrial sources include petrochemical plants, coke oven plants, and kraft paper mills. Sources for H_2S within a residential project may occur through on-site composting of organic matter, however, the quantities are typically insignificant and avoidable by following proper composting techniques. Thus, H_2S is not quantified within the State's emissions estimator model.

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", while if the air pollutant concentrations exceed the AAQS, then 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 exceed 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 South Coast Air Basin (SCAB).

Table 5
South Coast Air Basin Attainment Status¹

Pollutant	State Status	National Status
Ozone	Nonattainment	Nonattainment (Extreme) ²
Carbon monoxide	Attainment	Attainment (Maintenance)
Nitrogen dioxide	Attainment	Attainment (Maintenance)
PM ₁₀	Nonattainment	Attainment (Maintenance)
PM _{2.5}	Nonattainment	Nonattainment
Lead	Attainment	Nonattainment (Partial) ³

¹ Source: California Air Resources Board. <http://www.arb.ca.gov/desig/adm/adm.htm>

² 8-Hour Ozone.

³ Partial Nonattainment designation – Los Angeles County portion of Basin only.

2.4 South Coast Air Quality Management District (SCAQMD)

The agency responsible for air pollution control for the South Coast Air Basin (SCAB) is the South Coast Air Quality Management District (SCAQMD). SCAQMD is responsible for controlling emissions primarily from stationary sources. SCAQMD maintains air quality monitoring stations throughout the SCAB. SCAQMD, in coordination with the Southern California Association of Governments, is also responsible for developing, updating, and implementing the Air Quality Management Plan (AQMP) for the SCAB. An AQMP is a plan prepared and implemented by an air pollution district for a county or region designated as nonattainment of the federal and/or California ambient air quality standards.

The latest version is the 2016 AQMP. The 2016 AQMP is a regional blueprint for achieving federal air quality standards and healthful air. While air quality has dramatically improved over the years, the SCAB still exceeds federal public health standards for both ozone and particulate matter (PM) and experiences some of the worst air pollution in the nation. The 2016 AQMP includes both stationary and mobile source strategies to ensure that rapidly approaching attainment deadlines are met, that public health is protected to the maximum extent feasible and that the region is not faced with burdensome sanctions if the Plan is not approved or if the NAAQS are not met on time.

According to the 2016 AQMP, the most significant air quality challenge in the SCAB is to reduce nitrogen oxide (NOx) emissions sufficiently to meet the upcoming ozone standard deadlines. Based on the inventory and modeling results, 522 tons per day (tpd) of total SCAB NOx 2012 emissions are projected to drop to 255 tpd and 214 tpd in the 8-hour ozone attainment years of 2023 and 2031, respectively, due to the continued implementation of already adopted regulatory actions (“baseline emissions”). The analysis suggests that total SCAB emissions of NOx must be reduced to approximately 141 tpd in 2023 and 96 tpd in 2031 to attain the 8-hour ozone standards. This represents an additional 45 percent reduction in NOx in 2023, and an additional 55 percent NOx reduction beyond 2031 levels.²

2.4.1 SCAQMD Rules and Regulations

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

- **SCAQMD Rule 402** prohibits a person from discharging 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.
- **SCAQMD Rule 403** governs emissions of fugitive dust during construction and operation activities. Compliance with this rule is achieved through application of standard Best Management Practices, such as application of water or chemical stabilizers to disturbed soils, covering haul vehicles, restricting vehicle speeds on unpaved roads to 15 miles per hour, sweeping loose dirt from paved site access roadways, cessation of construction activity when winds exceed 25 mph, and establishing a permanent ground cover on finished sites.
- **SCAQMD Rule 445** restricts wood burning devices from being installed into any new development and is intended to reduce the emissions of particulate matter for wood burning devices.

² SCAQMD. Final 2016 Air Quality Management Plan. <http://www.aqmd.gov/home/air-quality/clean-air-plans/air-quality-mgt-plan/final-2016-aqmp>

- **SCAQMD Rule 1113** governs the sale, use, and manufacturing of architectural coating and limits the VOC content in paints and paint solvents. This rule regulates the VOC content of paints available during construction. Therefore, all paints and solvents used during construction and operation of project must comply with Rule 1113.
- **SCAQMD Rule 1143** governs the manufacture, sale, and use of paint thinners and solvents used in thinning of coating materials, cleaning of coating application equipment, and other solvent cleaning operations by limiting their VOC content. This rule regulates the VOC content of solvents used during construction. Solvents used during the construction phase must comply with this rule.
- **SCAQMD Rule 1186** limits the presence of fugitive dust on paved and unpaved roads and sets certification protocols and requirements for street sweepers that are under contract to provide sweeping services to any federal, state, county, agency or special district such as water, air, sanitation, transit, or school district.

2.5 Local Climate and Meteorology

The project is in the South Coast Air Basin (SCAB). Climatological data from the nearest weather station to the project site is summarized in Table 6.

Table 6
Meteorological Summary¹

Month	Temperature (°F)			Mean Precipitation (inches)
	Max.	Min.	Mean	
January	70.0	47.5	58.8	3.34
February	70.0	48.2	59.1	3.47
March	72.4	50.4	61.4	1.86
April	74.7	52.8	63.8	0.83
May	77.1	57.3	67.2	0.53
June	80.1	60.5	70.3	0.15
July	85.2	64.2	74.7	0.07
August	87.1	64.5	75.8	0.01
September	86.5	62.7	74.6	0.10
October	81.2	57.7	69.5	0.72
November	75.4	51.8	63.6	0.99
December	69.7	46.9	58.3	2.02
Yearly Average	77.4	55.4	66.4	14.09

¹ Source: Western Regional Climate Center 2012. Averages derived from measurements recorded between 1989 and 2016, Anaheim, CA (040192).

2.6 Local Air Quality

The air quality at any site is dependent on the regional air quality and local pollutant sources. Regional air quality is determined by the release of pollutants throughout the air basin. Estimates of the existing emissions in the Basin provided in the Final 2016 Air Quality Management Plan, prepared by SCAQMD, March 2017, indicate that collectively, mobile sources account for 60 percent of the VOC, 90 percent of the NO_x emissions, 95 percent of the CO emissions and 34 percent of directly emitted PM_{2.5}, with another 13 percent of PM_{2.5} from road dust.

The SCAQMD has divided the SCAB into fourteen general forecasting areas and thirty-eight Source Receptor Areas (SRA) for monitoring and reporting local air quality. The SCAQMD provides daily reports of the current air quality conditions in each general forecast area and SRA. The monitoring areas provide a general representation of the local meteorological, terrain, and air quality conditions within the SCAB.

Table 7 summarizes the published air quality monitoring for 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. For criteria pollutants not monitored near the site, data from the nearest monitoring station with a comparable setting were used.

Table 7
Local Air Quality

Air Pollutant Location	Averaging Time	Item	2018	2019	2020
Carbon Monoxide -- Central Orange County	1 Hour	Max 1-Hour (ppm)	2.3	2.4	2.3
		Exceeded State Standard (20 ppm)	No	No	No
		Exceeded National Standard (35 ppm)	No	No	No
	8 Hour	Max 8 Hour (ppm)	1.9	1.3	1.7
		Days > State Standard (9 ppm)	No	No	No
		Days > National Standard (9 ppm)	No	No	No
Ozone -- Central Orange County	1 Hour	Max 1-Hour (ppm)	0.112	0.096	0.142
		Days > State Standard (0.09 ppm)	1.0	1.0	6.0
	8 Hour	Max 8 Hour (ppm)	0.071	0.082	0.097
		Days > State Standard (0.070 ppm)	1	1	15
		Days > National Standard (0.070 ppm)	1	1	15
Nitrogen Dioxide -- Central Orange County	1 Hour	Max 1-Hour (ppm)	0.066	0.059	0.071
		Exceeded State Standard (0.18 ppm)	No	No	No
	Annual	Annual Average (ppm)	0.014	0.013	0.013
		Exceeded State Standard (0.030 ppm)	No	No	No
		Exceeded National Standard (0.053 ppm)	No	No	No
Sulfur Dioxide -- Central LA	1 Hour	Max 1 Hour (ppm)	0.0179	0.0100	0.0038
		Exceeded State Standard (0.25 ppm)	No	No	No
		Exceeded National Standard (0.075 ppm)	No	No	No
	24 Hour	Max 24-Hour ($\mu\text{g}/\text{m}^3$)	129	127	120
		Days > State Standard ($50 \mu\text{g}/\text{m}^3$)	13	13	13
		Days > National Standard ($150 \mu\text{g}/\text{m}^3$)	0	0	0
Suspended Particles (PM10) -- Central Orange County	Annual	Annual Average ($\mu\text{g}/\text{m}^3$)	27.20	21.90	23.90
		Exceeded State Standard ($20 \mu\text{g}/\text{m}^3$)	Yes	Yes	Yes
	24 Hour	Max 24-Hour ($\mu\text{g}/\text{m}^3$)	54.10	36.10	41.40
		Days > National Standard ($35 \mu\text{g}/\text{m}^3$)	3	3	1
		Annual Average ($\mu\text{g}/\text{m}^3$)	11.02	9.32	11.27
			No	No	No
Fine Particulates (PM2.5) -- Central Orange County	Annual	Exceeded State Standard ($12 \mu\text{g}/\text{m}^3$)	No	No	No
		Exceeded National Standard ($15 \mu\text{g}/\text{m}^3$)	No	No	No
	24 Hour	Max 24-Hour ($\mu\text{g}/\text{m}^3$)	54.10	36.10	41.40
		Days > National Standard ($35 \mu\text{g}/\text{m}^3$)	3	3	1
		Annual Average ($\mu\text{g}/\text{m}^3$)	11.02	9.32	11.27

Source: <https://www.aqmd.gov/home/air-quality/historical-air-quality-data/historical-data-by-year>

$\mu\text{g}/\text{m}^3$ = 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, the 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

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 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 (AR5) and sixth assessment report (AR6).

Table 8
Global Warming Potential of Greenhouse Gases^{1, 2}

Gas Name	Formula	Lifetime (years)	GWP
Carbon Dioxide	CO ₂		1
Methane	CH ₄ (Fossil Origin)	12	29.8
	CH ₄ (Non-Fossil Origin)		27.2
Nitrous Oxide	N ₂ O	114	273
Sulphur Hexafluoride	SF ₆	3200	23,500
Nitrogen Trifluoride	NF ₃	740	16,100
Chlorofluorocarbon (CFC-11)	CFC-11	52	8,321
Hexafluoroethane (PFC-116)	C ₂ F ₆	10,000	11,100
Octafluoropropane (PFC-218)	C ₃ F ₈	2,600	8,900
Octafluorocyclobutane (PFC-318)	C ₄ F ₈	3,200	9,540
Tetrafluoromethane (PFC-14)	CF ₄	50,000	5,301
Hydrofluorocarbon 125	HFC-125	29	3,170
Hydrofluorocarbon 134a	HFC-134a	14	1,526
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	771
Hydrofluorocarbon 365mfc	HFC-365mfc	9	804
Hydrofluorocarbon 43-10mee	HFC-43-10mee	16	1,650

¹ Source: IPCC Sixth Assessment Report (AR6),

https://www.ipcc.ch/report/ar6/wg1/downloads/report/IPCC_AR6_WGI_Full_Report.pdf &

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" (CO₂e) 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 address climate change.³
- **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.⁴
- **Senate Bill (SB) 100, California Renewables Portfolio Standard Program.** SB 100 established a landmark policy requiring renewable energy and zero-carbon resources to supply 100 percent of electric retail sales to end-use customers by 2045.⁵

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 Inventory¹

United States (2018)²	State of California (2019)³	SCAG (2020)⁴
6,678 MMTCO ₂ e	418.2 MMTCO ₂ e	216.4 MMTCO ₂ e

¹ MMTCO₂e = Million Metric Tons of Carbon Dioxide Equivalent

² <https://www.epa.gov/ghgemissions/inventory-us-greenhouse-gas-emissions-and-sinks>

³ https://ww3.arb.ca.gov/cc/inventory/pubs/reports/2000_2019/ghg_inventory_trends_00-19.pdf

⁴ <http://www.scag.ca.gov/programs/Pages/GreenhouseGases.asp>

³ 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>

⁴ California Air Resources Board. Sustainable Communities and Climate Protection Program.

<https://ww2.arb.ca.gov/our-work/programs/sustainable-communities-climate-protection-program/about>

⁵ California Energy Commission. SB 100 Joint Agency Report. <https://www.energy.ca.gov/sb100>

4.0 Modelling Parameters and Assumptions

The California Emissions Estimator Model Version 2020.4.0 (CalEEMod) was used to calculate criteria air pollutants and GHG emissions during 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 pollutants 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 estimated to begin in the year 2023. Construction activities are expected to consist of demolition, site preparation, grading, building construction, paving, and architectural coating. The project is expected to be operational in the year 2024.

The project site is currently occupied by a vacant AT&T call center, and demolition is expected to be required.

The project is expected to import approximately 962 cubic yards of earthwork material for grading purposes.

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 construction equipment list is shown in Table 10.

The project will be required to comply with several standard fugitive dust control measures, per SCAQMD Rule 403. The following key inputs are utilized in CalEEMod and are based upon data provided from SCAQMD⁶:

⁶ SCAQMD. Fugitive Dust Mitigation Measures. <http://www.aqmd.gov/home/rules-compliance/ceqa/air-quality-analysis-handbook/mitigation-measures-and-control-efficiencies/fugitive-dust>

- Soil stabilizers - 30% PM₁₀ and PM_{2.5} reduction.
- Replace ground cover - 15% PM₁₀ and PM_{2.5} reduction.
- Water exposed areas 2x per day.
- Unpaved road moisture content – 25%.
- Unpaved road vehicle speed – 15 mph.

Table 10
Construction Equipment Assumptions¹

Phase	Equipment	Number	Hrs Per Day	Soil Disturbance Rate (Acres/ 8hr-Day)	Off-Road Equipment Daily Disturbance Footprint (Acres)	Total Daily Disturbance Footprint (Acres)
Demolition	Concrete/Industrial Saws	1	8	0.0	0.00	2.0
	Rubber Tired Dozers	1	8	0.5	0.50	
	Tractors/Loaders/Backhoes	3	8	0.5	1.50	
Site Preparation	Graders	1	8	0.5	0.50	1.4
	Scrapers	1	8	0.5	0.50	
	Tractors/Loaders/Backhoes	1	7	0.5	0.44	
Grading	Graders	1	8	0.5	0.50	1.9
	Rubber Tired Dozers	1	8	0.5	0.50	
	Tractors/Loaders/Backhoes	2	7	0.5	0.88	
Building Construction	Cranes	1	8	0.0	0.00	0.4
	Forklifts	2	7	0.0	0.00	
	Generator Sets	1	8	0.0	0.00	
	Tractors/Loaders/Backhoes	1	6	0.5	0.38	
	Welders	3	8	0.0	0.00	
Paving	Cement and Mortar Mixers	1	8	0.0	0.00	0.5
	Pavers	1	8	0.0	0.00	
	Paving Equipment	1	8	0.0	0.00	
	Rollers	2	8	0.0	0.00	
	Tractors/Loaders/Backhoes	1	8	0.5	0.50	
Architectural Coating	Air Compressors	1	6	0.0	0.00	0.0

¹ CalEEMod
Defaults

4.2 Localized Construction Analysis Modeling Parameters

CalEEMod calculates construction emissions based on the number of equipment hours and the maximum daily disturbance activity possible for each piece of equipment. This report identifies the following parameters in the project design or applicable mitigation measures in order to compare CalEEMod reported emissions against the localized significance threshold lookup tables:

- 1) The off-road equipment list (including the type of equipment, horsepower, and hours of operation) assumed for the day of construction activity with maximum emissions.
- 2) The maximum number of acres disturbed on the peak day.
- 3) Any emission control devices added onto off-road equipment.
- 4) Specific dust suppression techniques used on the day of construction activity with maximum emissions.

4.3 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.

4.3.1 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).

The Emission Factors (EMFAC) 2017 model is used to estimate the mobile source emissions embedded in the CalEEMod emissions model. No adjustments have been made to default emission factors. The trip generation rates for this project are based on the ITE Trip Generation Manual 11th Edition, 2021.

The project’s total vehicle miles traveled estimated by CalEEMod is shown in Table 11.

Table 11
Operational Vehicle Miles Traveled

Land Use	Annual Vehicle Miles Traveled (VMT) ¹
Condo/Townhouse	1,318,220

¹ Unmitigated VMT.

The operational vehicle fleet mix has been adjusted to reflect vehicle types used for typical residential and commercial trips generated by the project. The Southern California Association of Governments (SCAG) regional travel demand model does not assign heavy-duty trucks, buses, or other large vehicles that would require passenger car equivalent (PCE) adjustments to residential home-based trips. The project does not consist of land uses that would typically require PCE adjustments to account for large trucks, such as warehousing.

To be conservative, the Air Quality/GHG analysis has assumed that 2% of the total residential home-based trips will include trucks with a gross vehicle weight rating (GVWR) of 10,000 pounds 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. The adjusted vehicle mix is proportioned according to the default CalEEMod vehicle mix.

Table 12 summarizes the vehicle mix used for this project.

Table 12
Operational Vehicle Mix¹

Vehicle Class	Vehicle Mix (%)
Light Duty Automobile (LDA)	55.28%
Light Duty Truck (LDT1)	6.03%
Light Duty Truck (LDT2)	18.81%
Medium Duty Truck (MDV)	12.94%
Light Heavy Truck (LHD1)	2.46%
Light Heavy Truck (LHD2)	0.42%
Medium Heavy Truck (MHD)	0.92%
Heavy Heavy Truck (HHD)	0.31%
Other Bus (OBUS)	0.04%
Urban Bus (UBUS)	0.02%
Motorcycle (MCY)	2.48%
School Bus (SBUS)	0.05%
Motor Home (MH)	0.24%
Total	100.0%

¹Adjusted fleet mix to include 2% total trucks over 10,000 lbs. GVWR. (LHD2, MHD, HHD, OBUS, UBUS, SBUS, MH)

4.3.2 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.

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).

Table 13 shows the total annual expected electricity and natural gas usage for the proposed project.

Table 13
Electricity and Natural Gas Usage

Land Use	Electricity Usage ¹ (KWhr/yr) ²	Natural Gas Usage ¹ (KBTU/yr) ²
Condo/Townhouse	251,281.00	858,283.00
Parking Lot	10,850.00	0
Total	262,131.0	858,283.0

¹ CalEEMod unmitigated default estimates.

² KWhr/yr = Kilowatt Hours per Year

KBTU/yr = Thousand British Thermal Units per Year

4.3.3 Area Source Emissions

Area source emissions are direct sources of emissions that fall under four categories: hearths, consumer products, architectural coatings, and landscaping equipment. Per SCAQMD rule 445, no wood-burning devices are allowed in new developments; therefore, no wood hearths are included in this project.

Consumer products are various solvents used in non-industrial applications which emit ROG's during their product use. These typically include cleaning supplies, kitchen aerosols, cosmetics, and toiletries.

4.3.4 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 14.

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 14.

Table 14
Operational Water Usage and Waste Generation

Land Use	Water Usage (gallons/year)			Waste Generation (tons/year) ¹
	Indoor	Outdoor	Total	
Condo/Townhouse	3,388,010	2,135,920	5,523,930	23.92
Parking Lot	-	-	-	-
Total	3,388,010	2,135,920	5,523,930	23.92

¹ CalEEMod unmitigated default estimates.

5.0 Significance Thresholds

5.1 Air Quality Significance Thresholds

The SCAQMD has established air quality emissions thresholds for criteria air pollutants for the purposes of determining whether a project may have a significant effect on the environment per Section 15002(g) of the Guidelines for implementing CEQA. By complying with the thresholds of significance, the project would be in compliance with the SCAQMD Air Quality Management Plan (AQMP) and the federal and state air quality standards.

Table 15 lists the air quality significance thresholds for the six air pollutants analyzed in this report. Lead is not included as part of this analysis as the project is not expected to emit lead in any significant measurable quantity.

Table 15
SCAQMD Air Quality Significance Thresholds

Pollutant	Construction (lbs/day)	Operation (lbs/day)
NO_x	100	55
VOC	75	55
PM₁₀	150	150
PM_{2.5}	55	55
SO_x	150	150
CO	550	550

¹ Source : <http://www.aqmd.gov/docs/default-source/ceqa/handbook/scaqmd-air-quality-significance-thresholds.pdf>

5.2 Air Quality Localized Significance Thresholds

Air quality emissions were analyzed using the SCAQMD's Mass Rate Localized Significant Threshold (LST) Look-up Tables.

Table 16 lists the Localized Significance Thresholds (LST) used to determine whether a project may generate significant adverse localized air quality impacts. LSTs represent the maximum emissions from a project that are not expected to cause or contribute to an exceedance of the most stringent applicable federal or state ambient air quality standard. LSTs are developed based on the ambient concentrations of four applicable air pollutants for source receptor area (SRA) 17 – Central Orange County.

The nearest existing sensitive receptors are located along the northern property line of the site, less than 25 meters from potential areas of on-site construction and operational activity. Although receptors are located closer than 25 meters to the site, SCAQMD LST methodology states that projects with boundaries located closer than 25 meters to the nearest receptor should use the LSTs for receptors located at 25 meters.

The SCAQMD provides localized thresholds for 1-, 2-, and 5-acre sites. However, because the project's daily disturbance area is estimated to be 1.9 acres, this analysis utilizes a linear progression to estimate LST thresholds for a 1.9-acre site.

Table 16
SCAQMD Localized Significance Thresholds¹ (LST)

Pollutant	Construction (lbs/day)	Operation (lbs/day)
NO_x	107.3	107.3
CO	672.7	672.7
PM₁₀	5.9	1.6
PM_{2.5}	3.9	1.1

¹ Source: SCAQMD Mass Rate Localized Significance Thresholds for a 1.9-acre site in SRA-17 at 25 meters

5.3 GHG Significance Thresholds

5.3.1 SCAQMD Recommended GHG Thresholds

SCAQMD has developed recommended GHG thresholds of significance to assist local agencies with determining the impact of a project for CEQA. SCAQMD's objective in providing the GHG guidelines is to establish a performance standard that will ultimately contribute to reducing GHG emissions below 1990 levels, and thus achieve the requirements of the California Global Warming Solutions Act (AB 32).

SCAQMD first issued the *Interim CEQA Greenhouse Gas (GHG) Significance Thresholds* guidance document in October 2008 and has since held several stakeholder working group meetings where staff has presented updated recommendations. The latest recommended GHG thresholds are based on the GHG CEQA Significance Threshold Stakeholder Working Group #15, September 2010.

The SCAQMD describes a five-tiered approach for determining GHG Significance Thresholds.

- **Tier 1** - If a project is exempt from CEQA, project-level and cumulative GHG emissions are less than significant.
- **Tier 2** - If the project complies with a GHG emissions reduction plan or mitigation program that avoids or substantially reduces GHG emissions in the project's geographic area (i.e., city or county), project-level and cumulative GHG emissions are less than significant.

For projects that are not exempt or where no qualifying GHG reduction plans are directly applicable, SCAQMD requires an assessment based on the following tiers.

- **Tier 3** - Consists of screening values that are intended to capture 90 percent of the GHG emissions from projects. If a project's emissions are under the screening thresholds, then the project is less than significant. SCAQMD has presented two options that lead agencies could choose for screening values. Option #1 sets the thresholds for residential projects to 3,500 MTCO₂e/year, commercial projects to 1,400 MTCO₂e/year), and mixed use to 3,000 MTCO₂e/year. Option #2 sets a single numerical threshold for all non-industrial projects of 3,000 MTCO₂e/year. The current staff recommendation is to use option #2, but allows lead agencies to choose option #1 if they prefer. Regardless of which option a lead agency chooses to follow, it is recommended that the same option is consistently used for all projects.

Table 17 shows the screening levels described in option #2, which has been used previously in the City of Orange.

Table 17
SCAQMD Tier 3 GHG Screening Values

Land Use	Screening Value
Industrial Projects	10,000 MTCO ₂ e/Yr
Residential/Commercial Projects	3,000 MTCO ₂ e/Yr

6.0 Air Quality Impact Analysis

Consistent with CEQA and the State CEQA Guidelines, a significant impact related to air quality would occur if the proposed project is determined to:

- a) Conflict with or obstruct implementation of the applicable air quality plan.
- b) 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.
- c) Expose sensitive receptors to substantial pollutant concentrations.
- d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people.

6.1 Short-Term Air Quality Impacts - Construction

6.1.1 Regional Daily Emissions - Construction

Daily air quality emissions include both on-site and off-site emissions associated with the construction of the project. Regional daily emissions of criteria pollutants are compared to the SCAQMD thresholds of significance.

As shown in Table 18, daily emissions of criteria pollutants are expected to be below the allowable thresholds of significance.

CalEEMod unmitigated daily emissions outputs are provided in Appendix A.

Table 18
Daily Construction Emissions

Maximum Daily Emissions (lbs/day) ¹						
Activity	VOC	NO _x	CO	SO ₂	PM ₁₀	PM _{2.5}
Demolition	1.54	16.31	14.50	0.03	2.03	0.90
Site Preparation	1.33	14.30	10.03	0.03	1.24	0.59
Grading	1.39	16.45	9.66	0.03	3.71	1.98
Building Construction	1.88	14.13	15.91	0.03	1.25	0.76
Paving	1.07	8.13	12.14	0.02	0.56	0.41
Architectural Coating	33.61	1.24	2.10	0.00	0.17	0.09
Maximum¹	33.61	16.45	15.91	0.03	3.71	1.98
SCAQMD Threshold	75	100	550	150	150	55
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.

The project must follow mandatory SCAQMD rules and requirements with regard to fugitive dust control, as described in Section 6.1.3. Compliance with the standard dust control measures is considered to be part of the conditions of approval for the project and is reflected in the emissions in Table 18.

Table 18 shows that the project's daily construction emissions will be below the applicable SCAQMD air quality standards and thresholds of significance. As a result, the project would not contribute substantially to an existing or projected air quality violation.

Furthermore, by complying with the SCAQMD standards, the project would not contribute to a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable Federal or State ambient air quality standard (including releasing emissions that exceed quantitative thresholds for ozone precursors).

The project's short-term construction impact on regional air resources is less than significant.

6.1.2 Localized Emissions - Construction

Table 19 illustrates the construction-related localized emissions and compares the results to SCAQMD LST thresholds. As shown in Table 19, the emissions will be below the SCAQMD

thresholds of significance for localized construction emissions. The project must follow all standard SCAQMD rules and requirements with regard to fugitive dust control, as described in Section 6.1.3.

The project's short-term construction impact on localized air resources is less than significant.

Table 19
Localized Construction Emissions

Maximum Daily Emissions (lbs/day)¹				
Activity	NO_x	CO	PM₁₀	PM_{2.5}
On-site Emissions	14.47	14.21	3.31	1.87
SCAQMD Construction Threshold ²	107.3	672.7	5.9	3.9
Exceeds Threshold (?)	No	No	No	No

¹ Maximum daily emission during summer or winter; includes on-site project emissions only.

² Reference 2006-2008 SCAQMD Mass Rate Localized Significant Thresholds for construction and operation. SRA-17, Central Orange County, 2-acre site, receptor distance 25 meters.

6.1.3 Fugitive Dust - Construction

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. SCAQMD 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, SCAQMD Rules 402 and 403 require the implementation of dust suppression techniques to prevent fugitive dust from creating a nuisance off-site.

To ensure full compliance with the applicable dust control standards, the following project design features will be incorporated as conditions of approval:

DF-1 The project must follow the standard SCAQMD rules and requirements with regards to fugitive dust control, which include, but are 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. Use gravel aprons and track out grates at all truck exits.
11. Replace the ground cover of disturbed areas as quickly as possible.

By complying with the above construction design features, the project impact from fugitive dust emissions is less than significant.

6.1.4 Odors - Construction

Heavy-duty equipment in the project area during construction will emit odors; however, the construction activity would cease to occur after construction is completed. The project is required to comply with Rule 402 during construction, which states 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. No other sources of objectionable odors have been identified for the proposed Project.

Therefore, the project impact from odor emissions is less than significant.

6.1.5 Asbestos - Construction

Asbestos is a carcinogen and is categorized as a hazardous air pollutant by the Environmental Protection Agency (EPA). Asbestos fibers embedded within construction materials become a health hazard once they are disturbed and rendered airborne, such as

through physical contact during building renovation and demolition activities. Asbestos is regulated through the National Emissions Standards for Hazardous Air Pollutants (NESHAP) and SCAQMD is the local enforcement authority for asbestos.

Asbestos also occurs naturally in serpentine and ultramafic rock. Based on the California Division of Mines and Geology General Location Guide for Ultramafic Rocks in California - Areas More Likely to Contain Naturally Occurring Asbestos, naturally occurring asbestos has not been shown to occur within the vicinity of the project site. Therefore, the potential risk for naturally occurring asbestos (NOA) during project construction is small.

In the event asbestos is found on the site, the project will be required to comply with SCAQMD and NESHAP standards and protocols. SCAQMD Rule 1403 establishes the survey requirements, notification, and work practice requirements to prevent asbestos emissions during construction activities. By following the required asbestos abatement protocols, the project impact from asbestos would be less than significant.

6.1.6 Diesel Particulate Matter - Construction

The project will generate diesel particulate matter (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.⁷

The HRA Guidelines provide risk factors based on exposure to toxic substances over a 30-year life span. The proposed project's construction activity is not expected to be a long-term (i.e., 30 years) source of toxic air contaminant emissions and short-term risk factors have not been developed. Due to the significantly reduced risk from short-term exposure, SCAQMD does not typically require the evaluation of long-term cancer risk or chronic health impacts for construction operations from a project such as the one being proposed.

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 further reduce the potential health risks associated with DPM exposure during construction, the following project design features would be imposed as conditions of approval. Project design features include a recommendation for Tier 4 engines on all off-

⁷ OEHHA. Air Toxics Hot Spots Program. Risk Assessment Guidelines. Guidance for Preparation of Health Risk Assessments. February 2015.

road diesel equipment. Tier 4 engines, along with the latest national fuel standards, have been shown to yield PM reductions of over 95% from the typical Tier 2 and Tier 3 engines.⁸ Thus ensuring the potential DPM exposure to adjacent sensitive receptors is reduced to the maximum extent feasible.

- DF-2** All diesel construction equipment should have Tier 4 low emission “clean diesel” engines (OEM or retrofit) that include diesel oxidation catalysts and diesel particulate filters that meet the latest CARB best available control technology.
- DF-3** Construction equipment should be maintained in proper tune.
- DF-4** All construction vehicles should be prohibited from excessive idling. Excessive idling is defined as five (5) minutes or longer.
- DF-5** Minimize the simultaneous operation of multiple construction equipment units, to the maximum extent feasible.
- DF-6** The use of heavy construction equipment and earthmoving activity should be suspended during Air Alerts when the Air Quality Index reaches the “Unhealthy” level.
- DF-7** Establish an electricity supply to the construction site and use electric-powered equipment instead of diesel-powered equipment or generators, where feasible.
- DF-8** Establish staging areas for the construction equipment that are as far from adjacent residential homes, as feasible.
- DF-9** Use haul trucks with on-road engines instead of off-road engines for on-site hauling.

⁸ EPA. Control of Emissions of Air Pollution from Nonroad Diesel Engines and Fuel; Final Rule. (40 CFR Parts 9, 69, et al.)

6.2 Long-Term Air Quality Impacts - Operation

6.2.1 Daily Emissions - Operation

Long-term operational air pollutant impacts from the project are shown in Table 20. The project is not expected to exceed any of the allowable daily emissions thresholds for criteria pollutants at the regional level. CalEEMod daily emissions outputs are provided in Appendix A.

The project's daily operational emissions will be below the applicable SCAQMD air quality thresholds of significance and the project would not contribute substantially to an existing or projected air quality violation. Furthermore, by complying with the SCAQMD standards, the project would not contribute to a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable Federal or State ambient air quality standard (including releasing emissions that exceed quantitative thresholds for ozone precursors).

The project-related long-term air quality impacts are less than significant.

Table 20
Daily Operational Emissions

Maximum Daily Emissions (lbs/day) ^{1,2}						
Activity	VOC	NO _x	CO	SO ₂	PM ₁₀	PM _{2.5}
Mobile Sources	1.24	1.20	12.57	0.03	3.29	0.89
Energy Sources	0.03	0.22	0.09	0.00	0.02	0.02
Area Sources	1.36	0.91	4.66	0.01	0.09	0.09
Total	2.63	2.33	17.32	0.04	3.40	1.00
SCAQMD Threshold	55	55	550	150	150	55
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.

² Daily emissions reports are provided in Appendix A.

6.2.2 Localized Operational Emissions - Operation

Table 21 shows the localized operational emissions and compares the results to SCAQMD LST thresholds of significance. As shown in Table 21, the emissions will be below the SCAQMD thresholds of significance for localized operational emissions. **The project will result in less than significant localized operational emissions impacts.**

Table 21
Localized Operational Emissions

Maximum Daily Emissions (lbs/day) ^{1,4}				
LST Pollutants	NOx (lbs/day)	CO (lbs/day)	PM ₁₀ (lbs/day)	PM _{2.5} (lbs/day)
On-site Emissions ²	1.19	5.38	0.3	0.2
SCAQMD Operation Threshold ³	107.3	672.7	1.6	1.1
Exceeds Threshold (?)	No	No	No	No

¹ Maximum daily emission in summer or winter.

² Mobile source emissions include on-site vehicle emissions only. It is estimated that approximately 5% of mobile emissions will occur on the project site.

³ Reference: 2006-2008 SCAQMD Mass Rate Localized Significant Thresholds for construction and operation Table C-1 through C-6; SRA 17, Central Orange County disturbance area of 2 acre and receptor distance of 25 meters.

6.2.3 Odors - Operation

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 project does not contain land uses that would typically be associated with significant odor emissions.

The project will be required to comply with standard building code requirements related to exhaust ventilation, as well as comply with SCAQMD Rule 402. Rule 402 requires that a person may 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. Project-related odors are not expected to meet the criteria of being a nuisance. **The project's operation would result in less than significant odor impacts.**

6.2.4 Toxic Air Contaminants - Operations

The project consists of a residential land use and does not include major sources of toxic air contaminants (TAC) emissions that would result in significant exposure of sensitive receptors to substantial pollutant concentrations. Examples of land uses that are major sources of TACs include distribution centers with heavy truck traffic, rail yards, ports, refineries, chrome plating facilities, dry cleaners, and gasoline dispensing stations. The project does not call for any of these uses. **The project impact is considered less than significant.**

7.0 Greenhouse Gas Impact Analysis

Consistent with CEQA Guidelines, a significant impact related to greenhouse gas would occur if the proposed project were determined to:

- a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment.
- b) Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing emissions of greenhouse gases.

7.1 Greenhouse Gas Emissions - Construction

Greenhouse gas emissions are estimated for on-site and off-site construction activity using CalEEMod. Table 22 shows the construction greenhouse gas emissions, including equipment and worker vehicle emissions for all phases of construction. Construction emissions are amortized over 30 years and added to the long-term operational emissions, pursuant to SCAQMD recommendations.

Table 22
Construction Greenhouse Gas Emissions

Activity	Emissions (MTCO ₂ e) ¹		
	On-site	Off-site	Total
Demolition	21.22	10.77	31.99
Site Preparation	3.26	0.10	3.36
Grading	5.48	3.15	8.63
Building Construction	229.55	68.24	297.79
Paving	7.82	0.62	8.44
Architectural Coating	1.28	0.42	1.70
Total	268.61	83.30	351.91
Amortized over 30 years²	8.95	2.78	11.73

¹ MTCO₂e = metric tons of carbon dioxide equivalents (includes carbon dioxide, methane, nitrous oxide, and/or hydrofluorocarbon).

² The emissions are amortized over 30 years and added to the operational emissions, pursuant to SCAQMD recommendations.

Because impacts from construction activities occur over a relatively short-term period of time, they contribute a relatively small portion of the overall lifetime project GHG emissions, and GHG emissions reduction measures for construction equipment are relatively limited. Therefore, SCAQMD recommends that construction emissions be amortized over a 30-year project lifetime and added to the overall project operational emissions.⁹ In doing so, construction GHG emissions are included in the overall contribution of the project, as further discussed in the following section.

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 23. CalEEMod annual GHG output calculations are provided in Appendix B.

Table 23
Operational Greenhouse Gas Emissions

Emission Source	GHG Emissions (MTCO₂e)¹
Mobile Source	415.0424
Energy Source	92.8009
Area Source	13.4591
Water	16.7058
Waste	12.0294
Construction (30-year amortization)	11.73
Total Annual Emissions	561.77
SCAQMD Tier 3 Screening Threshold ²	3,000
Exceed Tier 3 Threshold?	No

¹ MTCO₂e = metric tons of carbon dioxide equivalents.

² Per South Coast Air Quality Management District (SCAQMD) Draft Guidance Document - Interim CEQA Greenhouse Gas (GHG) Significance Threshold, October 2008

As shown in Table 23, the project GHG emissions are expected to be below the SCAQMD's Tier 3 approach, which limits GHG emissions to 3,000 MTCO₂e for residential projects.

⁹ SCAQMD. Interim CEQA GHG Significance Thresholds. Page 3-10. 2008

The project-related long-term GHG impacts are less than significant.

7.3 Project Consistency with Greenhouse Gas Reduction Plans

The project will be required to comply with the mandatory requirements of the latest 2019 California Building Standards Code, including Title 24, Part 11, CALGreen, and Title 24, Part 6, Energy Code. The purpose of the building standards is to reduce negative impacts on the environment through improved planning and design, energy efficiency, water efficiency and conservation, and material and resource conservation. The California Building Standards were developed to help meet the requirements of the Global Warming Solutions Act (AB 32).

By complying with the California Building Standards Code requirements the project would 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.

The following project design features will be implemented to ensure the project is consistent with applicable GHG reduction standards.

DF-10 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 (or other sources of on-site renewable energy) per the prescribed Energy Design Ratings.

DF-11 Participate in the local waste management recycling and composting programs.

As a result, the project would 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.

8.0 Energy Impact Analysis

The purpose of this energy conservation analysis is to review the project's energy implications and provide recommendations to reduce wasteful, inefficient, and unnecessary consumption of energy during construction and operation. This analysis has been prepared within the context of the California Environmental Quality Act (CEQA, California Public Resources Code Sections 21000, et seq.).

CEQA Guidelines, Appendix F, Energy Conservation, describes the framework within which energy conservation should be analyzed. Conserving energy implies the wise and efficient use of energy through decreasing overall per capita energy consumption, decreasing reliance on fossil fuels (such as coal, natural gas and oil), and increasing reliance on renewable energy sources.

Table 24 provides a summary of the project's impact to Energy resources, per the impact criteria described in CEQA Guidelines, Appendix G.

Table 24
CEQA Energy Impact Criteria

Energy Impact Criteria	Potentially Significant	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
<i>Would the project:</i>				
a) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?			X	
b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?			X	

8.1 Energy Impact - A

Would the project result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?

The project will implement the mandatory requirements of California's Building Energy Efficiency Standards (Title 24, Part 6) and Green Building Standards (CALGreen, Title 24,

Part 11) to reduce energy consumption. California's building energy standards are some of the strictest in the nation and the project's compliance with the Building Code will ensure that wasteful, inefficient or unnecessary consumption of energy is minimized. The California Building Code is designed to reduce the amount of energy needed to heat or cool a building, reduce energy usage for lighting and appliances and promote usage of energy from renewable sources.

In particular, the project will provide solar installations (or other sources of on-site renewable energy) to satisfy the prescribed Energy Design Ratings from the Energy Code. Thus, the project will significantly reduce its reliance on fossil fuels for building energy.

By providing renewable sources of energy, the project satisfies recent court rulings which indicate that when determining if a project would have a potentially significant impact to energy conservation, the analysis should discuss whether any renewable energy features could be incorporated into the project¹⁰.

Therefore, the project's impact is considered less than significant.

8.2 Energy Impact - B

Would the project conflict with or obstruct a state or local plan for renewable energy or energy efficiency?

The project's impact is considered less than significant as the project will purchase electricity through Southern California Edison which is subject to the requirements of California Senate Bill 100 (SB 100). SB 100 is the most stringent and current energy legislation in California; requiring that renewable energy resources and zero-carbon resources supply 100% of retail sales of electricity to California end-use customers and 100% of electricity procured to serve all state agencies by December 31, 2045.¹¹

The project will also comply with the mandatory requirements of California's Green Building and Building Energy Efficiency standards that promote renewable energy and energy efficiency.

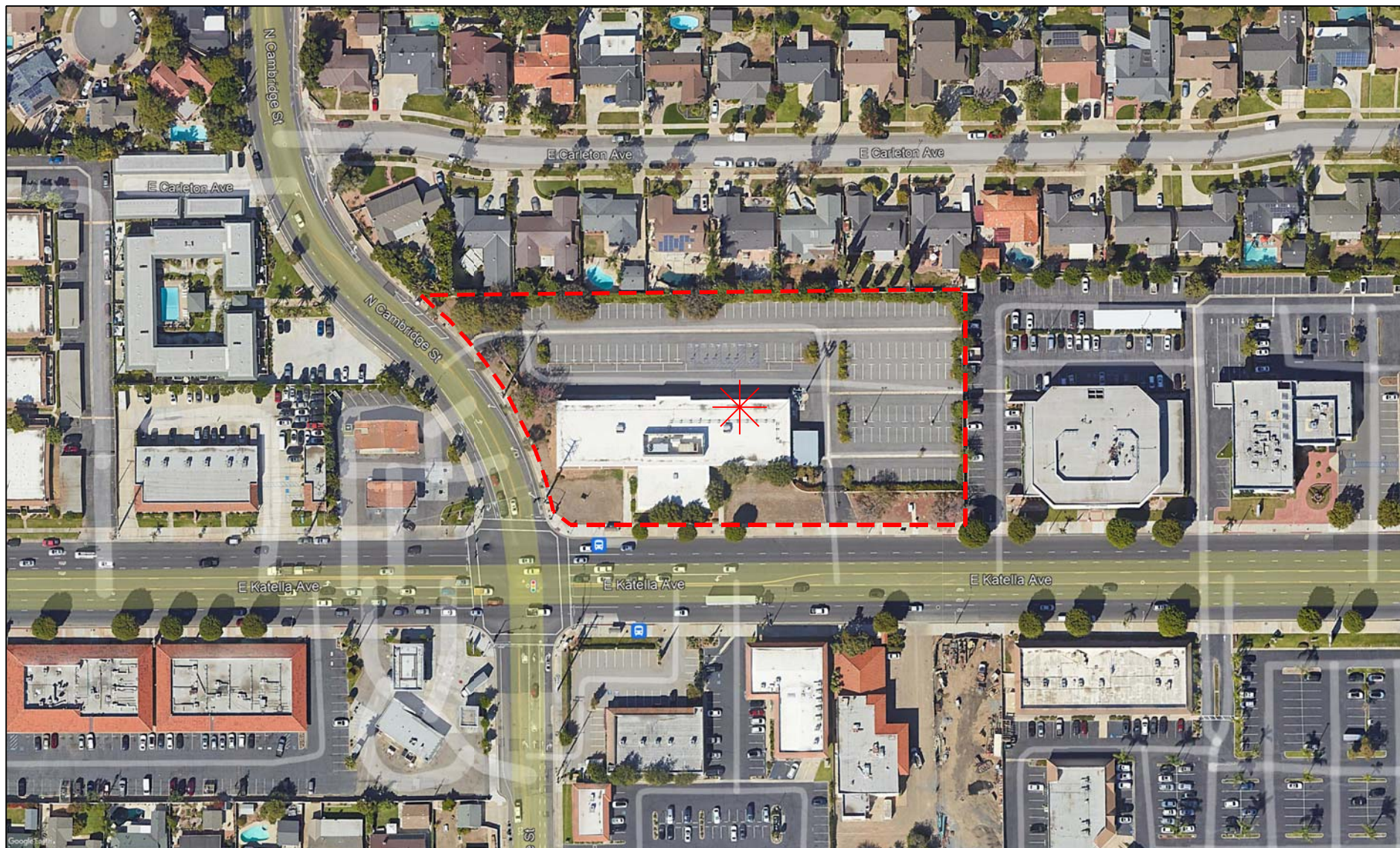
Hence, the project will not conflict with or obstruct a state or local plan for renewable energy or energy efficiency and the impact is considered less than significant.

¹⁰ *League to Save Lake Tahoe Mountain Area Preservation Foundation, et al. v. County of Placer, et al.*

¹¹ SB-100 California Renewables Portfolio Standard Program.

http://leginfo.ca.gov/faces/billNavClient.xhtml?bill_id=201720180SB100

Exhibits



Legend:

--- = Project Site Boundary

* = Project Site





Appendices

Appendix A

Daily Emissions Calculations Output
(CalEEMod)

901 E. Katella Avenue In-Fill Residential Development - Orange County, Summer

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

901 E. Katella Avenue In-Fill Residential Development
Orange County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Parking Lot	31.00	1000sqft	0.71	31,000.00	0
Condo/Townhouse	52.00	Dwelling Unit	2.00	52,000.00	149

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	30
Climate Zone	8			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 - Project will construct 52 dwelling units and 31,000 square feet of paved surfaces on a 2.71-acre site.
- Demolition -
- Grading -
- Vehicle Trips - Trip rates are adjusted based on ITE Trip Generation Manual, 11th Edition (2021).
- Woodstoves - Per SCAQMD Rule 445, no wood-burning devices will be allowed.
- Construction Off-road Equipment Mitigation - Project will be required to comply with SCAQMD Rule 403 regarding fugitive dust.
- Fleet Mix - Fleet mix is adjusted to reflect a total of 2% trucks over 10,000 lbs.
- Trips and VMT - Project will demolish an approximately 20,820 square foot building as well as an approximately 59,954 square foot parking lot.

901 E. Katella Avenue In-Fill Residential Development - Orange 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	25
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblFireplaces	NumberGas	44.20	52.00
tblFireplaces	NumberNoFireplace	5.20	0.00
tblFireplaces	NumberWood	2.60	0.00
tblFleetMix	HHD	4.9060e-003	3.1020e-003
tblFleetMix	LDA	0.55	0.55
tblFleetMix	LDT1	0.06	0.06
tblFleetMix	LDT2	0.19	0.19
tblFleetMix	LHD1	0.02	0.02
tblFleetMix	LHD2	6.6050e-003	4.1760e-003
tblFleetMix	MCY	0.02	0.02
tblFleetMix	MDV	0.13	0.13
tblFleetMix	MH	3.8690e-003	2.4460e-003
tblFleetMix	MHD	0.01	9.1680e-003
tblFleetMix	OBUS	6.5700e-004	4.1500e-004
tblFleetMix	SBUS	7.1300e-004	4.5100e-004
tblFleetMix	UBUS	3.8100e-004	2.4100e-004
tblGrading	MaterialImported	0.00	962.00
tblLandUse	LotAcreage	3.25	2.00
tblTripsAndVMT	HaulingTripNumber	222.00	317.00
tblVehicleTrips	ST_TR	8.14	8.76
tblVehicleTrips	SU_TR	6.28	7.17
tblVehicleTrips	WD_TR	7.32	7.20
tblWoodstoves	NumberCatalytic	2.60	0.00
tblWoodstoves	NumberNoncatalytic	2.60	0.00

2.0 Emissions Summary

901 E. Katella Avenue In-Fill Residential Development - Orange County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**2.1 Overall Construction (Maximum Daily Emission)****Unmitigated Construction**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2023	1.8656	16.3726	15.9053	0.0343	7.4705	0.6895	8.0876	3.5300	0.6451	4.0982	0.0000	3,463.573 9	3,463.573 9	0.7698	0.1653	3,530.186 1
2024	33.6071	13.2888	15.6858	0.0315	0.6292	0.5428	1.1721	0.1685	0.5197	0.6882	0.0000	2,974.523 2	2,974.523 2	0.5449	0.0404	2,997.799 9
Maximum	33.6071	16.3726	15.9053	0.0343	7.4705	0.6895	8.0876	3.5300	0.6451	4.0982	0.0000	3,463.573 9	3,463.573 9	0.7698	0.1653	3,530.186 1

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2023	1.8656	16.3726	15.9053	0.0343	3.0970	0.6895	3.7141	1.4152	0.6451	1.9834	0.0000	3,463.573 9	3,463.573 9	0.7698	0.1653	3,530.186 1
2024	33.6071	13.2888	15.6858	0.0315	0.6292	0.5428	1.1721	0.1685	0.5197	0.6882	0.0000	2,974.523 2	2,974.523 2	0.5449	0.0404	2,997.799 9
Maximum	33.6071	16.3726	15.9053	0.0343	3.0970	0.6895	3.7141	1.4152	0.6451	1.9834	0.0000	3,463.573 9	3,463.573 9	0.7698	0.1653	3,530.186 1

901 E. Katella Avenue In-Fill Residential Development - Orange County, Summer

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

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	54.00	0.00	47.23	57.18	0.00	44.18	0.00	0.00	0.00	0.00	0.00	0.00

901 E. Katella Avenue In-Fill Residential Development - Orange County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**2.2 Overall Operational****Unmitigated Operational**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	1.3623	0.9120	4.6585	5.7300e-003		0.0935	0.0935		0.0935	0.0935	0.0000	1,108.9080	1,108.9080	0.0285	0.0202	1,115.6375
Energy	0.0254	0.2167	0.0922	1.3800e-003		0.0175	0.0175		0.0175	0.0175		276.6424	276.6424	5.3000e-003	5.0700e-003	278.2863
Mobile	1.2428	1.1100	12.5682	0.0292	3.2695	0.0189	3.2884	0.8699	0.0176	0.8875		3,021.7209	3,021.7209	0.1676	0.1066	3,057.6715
Total	2.6304	2.2388	17.3189	0.0363	3.2695	0.1300	3.3995	0.8699	0.1286	0.9985	0.0000	4,407.2712	4,407.2712	0.2014	0.1318	4,451.5952

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	1.3623	0.9120	4.6585	5.7300e-003		0.0935	0.0935		0.0935	0.0935	0.0000	1,108.9080	1,108.9080	0.0285	0.0202	1,115.6375
Energy	0.0254	0.2167	0.0922	1.3800e-003		0.0175	0.0175		0.0175	0.0175		276.6424	276.6424	5.3000e-003	5.0700e-003	278.2863
Mobile	1.2428	1.1100	12.5682	0.0292	3.2695	0.0189	3.2884	0.8699	0.0176	0.8875		3,021.7209	3,021.7209	0.1676	0.1066	3,057.6715
Total	2.6304	2.2388	17.3189	0.0363	3.2695	0.1300	3.3995	0.8699	0.1286	0.9985	0.0000	4,407.2712	4,407.2712	0.2014	0.1318	4,451.5952

901 E. Katella Avenue In-Fill Residential Development - Orange County, Summer

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

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
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	Demolition	Demolition	10/1/2023	10/27/2023	5	20	
2	Site Preparation	Site Preparation	10/28/2023	11/1/2023	5	3	
3	Grading	Grading	11/2/2023	11/9/2023	5	6	
4	Building Construction	Building Construction	11/10/2023	9/12/2024	5	220	
5	Paving	Paving	9/13/2024	9/26/2024	5	10	
6	Architectural Coating	Architectural Coating	9/27/2024	10/10/2024	5	10	

Acres of Grading (Site Preparation Phase): 4.5**Acres of Grading (Grading Phase): 6****Acres of Paving: 0.71****Residential Indoor: 105,300; Residential Outdoor: 35,100; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 1,860 (Architectural Coating – sqft)****OffRoad Equipment**

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Rubber Tired Dozers	1	8.00	247	0.40
Demolition	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Site Preparation	Graders	1	8.00	187	0.41
Site Preparation	Scrapers	1	8.00	367	0.48

901 E. Katella Avenue In-Fill Residential Development - Orange County, Summer

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

Site Preparation	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Tractors/Loaders/Backhoes	2	7.00	97	0.37
Building Construction	Cranes	1	8.00	231	0.29
Building Construction	Forklifts	2	7.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Building Construction	Welders	3	8.00	46	0.45
Paving	Cement and Mortar Mixers	1	8.00	9	0.56
Paving	Pavers	1	8.00	130	0.42
Paving	Paving Equipment	1	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	5	13.00	0.00	317.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	3	8.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	4	10.00	0.00	95.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	8	50.00	11.00	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	10.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Soil Stabilizer

901 E. Katella Avenue In-Fill Residential Development - Orange County, Summer

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

Replace Ground Cover

Water Exposed Area

Water Unpaved Roads

Reduce Vehicle Speed on Unpaved Roads

3.2 Demolition - 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					2.4055	0.0000	2.4055	0.3642	0.0000	0.3642			0.0000			0.0000
Off-Road	1.4725	14.3184	13.4577	0.0241		0.6766	0.6766		0.6328	0.6328		2,324.3959	2,324.3959	0.5893		2,339.1278
Total	1.4725	14.3184	13.4577	0.0241	2.4055	0.6766	3.0822	0.3642	0.6328	0.9970		2,324.3959	2,324.3959	0.5893		2,339.1278

901 E. Katella Avenue In-Fill Residential Development - Orange County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**3.2 Demolition - 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	lb/day										lb/day					
Hauling	0.0330	1.8889	0.6475	8.8900e-003	0.2764	0.0122	0.2886	0.0757	0.0116	0.0873		1,013.6877	1,013.6877	0.1023	0.1626	1,064.7019
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	0.0366	0.0234	0.3981	1.2300e-003	0.1453	7.4000e-004	0.1461	0.0385	6.8000e-004	0.0392		125.4904	125.4904	2.7200e-003	2.6800e-003	126.3564
Total	0.0697	1.9123	1.0456	0.0101	0.4217	0.0129	0.4346	0.1142	0.0123	0.1266		1,139.1780	1,139.1780	0.1050	0.1653	1,191.0583

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					0.9201	0.0000	0.9201	0.1393	0.0000	0.1393			0.0000			0.0000
Off-Road	1.4725	14.3184	13.4577	0.0241		0.6766	0.6766		0.6328	0.6328	0.0000	2,324.3959	2,324.3959	0.5893		2,339.1278
Total	1.4725	14.3184	13.4577	0.0241	0.9201	0.6766	1.5968	0.1393	0.6328	0.7721	0.0000	2,324.3959	2,324.3959	0.5893		2,339.1278

901 E. Katella Avenue In-Fill Residential Development - Orange County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**3.2 Demolition - 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	lb/day										lb/day					
Hauling	0.0330	1.8889	0.6475	8.8900e-003	0.2764	0.0122	0.2886	0.0757	0.0116	0.0873		1,013.6877	1,013.6877	0.1023	0.1626	1,064.7019
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	0.0366	0.0234	0.3981	1.2300e-003	0.1453	7.4000e-004	0.1461	0.0385	6.8000e-004	0.0392		125.4904	125.4904	2.7200e-003	2.6800e-003	126.3564
Total	0.0697	1.9123	1.0456	0.0101	0.4217	0.0129	0.4346	0.1142	0.0123	0.1266		1,139.1780	1,139.1780	0.1050	0.1653	1,191.0583

3.3 Site Preparation - 2023**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					1.5908	0.0000	1.5908	0.1718	0.0000	0.1718			0.0000			0.0000
Off-Road	1.3027	14.2802	9.7820	0.0245		0.5419	0.5419		0.4985	0.4985		2,374.8634	2,374.8634	0.7681		2,394.0654
Total	1.3027	14.2802	9.7820	0.0245	1.5908	0.5419	2.1326	0.1718	0.4985	0.6703		2,374.8634	2,374.8634	0.7681		2,394.0654

901 E. Katella Avenue In-Fill Residential Development - Orange County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**3.3 Site Preparation - 2023****Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	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	0.0225	0.0144	0.2450	7.5000e-004	0.0894	4.6000e-004	0.0899	0.0237	4.2000e-004	0.0241		77.2248	77.2248	1.6800e-003	1.6500e-003	77.7578
Total	0.0225	0.0144	0.2450	7.5000e-004	0.0894	4.6000e-004	0.0899	0.0237	4.2000e-004	0.0241		77.2248	77.2248	1.6800e-003	1.6500e-003	77.7578

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					0.6085	0.0000	0.6085	0.0657	0.0000	0.0657			0.0000			0.0000
Off-Road	1.3027	14.2802	9.7820	0.0245		0.5419	0.5419		0.4985	0.4985	0.0000	2,374.8634	2,374.8634	0.7681		2,394.0654
Total	1.3027	14.2802	9.7820	0.0245	0.6085	0.5419	1.1503	0.0657	0.4985	0.5642	0.0000	2,374.8634	2,374.8634	0.7681		2,394.0654

901 E. Katella Avenue In-Fill Residential Development - Orange County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**3.3 Site Preparation - 2023****Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	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	0.0225	0.0144	0.2450	7.5000e-004	0.0894	4.6000e-004	0.0899	0.0237	4.2000e-004	0.0241		77.2248	77.2248	1.6800e-003	1.6500e-003	77.7578
Total	0.0225	0.0144	0.2450	7.5000e-004	0.0894	4.6000e-004	0.0899	0.0237	4.2000e-004	0.0241		77.2248	77.2248	1.6800e-003	1.6500e-003	77.7578

3.4 Grading - 2023**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					7.0826	0.0000	7.0826	3.4247	0.0000	3.4247			0.0000			0.0000
Off-Road	1.3330	14.4676	8.7038	0.0206		0.6044	0.6044		0.5560	0.5560		1,995.6147	1,995.6147	0.6454		2,011.7503
Total	1.3330	14.4676	8.7038	0.0206	7.0826	0.6044	7.6869	3.4247	0.5560	3.9807		1,995.6147	1,995.6147	0.6454		2,011.7503

901 E. Katella Avenue In-Fill Residential Development - Orange County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**3.4 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	lb/day										lb/day					
Hauling	0.0330	1.8869	0.6468	8.8800e-003	0.2761	0.0122	0.2883	0.0756	0.0116	0.0872		1,012.6217	1,012.6217	0.1022	0.1624	1,063.5824
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	0.0282	0.0180	0.3062	9.4000e-004	0.1118	5.7000e-004	0.1124	0.0296	5.3000e-004	0.0302		96.5311	96.5311	2.1000e-003	2.0600e-003	97.1972
Total	0.0612	1.9049	0.9530	9.8200e-003	0.3879	0.0127	0.4006	0.1053	0.0122	0.1174		1,109.1528	1,109.1528	0.1043	0.1645	1,160.7796

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.7091	0.0000	2.7091	1.3100	0.0000	1.3100			0.0000			0.0000
Off-Road	1.3330	14.4676	8.7038	0.0206		0.6044	0.6044		0.5560	0.5560	0.0000	1,995.6147	1,995.6147	0.6454		2,011.7503
Total	1.3330	14.4676	8.7038	0.0206	2.7091	0.6044	3.3134	1.3100	0.5560	1.8660	0.0000	1,995.6147	1,995.6147	0.6454		2,011.7503

901 E. Katella Avenue In-Fill Residential Development - Orange County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**3.4 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	lb/day										lb/day					
Hauling	0.0330	1.8869	0.6468	8.8800e-003	0.2761	0.0122	0.2883	0.0756	0.0116	0.0872		1,012.6217	1,012.6217	0.1022	0.1624	1,063.5824
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	0.0282	0.0180	0.3062	9.4000e-004	0.1118	5.7000e-004	0.1124	0.0296	5.3000e-004	0.0302		96.5311	96.5311	2.1000e-003	2.0600e-003	97.1972
Total	0.0612	1.9049	0.9530	9.8200e-003	0.3879	0.0127	0.4006	0.1053	0.0122	0.1174		1,109.1528	1,109.1528	0.1043	0.1645	1,160.7796

3.5 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	1.7136	13.6239	14.2145	0.0250		0.6136	0.6136		0.5880	0.5880		2,289.5233	2,289.5233	0.4330		2,300.3479
Total	1.7136	13.6239	14.2145	0.0250		0.6136	0.6136		0.5880	0.5880		2,289.5233	2,289.5233	0.4330		2,300.3479

901 E. Katella Avenue In-Fill Residential Development - Orange County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**3.5 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	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	0.0111	0.3855	0.1598	1.9800e-003	0.0703	1.9800e-003	0.0723	0.0202	1.8900e-003	0.0221		217.1943	217.1943	0.0129	0.0312	226.8042
Worker	0.1409	0.0901	1.5310	4.7200e-003	0.5589	2.8600e-003	0.5617	0.1482	2.6300e-003	0.1509		482.6553	482.6553	0.0105	0.0103	485.9860
Total	0.1520	0.4756	1.6909	6.7000e-003	0.6292	4.8400e-003	0.6341	0.1685	4.5200e-003	0.1730		699.8496	699.8496	0.0234	0.0415	712.7902

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	1.7136	13.6239	14.2145	0.0250		0.6136	0.6136		0.5880	0.5880	0.0000	2,289.5233	2,289.5233	0.4330		2,300.3479
Total	1.7136	13.6239	14.2145	0.0250		0.6136	0.6136		0.5880	0.5880	0.0000	2,289.5233	2,289.5233	0.4330		2,300.3479

901 E. Katella Avenue In-Fill Residential Development - Orange County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**3.5 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	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	0.0111	0.3855	0.1598	1.9800e-003	0.0703	1.9800e-003	0.0723	0.0202	1.8900e-003	0.0221		217.1943	217.1943	0.0129	0.0312	226.8042
Worker	0.1409	0.0901	1.5310	4.7200e-003	0.5589	2.8600e-003	0.5617	0.1482	2.6300e-003	0.1509		482.6553	482.6553	0.0105	0.0103	485.9860
Total	0.1520	0.4756	1.6909	6.7000e-003	0.6292	4.8400e-003	0.6341	0.1685	4.5200e-003	0.1730		699.8496	699.8496	0.0234	0.0415	712.7902

3.5 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	1.5971	12.8235	14.1002	0.0250		0.5381	0.5381		0.5153	0.5153		2,289.6541	2,289.6541	0.4265		2,300.3154
Total	1.5971	12.8235	14.1002	0.0250		0.5381	0.5381		0.5153	0.5153		2,289.6541	2,289.6541	0.4265		2,300.3154

901 E. Katella Avenue In-Fill Residential Development - Orange County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**3.5 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	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	0.0109	0.3844	0.1587	1.9400e-003	0.0703	2.0700e-003	0.0724	0.0202	1.9800e-003	0.0222		213.8250	213.8250	0.0131	0.0308	223.3330
Worker	0.1324	0.0810	1.4270	4.5700e-003	0.5589	2.7200e-003	0.5616	0.1482	2.5000e-003	0.1507		471.0441	471.0441	9.5000e-003	9.6300e-003	474.1516
Total	0.1434	0.4654	1.5857	6.5100e-003	0.6292	4.7900e-003	0.6340	0.1685	4.4800e-003	0.1729		684.8691	684.8691	0.0226	0.0404	697.4845

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	1.5971	12.8235	14.1002	0.0250		0.5381	0.5381		0.5153	0.5153	0.0000	2,289.6541	2,289.6541	0.4265		2,300.3154
Total	1.5971	12.8235	14.1002	0.0250		0.5381	0.5381		0.5153	0.5153	0.0000	2,289.6541	2,289.6541	0.4265		2,300.3154

901 E. Katella Avenue In-Fill Residential Development - Orange County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**3.5 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	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	0.0109	0.3844	0.1587	1.9400e-003	0.0703	2.0700e-003	0.0724	0.0202	1.9800e-003	0.0222		213.8250	213.8250	0.0131	0.0308	223.3330
Worker	0.1324	0.0810	1.4270	4.5700e-003	0.5589	2.7200e-003	0.5616	0.1482	2.5000e-003	0.1507		471.0441	471.0441	9.5000e-003	9.6300e-003	474.1516
Total	0.1434	0.4654	1.5857	6.5100e-003	0.6292	4.7900e-003	0.6340	0.1685	4.4800e-003	0.1729		684.8691	684.8691	0.0226	0.0404	697.4845

3.6 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	0.8425	8.1030	11.7069	0.0179		0.3957	0.3957		0.3652	0.3652		1,710.2024	1,710.2024	0.5420		1,723.7529
Paving	0.1860					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	1.0285	8.1030	11.7069	0.0179		0.3957	0.3957		0.3652	0.3652		1,710.2024	1,710.2024	0.5420		1,723.7529

901 E. Katella Avenue In-Fill Residential Development - Orange County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**3.6 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	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	0.0397	0.0243	0.4281	1.3700e-003	0.1677	8.2000e-004	0.1685	0.0445	7.5000e-004	0.0452		141.3132	141.3132	2.8500e-003	2.8900e-003	142.2455
Total	0.0397	0.0243	0.4281	1.3700e-003	0.1677	8.2000e-004	0.1685	0.0445	7.5000e-004	0.0452		141.3132	141.3132	2.8500e-003	2.8900e-003	142.2455

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	0.8425	8.1030	11.7069	0.0179		0.3957	0.3957		0.3652	0.3652	0.0000	1,710.2024	1,710.2024	0.5420		1,723.7529
Paving	0.1860					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	1.0285	8.1030	11.7069	0.0179		0.3957	0.3957		0.3652	0.3652	0.0000	1,710.2024	1,710.2024	0.5420		1,723.7529

901 E. Katella Avenue In-Fill Residential Development - Orange County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**3.6 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	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	0.0397	0.0243	0.4281	1.3700e-003	0.1677	8.2000e-004	0.1685	0.0445	7.5000e-004	0.0452		141.3132	141.3132	2.8500e-003	2.8900e-003	142.2455
Total	0.0397	0.0243	0.4281	1.3700e-003	0.1677	8.2000e-004	0.1685	0.0445	7.5000e-004	0.0452		141.3132	141.3132	2.8500e-003	2.8900e-003	142.2455

3.7 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	33.3998					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	33.5806	1.2188	1.8101	2.9700e-003		0.0609	0.0609		0.0609	0.0609		281.4481	281.4481	0.0159		281.8443

901 E. Katella Avenue In-Fill Residential Development - Orange County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**3.7 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	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	0.0265	0.0162	0.2854	9.1000e-004	0.1118	5.4000e-004	0.1123	0.0296	5.0000e-004	0.0301		94.2088	94.2088	1.9000e-003	1.9300e-003	94.8303
Total	0.0265	0.0162	0.2854	9.1000e-004	0.1118	5.4000e-004	0.1123	0.0296	5.0000e-004	0.0301		94.2088	94.2088	1.9000e-003	1.9300e-003	94.8303

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	33.3998					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	33.5806	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

901 E. Katella Avenue In-Fill Residential Development - Orange County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**3.7 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	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	0.0265	0.0162	0.2854	9.1000e-004	0.1118	5.4000e-004	0.1123	0.0296	5.0000e-004	0.0301		94.2088	94.2088	1.9000e-003	1.9300e-003	94.8303
Total	0.0265	0.0162	0.2854	9.1000e-004	0.1118	5.4000e-004	0.1123	0.0296	5.0000e-004	0.0301		94.2088	94.2088	1.9000e-003	1.9300e-003	94.8303

4.0 Operational Detail - Mobile**4.1 Mitigation Measures Mobile**

901 E. Katella Avenue In-Fill Residential Development - Orange County, Summer

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

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	1.2428	1.1100	12.5682	0.0292	3.2695	0.0189	3.2884	0.8699	0.0176	0.8875		3,021.7209	3,021.7209	0.1676	0.1066	3,057.6715
Unmitigated	1.2428	1.1100	12.5682	0.0292	3.2695	0.0189	3.2884	0.8699	0.0176	0.8875		3,021.7209	3,021.7209	0.1676	0.1066	3,057.6715

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Condo/Townhouse	374.40	455.52	372.84	1,318,220	1,318,220
Parking Lot	0.00	0.00	0.00		
Total	374.40	455.52	372.84	1,318,220	1,318,220

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Condo/Townhouse	14.70	5.90	8.70	40.20	19.20	40.60	86	11	3
Parking Lot	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Condo/Townhouse	0.552760	0.060261	0.188143	0.129402	0.024587	0.004176	0.009168	0.003102	0.000415	0.000241	0.024847	0.000451	0.002446
Parking Lot	0.546200	0.059546	0.185910	0.127866	0.024295	0.006605	0.014499	0.004906	0.000657	0.000381	0.024552	0.000713	0.003869

5.0 Energy Detail

901 E. Katella Avenue In-Fill Residential Development - Orange County, Summer

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	lb/day										lb/day					
NaturalGas Mitigated	0.0254	0.2167	0.0922	1.3800e-003		0.0175	0.0175		0.0175	0.0175		276.6424	276.6424	5.3000e-003	5.0700e-003	278.2863
NaturalGas Unmitigated	0.0254	0.2167	0.0922	1.3800e-003		0.0175	0.0175		0.0175	0.0175		276.6424	276.6424	5.3000e-003	5.0700e-003	278.2863

5.2 Energy by Land Use - NaturalGas**Unmitigated**

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Condo/Townhouse	2351.46	0.0254	0.2167	0.0922	1.3800e-003		0.0175	0.0175		0.0175	0.0175		276.6424	276.6424	5.3000e-003	5.0700e-003	278.2863
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.0254	0.2167	0.0922	1.3800e-003		0.0175	0.0175		0.0175	0.0175		276.6424	276.6424	5.3000e-003	5.0700e-003	278.2863

901 E. Katella Avenue In-Fill Residential Development - Orange County, Summer

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

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Condo/Townhouse	2.35146	0.0254	0.2167	0.0922	1.3800e-003		0.0175	0.0175		0.0175	0.0175		276.6424	276.6424	5.3000e-003	5.0700e-003	278.2863
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.0254	0.2167	0.0922	1.3800e-003		0.0175	0.0175		0.0175	0.0175		276.6424	276.6424	5.3000e-003	5.0700e-003	278.2863

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	1.3623	0.9120	4.6585	5.7300e-003		0.0935	0.0935		0.0935	0.0935	0.0000	1,108.9080	1,108.9080	0.0285	0.0202	1,115.6375
Unmitigated	1.3623	0.9120	4.6585	5.7300e-003		0.0935	0.0935		0.0935	0.0935	0.0000	1,108.9080	1,108.9080	0.0285	0.0202	1,115.6375

901 E. Katella Avenue In-Fill Residential Development - Orange 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	0.0915					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	1.0406					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.1009	0.8626	0.3671	5.5100e-003		0.0697	0.0697		0.0697	0.0697	0.0000	1,101.1765	1,101.1765	0.0211	0.0202	1,107.7202
Landscaping	0.1292	0.0494	4.2914	2.3000e-004		0.0238	0.0238		0.0238	0.0238		7.7315	7.7315	7.4300e-003		7.9172
Total	1.3623	0.9120	4.6585	5.7400e-003		0.0935	0.0935		0.0935	0.0935	0.0000	1,108.9080	1,108.9080	0.0285	0.0202	1,115.6375

901 E. Katella Avenue In-Fill Residential Development - Orange 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	0.0915					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	1.0406					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.1009	0.8626	0.3671	5.5100e-003		0.0697	0.0697		0.0697	0.0697	0.0000	1,101.1765	1,101.1765	0.0211	0.0202	1,107.7202
Landscaping	0.1292	0.0494	4.2914	2.3000e-004		0.0238	0.0238		0.0238	0.0238		7.7315	7.7315	7.4300e-003		7.9172
Total	1.3623	0.9120	4.6585	5.7400e-003		0.0935	0.0935		0.0935	0.0935	0.0000	1,108.9080	1,108.9080	0.0285	0.0202	1,115.6375

7.0 Water Detail**7.1 Mitigation Measures Water**

901 E. Katella Avenue In-Fill Residential Development - Orange 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
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10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

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

Equipment Type	Number
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11.0 Vegetation

901 E. Katella Avenue In-Fill Residential Development - Orange County, Winter

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

901 E. Katella Avenue In-Fill Residential Development
Orange County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Parking Lot	31.00	1000sqft	0.71	31,000.00	0
Condo/Townhouse	52.00	Dwelling Unit	2.00	52,000.00	149

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	30
Climate Zone	8			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 - Project will construct 52 dwelling units and 31,000 square feet of paved surfaces on a 2.71-acre site.
- Demolition -
- Grading -
- Vehicle Trips - Trip rates are adjusted based on ITE Trip Generation Manual, 11th Edition (2021).
- Woodstoves - Per SCAQMD Rule 445, no wood-burning devices will be allowed.
- Construction Off-road Equipment Mitigation - Project will be required to comply with SCAQMD Rule 403 regarding fugitive dust.
- Fleet Mix - Fleet mix is adjusted to reflect a total of 2% trucks over 10,000 lbs.
- Trips and VMT - Project will demolish an approximately 20,820 square foot building as well as an approximately 59,954 square foot parking lot.

901 E. Katella Avenue In-Fill Residential Development - Orange 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	25
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblFireplaces	NumberGas	44.20	52.00
tblFireplaces	NumberNoFireplace	5.20	0.00
tblFireplaces	NumberWood	2.60	0.00
tblFleetMix	HHD	4.9060e-003	3.1020e-003
tblFleetMix	LDA	0.55	0.55
tblFleetMix	LDT1	0.06	0.06
tblFleetMix	LDT2	0.19	0.19
tblFleetMix	LHD1	0.02	0.02
tblFleetMix	LHD2	6.6050e-003	4.1760e-003
tblFleetMix	MCY	0.02	0.02
tblFleetMix	MDV	0.13	0.13
tblFleetMix	MH	3.8690e-003	2.4460e-003
tblFleetMix	MHD	0.01	9.1680e-003
tblFleetMix	OBUS	6.5700e-004	4.1500e-004
tblFleetMix	SBUS	7.1300e-004	4.5100e-004
tblFleetMix	UBUS	3.8100e-004	2.4100e-004
tblGrading	MaterialImported	0.00	962.00
tblLandUse	LotAcreage	3.25	2.00
tblTripsAndVMT	HaulingTripNumber	222.00	317.00
tblVehicleTrips	ST_TR	8.14	8.76
tblVehicleTrips	SU_TR	6.28	7.17
tblVehicleTrips	WD_TR	7.32	7.20
tblWoodstoves	NumberCatalytic	2.60	0.00
tblWoodstoves	NumberNoncatalytic	2.60	0.00

2.0 Emissions Summary

901 E. Katella Avenue In-Fill Residential Development - Orange County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**2.1 Overall Construction (Maximum Daily Emission)****Unmitigated Construction**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2023	1.8783	16.4546	15.8056	0.0342	7.4705	0.6896	8.0876	3.5300	0.6451	4.0982	0.0000	3,458.490 1	3,458.490 1	0.7698	0.1656	3,525.196 6
2024	33.6096	13.3139	15.5947	0.0313	0.6292	0.5429	1.1721	0.1685	0.5198	0.6882	0.0000	2,952.359 1	2,952.359 1	0.5449	0.0411	2,975.844 3
Maximum	33.6096	16.4546	15.8056	0.0342	7.4705	0.6896	8.0876	3.5300	0.6451	4.0982	0.0000	3,458.490 1	3,458.490 1	0.7698	0.1656	3,525.196 6

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2023	1.8783	16.4546	15.8056	0.0342	3.0970	0.6896	3.7141	1.4152	0.6451	1.9834	0.0000	3,458.490 1	3,458.490 1	0.7698	0.1656	3,525.196 6
2024	33.6096	13.3139	15.5947	0.0313	0.6292	0.5429	1.1721	0.1685	0.5198	0.6882	0.0000	2,952.359 1	2,952.359 1	0.5449	0.0411	2,975.844 3
Maximum	33.6096	16.4546	15.8056	0.0342	3.0970	0.6896	3.7141	1.4152	0.6451	1.9834	0.0000	3,458.490 1	3,458.490 1	0.7698	0.1656	3,525.196 6

901 E. Katella Avenue In-Fill Residential Development - Orange 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	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	54.00	0.00	47.23	57.18	0.00	44.18	0.00	0.00	0.00	0.00	0.00	0.00

901 E. Katella Avenue In-Fill Residential Development - Orange County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**2.2 Overall Operational****Unmitigated Operational**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	1.3623	0.9120	4.6585	5.7300e-003		0.0935	0.0935		0.0935	0.0935	0.0000	1,108.9080	1,108.9080	0.0285	0.0202	1,115.6375
Energy	0.0254	0.2167	0.0922	1.3800e-003		0.0175	0.0175		0.0175	0.0175		276.6424	276.6424	5.3000e-003	5.0700e-003	278.2863
Mobile	1.2354	1.1975	12.4122	0.0281	3.2695	0.0189	3.2884	0.8699	0.0176	0.8875		2,901.5823	2,901.5823	0.1731	0.1115	2,939.1444
Total	2.6230	2.3262	17.1629	0.0352	3.2695	0.1300	3.3995	0.8699	0.1286	0.9986	0.0000	4,287.1326	4,287.1326	0.2070	0.1368	4,333.0682

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	1.3623	0.9120	4.6585	5.7300e-003		0.0935	0.0935		0.0935	0.0935	0.0000	1,108.9080	1,108.9080	0.0285	0.0202	1,115.6375
Energy	0.0254	0.2167	0.0922	1.3800e-003		0.0175	0.0175		0.0175	0.0175		276.6424	276.6424	5.3000e-003	5.0700e-003	278.2863
Mobile	1.2354	1.1975	12.4122	0.0281	3.2695	0.0189	3.2884	0.8699	0.0176	0.8875		2,901.5823	2,901.5823	0.1731	0.1115	2,939.1444
Total	2.6230	2.3262	17.1629	0.0352	3.2695	0.1300	3.3995	0.8699	0.1286	0.9986	0.0000	4,287.1326	4,287.1326	0.2070	0.1368	4,333.0682

901 E. Katella Avenue In-Fill Residential Development - Orange 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	N2O	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	Demolition	Demolition	10/1/2023	10/27/2023	5	20	
2	Site Preparation	Site Preparation	10/28/2023	11/1/2023	5	3	
3	Grading	Grading	11/2/2023	11/9/2023	5	6	
4	Building Construction	Building Construction	11/10/2023	9/12/2024	5	220	
5	Paving	Paving	9/13/2024	9/26/2024	5	10	
6	Architectural Coating	Architectural Coating	9/27/2024	10/10/2024	5	10	

Acres of Grading (Site Preparation Phase): 4.5**Acres of Grading (Grading Phase): 6****Acres of Paving: 0.71****Residential Indoor: 105,300; Residential Outdoor: 35,100; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 1,860 (Architectural Coating – sqft)****OffRoad Equipment**

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Rubber Tired Dozers	1	8.00	247	0.40
Demolition	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Site Preparation	Graders	1	8.00	187	0.41
Site Preparation	Scrapers	1	8.00	367	0.48

901 E. Katella Avenue In-Fill Residential Development - Orange County, Winter

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

Site Preparation	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Tractors/Loaders/Backhoes	2	7.00	97	0.37
Building Construction	Cranes	1	8.00	231	0.29
Building Construction	Forklifts	2	7.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Building Construction	Welders	3	8.00	46	0.45
Paving	Cement and Mortar Mixers	1	8.00	9	0.56
Paving	Pavers	1	8.00	130	0.42
Paving	Paving Equipment	1	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	5	13.00	0.00	317.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	3	8.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	4	10.00	0.00	95.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	8	50.00	11.00	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	10.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Soil Stabilizer

901 E. Katella Avenue In-Fill Residential Development - Orange County, Winter

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

Replace Ground Cover

Water Exposed Area

Water Unpaved Roads

Reduce Vehicle Speed on Unpaved Roads

3.2 Demolition - 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					2.4055	0.0000	2.4055	0.3642	0.0000	0.3642			0.0000			0.0000
Off-Road	1.4725	14.3184	13.4577	0.0241		0.6766	0.6766		0.6328	0.6328		2,324.3959	2,324.3959	0.5893		2,339.1278
Total	1.4725	14.3184	13.4577	0.0241	2.4055	0.6766	3.0822	0.3642	0.6328	0.9970		2,324.3959	2,324.3959	0.5893		2,339.1278

901 E. Katella Avenue In-Fill Residential Development - Orange County, Winter

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

3.2 Demolition - 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	lb/day										lb/day					
Hauling	0.0311	1.9693	0.6546	8.9000e-003	0.2764	0.0122	0.2886	0.0757	0.0117	0.0874		1,014.603 9	1,014.603 9	0.1022	0.1628	1,065.659 9
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	0.0400	0.0257	0.3708	1.1700e-003	0.1453	7.4000e-004	0.1461	0.0385	6.8000e-004	0.0392		119.4903	119.4903	2.7900e-003	2.8500e-003	120.4090
Total	0.0711	1.9950	1.0254	0.0101	0.4217	0.0129	0.4347	0.1142	0.0124	0.1266		1,134.094 3	1,134.094 3	0.1050	0.1656	1,186.068 8

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					0.9201	0.0000	0.9201	0.1393	0.0000	0.1393			0.0000			0.0000
Off-Road	1.4725	14.3184	13.4577	0.0241		0.6766	0.6766		0.6328	0.6328	0.0000	2,324.395 9	2,324.395 9	0.5893		2,339.127 8
Total	1.4725	14.3184	13.4577	0.0241	0.9201	0.6766	1.5968	0.1393	0.6328	0.7721	0.0000	2,324.395 9	2,324.395 9	0.5893		2,339.127 8

901 E. Katella Avenue In-Fill Residential Development - Orange County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**3.2 Demolition - 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	lb/day										lb/day					
Hauling	0.0311	1.9693	0.6546	8.9000e-003	0.2764	0.0122	0.2886	0.0757	0.0117	0.0874		1,014.603 9	1,014.603 9	0.1022	0.1628	1,065.659 9
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	0.0400	0.0257	0.3708	1.1700e-003	0.1453	7.4000e-004	0.1461	0.0385	6.8000e-004	0.0392		119.4903	119.4903	2.7900e-003	2.8500e-003	120.4090
Total	0.0711	1.9950	1.0254	0.0101	0.4217	0.0129	0.4347	0.1142	0.0124	0.1266		1,134.094 3	1,134.094 3	0.1050	0.1656	1,186.068 8

3.3 Site Preparation - 2023**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					1.5908	0.0000	1.5908	0.1718	0.0000	0.1718			0.0000			0.0000
Off-Road	1.3027	14.2802	9.7820	0.0245		0.5419	0.5419		0.4985	0.4985		2,374.863 4	2,374.863 4	0.7681		2,394.065 4
Total	1.3027	14.2802	9.7820	0.0245	1.5908	0.5419	2.1326	0.1718	0.4985	0.6703		2,374.863 4	2,374.863 4	0.7681		2,394.065 4

901 E. Katella Avenue In-Fill Residential Development - Orange County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**3.3 Site Preparation - 2023****Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	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	0.0246	0.0158	0.2282	7.2000e-004	0.0894	4.6000e-004	0.0899	0.0237	4.2000e-004	0.0241		73.5325	73.5325	1.7200e-003	1.7500e-003	74.0978
Total	0.0246	0.0158	0.2282	7.2000e-004	0.0894	4.6000e-004	0.0899	0.0237	4.2000e-004	0.0241		73.5325	73.5325	1.7200e-003	1.7500e-003	74.0978

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					0.6085	0.0000	0.6085	0.0657	0.0000	0.0657			0.0000			0.0000
Off-Road	1.3027	14.2802	9.7820	0.0245		0.5419	0.5419		0.4985	0.4985	0.0000	2,374.8634	2,374.8634	0.7681		2,394.0654
Total	1.3027	14.2802	9.7820	0.0245	0.6085	0.5419	1.1503	0.0657	0.4985	0.5642	0.0000	2,374.8634	2,374.8634	0.7681		2,394.0654

901 E. Katella Avenue In-Fill Residential Development - Orange County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**3.3 Site Preparation - 2023****Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	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	0.0246	0.0158	0.2282	7.2000e-004	0.0894	4.6000e-004	0.0899	0.0237	4.2000e-004	0.0241		73.5325	73.5325	1.7200e-003	1.7500e-003	74.0978
Total	0.0246	0.0158	0.2282	7.2000e-004	0.0894	4.6000e-004	0.0899	0.0237	4.2000e-004	0.0241		73.5325	73.5325	1.7200e-003	1.7500e-003	74.0978

3.4 Grading - 2023**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					7.0826	0.0000	7.0826	3.4247	0.0000	3.4247			0.0000			0.0000
Off-Road	1.3330	14.4676	8.7038	0.0206		0.6044	0.6044		0.5560	0.5560		1,995.6147	1,995.6147	0.6454		2,011.7503
Total	1.3330	14.4676	8.7038	0.0206	7.0826	0.6044	7.6869	3.4247	0.5560	3.9807		1,995.6147	1,995.6147	0.6454		2,011.7503

901 E. Katella Avenue In-Fill Residential Development - Orange County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**3.4 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	lb/day										lb/day					
Hauling	0.0311	1.9672	0.6539	8.8900e-003	0.2761	0.0122	0.2883	0.0756	0.0117	0.0873		1,013.537 1	1,013.537 1	0.1021	0.1626	1,064.539 3
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	0.0308	0.0198	0.2853	9.0000e-004	0.1118	5.7000e-004	0.1124	0.0296	5.3000e-004	0.0302		91.9157	91.9157	2.1500e-003	2.1900e-003	92.6223
Total	0.0619	1.9870	0.9392	9.7900e-003	0.3879	0.0128	0.4007	0.1053	0.0122	0.1174		1,105.452 7	1,105.452 7	0.1042	0.1648	1,157.161 6

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.7091	0.0000	2.7091	1.3100	0.0000	1.3100			0.0000			0.0000
Off-Road	1.3330	14.4676	8.7038	0.0206		0.6044	0.6044		0.5560	0.5560	0.0000	1,995.614 7	1,995.614 7	0.6454		2,011.750 3
Total	1.3330	14.4676	8.7038	0.0206	2.7091	0.6044	3.3134	1.3100	0.5560	1.8660	0.0000	1,995.614 7	1,995.614 7	0.6454		2,011.750 3

901 E. Katella Avenue In-Fill Residential Development - Orange County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**3.4 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	lb/day										lb/day					
Hauling	0.0311	1.9672	0.6539	8.8900e-003	0.2761	0.0122	0.2883	0.0756	0.0117	0.0873		1,013.537 1	1,013.537 1	0.1021	0.1626	1,064.539 3
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	0.0308	0.0198	0.2853	9.0000e-004	0.1118	5.7000e-004	0.1124	0.0296	5.3000e-004	0.0302		91.9157	91.9157	2.1500e-003	2.1900e-003	92.6223
Total	0.0619	1.9870	0.9392	9.7900e-003	0.3879	0.0128	0.4007	0.1053	0.0122	0.1174		1,105.452 7	1,105.452 7	0.1042	0.1648	1,157.161 6

3.5 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	1.7136	13.6239	14.2145	0.0250		0.6136	0.6136		0.5880	0.5880		2,289.523 3	2,289.523 3	0.4330		2,300.347 9
Total	1.7136	13.6239	14.2145	0.0250		0.6136	0.6136		0.5880	0.5880		2,289.523 3	2,289.523 3	0.4330		2,300.347 9

901 E. Katella Avenue In-Fill Residential Development - Orange County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**3.5 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	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	0.0107	0.4027	0.1649	1.9800e-003	0.0703	1.9900e-003	0.0723	0.0202	1.9000e-003	0.0222		217.5138	217.5138	0.0129	0.0312	227.1439
Worker	0.1540	0.0990	1.4262	4.4900e-003	0.5589	2.8600e-003	0.5617	0.1482	2.6300e-003	0.1509		459.5782	459.5782	0.0107	0.0110	463.1114
Total	0.1647	0.5017	1.5912	6.4700e-003	0.6292	4.8500e-003	0.6341	0.1685	4.5300e-003	0.1730		677.0920	677.0920	0.0236	0.0422	690.2553

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	1.7136	13.6239	14.2145	0.0250		0.6136	0.6136		0.5880	0.5880	0.0000	2,289.5233	2,289.5233	0.4330		2,300.3479
Total	1.7136	13.6239	14.2145	0.0250		0.6136	0.6136		0.5880	0.5880	0.0000	2,289.5233	2,289.5233	0.4330		2,300.3479

901 E. Katella Avenue In-Fill Residential Development - Orange County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**3.5 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	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	0.0107	0.4027	0.1649	1.9800e-003	0.0703	1.9900e-003	0.0723	0.0202	1.9000e-003	0.0222		217.5138	217.5138	0.0129	0.0312	227.1439
Worker	0.1540	0.0990	1.4262	4.4900e-003	0.5589	2.8600e-003	0.5617	0.1482	2.6300e-003	0.1509		459.5782	459.5782	0.0107	0.0110	463.1114
Total	0.1647	0.5017	1.5912	6.4700e-003	0.6292	4.8500e-003	0.6341	0.1685	4.5300e-003	0.1730		677.0920	677.0920	0.0236	0.0422	690.2553

3.5 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	1.5971	12.8235	14.1002	0.0250		0.5381	0.5381		0.5153	0.5153		2,289.6541	2,289.6541	0.4265		2,300.3154
Total	1.5971	12.8235	14.1002	0.0250		0.5381	0.5381		0.5153	0.5153		2,289.6541	2,289.6541	0.4265		2,300.3154

901 E. Katella Avenue In-Fill Residential Development - Orange County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**3.5 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	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	0.0106	0.4016	0.1636	1.9500e-003	0.0703	2.0800e-003	0.0724	0.0202	1.9900e-003	0.0222		214.1473	214.1473	0.0130	0.0309	223.6751
Worker	0.1452	0.0889	1.3309	4.3500e-003	0.5589	2.7200e-003	0.5616	0.1482	2.5000e-003	0.1507		448.5577	448.5577	9.7400e-003	0.0102	451.8539
Total	0.1558	0.4905	1.4945	6.3000e-003	0.6292	4.8000e-003	0.6340	0.1685	4.4900e-003	0.1730		662.7050	662.7050	0.0228	0.0411	675.5290

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	1.5971	12.8235	14.1002	0.0250		0.5381	0.5381		0.5153	0.5153	0.0000	2,289.6541	2,289.6541	0.4265		2,300.3154
Total	1.5971	12.8235	14.1002	0.0250		0.5381	0.5381		0.5153	0.5153	0.0000	2,289.6541	2,289.6541	0.4265		2,300.3154

901 E. Katella Avenue In-Fill Residential Development - Orange County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**3.5 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	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	0.0106	0.4016	0.1636	1.9500e-003	0.0703	2.0800e-003	0.0724	0.0202	1.9900e-003	0.0222		214.1473	214.1473	0.0130	0.0309	223.6751
Worker	0.1452	0.0889	1.3309	4.3500e-003	0.5589	2.7200e-003	0.5616	0.1482	2.5000e-003	0.1507		448.5577	448.5577	9.7400e-003	0.0102	451.8539
Total	0.1558	0.4905	1.4945	6.3000e-003	0.6292	4.8000e-003	0.6340	0.1685	4.4900e-003	0.1730		662.7050	662.7050	0.0228	0.0411	675.5290

3.6 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	0.8425	8.1030	11.7069	0.0179		0.3957	0.3957		0.3652	0.3652		1,710.2024	1,710.2024	0.5420		1,723.7529
Paving	0.1860					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	1.0285	8.1030	11.7069	0.0179		0.3957	0.3957		0.3652	0.3652		1,710.2024	1,710.2024	0.5420		1,723.7529

901 E. Katella Avenue In-Fill Residential Development - Orange County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**3.6 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	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	0.0436	0.0267	0.3993	1.3000e-003	0.1677	8.2000e-004	0.1685	0.0445	7.5000e-004	0.0452		134.5673	134.5673	2.9200e-003	3.0700e-003	135.5562
Total	0.0436	0.0267	0.3993	1.3000e-003	0.1677	8.2000e-004	0.1685	0.0445	7.5000e-004	0.0452		134.5673	134.5673	2.9200e-003	3.0700e-003	135.5562

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	0.8425	8.1030	11.7069	0.0179		0.3957	0.3957		0.3652	0.3652	0.0000	1,710.2024	1,710.2024	0.5420		1,723.7529
Paving	0.1860					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	1.0285	8.1030	11.7069	0.0179		0.3957	0.3957		0.3652	0.3652	0.0000	1,710.2024	1,710.2024	0.5420		1,723.7529

901 E. Katella Avenue In-Fill Residential Development - Orange County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**3.6 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	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	0.0436	0.0267	0.3993	1.3000e-003	0.1677	8.2000e-004	0.1685	0.0445	7.5000e-004	0.0452		134.5673	134.5673	2.9200e-003	3.0700e-003	135.5562
Total	0.0436	0.0267	0.3993	1.3000e-003	0.1677	8.2000e-004	0.1685	0.0445	7.5000e-004	0.0452		134.5673	134.5673	2.9200e-003	3.0700e-003	135.5562

3.7 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	33.3998					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	33.5806	1.2188	1.8101	2.9700e-003		0.0609	0.0609		0.0609	0.0609		281.4481	281.4481	0.0159		281.8443

901 E. Katella Avenue In-Fill Residential Development - Orange County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**3.7 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	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	0.0291	0.0178	0.2662	8.7000e-004	0.1118	5.4000e-004	0.1123	0.0296	5.0000e-004	0.0301		89.7115	89.7115	1.9500e-003	2.0500e-003	90.3708
Total	0.0291	0.0178	0.2662	8.7000e-004	0.1118	5.4000e-004	0.1123	0.0296	5.0000e-004	0.0301		89.7115	89.7115	1.9500e-003	2.0500e-003	90.3708

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	33.3998					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	33.5806	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

901 E. Katella Avenue In-Fill Residential Development - Orange County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**3.7 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	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	0.0291	0.0178	0.2662	8.7000e-004	0.1118	5.4000e-004	0.1123	0.0296	5.0000e-004	0.0301		89.7115	89.7115	1.9500e-003	2.0500e-003	90.3708
Total	0.0291	0.0178	0.2662	8.7000e-004	0.1118	5.4000e-004	0.1123	0.0296	5.0000e-004	0.0301		89.7115	89.7115	1.9500e-003	2.0500e-003	90.3708

4.0 Operational Detail - Mobile**4.1 Mitigation Measures Mobile**

901 E. Katella Avenue In-Fill Residential Development - Orange 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	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	1.2354	1.1975	12.4122	0.0281	3.2695	0.0189	3.2884	0.8699	0.0176	0.8875		2,901.582 3	2,901.582 3	0.1731	0.1115	2,939.144 4
Unmitigated	1.2354	1.1975	12.4122	0.0281	3.2695	0.0189	3.2884	0.8699	0.0176	0.8875		2,901.582 3	2,901.582 3	0.1731	0.1115	2,939.144 4

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Condo/Townhouse	374.40	455.52	372.84	1,318,220	1,318,220
Parking Lot	0.00	0.00	0.00		
Total	374.40	455.52	372.84	1,318,220	1,318,220

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Condo/Townhouse	14.70	5.90	8.70	40.20	19.20	40.60	86	11	3
Parking Lot	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Condo/Townhouse	0.552760	0.060261	0.188143	0.129402	0.024587	0.004176	0.009168	0.003102	0.000415	0.000241	0.024847	0.000451	0.002446
Parking Lot	0.546200	0.059546	0.185910	0.127866	0.024295	0.006605	0.014499	0.004906	0.000657	0.000381	0.024552	0.000713	0.003869

5.0 Energy Detail

901 E. Katella Avenue In-Fill Residential Development - Orange County, Winter

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	lb/day										lb/day					
NaturalGas Mitigated	0.0254	0.2167	0.0922	1.3800e-003		0.0175	0.0175		0.0175	0.0175		276.6424	276.6424	5.3000e-003	5.0700e-003	278.2863
NaturalGas Unmitigated	0.0254	0.2167	0.0922	1.3800e-003		0.0175	0.0175		0.0175	0.0175		276.6424	276.6424	5.3000e-003	5.0700e-003	278.2863

5.2 Energy by Land Use - NaturalGas**Unmitigated**

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Condo/Townhouse	2351.46	0.0254	0.2167	0.0922	1.3800e-003		0.0175	0.0175		0.0175	0.0175		276.6424	276.6424	5.3000e-003	5.0700e-003	278.2863
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.0254	0.2167	0.0922	1.3800e-003		0.0175	0.0175		0.0175	0.0175		276.6424	276.6424	5.3000e-003	5.0700e-003	278.2863

901 E. Katella Avenue In-Fill Residential Development - Orange 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****Mitigated**

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Condo/Townhouse	2.35146	0.0254	0.2167	0.0922	1.3800e-003		0.0175	0.0175		0.0175	0.0175		276.6424	276.6424	5.3000e-003	5.0700e-003	278.2863
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.0254	0.2167	0.0922	1.3800e-003		0.0175	0.0175		0.0175	0.0175		276.6424	276.6424	5.3000e-003	5.0700e-003	278.2863

6.0 Area Detail**6.1 Mitigation Measures Area**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	1.3623	0.9120	4.6585	5.7300e-003		0.0935	0.0935		0.0935	0.0935	0.0000	1,108.9080	1,108.9080	0.0285	0.0202	1,115.6375
Unmitigated	1.3623	0.9120	4.6585	5.7300e-003		0.0935	0.0935		0.0935	0.0935	0.0000	1,108.9080	1,108.9080	0.0285	0.0202	1,115.6375

901 E. Katella Avenue In-Fill Residential Development - Orange 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	0.0915					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	1.0406					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.1009	0.8626	0.3671	5.5100e-003		0.0697	0.0697		0.0697	0.0697	0.0000	1,101.1765	1,101.1765	0.0211	0.0202	1,107.7202
Landscaping	0.1292	0.0494	4.2914	2.3000e-004		0.0238	0.0238		0.0238	0.0238		7.7315	7.7315	7.4300e-003		7.9172
Total	1.3623	0.9120	4.6585	5.7400e-003		0.0935	0.0935		0.0935	0.0935	0.0000	1,108.9080	1,108.9080	0.0285	0.0202	1,115.6375

901 E. Katella Avenue In-Fill Residential Development - Orange 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	0.0915					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	1.0406					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.1009	0.8626	0.3671	5.5100e-003		0.0697	0.0697		0.0697	0.0697	0.0000	1,101.1765	1,101.1765	0.0211	0.0202	1,107.7202
Landscaping	0.1292	0.0494	4.2914	2.3000e-004		0.0238	0.0238		0.0238	0.0238		7.7315	7.7315	7.4300e-003		7.9172
Total	1.3623	0.9120	4.6585	5.7400e-003		0.0935	0.0935		0.0935	0.0935	0.0000	1,108.9080	1,108.9080	0.0285	0.0202	1,115.6375

7.0 Water Detail**7.1 Mitigation Measures Water**

901 E. Katella Avenue In-Fill Residential Development - Orange County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**8.0 Waste Detail**

8.1 Mitigation Measures Waste**9.0 Operational Offroad**

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

Fire Pumps and Emergency Generators

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

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

Equipment Type	Number
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11.0 Vegetation

Appendix B

Annual Emission Calculations Output
(CalEEMod)

901 E. Katella Avenue In-Fill Residential Development - Orange County, Annual

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

901 E. Katella Avenue In-Fill Residential Development
Orange County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Parking Lot	31.00	1000sqft	0.71	31,000.00	0
Condo/Townhouse	52.00	Dwelling Unit	2.00	52,000.00	149

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	30
Climate Zone	8			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 - Project will construct 52 dwelling units and 31,000 square feet of paved surfaces on a 2.71-acre site.
- Demolition -
- Grading -
- Vehicle Trips - Trip rates are adjusted based on ITE Trip Generation Manual, 11th Edition (2021).
- Woodstoves - Per SCAQMD Rule 445, no wood-burning devices will be allowed.
- Construction Off-road Equipment Mitigation - Project will be required to comply with SCAQMD Rule 403 regarding fugitive dust.
- Fleet Mix - Fleet mix is adjusted to reflect a total of 2% trucks over 10,000 lbs.
- Trips and VMT - Project will demolish an approximately 20,820 square foot building as well as an approximately 59,954 square foot parking lot.

901 E. Katella Avenue In-Fill Residential Development - Orange 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	25
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblFireplaces	NumberGas	44.20	52.00
tblFireplaces	NumberNoFireplace	5.20	0.00
tblFireplaces	NumberWood	2.60	0.00
tblFleetMix	HHD	4.9060e-003	3.1020e-003
tblFleetMix	LDA	0.55	0.55
tblFleetMix	LDT1	0.06	0.06
tblFleetMix	LDT2	0.19	0.19
tblFleetMix	LHD1	0.02	0.02
tblFleetMix	LHD2	6.6050e-003	4.1760e-003
tblFleetMix	MCY	0.02	0.02
tblFleetMix	MDV	0.13	0.13
tblFleetMix	MH	3.8690e-003	2.4460e-003
tblFleetMix	MHD	0.01	9.1680e-003
tblFleetMix	OBUS	6.5700e-004	4.1500e-004
tblFleetMix	SBUS	7.1300e-004	4.5100e-004
tblFleetMix	UBUS	3.8100e-004	2.4100e-004
tblGrading	MaterialImported	0.00	962.00
tblLandUse	LotAcreage	3.25	2.00
tblTripsAndVMT	HaulingTripNumber	222.00	317.00
tblVehicleTrips	ST_TR	8.14	8.76
tblVehicleTrips	SU_TR	6.28	7.17
tblVehicleTrips	WD_TR	7.32	7.20
tblWoodstoves	NumberCatalytic	2.60	0.00
tblWoodstoves	NumberNoncatalytic	2.60	0.00

2.0 Emissions Summary

901 E. Katella Avenue In-Fill Residential Development - Orange 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					
2023	0.0552	0.4885	0.4739	1.0400e-003	0.0642	0.0207	0.0849	0.0186	0.0196	0.0382	0.0000	91.7010	91.7010	0.0168	2.6400e-003	92.9099
2024	0.3335	1.2720	1.5082	3.0000e-003	0.0583	0.0522	0.1105	0.0156	0.0500	0.0656	0.0000	256.9627	256.9627	0.0400	3.4700e-003	258.9965
Maximum	0.3335	1.2720	1.5082	3.0000e-003	0.0642	0.0522	0.1105	0.0186	0.0500	0.0656	0.0000	256.9627	256.9627	0.0400	3.4700e-003	258.9965

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2023	0.0552	0.4885	0.4739	1.0400e-003	0.0348	0.0207	0.0555	9.8800e-003	0.0196	0.0295	0.0000	91.7009	91.7009	0.0168	2.6400e-003	92.9098
2024	0.3335	1.2720	1.5082	3.0000e-003	0.0583	0.0522	0.1105	0.0156	0.0500	0.0656	0.0000	256.9624	256.9624	0.0400	3.4700e-003	258.9963
Maximum	0.3335	1.2720	1.5082	3.0000e-003	0.0583	0.0522	0.1105	0.0156	0.0500	0.0656	0.0000	256.9624	256.9624	0.0400	3.4700e-003	258.9963

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

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	24.04	0.00	15.07	25.55	0.00	8.43	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	10-1-2023	12-31-2023	0.5483	0.5483
2	1-1-2024	3-31-2024	0.4897	0.4897
3	4-1-2024	6-30-2024	0.4885	0.4885
4	7-1-2024	9-30-2024	0.4930	0.4930
		Highest	0.5483	0.5483

2.2 Overall Operational**Unmitigated Operational**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.2240	0.0170	0.5410	1.0000e-004		3.8400e-003	3.8400e-003		3.8400e-003	3.8400e-003	0.0000	13.3639	13.3639	1.0800e-003	2.3000e-004	13.4591
Energy	4.6300e-003	0.0396	0.0168	2.5000e-004		3.2000e-003	3.2000e-003		3.2000e-003	3.2000e-003	0.0000	92.2889	92.2889	4.8000e-003	1.3200e-003	92.8009
Mobile	0.1863	0.1873	1.9264	4.3700e-003	0.4950	2.9200e-003	0.4979	0.1319	2.7000e-003	0.1346	0.0000	409.7637	409.7637	0.0241	0.0157	415.0424
Waste						0.0000	0.0000		0.0000	0.0000	4.8555	0.0000	4.8555	0.2870	0.0000	12.0294
Water						0.0000	0.0000		0.0000	0.0000	1.0749	12.0321	13.1069	0.1114	2.7300e-003	16.7058
Total	0.4150	0.2439	2.4843	4.7200e-003	0.4950	9.9600e-003	0.5049	0.1319	9.7400e-003	0.1416	5.9304	527.4485	533.3789	0.4283	0.0200	550.0377

901 E. Katella Avenue In-Fill Residential Development - Orange County, Annual

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

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.2240	0.0170	0.5410	1.0000e-004		3.8400e-003	3.8400e-003		3.8400e-003	3.8400e-003	0.0000	13.3639	13.3639	1.0800e-003	2.3000e-004	13.4591
Energy	4.6300e-003	0.0396	0.0168	2.5000e-004		3.2000e-003	3.2000e-003		3.2000e-003	3.2000e-003	0.0000	92.2889	92.2889	4.8000e-003	1.3200e-003	92.8009
Mobile	0.1863	0.1873	1.9264	4.3700e-003	0.4950	2.9200e-003	0.4979	0.1319	2.7000e-003	0.1346	0.0000	409.7637	409.7637	0.0241	0.0157	415.0424
Waste						0.0000	0.0000		0.0000	0.0000	4.8555	0.0000	4.8555	0.2870	0.0000	12.0294
Water						0.0000	0.0000		0.0000	0.0000	1.0749	12.0321	13.1069	0.1114	2.7300e-003	16.7058
Total	0.4150	0.2439	2.4843	4.7200e-003	0.4950	9.9600e-003	0.5049	0.1319	9.7400e-003	0.1416	5.9304	527.4485	533.3789	0.4283	0.0200	550.0377

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	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	Demolition	Demolition	10/1/2023	10/27/2023	5	20	
2	Site Preparation	Site Preparation	10/28/2023	11/1/2023	5	3	
3	Grading	Grading	11/2/2023	11/9/2023	5	6	

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

4	Building Construction	Building Construction	11/10/2023	9/12/2024	5	220
5	Paving	Paving	9/13/2024	9/26/2024	5	10
6	Architectural Coating	Architectural Coating	9/27/2024	10/10/2024	5	10

Acres of Grading (Site Preparation Phase): 4.5**Acres of Grading (Grading Phase): 6****Acres of Paving: 0.71****Residential Indoor: 105,300; Residential Outdoor: 35,100; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 1,860 (Architectural Coating – sqft)****OffRoad Equipment**

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Rubber Tired Dozers	1	8.00	247	0.40
Demolition	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Site Preparation	Graders	1	8.00	187	0.41
Site Preparation	Scrapers	1	8.00	367	0.48
Site Preparation	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Tractors/Loaders/Backhoes	2	7.00	97	0.37
Building Construction	Cranes	1	8.00	231	0.29
Building Construction	Forklifts	2	7.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Building Construction	Welders	3	8.00	46	0.45
Paving	Cement and Mortar Mixers	1	8.00	9	0.56
Paving	Pavers	1	8.00	130	0.42
Paving	Paving Equipment	1	8.00	132	0.36

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

Paving	Rollers	2	8.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	5	13.00	0.00	317.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	3	8.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	4	10.00	0.00	95.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	8	50.00	11.00	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	10.00	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

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**3.2 Demolition - 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					0.0241	0.0000	0.0241	3.6400e-003	0.0000	3.6400e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0147	0.1432	0.1346	2.4000e-004		6.7700e-003	6.7700e-003		6.3300e-003	6.3300e-003	0.0000	21.0866	21.0866	5.3500e-003	0.0000	21.2202
Total	0.0147	0.1432	0.1346	2.4000e-004	0.0241	6.7700e-003	0.0308	3.6400e-003	6.3300e-003	9.9700e-003	0.0000	21.0866	21.0866	5.3500e-003	0.0000	21.2202

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	3.2000e-004	0.0199	6.5000e-003	9.0000e-005	2.7200e-003	1.2000e-004	2.8400e-003	7.5000e-004	1.2000e-004	8.6000e-004	0.0000	9.1995	9.1995	9.3000e-004	1.4800e-003	9.6625
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.7000e-004	2.6000e-004	3.7900e-003	1.0000e-005	1.4300e-003	1.0000e-005	1.4300e-003	3.8000e-004	1.0000e-005	3.9000e-004	0.0000	1.0987	1.0987	3.0000e-005	3.0000e-005	1.1071
Total	6.9000e-004	0.0201	0.0103	1.0000e-004	4.1500e-003	1.3000e-004	4.2700e-003	1.1300e-003	1.3000e-004	1.2500e-003	0.0000	10.2982	10.2982	9.6000e-004	1.5100e-003	10.7696

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**3.2 Demolition - 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	tons/yr										MT/yr					
Fugitive Dust					9.2000e-003	0.0000	9.2000e-003	1.3900e-003	0.0000	1.3900e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0147	0.1432	0.1346	2.4000e-004		6.7700e-003	6.7700e-003		6.3300e-003	6.3300e-003	0.0000	21.0865	21.0865	5.3500e-003	0.0000	21.2202
Total	0.0147	0.1432	0.1346	2.4000e-004	9.2000e-003	6.7700e-003	0.0160	1.3900e-003	6.3300e-003	7.7200e-003	0.0000	21.0865	21.0865	5.3500e-003	0.0000	21.2202

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	3.2000e-004	0.0199	6.5000e-003	9.0000e-005	2.7200e-003	1.2000e-004	2.8400e-003	7.5000e-004	1.2000e-004	8.6000e-004	0.0000	9.1995	9.1995	9.3000e-004	1.4800e-003	9.6625
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.7000e-004	2.6000e-004	3.7900e-003	1.0000e-005	1.4300e-003	1.0000e-005	1.4300e-003	3.8000e-004	1.0000e-005	3.9000e-004	0.0000	1.0987	1.0987	3.0000e-005	3.0000e-005	1.1071
Total	6.9000e-004	0.0201	0.0103	1.0000e-004	4.1500e-003	1.3000e-004	4.2700e-003	1.1300e-003	1.3000e-004	1.2500e-003	0.0000	10.2982	10.2982	9.6000e-004	1.5100e-003	10.7696

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

3.3 Site Preparation - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					2.3900e-003	0.0000	2.3900e-003	2.6000e-004	0.0000	2.6000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.9500e-003	0.0214	0.0147	4.0000e-005		8.1000e-004	8.1000e-004		7.5000e-004	7.5000e-004	0.0000	3.2317	3.2317	1.0500e-003	0.0000	3.2578
Total	1.9500e-003	0.0214	0.0147	4.0000e-005	2.3900e-003	8.1000e-004	3.2000e-003	2.6000e-004	7.5000e-004	1.0100e-003	0.0000	3.2317	3.2317	1.0500e-003	0.0000	3.2578

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.0000e-005	2.0000e-005	3.5000e-004	0.0000	1.3000e-004	0.0000	1.3000e-004	3.0000e-005	0.0000	4.0000e-005	0.0000	0.1014	0.1014	0.0000	0.0000	0.1022
Total	3.0000e-005	2.0000e-005	3.5000e-004	0.0000	1.3000e-004	0.0000	1.3000e-004	3.0000e-005	0.0000	4.0000e-005	0.0000	0.1014	0.1014	0.0000	0.0000	0.1022

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**3.3 Site Preparation - 2023****Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					9.1000e-004	0.0000	9.1000e-004	1.0000e-004	0.0000	1.0000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.9500e-003	0.0214	0.0147	4.0000e-005		8.1000e-004	8.1000e-004		7.5000e-004	7.5000e-004	0.0000	3.2317	3.2317	1.0500e-003	0.0000	3.2578
Total	1.9500e-003	0.0214	0.0147	4.0000e-005	9.1000e-004	8.1000e-004	1.7200e-003	1.0000e-004	7.5000e-004	8.5000e-004	0.0000	3.2317	3.2317	1.0500e-003	0.0000	3.2578

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.0000e-005	2.0000e-005	3.5000e-004	0.0000	1.3000e-004	0.0000	1.3000e-004	3.0000e-005	0.0000	4.0000e-005	0.0000	0.1014	0.1014	0.0000	0.0000	0.1022
Total	3.0000e-005	2.0000e-005	3.5000e-004	0.0000	1.3000e-004	0.0000	1.3000e-004	3.0000e-005	0.0000	4.0000e-005	0.0000	0.1014	0.1014	0.0000	0.0000	0.1022

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**3.4 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					0.0213	0.0000	0.0213	0.0103	0.0000	0.0103	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.0000e-003	0.0434	0.0261	6.0000e-005		1.8100e-003	1.8100e-003		1.6700e-003	1.6700e-003	0.0000	5.4312	5.4312	1.7600e-003	0.0000	5.4751
Total	4.0000e-003	0.0434	0.0261	6.0000e-005	0.0213	1.8100e-003	0.0231	0.0103	1.6700e-003	0.0119	0.0000	5.4312	5.4312	1.7600e-003	0.0000	5.4751

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.0000e-004	5.9600e-003	1.9500e-003	3.0000e-005	8.2000e-004	4.0000e-005	8.5000e-004	2.2000e-004	3.0000e-005	2.6000e-004	0.0000	2.7570	2.7570	2.8000e-004	4.4000e-004	2.8957
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	8.8000e-004	0.0000	3.3000e-004	0.0000	3.3000e-004	9.0000e-005	0.0000	9.0000e-005	0.0000	0.2535	0.2535	1.0000e-005	1.0000e-005	0.2555
Total	1.8000e-004	6.0200e-003	2.8300e-003	3.0000e-005	1.1500e-003	4.0000e-005	1.1800e-003	3.1000e-004	3.0000e-005	3.5000e-004	0.0000	3.0105	3.0105	2.9000e-004	4.5000e-004	3.1512

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

3.4 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	tons/yr										MT/yr					
Fugitive Dust					8.1300e-003	0.0000	8.1300e-003	3.9300e-003	0.0000	3.9300e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.0000e-003	0.0434	0.0261	6.0000e-005		1.8100e-003	1.8100e-003		1.6700e-003	1.6700e-003	0.0000	5.4312	5.4312	1.7600e-003	0.0000	5.4751
Total	4.0000e-003	0.0434	0.0261	6.0000e-005	8.1300e-003	1.8100e-003	9.9400e-003	3.9300e-003	1.6700e-003	5.6000e-003	0.0000	5.4312	5.4312	1.7600e-003	0.0000	5.4751

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.0000e-004	5.9600e-003	1.9500e-003	3.0000e-005	8.2000e-004	4.0000e-005	8.5000e-004	2.2000e-004	3.0000e-005	2.6000e-004	0.0000	2.7570	2.7570	2.8000e-004	4.4000e-004	2.8957
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	8.8000e-004	0.0000	3.3000e-004	0.0000	3.3000e-004	9.0000e-005	0.0000	9.0000e-005	0.0000	0.2535	0.2535	1.0000e-005	1.0000e-005	0.2555
Total	1.8000e-004	6.0200e-003	2.8300e-003	3.0000e-005	1.1500e-003	4.0000e-005	1.1800e-003	3.1000e-004	3.0000e-005	3.5000e-004	0.0000	3.0105	3.0105	2.9000e-004	4.5000e-004	3.1512

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**3.5 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	0.0309	0.2452	0.2559	4.5000e-004		0.0111	0.0111		0.0106	0.0106	0.0000	37.3864	37.3864	7.0700e-003	0.0000	37.5631
Total	0.0309	0.2452	0.2559	4.5000e-004		0.0111	0.0111		0.0106	0.0106	0.0000	37.3864	37.3864	7.0700e-003	0.0000	37.5631

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.0000e-004	7.2700e-003	2.9200e-003	4.0000e-005	1.2500e-003	4.0000e-005	1.2800e-003	3.6000e-004	3.0000e-005	3.9000e-004	0.0000	3.5488	3.5488	2.1000e-004	5.1000e-004	3.7060
Worker	2.5400e-003	1.8200e-003	0.0263	8.0000e-005	9.8800e-003	5.0000e-005	9.9300e-003	2.6200e-003	5.0000e-005	2.6700e-003	0.0000	7.6063	7.6063	1.7000e-004	1.8000e-004	7.6647
Total	2.7400e-003	9.0900e-003	0.0292	1.2000e-004	0.0111	9.0000e-005	0.0112	2.9800e-003	8.0000e-005	3.0600e-003	0.0000	11.1551	11.1551	3.8000e-004	6.9000e-004	11.3707

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**3.5 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	tons/yr										MT/yr					
Off-Road	0.0309	0.2452	0.2559	4.5000e-004		0.0111	0.0111		0.0106	0.0106	0.0000	37.3863	37.3863	7.0700e-003	0.0000	37.5631
Total	0.0309	0.2452	0.2559	4.5000e-004		0.0111	0.0111		0.0106	0.0106	0.0000	37.3863	37.3863	7.0700e-003	0.0000	37.5631

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.0000e-004	7.2700e-003	2.9200e-003	4.0000e-005	1.2500e-003	4.0000e-005	1.2800e-003	3.6000e-004	3.0000e-005	3.9000e-004	0.0000	3.5488	3.5488	2.1000e-004	5.1000e-004	3.7060
Worker	2.5400e-003	1.8200e-003	0.0263	8.0000e-005	9.8800e-003	5.0000e-005	9.9300e-003	2.6200e-003	5.0000e-005	2.6700e-003	0.0000	7.6063	7.6063	1.7000e-004	1.8000e-004	7.6647
Total	2.7400e-003	9.0900e-003	0.0292	1.2000e-004	0.0111	9.0000e-005	0.0112	2.9800e-003	8.0000e-005	3.0600e-003	0.0000	11.1551	11.1551	3.8000e-004	6.9000e-004	11.3707

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**3.5 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	0.1469	1.1798	1.2972	2.3000e-003		0.0495	0.0495		0.0474	0.0474	0.0000	191.0968	191.0968	0.0356	0.0000	191.9866
Total	0.1469	1.1798	1.2972	2.3000e-003		0.0495	0.0495		0.0474	0.0474	0.0000	191.0968	191.0968	0.0356	0.0000	191.9866

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	9.9000e-004	0.0370	0.0148	1.8000e-004	6.3800e-003	1.9000e-004	6.5700e-003	1.8400e-003	1.8000e-004	2.0200e-003	0.0000	17.8574	17.8574	1.0900e-003	2.5800e-003	18.6519
Worker	0.0122	8.3400e-003	0.1252	4.1000e-004	0.0505	2.5000e-004	0.0508	0.0134	2.3000e-004	0.0136	0.0000	37.9434	37.9434	8.1000e-004	8.7000e-004	38.2221
Total	0.0132	0.0454	0.1400	5.9000e-004	0.0569	4.4000e-004	0.0573	0.0153	4.1000e-004	0.0157	0.0000	55.8008	55.8008	1.9000e-003	3.4500e-003	56.8740

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

3.5 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	tons/yr										MT/yr					
Off-Road	0.1469	1.1798	1.2972	2.3000e-003		0.0495	0.0495		0.0474	0.0474	0.0000	191.0966	191.0966	0.0356	0.0000	191.9864
Total	0.1469	1.1798	1.2972	2.3000e-003		0.0495	0.0495		0.0474	0.0474	0.0000	191.0966	191.0966	0.0356	0.0000	191.9864

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	9.9000e-004	0.0370	0.0148	1.8000e-004	6.3800e-003	1.9000e-004	6.5700e-003	1.8400e-003	1.8000e-004	2.0200e-003	0.0000	17.8574	17.8574	1.0900e-003	2.5800e-003	18.6519
Worker	0.0122	8.3400e-003	0.1252	4.1000e-004	0.0505	2.5000e-004	0.0508	0.0134	2.3000e-004	0.0136	0.0000	37.9434	37.9434	8.1000e-004	8.7000e-004	38.2221
Total	0.0132	0.0454	0.1400	5.9000e-004	0.0569	4.4000e-004	0.0573	0.0153	4.1000e-004	0.0157	0.0000	55.8008	55.8008	1.9000e-003	3.4500e-003	56.8740

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**3.6 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	4.2100e-003	0.0405	0.0585	9.0000e-005		1.9800e-003	1.9800e-003		1.8300e-003	1.8300e-003	0.0000	7.7574	7.7574	2.4600e-003	0.0000	7.8188
Paving	9.3000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	5.1400e-003	0.0405	0.0585	9.0000e-005		1.9800e-003	1.9800e-003		1.8300e-003	1.8300e-003	0.0000	7.7574	7.7574	2.4600e-003	0.0000	7.8188

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	2.0000e-004	1.4000e-004	2.0400e-003	1.0000e-005	8.2000e-004	0.0000	8.3000e-004	2.2000e-004	0.0000	2.2000e-004	0.0000	0.6186	0.6186	1.0000e-005	1.0000e-005	0.6232
Total	2.0000e-004	1.4000e-004	2.0400e-003	1.0000e-005	8.2000e-004	0.0000	8.3000e-004	2.2000e-004	0.0000	2.2000e-004	0.0000	0.6186	0.6186	1.0000e-005	1.0000e-005	0.6232

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**3.6 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	tons/yr										MT/yr					
Off-Road	4.2100e-003	0.0405	0.0585	9.0000e-005		1.9800e-003	1.9800e-003		1.8300e-003	1.8300e-003	0.0000	7.7573	7.7573	2.4600e-003	0.0000	7.8188
Paving	9.3000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	5.1400e-003	0.0405	0.0585	9.0000e-005		1.9800e-003	1.9800e-003		1.8300e-003	1.8300e-003	0.0000	7.7573	7.7573	2.4600e-003	0.0000	7.8188

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	2.0000e-004	1.4000e-004	2.0400e-003	1.0000e-005	8.2000e-004	0.0000	8.3000e-004	2.2000e-004	0.0000	2.2000e-004	0.0000	0.6186	0.6186	1.0000e-005	1.0000e-005	0.6232
Total	2.0000e-004	1.4000e-004	2.0400e-003	1.0000e-005	8.2000e-004	0.0000	8.3000e-004	2.2000e-004	0.0000	2.2000e-004	0.0000	0.6186	0.6186	1.0000e-005	1.0000e-005	0.6232

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**3.7 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	0.1670					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	9.0000e-004	6.0900e-003	9.0500e-003	1.0000e-005		3.0000e-004	3.0000e-004		3.0000e-004	3.0000e-004	0.0000	1.2766	1.2766	7.0000e-005	0.0000	1.2784
Total	0.1679	6.0900e-003	9.0500e-003	1.0000e-005		3.0000e-004	3.0000e-004		3.0000e-004	3.0000e-004	0.0000	1.2766	1.2766	7.0000e-005	0.0000	1.2784

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	1.3000e-004	9.0000e-005	1.3600e-003	0.0000	5.5000e-004	0.0000	5.5000e-004	1.5000e-004	0.0000	1.5000e-004	0.0000	0.4124	0.4124	1.0000e-005	1.0000e-005	0.4155
Total	1.3000e-004	9.0000e-005	1.3600e-003	0.0000	5.5000e-004	0.0000	5.5000e-004	1.5000e-004	0.0000	1.5000e-004	0.0000	0.4124	0.4124	1.0000e-005	1.0000e-005	0.4155

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**3.7 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	tons/yr										MT/yr					
Archit. Coating	0.1670					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	9.0000e-004	6.0900e-003	9.0500e-003	1.0000e-005		3.0000e-004	3.0000e-004		3.0000e-004	3.0000e-004	0.0000	1.2766	1.2766	7.0000e-005	0.0000	1.2784
Total	0.1679	6.0900e-003	9.0500e-003	1.0000e-005		3.0000e-004	3.0000e-004		3.0000e-004	3.0000e-004	0.0000	1.2766	1.2766	7.0000e-005	0.0000	1.2784

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	1.3000e-004	9.0000e-005	1.3600e-003	0.0000	5.5000e-004	0.0000	5.5000e-004	1.5000e-004	0.0000	1.5000e-004	0.0000	0.4124	0.4124	1.0000e-005	1.0000e-005	0.4155
Total	1.3000e-004	9.0000e-005	1.3600e-003	0.0000	5.5000e-004	0.0000	5.5000e-004	1.5000e-004	0.0000	1.5000e-004	0.0000	0.4124	0.4124	1.0000e-005	1.0000e-005	0.4155

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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	tons/yr										MT/yr					
Mitigated	0.1863	0.1873	1.9264	4.3700e-003	0.4950	2.9200e-003	0.4979	0.1319	2.7000e-003	0.1346	0.0000	409.7637	409.7637	0.0241	0.0157	415.0424
Unmitigated	0.1863	0.1873	1.9264	4.3700e-003	0.4950	2.9200e-003	0.4979	0.1319	2.7000e-003	0.1346	0.0000	409.7637	409.7637	0.0241	0.0157	415.0424

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Condo/Townhouse	374.40	455.52	372.84	1,318,220	1,318,220
Parking Lot	0.00	0.00	0.00		
Total	374.40	455.52	372.84	1,318,220	1,318,220

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Condo/Townhouse	14.70	5.90	8.70	40.20	19.20	40.60	86	11	3
Parking Lot	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

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

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Condo/Townhouse	0.552760	0.060261	0.188143	0.129402	0.024587	0.004176	0.009168	0.003102	0.000415	0.000241	0.024847	0.000451	0.002446
Parking Lot	0.546200	0.059546	0.185910	0.127866	0.024295	0.006605	0.014499	0.004906	0.000657	0.000381	0.024552	0.000713	0.003869

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	46.4877	46.4877	3.9200e-003	4.8000e-004	46.7275
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	46.4877	46.4877	3.9200e-003	4.8000e-004	46.7275
NaturalGas Mitigated	4.6300e-003	0.0396	0.0168	2.5000e-004		3.2000e-003	3.2000e-003		3.2000e-003	3.2000e-003	0.0000	45.8012	45.8012	8.8000e-004	8.4000e-004	46.0734
NaturalGas Unmitigated	4.6300e-003	0.0396	0.0168	2.5000e-004		3.2000e-003	3.2000e-003		3.2000e-003	3.2000e-003	0.0000	45.8012	45.8012	8.8000e-004	8.4000e-004	46.0734

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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					
Condo/Townhouse	858283	4.6300e-003	0.0396	0.0168	2.5000e-004		3.2000e-003	3.2000e-003		3.2000e-003	3.2000e-003	0.0000	45.8012	45.8012	8.8000e-004	8.4000e-004	46.0734
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		4.6300e-003	0.0396	0.0168	2.5000e-004		3.2000e-003	3.2000e-003		3.2000e-003	3.2000e-003	0.0000	45.8012	45.8012	8.8000e-004	8.4000e-004	46.0734

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					
Condo/Townhouse	858283	4.6300e-003	0.0396	0.0168	2.5000e-004		3.2000e-003	3.2000e-003		3.2000e-003	3.2000e-003	0.0000	45.8012	45.8012	8.8000e-004	8.4000e-004	46.0734
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		4.6300e-003	0.0396	0.0168	2.5000e-004		3.2000e-003	3.2000e-003		3.2000e-003	3.2000e-003	0.0000	45.8012	45.8012	8.8000e-004	8.4000e-004	46.0734

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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			
Condo/Townhouse	251281	44.5635	3.7600e-003	4.6000e-004	44.7934
Parking Lot	10850	1.9242	1.6000e-004	2.0000e-005	1.9341
Total		46.4877	3.9200e-003	4.8000e-004	46.7275

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Condo/Townhouse	251281	44.5635	3.7600e-003	4.6000e-004	44.7934
Parking Lot	10850	1.9242	1.6000e-004	2.0000e-005	1.9341
Total		46.4877	3.9200e-003	4.8000e-004	46.7275

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	0.2240	0.0170	0.5410	1.0000e-004		3.8400e-003	3.8400e-003		3.8400e-003	3.8400e-003	0.0000	13.3639	13.3639	1.0800e-003	2.3000e-004	13.4591
Unmitigated	0.2240	0.0170	0.5410	1.0000e-004		3.8400e-003	3.8400e-003		3.8400e-003	3.8400e-003	0.0000	13.3639	13.3639	1.0800e-003	2.3000e-004	13.4591

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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	0.0167					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.1899					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	1.2600e-003	0.0108	4.5900e-003	7.0000e-005		8.7000e-004	8.7000e-004		8.7000e-004	8.7000e-004	0.0000	12.4871	12.4871	2.4000e-004	2.3000e-004	12.5613
Landscaping	0.0162	6.1800e-003	0.5364	3.0000e-005		2.9700e-003	2.9700e-003		2.9700e-003	2.9700e-003	0.0000	0.8767	0.8767	8.4000e-004	0.0000	0.8978
Total	0.2240	0.0170	0.5410	1.0000e-004		3.8400e-003	3.8400e-003		3.8400e-003	3.8400e-003	0.0000	13.3639	13.3639	1.0800e-003	2.3000e-004	13.4591

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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	0.0167					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.1899					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	1.2600e-003	0.0108	4.5900e-003	7.0000e-005		8.7000e-004	8.7000e-004		8.7000e-004	8.7000e-004	0.0000	12.4871	12.4871	2.4000e-004	2.3000e-004	12.5613
Landscaping	0.0162	6.1800e-003	0.5364	3.0000e-005		2.9700e-003	2.9700e-003		2.9700e-003	2.9700e-003	0.0000	0.8767	0.8767	8.4000e-004	0.0000	0.8978
Total	0.2240	0.0170	0.5410	1.0000e-004		3.8400e-003	3.8400e-003		3.8400e-003	3.8400e-003	0.0000	13.3639	13.3639	1.0800e-003	2.3000e-004	13.4591

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	13.1069	0.1114	2.7300e-003	16.7058
Unmitigated	13.1069	0.1114	2.7300e-003	16.7058

7.2 Water by Land Use**Unmitigated**

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Condo/Townhouse	3.38801 / 2.13592	13.1069	0.1114	2.7300e-003	16.7058
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		13.1069	0.1114	2.7300e-003	16.7058

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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			
Condo/Townhouse	3.38801 / 2.13592	13.1069	0.1114	2.7300e-003	16.7058
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		13.1069	0.1114	2.7300e-003	16.7058

8.0 Waste Detail**8.1 Mitigation Measures Waste****Category/Year**

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	4.8555	0.2870	0.0000	12.0294
Unmitigated	4.8555	0.2870	0.0000	12.0294

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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			
Condo/Townhouse	23.92	4.8555	0.2870	0.0000	12.0294
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Total		4.8555	0.2870	0.0000	12.0294

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Condo/Townhouse	23.92	4.8555	0.2870	0.0000	12.0294
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Total		4.8555	0.2870	0.0000	12.0294

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
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10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

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

Equipment Type	Number
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11.0 Vegetation
