IMPERIAL AND EUCLID RESIDENTIAL DEVELOPMENT
AIR QUALITY AND GREENHOUSE GAS IMPACT STUDY
City of La Habra

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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 construction and operation of the proposed Imperial & Euclid Residential Development (hereinafter referred to as project) would cause significant impacts to air resources.

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

1.1 Site Location

The proposed project site is located on 251-351 Imperial Highway, in the City of La Habra. The project site is located on the north of Imperial Highway, west of Euclid Street, in the City of La Habra.

The project site is located within the South Coast Air Basin (SCAB), the SCAQMD Metropolitan General Forecast Area, and the South-Central North Orange County Air Monitoring Area-16.

The project location map is provided in Exhibit A.

1.2 Project Description

The project proposes to construct and operate 117 multifamily residential homes (condo/townhomes) on approximately 4.91 acres. The site plan used for this analysis, provided by KTGY ARCHITECTURE + PLANNING, is illustrated in Exhibit B.

Table 1 summarizes the proposed project land uses.

Table 1
Land Use Summary

Land Use	Quantity	Metric
Multifamily Residential (Condo/Townhomes)	117	Dwelling Units
On-site Street Improvements (Parking Lot)	59,205	Square Feet

Construction of the project is estimated to begin in the year 2022 and last approximately 15 months. Construction activities are expected to consist of demolition, site preparation, grading, building construction, paving, and architectural coating.

The project site is currently occupied and the project will require the demolition of approximately 61,068 square feet of building area and approximately 152,811 square feet of an existing asphalt surface parking lot. The project is also expected to require the export of approximately 836.29 cubic yards of earthwork materials, including the hauling of hazardous soil materials.

The project is expected to be operational in the year 2023.

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).

The nearest sensitive land uses to the project site include the following:

- Existing residential land uses located along Keene Drive adjacent to the project site to the north (less than 25 meters from property line to property line).

- Existing residential land uses located along Parkwood Avenue south of Imperial Highway, approximately 180 feet to the south of the project site (approximately 55 meters from property line to the property line).

1.4 Summary of Air Quality and Greenhouse Gas 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
Would the project:				
a) Conflict with, or obstruct implementation of, the applicable air quality plan?			X	
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in non-attainment under an applicable Federal or State ambient air quality standard?			X	
d) Expose sensitive receptors to substantial pollutant concentrations?			X	
e) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?			X	

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

Table 3
CEQA GHG Impact Criteria

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

1.5 Recommended Project Design Features

The following recommended project design features include common rules and requirements, best practices, and California Building Standards Code compliance measures that help reduce air quality and GHG emissions. Project design features are typically included as part of the conditions of approval for the project, but are not considered mitigation under CEQA.

Construction Design Features:

DF-1 The project must follow the standard SCAQMD rules and requirements with regards to fugitive dust control, which includes, 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. Pave or gravel construction access roads at least 100 feet onto the site from the main road and use gravel aprons at truck exits.
11. Replace the ground cover of disturbed areas as quickly possible.

DF-2 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 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 will be located within a low VMT-generating area based on residential home-based VMT, home-based work VMT, and total VMT, according to the North Orange County Collaborative (NOCC+) VMT Screening Tool.

DF-11 The project will provide bicycle racks in common areas for guests and pay development impact fees that contribute towards future citywide improvements, such as bicycle infrastructure. The project is also located less than ½ mile from the proposed future Class-I bike lane along the south side of Imperial Highway.

DF-12 The project will provide the necessary infrastructure to support electric vehicle charging, such as dedicated circuits for in-garage charging, as required by the Building Code.

DF-13 The project will comply with the mandatory requirements of the latest 2019 California Building Standards Code, Title 24, Part 6 (Energy Code) and Part 11 (CALGreen), which are at least 20% more energy efficient than 2008 standards by requiring measure that include, but are not limited to the following:

- Install energy efficient appliances, including air conditioning and heating units, dishwashers, water heaters, etc.;
- Install solar water heaters;
- Install top quality windows and insulation;
- Install energy efficient lighting;
- Optimize conditions for natural heating, cooling and lighting by building siting and orientation;
- Use features that incorporate natural ventilation;
- Install light-colored "cool" pavements, and strategically located shade trees along all bicycle and pedestrian routes; and
- Incorporate skylights; reflective surfaces, and natural shading in building design and layouts.

DF-14 The project will include photovoltaic (solar) panel systems capable of meeting the Energy Design Ratings and the latest CA Energy Code requirements.

DF-15 The project will encourage the property management company and landscape maintenance crews to use electric powered landscaping equipment for landscape maintenance.

DF-16 The project will include low-flow toilets and fixtures, drought-tolerant plants with efficient landscape watering systems, recycled water, and rainwater capture systems. The project will also notify the property management company and landscape maintenance crews that excessive watering of landscaping, excessive fountain operation, watering during peak daylight hours, water of non-permeable surfaces, excessive water uses for washing, and water use resulting in flooding or runoff is prohibited.

DF-17 The project will participate in the local waste management recycling and composting programs.

2.0 Air Quality Setting

The Federal Clean Air Act (§ 7602) defines air pollution as any agent or combination of such agents, including any physical, chemical, biological, or radioactive substance which is emitted into or otherwise enters the ambient air. Household combustion devices, motor vehicles, industrial facilities and forest fires are common sources of air pollution. Air pollution can cause disease, allergies and 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 Pollutants[1].

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

- **Ozone (O_3)** is one of several substances called photochemical oxidants that are formed when volatile organic compounds (VOC) and NO_x react in the presence of ultraviolet sunlight. O_3 concentrations in the South Coast basin are typically among the highest in the nation, and the damaging effects of photochemical smog, which is a popular name for a number of oxidants in combination, are generally related to the concentrations of O_3. Individuals exercising outdoors, children, and people with preexisting lung disease, such as asthma and chronic pulmonary lung disease, are considered to be the subgroups most susceptible to O_3 effects. Short-term exposures (lasting for a few hours) to O_3 at levels typically observed in southern California can result in breathing pattern changes, reduction of breathing capacity, increased susceptibility to infections, inflammation of the lung tissue, and some immunological changes. In recent years, a correlation between elevated ambient O_3 levels and increases in daily hospital admission rates, as well as mortality, has also been reported. The South Coast Air Basin is designated by the USEPA as an extreme non-attainment area for ozone. Although O_3 concentrations have declined substantially since the early 1990s, the South Coast basin continues to have peak O_3 levels that exceed both state and federal standards.

- **Fine Particulate Matter (PM_{10})** consists of extremely small, suspended particles or droplets 10 microns or smaller in diameter that can lodge in the lungs, contributing to respiratory problems. PM_{10} arises from such sources as re-entrained road dust, diesel soot, combustion products, tire and brake abrasion, construction operations, and fires. It is also formed in the atmosphere from NO_x and SO_2 reactions with ammonia. PM_{10} scatters light and significantly reduces visibility. Inhalable particulates

pose a serious health hazard, alone or in combination with other pollutants. More than half of the smallest particles inhaled will be deposited in the lungs and can cause permanent lung damage. Inhalable particulates can also have a damaging effect on health by interfering with the body's mechanism for clearing the respiratory tract or by acting as a carrier of an absorbed toxic substance. 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 PM_{10} and lower visibility levels. Sources of VOCs include combustion engines, and evaporative emissions associated with fuel, paints and solvents, asphalt paving, and the use of household consumer products such as aerosols. Although health-based standards have not been established for VOCs, health effects can occur from exposures to high concentrations of VOC. Some hydrocarbon components classified as VOC emissions are hazardous air pollutants. Benzene, for example, is a hydrocarbon component of VOC emissions that are known to be a human carcinogen. The term reactive organic gases (ROG) are often used interchangeably with VOC.

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

2.2 Federal and State Ambient Air Quality Standards

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

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

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

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

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

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

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

[3] Secondary standards

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

2.3 Attainment Status

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

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

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

Table 5 lists the attainment status for the criteria pollutants in the South Coast Air Basin (SCAB).

Table 5
South Coast Air Basin Attainment Status[1]

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 term nonattainment area is used to refer to an air SCAB where one or more ambient air quality standards are exceeded.

The latest version is the 2016 AQMP. The 2016 AQMP is a regional blueprint for achieving the 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 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.

- **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

[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

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 located 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 Summary[1]

Month	Temperature (˚F)			Mean Precipitation (inches)
	Max.	Min.	Mean	
January	70.0	47.5	58.7	3.34
February	70.0	48.2	59.1	3.47
March	72.4	50.4	61.4	1.86
Total	74.7	52.8	63.7	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	69.4	0.72
November	75.4	51.8	63.6	0.99
December	69.7	46.9	58.3	2.02
Annual	**77.4**	**55.4**	**66.4**	**14.09**

[1] Source: Western Regional Climate Center 2016-2019. Averages derived from measurements recorded between 1989 and 2012 at Anaheim Station, (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 NOx emissions, 95 percent of the CO emissions and 34 percent of directly emitted PM2.5, with another 13 percent of PM2.5 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.

The project is located within the Metropolitan general forecasting area and North Orange County air monitoring area (SRA-16).

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	2017	2018	2019
Carbon Monoxide -- North Orange County	1 Hour	Max 1-Hour (ppm)	3.8	3.0	2.6
		Exceeded State Standard (20 ppm)	No	No	No
		Exceeded National Standard (35 ppm)	No	No	No
	8 Hour	Max 8 Hour (ppm)	1.6	1.4	1.2
		Exceeded State Standard (9 ppm)	No	No	No
		Exceeded National Standard (9 ppm)	No	No	No
Ozone -- North Orange County	1 Hour	Max 1-Hour (ppm)	0.113	0.111	0.107
		Days > State Standard (0.09 ppm)	5	3	2
	8 Hour	Max 8 Hour (ppm)	0.086	0.077	0.094
		Days > State Standard (0.07 ppm)	12	4	6
		Days >National Standard (0.070 ppm)	12	4	6
Nitrogen Dioxide -- North Orange County	1 Hour	Max 1-Hour (ppm)	0.0718	0.0671	0.0594
		Exceeded State Standard (0.18 ppm)	No	No	No
	Annual	Annual Average (ppm)	0.0145	0.013	0.0121
		Exceeded >State Standard (0.030 ppm)	No	No	No
		Exceeded >National Standard (0.053 ppm)	No	No	No
Sulfur Dioxide -- Metropolitan Riverside County-1	1 Hour	Max 1 Hour (ppm)	0.0019	0.0016	0.0014
		Exceed State Standard (0.25 ppm)	No	No	No
		Exceed National Standard (0.075 ppm)	No	No	No
Coarse Particles (PM10) -- Central Orange County	24 Hour	Max 24-Hour ($\mu g/m^3$)	129	129	127
		Days > State Standard (50 $\mu g/m^3$)	19	13	13
		Days >National Standard (150 $\mu g/m^3$)	0	0	0
	Annual	Annual Average ($\mu g/m^3$)	27.3	27.2	21.9
		Exceeded State Standard (20 $\mu g/m^3$)	Yes	Yes	Yes
Fine Particulates (PM2.5) -- Central Orange County	24 Hour	Max 24-Hour ($\mu g/m^3$)	53.93	54.1	36.1
		Days >National Standard (35 $\mu g/m^3$)	6	3	3
	Annual	Annual Average ($\mu g/m^3$)	10.87	11.02	9.32
		Exceeded State Standard (12 $\mu g/m^3$)	No	No	No
		Exceeded National Standard (15 $\mu g/m^3$)	No	No	No

Source : https://www.aqmd.gov/home/air-quality/historical-air-quality-data/historical-data-by-year
$\mu g/m^3$ = micrograms per cubic meter
ARB = California Air Resource Board
EPA= Environmental Protection Agency
ppm = part per million
(- -) = Data not provided

3.0 Global Climate Change Setting

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

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

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

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

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

3.1 Greenhouse Gases

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

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

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

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

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

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

3.2 GHG Regulatory Setting – State of California

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

- **Assembly Bill (AB) 32, California Global Warming Solutions Act of 2006.** AB 32 set the stage for the State's transition to a sustainable, low-carbon future. AB 32 was the first program in the country to take a comprehensive, long-term approach to addressing climate change.[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 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 Inventory[1]

United States (2019)[2]	State of California (2018)[3]	SCAG (2020)[4]	City of La Habra[5]
6,558 $MMTCO_2e$	425 $MMTCO_2e$	216.4 $MMTCO_2e$	0.284 $MMTCO_2e$

[1] $MMTCO_2e$ = Million Metric Tons of Carbon Dioxide Equivalent
[2] https://www.epa.gov/ghgemissions/inventory-us-greenhouse-gas-emissions-and-sinks
[3] https://ww3.arb.ca.gov/cc/inventory/pubs/reports/2000_2018/ghg_inventory_trends_00-18.pdf.
[4] http://www.scag.ca.gov/programs/Pages/GreenhouseGases.aspx. Projected Emission from SACG - Regional GHG Inventory and Reference Case Projections, 1990-2035, dated May 30, 2012.
[5] Climate Action Plan, City of La Habra. 2010 net total emissions.

[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 Modeling Parameters and Assumptions

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

The model quantifies direct emissions from construction and operation activities (including vehicle use), as well as indirect emissions, such as GHG emissions from off-site energy generation, solid waste disposal, vegetation planting and/or removal, and water use. The model also identifies design features 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 2022 and last approximately 15 months. 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 2023. For purposes of this analysis, construction phases are not expected to overlap.

The project site is currently occupied and expected to demolish approximately 61,068 square feet of building area and approximately 152,811 square feet of an existing asphalt surface parking lot. The project is also expected to require the export of approximately 836.29 cubic yards of earthwork materials, including the hauling of hazardous soil material. This analysis assumes any hazardous soil material will be exported as part of the grading phase to represent a worst-case estimate of daily emissions.

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 SCAQMD[6]:

- Utilize soil stabilizers - 30% PM_{10} and $PM_{2.5}$ reduction.
- Replace ground cover - 15% PM_{10} and $PM_{2.5}$ reduction.
- Water exposed areas 2x per day.
- Unpaved road moisture content – 25%.
- Unpaved road vehicle speed – 15 mph.

Table 10
Off-Road Construction Equipment Assumptions[1]

Phase	Equipment	Number	Hours Per Day	Soil Disturbance Rate (Acres/ 8hr-Day)[2]	Off-Road Equipment Daily Disturbance Footprint (Acres)	Total Daily Disturbance Footprint (Acres)
Demolition	Concrete/Industrial Saws	1	8	0.0	0.00	1.0
	Excavators	3	8	0.0	0.00	
	Rubber Tired Dozers	2	8	0.5	1.00	
Site Preparation	Rubber Tired Dozers	3	8	0.5	1.50	3.5
	Tractors/Loaders/Backhoes	4	8	0.5	2.00	
Grading	Excavators	1	8	0.0	0.00	2.5
	Graders	1	8	0.5	0.50	
	Rubber Tired Dozers	1	8	0.5	0.50	
	Tractors/Loaders/Backhoes	3	8	0.5	1.50	
Building Construction	Cranes	1	7	0.0	0.00	1.3
	Forklifts	3	8	0.0	0.00	
	Generator Sets	1	8	0.0	0.00	
	Tractors/Loaders/Backhoes	3	7	0.5	1.31	
	Welders	1	8	0.0	0.00	
Paving	Pavers	2	8	0.0	0.00	0.0
	Paving Equipment	2	8	0.0	0.00	
	Rollers	2	8	0.0	0.00	
Architectural Coating	Air Compressors	1	6	0.0	0.00	0.0

[1] CalEEMod Defaults

[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

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 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 trip generation rates, trip length and trip percentages for this project are based on the CalEEMod defaults.

The Emission Factors (EMFAC2017) 2017 model and off-model adjustments factors to account for the SAFE Vehicle Rule is used to estimate the mobile source emissions are

embedded in the CalEEMod emissions model. No adjustments have been made to default emission factors.

The project's total vehicle miles traveled estimated by CalEEMod is shown in the Table 11 for this project.

Table 11
Operational Vehicle Miles Traveled[1]

Land Use	Annual Vehicle Miles Traveled (VMT)
Condo/Townhomes	2,914,020

[1] CalEEMod defaults.

The operational vehicle fleet mix has been adjusted to reflect vehicle types used for typical residential home-based trips generated by the project. The Southern California Association of Governments (SCAG) regional travel demand model does not include heavy-duty trucks, buses or other large vehicles that would require passenger car equivalent (PCE) adjustments for residential home-based trips. 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 pound or greater. This includes LHD2, MHD, HHD, OBUS, UBUS, and SBUS vehicles. The 2% mix is also consistent with the default Highway Capacity Manual (HCM) assumptions. The adjusted vehicle mix is proportioned according to the default CalEEMod vehicle mix.

Table 12 summarizes vehicle mix used for this project.

Table 12
Operational Vehicle Mix[1]

YUY	Vehicle Mix (%)
Light Duty Automobile (LDA)	55.12%
Light Duty Truck (LDTI)	5.95%
Light Duty Truck (LDT2)	18.91%
Medium Duty Truck (MDV)	13.09%
Light Heavy Truck (LHD1)	2.47%
Light Heavy Truck (LHD2)	0.42%
Medium Heavy Truck (MHD)	0.91%
Heavy Heavy Truck (HHD)	0.31%
Other Bus (OBUS)	0.04%
Urban Bus (UBUS)	0.02%
Motorcycle (MCY)	2.46%
School Bus (SBUS)	0.05%
Motor Home (MH)	0.25%
Total	**100.0%**

[1] Adjusted 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. Because some lighting is not considered as part of the building envelope energy budget, and since a

separate mitigation measure is applicable to this end use, CalEEMod makes lighting a separate category.

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

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

The project will be required to provide on-site renewable energy photovoltaic installations (solar panels), as required by the latest 2019 CA Energy Code requirements. The Energy Code requires all new residential construction to achieve net-zero emissions associated with electricity usage through the use of on-site renewable sources. This analysis has conservatively assumed 80% of electricity usage will be captured via on-site renewable sources (i.e., solar panels), as a part of project design.

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

Table 13
Electricity and Natural Gas Usage – Unmitigated

Land Use	Electricity Usage[1] (KWhr/yr)[2]	Natural Gas Usage[1] (KBTU/yr)[2]
Condo/Townhouse	567,135	1,890,960
Parking Lot	20,722	- -
Total	**587,856**	**1,890,960**

[1] CalEEMod Default Unmitigated 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 ROGs 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 and recommendations to reduce water usage are discussed in Section 6.0.

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

The estimated waste generation by the project is reported in Table 14 and recommendations to reduce waste generation in landfills are discussed in Section 6.0

Table 14
Operational Water Usage and Waste Generation

Land Use	Water Usage (gallons/year)			Waste Generation (tons/year)[1]
	Indoor	Outdoor	Total	
Condo/Townhouse	7,623,021	4,805,818	12,428,839	53.82

[1] CalEEMod 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
PM_{10}	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) 16 –North 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 daily disturbance area is calculated to be 3.5 acres, however LST thresholds are only based on 1, 2 and 5-acre sites. In order to be conservative, a linear progression model was used to estimate the threshold for 3.5-acre site based on the established LST thresholds.

Table 16
SCAQMD Localized Significance Thresholds[1] (LST)

Pollutant	Construction (lbs/day)	Operation (lbs/day)
NO_X	180.7	180.7
CO	1,026.6	1,026.6
PM_{10}	8.4	2.4
$PM_{2.5}$	4.9	1.6

[1] Source: SCAQMD Mass Rate Localized Significance Thresholds for 3.5-acre site in SRA-16 at 25 meters

5.3 GHG Significance Thresholds

5.3.1 City of La Habra Climate Action Plan

The City of La Habra adopted a Climate Action Plan (CAP) in January 2014. The CAP was designed to help the City identify and reduce GHG emissions across multiple sectors of the economy and municipal services, including transportation, energy, area sources, water, and solid waste. The City's CAP does not establish quantified thresholds of significance for CEQA purposes. Therefore, for purposes of this analysis, a qualitative assessment of the project's consistency with the CAP's R2 emissions reduction programs and regulations is provided. R2 reduction measures include reduction strategies that can be incorporated at the City (and project) level to provide additional reductions in greenhouse gas emissions beyond those administered in the State's Scoping Plan.

5.3.2 SCAQMD Recommended GHG Thresholds

For quantifiable analysis purposes, the project GHG emissions are also compared to the SCAQMD *Interim CEQA Greenhouse Gas (GHG) Significance Thresholds, December 2008.* The purpose of the SCAQMD thresholds of significance is 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). The SCAQMD has held several GHG Significance Thresholds Stakeholder Working Group meetings where staff has presented updated recommendations that serve in addendum to the interim document.

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 $MTCO_2e$/year, commercial projects to 1,400 $MTCO_2e$/year), and the mixed use to 3,000 $MTCO_2e$/year. Option #2 sets a single numerical threshold for all non-industrial projects of 3,000 $MTCO_2e$/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 La Habra.

Table 17
SCAQMD Tier 3 GHG Screening Values

Land Use	Screening Value
Industrial Projects	10,000 $MTCO_2e/Yr$
Residential/Commercial Projects	3,000 $MTCO_2e/Yr$

- **Tier 4 -** includes three performance standard compliance options to demonstrate that a project is not significant for GHG emissions.

  Compliance Option 1 consists of achieving a target percentage reduction in emission compared to the business as usual (BAU) methodology. The project proponent would need to incorporate design features into the project and/or implement GHG mitigation measures to demonstrate a 30 percent reduction in GHG emissions below BAU that is consistent with the current applicable goals of AB 32 in the State of the California.

  Compliance Option 2 consists of early compliance with AB 32 through early implementation of CARB's Scoping Plan Measures. This option is intended for projects in sectors subject to the Scoping Plan Measures.

  Compliance Option 3 consists of establishing efficiency-based performance standards at the plan level (program-level projects such as general plans) and project level. Efficiency standards are based on the amount of GHG emissions ($MTCO_2e$/year) per Service Population (SP). SP is defined as the sum of the residential and employment populations provided by a project.

Table 18
SCAQMD Tier 4 Efficiency Thresholds

Project Type	Efficiency Thresholds[1]	
	Target Year 2020	Target Year 2035
Plan (Program) Level	6.6 $MTCO_2e$/yr/SP	4.1 $MTCO_2e$/yr/SP
Project Level	4.8 $MTCO_2e$/yr/SP	3.0 $MTCO_2e$/yr/SP

- **Tier 5 –** involves implementing off-site mitigation or the purchasing of offsets to reduce GHG emissions to less than the proposed screening level. The project proponent would be required to provide offsets for the life of the project, which is defined as 30 years.

By complying with the SCAQMD GHG thresholds of significance, the project is considered to be in compliance with the applicable State GHG legislation.

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 Daily Emissions - Construction

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

As shown in Table 19, daily emissions of criteria pollutants are expected to be below the allowable thresholds of significance.

CalEEMod daily emissions outputs are provided in Appendix A.

Table 19
Daily Construction Emissions

Maximum Daily Emissions (lbs/day)[1]						
Activity	**VOC**	**NO_x**	**CO**	**SO_2**	**PM_{10}**	**$PM_{2.5}$**
Demolition	0.70	9.79	25.87	0.07	5.09	0.99
Site Preparation	0.52	2.06	21.46	0.04	7.78	3.98
Grading	0.43	2.46	18.48	0.03	3.03	1.44
Building Construction	0.72	3.50	21.40	0.04	1.42	0.42
Paving	0.50	1.25	17.76	0.02	0.21	0.08
Architectural Coating	68.83	0.17	2.51	0.01	0.25	0.07
Maximum[1]	**68.83**	**3.50**	**21.46**	**0.04**	**7.78**	**3.98**
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 regards 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 built into the design features.

Table 19 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 which 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 20 illustrates the construction related localized emissions and compares the results to SCAQMD LST thresholds. As shown in Table 20, 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 regards to fugitive dust control, as described in Section 6.1.3. Compliance with the dust control is considered a standard requirement and included as part of the project's design features, not mitigation.

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

Table 20
Localized Construction Emissions

Maximum Daily Emissions (lbs/day)[1]				
Activity	**NOx**	**CO**	**PM_{10}**	**$PM_{2.5}$**
On-site Emissions	2.23	23.28	7.58	3.93
SCAQMD Construction Threshold[2]	180.7	1,026.6	8.4	4.9
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-16, North Orange County, 3.5-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 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 are recommended for the project:

DF-1 The project must follow the standard SCAQMD rules and requirements with regards to fugitive dust control, which includes, 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. Pave or gravel construction access roads at least 100 feet onto the site from the main road and use gravel aprons at truck exits.
11. Replace the ground cover of disturbed areas as quickly possible.

6.1.4 Odors - Construction

Heavy-duty equipment in the project area during construction will emit odors; however, the construction activity would cease to occur after individual 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 imbedded within construction materials become a health hazard once they are disturbed and rendered airborne, such as through physical contact like 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.

The project includes demolition of existing structures that would be subject to the National Emissions Standards for Asbestos (40CFR Part 61 Subpart M). Prior to demolition of existing structures, an asbestos evaluation must be completed in accordance with the Asbestos NESHAP regulations. Section 61.145 requires written notification of demolition operations. Asbestos NESHAP demolition/Renovation Notification Form can be downloaded at http://www.arb.ca.gov/enf/asbestosform.pdf.

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 in 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 is 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]

[7] OEHHA. Air Toxics Hot Spots Program. Risk Assessment Guidelines. Guidance for Preparation of Health Risk

The HRA Guidelines provide risk factors based on exposure to toxic substances over a 30-year lifetime 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 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 are recommended. Project design features include a recommendation for Tier 4 engines on all off-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.

Assessments. February 2015.

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

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 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.

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 21. 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 which exceed quantitative thresholds for ozone precursors).

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

Table 21
Daily Operational Emissions

Maximum Daily Emissions (lbs/day)[1]						
Activity	**VOC**	**NO_x**	**CO**	**SO_2**	**PM_{10}**	**$PM_{2.5}$**
Mobile Sources	2.69	2.67	27.45	0.06	6.88	1.86
Energy Sources	0.06	0.48	0.20	0.00	0.04	0.04
Area Sources	5.21	2.05	10.49	0.01	0.21	0.21
Total	**7.96**	**5.20**	**38.14**	**0.08**	**7.13**	**2.11**
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 22 shows the localized operational emissions and compares the results to SCAQMD LST thresholds of significance. As shown in Table 22, 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 22
Localized Operational Emissions

Maximum Daily Emissions (lbs/day)[1]				
LST Pollutants	NOx (lbs/day)	CO (lbs/day)	PM_{10} (lbs/day)	$PM_{2.5}$ (lbs/day)
On-site Emissions[1]	2.66	12.06	0.6	0.3
SCAQMD Operation Threshold[2]	180.7	1,026.6	2.4	1.6
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 16, North Orange County disturbance area of 3.5-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 would consist of residential land uses. These types of projects do not include major sources of toxic air contaminants (TAC) emissions that would result in significant exposure of sensitive receptors to substantial pollutant concentrations. Therefore, **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 is 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 23 shows the construction greenhouse gas emissions, including equipment and worker vehicle emissions for all phases of construction. Construction emissions are averaged over 30 years and added to the long-term operational emissions, pursuant to SCAQMD recommendations.

CalEEMod annual GHG output calculations are provided in Appendix B.

Table 23
Construction Greenhouse Gas Emissions

Activity	Emissions ($MTCO_2e$)[1]		
	On-site	Off-site	Total
Demolition	34.23	32.17	66.40
Site Preparation	16.85	0.79	17.64
Grading	26.27	4.69	30.96
Building Construction	268.09	158.88	426.97
Paving	20.19	1.28	21.47
Architectural Coating	2.56	1.87	4.43
Total	368.19	199.68	567.87
Amortized over 30 years[2]	**12.27**	**6.66**	**18.93**

[1] $MTCO_2e$ = 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. By itself, the construction activities from this project are less than significant when compared to the thresholds recommended by SCAQMD. However, SCAQMD recommends that construction emissions be amortized over a 30-year project lifetime and added to the overall project operational emissions. 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 24. CalEEMod annual GHG output calculations are provided in Appendix B.

Table 24
Operational Greenhouse Gas Emissions

Emission Source	GHG Emissions ($MTCO_2e$)[1]
Mobile Source	940.77
Energy Source	122.47
Area Source	30.28
Water	37.59
Waste	27.07
Construction (30-year average)	18.93
Total Annual Emissions	**1,177.11**
SCAQMD Tier 3 Screening Threshold[2]	3,000
Exceed Tier 3 Threshold?	No

[1] $MTCO_2e$ = 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 24, the project GHG emissions are expected to be below the SCAQMD's Tier 3 approach, which limits GHG emissions to 3,000 $MTCO_2e$ for residential projects.

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

7.3 Project Consistency With La Habra Climate Action Plan

In order to help ensure the project does not conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing emissions of greenhouse gases, a qualitative assessment of the project's consistency with the La Habra Climate Action Plan (CAP) is provided.

The CAP does not establish quantified thresholds of significance for CEQA purposes. Therefore, for purposes of this analysis, a qualitative assessment is appropriate. Consistency with the CAP's R2 emissions reduction programs and regulations is considered to be the most appropriate metric for evaluating impacts. The R2 reduction measures include reduction strategies that can be incorporated at the City (and project) level to provide additional reductions in greenhouse gas emissions beyond those administered in the State's Scoping Plan.

Table 25 provides a summary of the project's consistency with the La Habra CAP.

Table 25
La Habra CAP Consistency Analysis

La Habra CAP GHG Reduction Measures[1]		Project Design Features		Consistent with CAP
Transportation				
R2-T1	Land Use Based Trips and VMT Reduction Policies	DF-10	The project will be located within a low VMT-generating area based on residential home-based VMT, home-based work VMT, and total VMT, according to the North Orange County Collaborative (NOCC+) VMT Screening Tool.	Yes
R2-T2	Bicycle Infrastructure	DF-11	The project will provide bicycle racks in common areas for guests and pay development impact fees that contribute towards future citywide improvements, such as bicycle infrastructure. The project is also located less than ½ mile from the proposed future Class-I bike lane along the south side of Imperial Highway.	Yes
R2-T3	Electric Vehicle Incentive Program	DF-12	The project will provide the necessary infrastructure to support electric vehicle charging, such as dedicated circuits for in-garage charging, as required by the Building Code.	Yes

Table 25
La Habra CAP Consistency Analysis

La Habra CAP GHG Reduction Measures[1]		Project Design Features	Consistent with CAP
Energy			
R2-E1	New Construction Residential Energy Efficiency Requirements	DF-13 The project will comply with the mandatory requirements of the latest 2019 California Building Standards Code, Title 24, Part 6 (Energy Code) and Part 11 (CALGreen), which are at least 20% more energy efficient than 2008 standards by requiring measure that include, but are not limited to the following: • Install energy efficient appliances, including air conditioning and heating units, dishwashers, water heaters, etc.; • Install solar water heaters; • Install top quality windows and insulation; • Install energy efficient lighting; • Optimize conditions for natural heating, cooling and lighting by building siting and orientation; • Use features that incorporate natural ventilation; • Install light-colored "cool" pavements, and strategically located shade trees along all bicycle and pedestrian routes; and • Incorporate skylights; reflective surfaces, and natural shading in building design and layouts.	Yes
R2-E2	New Construction Residential Renewable Energy	DF-14 The project will include photovoltaic (solar) panel systems capable of meeting the Energy Design Ratings and the latest CA Energy Code requirements.	Yes
R2-E3	Residential Energy Efficiency Retrofits	The project does not consist of retrofitting existing homes.	n/a
R2-E4	Residential Renewable Energy Retrofits	The project does not consist of retrofitting existing homes.	n/a
R2-E5	New Commercial Energy Efficiency Requirements	The project does not consist of new commercial buildings.	n/a
R2-E6	New Commercial/ Industrial Renewable Energy	The project does not consist of new commercial or industrial development	n/a

Table 25
La Habra CAP Consistency Analysis

La Habra CAP GHG Reduction Measures[1]		Project Design Features		Consistent with CAP
R2-E7	Commercial/ Industrial Energy Efficiency and Renewable Energy Retrofits	The project does not consist of retrofitting existing commercial or industrial development		n/a
R2-E8	Municipal Energy Efficiency Retrofit Projects	The project does not consist of retrofitting existing municipal buildings or facilities		n/a
Area Sources				
R2-A1	Electric Landscape Equipment Program	DF-15	The project will encourage the property management company and landscape maintenance crews to use electric powered landscaping equipment for landscape maintenance.	Yes
Water				
R2-W1	Water Use Reduction Initiative	DF-16	The project will include low-flow toilets and fixtures, drought-tolerant plants with efficient landscape watering systems, recycled water, and rainwater capture systems. The project will also notify the property management company and landscape maintenance crews that excessive watering of landscaping, excessive fountain operation, watering during peak daylight hours, water of non-permeable surfaces, excessive water uses for washing, and water use resulting in flooding or runoff is prohibited.	Yes
Solid Waste				
R2-S1	City Diversion Program	DF-17	The project will participate in the local waste management recycling and composting programs.	Yes

[1] City of La Habra Climate Action Plan, Adopted January 21, 2014.

By complying with the City of La Habra CAP goals and policies, the project will contribute to achieving the citywide goal of reducing GHG emissions by 30% in year 2035 compared to 2010 levels.

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.

Exhibits

Exhibit A

Location Map

N

Exhibit B

Site Plan

N

Appendices

Appendix A

Daily Emissions Calculations Output
(CalEEMod)

Imperial and Euclid Residential Development - Orange County, Summer

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

Imperial and Euclid 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	59.20	1000sqft	1.36	59,205.00	0
Condo/Townhouse	117.00	Dwelling Unit	4.21	217,060.00	335

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	30
Climate Zone	9			**Operational Year**	2023
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	390.98	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - The project proposes to construct and operate 117 multifamily (condo/townhomes) residential homes on approximately 5.58 gross acre site.

Demolition - The project is expected to demolish approximately 61,068 S.F. of Building Area and approximately 152,811.6 S.F. of paved surfaces, totalling 9,685.65 tons of waste material.

Grading - The project is expected to:
Cut: 1602.98 cy; Fill 766.68 cy; Net: 836.29 cy (cut), includes 10 cy of hazardous material

Woodstoves - SCAQMD Rule 445 restricts wood burning hearths/fireplaces from being installed in new development.

Construction Off-road Equipment Mitigation - Project will be required to comply with SCAQMD Rule 403 regarding fugitive dust control. The project is expected to use Tier 4 diesel engine construction equipment.

Area Mitigation -

Energy Mitigation - The project is expected to generate 80% of its electricty demand through on-site solar sources.

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

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadMoistureContent	0	12
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	6.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	10.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
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tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final

Imperial and Euclid Residential Development - Orange County, Summer

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

tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblFireplaces	FireplaceWoodMass	1,019.20	0.00
tblFireplaces	NumberGas	99.45	117.00
tblFireplaces	NumberNoFireplace	11.70	0.00
tblFireplaces	NumberWood	5.85	0.00
tblFleetMix	HHD	4.8550e-003	3.0998e-003
tblFleetMix	LDA	0.54	0.55
tblFleetMix	LDT1	0.06	0.06
tblFleetMix	LDT2	0.19	0.19
tblFleetMix	LHD1	0.02	0.02
tblFleetMix	LHD2	6.5220e-003	4.1641e-003
tblFleetMix	MCY	0.02	0.02
tblFleetMix	MDV	0.13	0.13
tblFleetMix	MH	3.9420e-003	2.5168e-003
tblFleetMix	MHD	0.01	9.0931e-003
tblFleetMix	OBUS	6.5600e-004	4.1883e-004
tblFleetMix	SBUS	7.2300e-004	4.6161e-004
tblFleetMix	UBUS	3.8500e-004	2.4581e-004
tblGrading	MaterialExported	0.00	836.29
tblLandUse	LandUseSquareFeet	59,200.00	59,205.00
tblLandUse	LandUseSquareFeet	117,000.00	217,060.00
tblLandUse	LotAcreage	7.31	4.21
tblWoodstoves	WoodstoveWoodMass	999.60	0.00

2.0 Emissions Summary

Imperial and Euclid 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					
2022	3.2243	33.2073	23.1825	0.0689	19.8582	1.6137	21.4719	10.1558	1.4846	11.6404	0.0000	7,133.9449	7,133.9449	1.3646	0.5220	7,323.6187
2023	68.9869	15.3524	19.9013	0.0412	1.3590	0.7099	2.0690	0.3636	0.6679	1.0315	0.0000	4,041.7871	4,041.7871	0.7171	0.0848	4,083.4639
Maximum	**68.9869**	**33.2073**	**23.1825**	**0.0689**	**19.8582**	**1.6137**	**21.4719**	**10.1558**	**1.4846**	**11.6404**	**0.0000**	**7,133.9449**	**7,133.9449**	**1.3646**	**0.5220**	**7,323.6187**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2022	0.7014	9.4912	25.8683	0.0689	7.7200	0.1190	7.7832	3.9176	0.1165	3.9806	0.0000	7,133.9449	7,133.9449	1.3646	0.5220	7,323.6187
2023	68.8249	3.2022	21.1175	0.0412	1.3590	0.0510	1.4100	0.3636	0.0503	0.4139	0.0000	4,041.7871	4,041.7871	0.7171	0.0848	4,083.4639
Maximum	**68.8249**	**9.4912**	**25.8683**	**0.0689**	**7.7200**	**0.1190**	**7.7832**	**3.9176**	**0.1165**	**3.9806**	**0.0000**	**7,133.9449**	**7,133.9449**	**1.3646**	**0.5220**	**7,323.6187**

Imperial and Euclid 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	N20	CO2e
Percent Reduction	3.72	73.86	-9.06	0.00	57.21	92.69	60.95	59.30	92.25	65.32	0.00	0.00	0.00	0.00	0.00	0.00

Imperial and Euclid 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	5.2139	2.0522	10.4867	0.0129		0.2104	0.2104		0.2104	0.2104	0.0000	2,495.0406	2,495.0406	0.0642	0.0454	2,510.1827
Energy	0.0559	0.4774	0.2032	3.0500e-003		0.0386	0.0386		0.0386	0.0386		609.4959	609.4959	0.0117	0.0112	613.1178
Mobile	2.6864	2.4719	27.4504	0.0631	6.8360	0.0411	6.8772	1.8190	0.0382	1.8571		6,477.4120	6,477.4120	0.3632	0.2315	6,555.4878
Total	**7.9562**	**5.0015**	**38.1403**	**0.0790**	**6.8360**	**0.2901**	**7.1261**	**1.8190**	**0.2871**	**2.1061**	**0.0000**	**9,581.9486**	**9,581.9486**	**0.4391**	**0.2881**	**9,678.7884**

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	5.2139	2.0522	10.4867	0.0129		0.2104	0.2104		0.2104	0.2104	0.0000	2,495.0406	2,495.0406	0.0642	0.0454	2,510.1827
Energy	0.0559	0.4774	0.2032	3.0500e-003		0.0386	0.0386		0.0386	0.0386		609.4959	609.4959	0.0117	0.0112	613.1178
Mobile	2.6864	2.4719	27.4504	0.0631	6.8360	0.0411	6.8772	1.8190	0.0382	1.8571		6,477.4120	6,477.4120	0.3632	0.2315	6,555.4878
Total	**7.9562**	**5.0015**	**38.1403**	**0.0790**	**6.8360**	**0.2901**	**7.1261**	**1.8190**	**0.2871**	**2.1061**	**0.0000**	**9,581.9486**	**9,581.9486**	**0.4391**	**0.2881**	**9,678.7884**

Imperial and Euclid 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	N20	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/3/2022	1/28/2022	5	20	
2	Site Preparation	Site Preparation	1/29/2022	2/11/2022	5	10	
3	Grading	Grading	2/12/2022	3/11/2022	5	20	
4	Building Construction	Building Construction	3/12/2022	1/27/2023	5	230	
5	Paving	Paving	1/28/2023	2/24/2023	5	20	
6	Architectural Coating	Architectural Coating	2/25/2023	3/24/2023	5	20	

Acres of Grading (Site Preparation Phase): 15

Acres of Grading (Grading Phase): 20

Acres of Paving: 1.36

Residential Indoor: 439,547; Residential Outdoor: 146,516; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 3,552 (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	Excavators	3	8.00	158	0.38
Demolition	Rubber Tired Dozers	2	8.00	247	0.40
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37

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

Grading	Excavators	1	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Architectural Coating	Air Compressors	1	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	6	15.00	0.00	958.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	18.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	6	15.00	0.00	105.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	109.00	22.00	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	22.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Use Soil Stabilizer

Replace Ground Cover

Imperial and Euclid Residential Development - Orange County, Summer

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

Water Exposed Area

Water Unpaved Roads

Reduce Vehicle Speed on Unpaved Roads

3.2 Demolition - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					10.3631	0.0000	10.3631	1.5691	0.0000	1.5691			0.0000			0.0000
Off-Road	2.6392	25.7194	20.5941	0.0388		1.2427	1.2427		1.1553	1.1553		3,746.7812	3,746.7812	1.0524		3,773.0920
Total	**2.6392**	**25.7194**	**20.5941**	**0.0388**	**10.3631**	**1.2427**	**11.6058**	**1.5691**	**1.1553**	**2.7243**		**3,746.7812**	**3,746.7812**	**1.0524**		**3,773.0920**

Imperial and Euclid 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 - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.1940	7.4576	2.0948	0.0286	0.8354	0.0564	0.8918	0.2288	0.0540	0.2828		3,238.5018	3,238.5018	0.3087	0.5187	3,400.7887
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	0.0451	0.0303	0.4936	1.4600e-003	0.1677	9.0000e-004	0.1686	0.0445	8.3000e-004	0.0453		148.6620	148.6620	3.4700e-003	3.3200e-003	149.7380
Total	**0.2392**	**7.4879**	**2.5885**	**0.0300**	**1.0031**	**0.0573**	**1.0604**	**0.2732**	**0.0548**	**0.3281**		**3,387.1638**	**3,387.1638**	**0.3122**	**0.5220**	**3,550.5267**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					3.9639	0.0000	3.9639	0.6002	0.0000	0.6002			0.0000			0.0000
Off-Road	0.4623	2.0032	23.2798	0.0388		0.0616	0.0616		0.0616	0.0616	0.0000	3,746.7812	3,746.7812	1.0524		3,773.0920
Total	**0.4623**	**2.0032**	**23.2798**	**0.0388**	**3.9639**	**0.0616**	**4.0255**	**0.6002**	**0.0616**	**0.6618**	**0.0000**	**3,746.7812**	**3,746.7812**	**1.0524**		**3,773.0920**

Imperial and Euclid 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 - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.1940	7.4576	2.0948	0.0286	0.8354	0.0564	0.8918	0.2288	0.0540	0.2828		3,238.5018	3,238.5018	0.3087	0.5187	3,400.7887
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	0.0451	0.0303	0.4936	1.4600e-003	0.1677	9.0000e-004	0.1686	0.0445	8.3000e-004	0.0453		148.6620	148.6620	3.4700e-003	3.3200e-003	149.7380
Total	**0.2392**	**7.4879**	**2.5885**	**0.0300**	**1.0031**	**0.0573**	**1.0604**	**0.2732**	**0.0548**	**0.3281**		**3,387.1638**	**3,387.1638**	**0.3122**	**0.5220**	**3,550.5267**

3.3 Site Preparation - 2022

Unmitigated Construction On-Site

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

Imperial and Euclid 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 - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	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	0.0542	0.0364	0.5924	1.7500e-003	0.2012	1.0900e-003	0.2023	0.0534	1.0000e-003	0.0544		178.3944	178.3944	4.1700e-003	3.9800e-003	179.6856
Total	**0.0542**	**0.0364**	**0.5924**	**1.7500e-003**	**0.2012**	**1.0900e-003**	**0.2023**	**0.0534**	**1.0000e-003**	**0.0544**		**178.3944**	**178.3944**	**4.1700e-003**	**3.9800e-003**	**179.6856**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					7.5188	0.0000	7.5188	3.8642	0.0000	3.8642			0.0000			0.0000
Off-Road	0.4656	2.0175	20.8690	0.0380		0.0621	0.0621		0.0621	0.0621	0.0000	3,686.0619	3,686.0619	1.1922		3,715.8655
Total	**0.4656**	**2.0175**	**20.8690**	**0.0380**	**7.5188**	**0.0621**	**7.5809**	**3.8642**	**0.0621**	**3.9263**	**0.0000**	**3,686.0619**	**3,686.0619**	**1.1922**		**3,715.8655**

Imperial and Euclid 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 - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	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	0.0542	0.0364	0.5924	1.7500e-003	0.2012	1.0900e-003	0.2023	0.0534	1.0000e-003	0.0544		178.3944	178.3944	4.1700e-003	3.9800e-003	179.6856
Total	**0.0542**	**0.0364**	**0.5924**	**1.7500e-003**	**0.2012**	**1.0900e-003**	**0.2023**	**0.0534**	**1.0000e-003**	**0.0544**		**178.3944**	**178.3944**	**4.1700e-003**	**3.9800e-003**	**179.6856**

3.4 Grading - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					7.0873	0.0000	7.0873	3.4255	0.0000	3.4255			0.0000			0.0000
Off-Road	1.9486	20.8551	15.2727	0.0297		0.9409	0.9409		0.8656	0.8656		2,872.0464	2,872.0464	0.9289		2,895.2684
Total	**1.9486**	**20.8551**	**15.2727**	**0.0297**	**7.0873**	**0.9409**	**8.0282**	**3.4255**	**0.8656**	**4.2910**		**2,872.0464**	**2,872.0464**	**0.9289**		**2,895.2684**

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

3.4 Grading - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0213	0.8174	0.2296	3.1300e-003	0.0916	6.1800e-003	0.0978	0.0251	5.9200e-003	0.0310		354.9506	354.9506	0.0338	0.0569	372.7378
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	0.0451	0.0303	0.4936	1.4600e-003	0.1677	9.0000e-004	0.1686	0.0445	8.3000e-004	0.0453		148.6620	148.6620	3.4700e-003	3.3200e-003	149.7380
Total	**0.0664**	**0.8477**	**0.7232**	**4.5900e-003**	**0.2592**	**7.0800e-003**	**0.2663**	**0.0695**	**6.7500e-003**	**0.0763**		**503.6126**	**503.6126**	**0.0373**	**0.0602**	**522.4758**

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					2.7109	0.0000	2.7109	1.3102	0.0000	1.3102			0.0000			0.0000
Off-Road	0.3632	1.5737	17.7527	0.0297		0.0484	0.0484		0.0484	0.0484	0.0000	2,872.0464	2,872.0464	0.9289		2,895.2684
Total	**0.3632**	**1.5737**	**17.7527**	**0.0297**	**2.7109**	**0.0484**	**2.7593**	**1.3102**	**0.0484**	**1.3587**	**0.0000**	**2,872.0464**	**2,872.0464**	**0.9289**		**2,895.2684**

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

3.4 Grading - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0213	0.8174	0.2296	3.1300e-003	0.0916	6.1800e-003	0.0978	0.0251	5.9200e-003	0.0310		354.9506	354.9506	0.0338	0.0569	372.7378
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	0.0451	0.0303	0.4936	1.4600e-003	0.1677	9.0000e-004	0.1686	0.0445	8.3000e-004	0.0453		148.6620	148.6620	3.4700e-003	3.3200e-003	149.7380
Total	**0.0664**	**0.8477**	**0.7232**	**4.5900e-003**	**0.2592**	**7.0800e-003**	**0.2663**	**0.0695**	**6.7500e-003**	**0.0763**		**503.6126**	**503.6126**	**0.0373**	**0.0602**	**522.4758**

3.5 Building Construction - 2022

Unmitigated Construction On-Site

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

Imperial and Euclid 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 - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	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	0.0366	0.9872	0.3505	4.1700e-003	0.1407	9.6000e-003	0.1503	0.0405	9.1900e-003	0.0497		456.1867	456.1867	0.0261	0.0654	476.3221
Worker	0.3280	0.2204	3.5871	0.0106	1.2184	6.5800e-003	1.2249	0.3231	6.0500e-003	0.3292		1,080.2769	1,080.2769	0.0253	0.0241	1,088.0960
Total	**0.3645**	**1.2075**	**3.9376**	**0.0148**	**1.3590**	**0.0162**	**1.3752**	**0.3636**	**0.0152**	**0.3788**		**1,536.4636**	**1,536.4636**	**0.0514**	**0.0895**	**1,564.4181**

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	0.3278	2.2347	17.4603	0.0269		0.0408	0.0408		0.0408	0.0408	0.0000	2,554.3336	2,554.3336	0.6120		2,569.6322
Total	**0.3278**	**2.2347**	**17.4603**	**0.0269**		**0.0408**	**0.0408**		**0.0408**	**0.0408**	**0.0000**	**2,554.3336**	**2,554.3336**	**0.6120**		**2,569.6322**

Imperial and Euclid 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 - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	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	0.0366	0.9872	0.3505	4.1700e-003	0.1407	9.6000e-003	0.1503	0.0405	9.1900e-003	0.0497		456.1867	456.1867	0.0261	0.0654	476.3221
Worker	0.3280	0.2204	3.5871	0.0106	1.2184	6.5800e-003	1.2249	0.3231	6.0500e-003	0.3292		1,080.2769	1,080.2769	0.0253	0.0241	1,088.0960
Total	**0.3645**	**1.2075**	**3.9376**	**0.0148**	**1.3590**	**0.0162**	**1.3752**	**0.3636**	**0.0152**	**0.3788**		**1,536.4636**	**1,536.4636**	**0.0514**	**0.0895**	**1,564.4181**

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	1.5728	14.3849	16.2440	0.0269		0.6997	0.6997		0.6584	0.6584		2,555.2099	2,555.2099	0.6079		2,570.4061
Total	**1.5728**	**14.3849**	**16.2440**	**0.0269**		**0.6997**	**0.6997**		**0.6584**	**0.6584**		**2,555.2099**	**2,555.2099**	**0.6079**		**2,570.4061**

Imperial and Euclid 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	0.0222	0.7710	0.3197	3.9500e-003	0.1407	3.9600e-003	0.1446	0.0405	3.7800e-003	0.0443		434.3886	434.3886	0.0258	0.0623	453.6084
Worker	0.3071	0.1965	3.3376	0.0103	1.2184	6.2300e-003	1.2246	0.3231	5.7300e-003	0.3289		1,052.1885	1,052.1885	0.0228	0.0225	1,059.4494
Total	**0.3294**	**0.9675**	**3.6573**	**0.0142**	**1.3590**	**0.0102**	**1.3692**	**0.3636**	**9.5100e-003**	**0.3731**		**1,486.5771**	**1,486.5771**	**0.0487**	**0.0848**	**1,513.0578**

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	0.3278	2.2347	17.4603	0.0269		0.0408	0.0408		0.0408	0.0408	0.0000	2,555.2099	2,555.2099	0.6079		2,570.4061
Total	**0.3278**	**2.2347**	**17.4603**	**0.0269**		**0.0408**	**0.0408**		**0.0408**	**0.0408**	**0.0000**	**2,555.2099**	**2,555.2099**	**0.6079**		**2,570.4061**

Imperial and Euclid 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	0.0222	0.7710	0.3197	3.9500e-003	0.1407	3.9600e-003	0.1446	0.0405	3.7800e-003	0.0443		434.3886	434.3886	0.0258	0.0623	453.6084
Worker	0.3071	0.1965	3.3376	0.0103	1.2184	6.2300e-003	1.2246	0.3231	5.7300e-003	0.3289		1,052.1885	1,052.1885	0.0228	0.0225	1,059.4494
Total	**0.3294**	**0.9675**	**3.6573**	**0.0142**	**1.3590**	**0.0102**	**1.3692**	**0.3636**	**9.5100e-003**	**0.3731**		**1,486.5771**	**1,486.5771**	**0.0487**	**0.0848**	**1,513.0578**

3.6 Paving - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.0327	10.1917	14.5842	0.0228		0.5102	0.5102		0.4694	0.4694		2,207.5841	2,207.5841	0.7140		2,225.4336
Paving	0.1782					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.2109**	**10.1917**	**14.5842**	**0.0228**		**0.5102**	**0.5102**		**0.4694**	**0.4694**		**2,207.5841**	**2,207.5841**	**0.7140**		**2,225.4336**

Imperial and Euclid 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 - 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	0.0423	0.0270	0.4593	1.4100e-003	0.1677	8.6000e-004	0.1685	0.0445	7.9000e-004	0.0453		144.7966	144.7966	3.1400e-003	3.0900e-003	145.7958
Total	**0.0423**	**0.0270**	**0.4593**	**1.4100e-003**	**0.1677**	**8.6000e-004**	**0.1685**	**0.0445**	**7.9000e-004**	**0.0453**		**144.7966**	**144.7966**	**3.1400e-003**	**3.0900e-003**	**145.7958**

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	0.2805	1.2154	17.2957	0.0228		0.0374	0.0374		0.0374	0.0374	0.0000	2,207.5841	2,207.5841	0.7140		2,225.4336
Paving	0.1782					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.4586**	**1.2154**	**17.2957**	**0.0228**		**0.0374**	**0.0374**		**0.0374**	**0.0374**	**0.0000**	**2,207.5841**	**2,207.5841**	**0.7140**		**2,225.4336**

Imperial and Euclid 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 - 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	0.0423	0.0270	0.4593	1.4100e-003	0.1677	8.6000e-004	0.1685	0.0445	7.9000e-004	0.0453		144.7966	144.7966	3.1400e-003	3.0900e-003	145.7958
Total	**0.0423**	**0.0270**	**0.4593**	**1.4100e-003**	**0.1677**	**8.6000e-004**	**0.1685**	**0.0445**	**7.9000e-004**	**0.0453**		**144.7966**	**144.7966**	**3.1400e-003**	**3.0900e-003**	**145.7958**

3.7 Architectural Coating - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	68.7332					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1917	1.3030	1.8111	2.9700e-003		0.0708	0.0708		0.0708	0.0708		281.4481	281.4481	0.0168		281.8690
Total	**68.9249**	**1.3030**	**1.8111**	**2.9700e-003**		**0.0708**	**0.0708**		**0.0708**	**0.0708**		**281.4481**	**281.4481**	**0.0168**		**281.8690**

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

3.7 Architectural Coating - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0620	0.0397	0.6737	2.0800e-003	0.2459	1.2600e-003	0.2472	0.0652	1.1600e-003	0.0664		212.3683	212.3683	4.6100e-003	4.5300e-003	213.8338
Total	**0.0620**	**0.0397**	**0.6737**	**2.0800e-003**	**0.2459**	**1.2600e-003**	**0.2472**	**0.0652**	**1.1600e-003**	**0.0664**		**212.3683**	**212.3683**	**4.6100e-003**	**4.5300e-003**	**213.8338**

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	68.7332					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.0297	0.1288	1.8324	2.9700e-003		3.9600e-003	3.9600e-003		3.9600e-003	3.9600e-003	0.0000	281.4481	281.4481	0.0168		281.8690
Total	**68.7629**	**0.1288**	**1.8324**	**2.9700e-003**		**3.9600e-003**	**3.9600e-003**		**3.9600e-003**	**3.9600e-003**	**0.0000**	**281.4481**	**281.4481**	**0.0168**		**281.8690**

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

3.7 Architectural Coating - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0620	0.0397	0.6737	2.0800e-003	0.2459	1.2600e-003	0.2472	0.0652	1.1600e-003	0.0664		212.3683	212.3683	4.6100e-003	4.5300e-003	213.8338
Total	**0.0620**	**0.0397**	**0.6737**	**2.0800e-003**	**0.2459**	**1.2600e-003**	**0.2472**	**0.0652**	**1.1600e-003**	**0.0664**		**212.3683**	**212.3683**	**4.6100e-003**	**4.5300e-003**	**213.8338**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Imperial and Euclid 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	2.6864	2.4719	27.4504	0.0631	6.8360	0.0411	6.8772	1.8190	0.0382	1.8571		6,477.4120	6,477.4120	0.3632	0.2315	6,555.4878
Unmitigated	2.6864	2.4719	27.4504	0.0631	6.8360	0.0411	6.8772	1.8190	0.0382	1.8571		6,477.4120	6,477.4120	0.3632	0.2315	6,555.4878

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Condo/Townhouse	856.44	952.38	734.76	2,914,020	2,914,020
Parking Lot	0.00	0.00	0.00		
Total	856.44	952.38	734.76	2,914,020	2,914,020

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	0.551165	0.059549	0.189089	0.130914	0.024666	0.004164	0.009093	0.003100	0.000419	0.000246	0.024617	0.000462	0.002517
Parking Lot	0.544795	0.058861	0.186903	0.129401	0.024381	0.006522	0.014242	0.004855	0.000656	0.000385	0.024332	0.000723	0.003942

5.0 Energy Detail

Imperial and Euclid 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

Percent of Electricity Use Generated with Renewable 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	0.0559	0.4774	0.2032	3.0500e-003		0.0386	0.0386		0.0386	0.0386		609.4959	609.4959	0.0117	0.0112	613.1178
NaturalGas Unmitigated	0.0559	0.4774	0.2032	3.0500e-003		0.0386	0.0386		0.0386	0.0386		609.4959	609.4959	0.0117	0.0112	613.1178

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

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Condo/Townhouse	5180.72	0.0559	0.4774	0.2032	3.0500e-003		0.0386	0.0386		0.0386	0.0386		609.4959	609.4959	0.0117	0.0112	613.1178
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		**0.0559**	**0.4774**	**0.2032**	**3.0500e-003**		**0.0386**	**0.0386**		**0.0386**	**0.0386**		**609.4959**	**609.4959**	**0.0117**	**0.0112**	**613.1178**

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	5.18072	0.0559	0.4774	0.2032	3.0500e-003		0.0386	0.0386		0.0386	0.0386		609.4959	609.4959	0.0117	0.0112	613.1178
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		**0.0559**	**0.4774**	**0.2032**	**3.0500e-003**		**0.0386**	**0.0386**		**0.0386**	**0.0386**		**609.4959**	**609.4959**	**0.0117**	**0.0112**	**613.1178**

6.0 Area Detail

Imperial and Euclid Residential Development - Orange County, Summer

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

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	5.2139	2.0522	10.4867	0.0129		0.2104	0.2104		0.2104	0.2104	0.0000	2,495.0406	2,495.0406	0.0642	0.0454	2,510.1827
Unmitigated	5.2139	2.0522	10.4867	0.0129		0.2104	0.2104		0.2104	0.2104	0.0000	2,495.0406	2,495.0406	0.0642	0.0454	2,510.1827

Imperial and Euclid 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	0.3766					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	4.3188					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.2271	1.9408	0.8259	0.0124		0.1569	0.1569		0.1569	0.1569	0.0000	2,477.6471	2,477.6471	0.0475	0.0454	2,492.3705
Landscaping	0.2914	0.1114	9.6608	5.1000e-004		0.0535	0.0535		0.0535	0.0535		17.3936	17.3936	0.0168		17.8123
Total	**5.2139**	**2.0522**	**10.4867**	**0.0129**		**0.2104**	**0.2104**		**0.2104**	**0.2104**	**0.0000**	**2,495.0406**	**2,495.0406**	**0.0642**	**0.0454**	**2,510.1827**

Imperial and Euclid 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	0.3766					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	4.3188					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.2271	1.9408	0.8259	0.0124		0.1569	0.1569		0.1569	0.1569	0.0000	2,477.6471	2,477.6471	0.0475	0.0454	2,492.3705
Landscaping	0.2914	0.1114	9.6608	5.1000e-004		0.0535	0.0535		0.0535	0.0535		17.3936	17.3936	0.0168		17.8123
Total	**5.2139**	**2.0522**	**10.4867**	**0.0129**		**0.2104**	**0.2104**		**0.2104**	**0.2104**	**0.0000**	**2,495.0406**	**2,495.0406**	**0.0642**	**0.0454**	**2,510.1827**

7.0 Water Detail

7.1 Mitigation Measures Water

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

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Imperial and Euclid Residential Development - Orange County, Winter

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

Imperial and Euclid 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	59.20	1000sqft	1.36	59,205.00	0
Condo/Townhouse	117.00	Dwelling Unit	4.21	217,060.00	335

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	30
Climate Zone	9			**Operational Year**	2023
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	390.98	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - The project proposes to construct and operate 117 multifamily (condo/townhomes) residential homes on approximately 5.58 gross acre site.

Demolition - The project is expected to demolish approximately 61,068 S.F. of Building Area and approximately 152,811.6 S.F. of paved surfaces, totalling 9,685.65 tons of waste material.

Grading - The project is expected to:
Cut: 1602.98 cy; Fill 766.68 cy; Net: 836.29 cy (cut), includes 10 cy of hazardous material

Woodstoves - SCAQMD Rule 445 restricts wood burning hearths/fireplaces from being installed in new development.

Construction Off-road Equipment Mitigation - Project will be required to comply with SCAQMD Rule 403 regarding fugitive dust control. The project is expected to use Tier 4 diesel engine construction equipment.

Area Mitigation -

Energy Mitigation - The project is expected to generate 80% of its electricty demand through on-site solar sources.

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

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadMoistureContent	0	12
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	6.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	10.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final

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

tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblFireplaces	FireplaceWoodMass	1,019.20	0.00
tblFireplaces	NumberGas	99.45	117.00
tblFireplaces	NumberNoFireplace	11.70	0.00
tblFireplaces	NumberWood	5.85	0.00
tblFleetMix	HHD	4.8550e-003	3.0998e-003
tblFleetMix	LDA	0.54	0.55
tblFleetMix	LDT1	0.06	0.06
tblFleetMix	LDT2	0.19	0.19
tblFleetMix	LHD1	0.02	0.02
tblFleetMix	LHD2	6.5220e-003	4.1641e-003
tblFleetMix	MCY	0.02	0.02
tblFleetMix	MDV	0.13	0.13
tblFleetMix	MH	3.9420e-003	2.5168e-003
tblFleetMix	MHD	0.01	9.0931e-003
tblFleetMix	OBUS	6.5600e-004	4.1883e-004
tblFleetMix	SBUS	7.2300e-004	4.6161e-004
tblFleetMix	UBUS	3.8500e-004	2.4581e-004
tblGrading	MaterialExported	0.00	836.29
tblLandUse	LandUseSquareFeet	59,200.00	59,205.00
tblLandUse	LandUseSquareFeet	117,000.00	217,060.00
tblLandUse	LotAcreage	7.31	4.21
tblWoodstoves	WoodstoveWoodMass	999.60	0.00

2.0 Emissions Summary

Imperial and Euclid 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					
2022	3.2291	33.5033	23.1789	0.0688	19.8582	1.6137	21.4719	10.1558	1.4846	11.6404	0.0000	7,127.5868	7,127.5868	1.3644	0.5224	7,317.3598
2023	68.9926	15.4060	19.6831	0.0407	1.3590	0.7099	2.0690	0.3636	0.6680	1.0316	0.0000	3,992.1180	3,992.1180	0.7172	0.0864	4,034.2767
Maximum	**68.9926**	**33.5033**	**23.1789**	**0.0688**	**19.8582**	**1.6137**	**21.4719**	**10.1558**	**1.4846**	**11.6404**	**0.0000**	**7,127.5868**	**7,127.5868**	**1.3644**	**0.5224**	**7,317.3598**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2022	0.7211	9.7871	25.8646	0.0688	7.7200	0.1191	7.7832	3.9176	0.1166	3.9806	0.0000	7,127.5868	7,127.5868	1.3644	0.5224	7,317.3598
2023	68.8307	3.2559	20.8993	0.0407	1.3590	0.0510	1.4100	0.3636	0.0503	0.4139	0.0000	3,992.1180	3,992.1180	0.7172	0.0864	4,034.2767
Maximum	**68.8307**	**9.7871**	**25.8646**	**0.0688**	**7.7200**	**0.1191**	**7.7832**	**3.9176**	**0.1166**	**3.9806**	**0.0000**	**7,127.5868**	**7,127.5868**	**1.3644**	**0.5224**	**7,317.3598**

Imperial and Euclid 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	N20	CO2e
Percent Reduction	3.70	73.33	-9.10	0.00	57.21	92.68	60.95	59.30	92.25	65.32	0.00	0.00	0.00	0.00	0.00	0.00

Imperial and Euclid 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	5.2139	2.0522	10.4867	0.0129		0.2104	0.2104		0.2104	0.2104	0.0000	2,495.0406	2,495.0406	0.0642	0.0454	2,510.1827
Energy	0.0559	0.4774	0.2032	3.0500e-003		0.0386	0.0386		0.0386	0.0386		609.4959	609.4959	0.0117	0.0112	613.1178
Mobile	2.6722	2.6673	27.0539	0.0606	6.8360	0.0411	6.8772	1.8190	0.0382	1.8571		6,219.1537	6,219.1537	0.3754	0.2424	6,300.7827
Total	**7.9420**	**5.1969**	**37.7438**	**0.0765**	**6.8360**	**0.2901**	**7.1262**	**1.8190**	**0.2871**	**2.1061**	**0.0000**	**9,323.6902**	**9,323.6902**	**0.4513**	**0.2990**	**9,424.0833**

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	5.2139	2.0522	10.4867	0.0129		0.2104	0.2104		0.2104	0.2104	0.0000	2,495.0406	2,495.0406	0.0642	0.0454	2,510.1827
Energy	0.0559	0.4774	0.2032	3.0500e-003		0.0386	0.0386		0.0386	0.0386		609.4959	609.4959	0.0117	0.0112	613.1178
Mobile	2.6722	2.6673	27.0539	0.0606	6.8360	0.0411	6.8772	1.8190	0.0382	1.8571		6,219.1537	6,219.1537	0.3754	0.2424	6,300.7827
Total	**7.9420**	**5.1969**	**37.7438**	**0.0765**	**6.8360**	**0.2901**	**7.1262**	**1.8190**	**0.2871**	**2.1061**	**0.0000**	**9,323.6902**	**9,323.6902**	**0.4513**	**0.2990**	**9,424.0833**

Imperial and Euclid 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	N20	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/3/2022	1/28/2022	5	20	
2	Site Preparation	Site Preparation	1/29/2022	2/11/2022	5	10	
3	Grading	Grading	2/12/2022	3/11/2022	5	20	
4	Building Construction	Building Construction	3/12/2022	1/27/2023	5	230	
5	Paving	Paving	1/28/2023	2/24/2023	5	20	
6	Architectural Coating	Architectural Coating	2/25/2023	3/24/2023	5	20	

Acres of Grading (Site Preparation Phase): 15

Acres of Grading (Grading Phase): 20

Acres of Paving: 1.36

Residential Indoor: 439,547; Residential Outdoor: 146,516; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 3,552 (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	Excavators	3	8.00	158	0.38
Demolition	Rubber Tired Dozers	2	8.00	247	0.40
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37

Imperial and Euclid Residential Development - Orange County, Winter

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

Grading	Excavators	1	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Architectural Coating	Air Compressors	1	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	6	15.00	0.00	958.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	18.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	6	15.00	0.00	105.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	109.00	22.00	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	22.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Use Soil Stabilizer

Replace Ground Cover

Imperial and Euclid Residential Development - Orange County, Winter

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

Water Exposed Area

Water Unpaved Roads

Reduce Vehicle Speed on Unpaved Roads

3.2 Demolition - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					10.3631	0.0000	10.3631	1.5691	0.0000	1.5691			0.0000			0.0000
Off-Road	2.6392	25.7194	20.5941	0.0388		1.2427	1.2427		1.1553	1.1553		3,746.7812	3,746.7812	1.0524		3,773.0920
Total	**2.6392**	**25.7194**	**20.5941**	**0.0388**	**10.3631**	**1.2427**	**11.6058**	**1.5691**	**1.1553**	**2.7243**		**3,746.7812**	**3,746.7812**	**1.0524**		**3,773.0920**

Imperial and Euclid 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 - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.1893	7.7506	2.1254	0.0286	0.8354	0.0566	0.8920	0.2288	0.0541	0.2829		3,239.2713	3,239.2713	0.3084	0.5188	3,401.5919
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	0.0492	0.0333	0.4594	1.3900e-003	0.1677	9.0000e-004	0.1686	0.0445	8.3000e-004	0.0453		141.5344	141.5344	3.5500e-003	3.5300e-003	142.6759
Total	**0.2385**	**7.7839**	**2.5848**	**0.0300**	**1.0031**	**0.0575**	**1.0605**	**0.2732**	**0.0549**	**0.3282**		**3,380.8056**	**3,380.8056**	**0.3120**	**0.5224**	**3,544.2678**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					3.9639	0.0000	3.9639	0.6002	0.0000	0.6002			0.0000			0.0000
Off-Road	0.4623	2.0032	23.2798	0.0388		0.0616	0.0616		0.0616	0.0616	0.0000	3,746.7812	3,746.7812	1.0524		3,773.0920
Total	**0.4623**	**2.0032**	**23.2798**	**0.0388**	**3.9639**	**0.0616**	**4.0255**	**0.6002**	**0.0616**	**0.6618**	**0.0000**	**3,746.7812**	**3,746.7812**	**1.0524**		**3,773.0920**

Imperial and Euclid 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 - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.1893	7.7506	2.1254	0.0286	0.8354	0.0566	0.8920	0.2288	0.0541	0.2829		3,239.2713	3,239.2713	0.3084	0.5188	3,401.5919
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	0.0492	0.0333	0.4594	1.3900e-003	0.1677	9.0000e-004	0.1686	0.0445	8.3000e-004	0.0453		141.5344	141.5344	3.5500e-003	3.5300e-003	142.6759
Total	**0.2385**	**7.7839**	**2.5848**	**0.0300**	**1.0031**	**0.0575**	**1.0605**	**0.2732**	**0.0549**	**0.3282**		**3,380.8056**	**3,380.8056**	**0.3120**	**0.5224**	**3,544.2678**

3.3 Site Preparation - 2022

Unmitigated Construction On-Site

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

Imperial and Euclid 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 - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	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	0.0590	0.0400	0.5512	1.6700e-003	0.2012	1.0900e-003	0.2023	0.0534	1.0000e-003	0.0544		169.8412	169.8412	4.2600e-003	4.2400e-003	171.2111
Total	**0.0590**	**0.0400**	**0.5512**	**1.6700e-003**	**0.2012**	**1.0900e-003**	**0.2023**	**0.0534**	**1.0000e-003**	**0.0544**		**169.8412**	**169.8412**	**4.2600e-003**	**4.2400e-003**	**171.2111**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					7.5188	0.0000	7.5188	3.8642	0.0000	3.8642			0.0000			0.0000
Off-Road	0.4656	2.0175	20.8690	0.0380		0.0621	0.0621		0.0621	0.0621	0.0000	3,686.0619	3,686.0619	1.1922		3,715.8655
Total	**0.4656**	**2.0175**	**20.8690**	**0.0380**	**7.5188**	**0.0621**	**7.5809**	**3.8642**	**0.0621**	**3.9263**	**0.0000**	**3,686.0619**	**3,686.0619**	**1.1922**		**3,715.8655**

Imperial and Euclid 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 - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	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	0.0590	0.0400	0.5512	1.6700e-003	0.2012	1.0900e-003	0.2023	0.0534	1.0000e-003	0.0544		169.8412	169.8412	4.2600e-003	4.2400e-003	171.2111
Total	**0.0590**	**0.0400**	**0.5512**	**1.6700e-003**	**0.2012**	**1.0900e-003**	**0.2023**	**0.0534**	**1.0000e-003**	**0.0544**		**169.8412**	**169.8412**	**4.2600e-003**	**4.2400e-003**	**171.2111**

3.4 Grading - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					7.0873	0.0000	7.0873	3.4255	0.0000	3.4255			0.0000			0.0000
Off-Road	1.9486	20.8551	15.2727	0.0297		0.9409	0.9409		0.8656	0.8656		2,872.0464	2,872.0464	0.9289		2,895.2684
Total	**1.9486**	**20.8551**	**15.2727**	**0.0297**	**7.0873**	**0.9409**	**8.0282**	**3.4255**	**0.8656**	**4.2910**		**2,872.0464**	**2,872.0464**	**0.9289**		**2,895.2684**

Imperial and Euclid 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 - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0208	0.8495	0.2330	3.1300e-003	0.0916	6.2000e-003	0.0978	0.0251	5.9300e-003	0.0310		355.0350	355.0350	0.0338	0.0569	372.8258
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	0.0492	0.0333	0.4594	1.3900e-003	0.1677	9.0000e-004	0.1686	0.0445	8.3000e-004	0.0453		141.5344	141.5344	3.5500e-003	3.5300e-003	142.6759
Total	**0.0699**	**0.8828**	**0.6923**	**4.5200e-003**	**0.2592**	**7.1000e-003**	**0.2663**	**0.0695**	**6.7600e-003**	**0.0763**		**496.5693**	**496.5693**	**0.0374**	**0.0604**	**515.5017**

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					2.7109	0.0000	2.7109	1.3102	0.0000	1.3102			0.0000			0.0000
Off-Road	0.3632	1.5737	17.7527	0.0297		0.0484	0.0484		0.0484	0.0484	0.0000	2,872.0464	2,872.0464	0.9289		2,895.2684
Total	**0.3632**	**1.5737**	**17.7527**	**0.0297**	**2.7109**	**0.0484**	**2.7593**	**1.3102**	**0.0484**	**1.3587**	**0.0000**	**2,872.0464**	**2,872.0464**	**0.9289**		**2,895.2684**

Imperial and Euclid 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 - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0208	0.8495	0.2330	3.1300e-003	0.0916	6.2000e-003	0.0978	0.0251	5.9300e-003	0.0310		355.0350	355.0350	0.0338	0.0569	372.8258
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	0.0492	0.0333	0.4594	1.3900e-003	0.1677	9.0000e-004	0.1686	0.0445	8.3000e-004	0.0453		141.5344	141.5344	3.5500e-003	3.5300e-003	142.6759
Total	**0.0699**	**0.8828**	**0.6923**	**4.5200e-003**	**0.2592**	**7.1000e-003**	**0.2663**	**0.0695**	**6.7600e-003**	**0.0763**		**496.5693**	**496.5693**	**0.0374**	**0.0604**	**515.5017**

3.5 Building Construction - 2022

Unmitigated Construction On-Site

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

Imperial and Euclid 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 - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	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	0.0361	1.0258	0.3631	4.1700e-003	0.1407	9.6400e-003	0.1503	0.0405	9.2200e-003	0.0497		456.3298	456.3298	0.0261	0.0654	476.4839
Worker	0.3572	0.2420	3.3380	0.0101	1.2184	6.5800e-003	1.2249	0.3231	6.0500e-003	0.3292		1,028.4829	1,028.4829	0.0258	0.0257	1,036.7780
Total	**0.3933**	**1.2679**	**3.7011**	**0.0143**	**1.3590**	**0.0162**	**1.3753**	**0.3636**	**0.0153**	**0.3789**		**1,484.8127**	**1,484.8127**	**0.0519**	**0.0911**	**1,513.2620**

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	0.3278	2.2347	17.4603	0.0269		0.0408	0.0408		0.0408	0.0408	0.0000	2,554.3336	2,554.3336	0.6120		2,569.6322
Total	**0.3278**	**2.2347**	**17.4603**	**0.0269**		**0.0408**	**0.0408**		**0.0408**	**0.0408**	**0.0000**	**2,554.3336**	**2,554.3336**	**0.6120**		**2,569.6322**

Imperial and Euclid 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 - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	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	0.0361	1.0258	0.3631	4.1700e-003	0.1407	9.6400e-003	0.1503	0.0405	9.2200e-003	0.0497		456.3298	456.3298	0.0261	0.0654	476.4839
Worker	0.3572	0.2420	3.3380	0.0101	1.2184	6.5800e-003	1.2249	0.3231	6.0500e-003	0.3292		1,028.4829	1,028.4829	0.0258	0.0257	1,036.7780
Total	**0.3933**	**1.2679**	**3.7011**	**0.0143**	**1.3590**	**0.0162**	**1.3753**	**0.3636**	**0.0153**	**0.3789**		**1,484.8127**	**1,484.8127**	**0.0519**	**0.0911**	**1,513.2620**

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	1.5728	14.3849	16.2440	0.0269		0.6997	0.6997		0.6584	0.6584		2,555.2099	2,555.2099	0.6079		2,570.4061
Total	**1.5728**	**14.3849**	**16.2440**	**0.0269**		**0.6997**	**0.6997**		**0.6584**	**0.6584**		**2,555.2099**	**2,555.2099**	**0.6079**		**2,570.4061**

Imperial and Euclid 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	0.0214	0.8054	0.3299	3.9600e-003	0.1407	3.9800e-003	0.1447	0.0405	3.8100e-003	0.0443		435.0275	435.0275	0.0258	0.0625	454.2878
Worker	0.3357	0.2158	3.1092	9.7900e-003	1.2184	6.2300e-003	1.2246	0.3231	5.7300e-003	0.3289		1,001.8805	1,001.8805	0.0234	0.0239	1,009.5829
Total	**0.3571**	**1.0212**	**3.4391**	**0.0138**	**1.3590**	**0.0102**	**1.3692**	**0.3636**	**9.5400e-003**	**0.3731**		**1,436.9081**	**1,436.9081**	**0.0492**	**0.0864**	**1,463.8707**

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	0.3278	2.2347	17.4603	0.0269		0.0408	0.0408		0.0408	0.0408	0.0000	2,555.2099	2,555.2099	0.6079		2,570.4061
Total	**0.3278**	**2.2347**	**17.4603**	**0.0269**		**0.0408**	**0.0408**		**0.0408**	**0.0408**	**0.0000**	**2,555.2099**	**2,555.2099**	**0.6079**		**2,570.4061**

Imperial and Euclid 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	0.0214	0.8054	0.3299	3.9600e-003	0.1407	3.9800e-003	0.1447	0.0405	3.8100e-003	0.0443		435.0275	435.0275	0.0258	0.0625	454.2878
Worker	0.3357	0.2158	3.1092	9.7900e-003	1.2184	6.2300e-003	1.2246	0.3231	5.7300e-003	0.3289		1,001.8805	1,001.8805	0.0234	0.0239	1,009.5829
Total	**0.3571**	**1.0212**	**3.4391**	**0.0138**	**1.3590**	**0.0102**	**1.3692**	**0.3636**	**9.5400e-003**	**0.3731**		**1,436.9081**	**1,436.9081**	**0.0492**	**0.0864**	**1,463.8707**

3.6 Paving - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.0327	10.1917	14.5842	0.0228		0.5102	0.5102		0.4694	0.4694		2,207.5841	2,207.5841	0.7140		2,225.4336
Paving	0.1782					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.2109**	**10.1917**	**14.5842**	**0.0228**		**0.5102**	**0.5102**		**0.4694**	**0.4694**		**2,207.5841**	**2,207.5841**	**0.7140**		**2,225.4336**

Imperial and Euclid 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 - 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	0.0462	0.0297	0.4279	1.3500e-003	0.1677	8.6000e-004	0.1685	0.0445	7.9000e-004	0.0453		137.8735	137.8735	3.2200e-003	3.2900e-003	138.9334
Total	**0.0462**	**0.0297**	**0.4279**	**1.3500e-003**	**0.1677**	**8.6000e-004**	**0.1685**	**0.0445**	**7.9000e-004**	**0.0453**		**137.8735**	**137.8735**	**3.2200e-003**	**3.2900e-003**	**138.9334**

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	0.2805	1.2154	17.2957	0.0228		0.0374	0.0374		0.0374	0.0374	0.0000	2,207.5841	2,207.5841	0.7140		2,225.4336
Paving	0.1782					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.4586**	**1.2154**	**17.2957**	**0.0228**		**0.0374**	**0.0374**		**0.0374**	**0.0374**	**0.0000**	**2,207.5841**	**2,207.5841**	**0.7140**		**2,225.4336**

Imperial and Euclid 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 - 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	0.0462	0.0297	0.4279	1.3500e-003	0.1677	8.6000e-004	0.1685	0.0445	7.9000e-004	0.0453		137.8735	137.8735	3.2200e-003	3.2900e-003	138.9334
Total	**0.0462**	**0.0297**	**0.4279**	**1.3500e-003**	**0.1677**	**8.6000e-004**	**0.1685**	**0.0445**	**7.9000e-004**	**0.0453**		**137.8735**	**137.8735**	**3.2200e-003**	**3.2900e-003**	**138.9334**

3.7 Architectural Coating - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	68.7332					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1917	1.3030	1.8111	2.9700e-003		0.0708	0.0708		0.0708	0.0708		281.4481	281.4481	0.0168		281.8690
Total	**68.9249**	**1.3030**	**1.8111**	**2.9700e-003**		**0.0708**	**0.0708**		**0.0708**	**0.0708**		**281.4481**	**281.4481**	**0.0168**		**281.8690**

Imperial and Euclid 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 - 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	0.0678	0.0436	0.6275	1.9800e-003	0.2459	1.2600e-003	0.2472	0.0652	1.1600e-003	0.0664		202.2144	202.2144	4.7200e-003	4.8200e-003	203.7690
Total	**0.0678**	**0.0436**	**0.6275**	**1.9800e-003**	**0.2459**	**1.2600e-003**	**0.2472**	**0.0652**	**1.1600e-003**	**0.0664**		**202.2144**	**202.2144**	**4.7200e-003**	**4.8200e-003**	**203.7690**

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	68.7332					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.0297	0.1288	1.8324	2.9700e-003		3.9600e-003	3.9600e-003		3.9600e-003	3.9600e-003	0.0000	281.4481	281.4481	0.0168		281.8690
Total	**68.7629**	**0.1288**	**1.8324**	**2.9700e-003**		**3.9600e-003**	**3.9600e-003**		**3.9600e-003**	**3.9600e-003**	**0.0000**	**281.4481**	**281.4481**	**0.0168**		**281.8690**

3.7 Architectural Coating - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	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	0.0678	0.0436	0.6275	1.9800e-003	0.2459	1.2600e-003	0.2472	0.0652	1.1600e-003	0.0664		202.2144	202.2144	4.7200e-003	4.8200e-003	203.7690
Total	**0.0678**	**0.0436**	**0.6275**	**1.9800e-003**	**0.2459**	**1.2600e-003**	**0.2472**	**0.0652**	**1.1600e-003**	**0.0664**		**202.2144**	**202.2144**	**4.7200e-003**	**4.8200e-003**	**203.7690**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Imperial and Euclid 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	2.6722	2.6673	27.0539	0.0606	6.8360	0.0411	6.8772	1.8190	0.0382	1.8571		6,219.1537	6,219.1537	0.3754	0.2424	6,300.7827
Unmitigated	2.6722	2.6673	27.0539	0.0606	6.8360	0.0411	6.8772	1.8190	0.0382	1.8571		6,219.1537	6,219.1537	0.3754	0.2424	6,300.7827

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Condo/Townhouse	856.44	952.38	734.76	2,914,020	2,914,020
Parking Lot	0.00	0.00	0.00		
Total	856.44	952.38	734.76	2,914,020	2,914,020

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	0.551165	0.059549	0.189089	0.130914	0.024666	0.004164	0.009093	0.003100	0.000419	0.000246	0.024617	0.000462	0.002517
Parking Lot	0.544795	0.058861	0.186903	0.129401	0.024381	0.006522	0.014242	0.004855	0.000656	0.000385	0.024332	0.000723	0.003942

5.0 Energy Detail

Imperial and Euclid 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

Percent of Electricity Use Generated with Renewable 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	0.0559	0.4774	0.2032	3.0500e-003		0.0386	0.0386		0.0386	0.0386		609.4959	609.4959	0.0117	0.0112	613.1178
NaturalGas Unmitigated	0.0559	0.4774	0.2032	3.0500e-003		0.0386	0.0386		0.0386	0.0386		609.4959	609.4959	0.0117	0.0112	613.1178

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

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Condo/Townhouse	5180.72	0.0559	0.4774	0.2032	3.0500e-003		0.0386	0.0386		0.0386	0.0386		609.4959	609.4959	0.0117	0.0112	613.1178
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		**0.0559**	**0.4774**	**0.2032**	**3.0500e-003**		**0.0386**	**0.0386**		**0.0386**	**0.0386**		**609.4959**	**609.4959**	**0.0117**	**0.0112**	**613.1178**

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	5.18072	0.0559	0.4774	0.2032	3.0500e-003		0.0386	0.0386		0.0386	0.0386		609.4959	609.4959	0.0117	0.0112	613.1178
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		**0.0559**	**0.4774**	**0.2032**	**3.0500e-003**		**0.0386**	**0.0386**		**0.0386**	**0.0386**		**609.4959**	**609.4959**	**0.0117**	**0.0112**	**613.1178**

6.0 Area Detail

Imperial and Euclid Residential Development - Orange County, Winter

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

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	5.2139	2.0522	10.4867	0.0129		0.2104	0.2104		0.2104	0.2104	0.0000	2,495.0406	2,495.0406	0.0642	0.0454	2,510.1827
Unmitigated	5.2139	2.0522	10.4867	0.0129		0.2104	0.2104		0.2104	0.2104	0.0000	2,495.0406	2,495.0406	0.0642	0.0454	2,510.1827

Imperial and Euclid 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	0.3766					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	4.3188					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.2271	1.9408	0.8259	0.0124		0.1569	0.1569		0.1569	0.1569	0.0000	2,477.6471	2,477.6471	0.0475	0.0454	2,492.3705
Landscaping	0.2914	0.1114	9.6608	5.1000e-004		0.0535	0.0535		0.0535	0.0535		17.3936	17.3936	0.0168		17.8123
Total	**5.2139**	**2.0522**	**10.4867**	**0.0129**		**0.2104**	**0.2104**		**0.2104**	**0.2104**	**0.0000**	**2,495.0406**	**2,495.0406**	**0.0642**	**0.0454**	**2,510.1827**

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	0.3766					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	4.3188					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.2271	1.9408	0.8259	0.0124		0.1569	0.1569		0.1569	0.1569	0.0000	2,477.6471	2,477.6471	0.0475	0.0454	2,492.3705
Landscaping	0.2914	0.1114	9.6608	5.1000e-004		0.0535	0.0535		0.0535	0.0535		17.3936	17.3936	0.0168		17.8123
Total	**5.2139**	**2.0522**	**10.4867**	**0.0129**		**0.2104**	**0.2104**		**0.2104**	**0.2104**	**0.0000**	**2,495.0406**	**2,495.0406**	**0.0642**	**0.0454**	**2,510.1827**

7.0 Water Detail

7.1 Mitigation Measures Water

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

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Appendix B

Annual Emissions Calculations Output
(CalEEMod)

Imperial and Euclid Residential Development - Orange County, Annual

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

Imperial and Euclid 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	59.20	1000sqft	1.36	59,205.00	0
Condo/Townhouse	117.00	Dwelling Unit	4.21	217,060.00	335

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	30
Climate Zone	9			**Operational Year**	2023
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	390.98	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - The project proposes to construct and operate 117 multifamily (condo/townhomes) residential homes on approximately 5.58 gross acre site.

Demolition - The project is expected to demolish approximately 61,068 S.F. of Building Area and approximately 152,811.6 S.F. of paved surfaces, totalling 9,685.65 tons of waste material.

Grading - The project is expected to:
Cut: 1602.98 cy; Fill 766.68 cy; Net: 836.29 cy (cut), includes 10 cy of hazardous material

Woodstoves - SCAQMD Rule 445 restricts wood burning hearths/fireplaces from being installed in new development.

Construction Off-road Equipment Mitigation - Project will be required to comply with SCAQMD Rule 403 regarding fugitive dust control. The project is expected to use Tier 4 diesel engine construction equipment.

Area Mitigation -

Energy Mitigation - The project is expected to generate 80% of its electricty demand through on-site solar sources.

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

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

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadMoistureContent	0	12
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	6.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	10.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final

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

tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblFireplaces	FireplaceWoodMass	1,019.20	0.00
tblFireplaces	NumberGas	99.45	117.00
tblFireplaces	NumberNoFireplace	11.70	0.00
tblFireplaces	NumberWood	5.85	0.00
tblFleetMix	HHD	4.8550e-003	3.0998e-003
tblFleetMix	LDA	0.54	0.55
tblFleetMix	LDT1	0.06	0.06
tblFleetMix	LDT2	0.19	0.19
tblFleetMix	LHD1	0.02	0.02
tblFleetMix	LHD2	6.5220e-003	4.1641e-003
tblFleetMix	MCY	0.02	0.02
tblFleetMix	MDV	0.13	0.13
tblFleetMix	MH	3.9420e-003	2.5168e-003
tblFleetMix	MHD	0.01	9.0931e-003
tblFleetMix	OBUS	6.5600e-004	4.1883e-004
tblFleetMix	SBUS	7.2300e-004	4.6161e-004
tblFleetMix	UBUS	3.8500e-004	2.4581e-004
tblGrading	MaterialExported	0.00	836.29
tblLandUse	LandUseSquareFeet	59,200.00	59,205.00
tblLandUse	LandUseSquareFeet	117,000.00	217,060.00
tblLandUse	LotAcreage	7.31	4.21
tblWoodstoves	WoodstoveWoodMass	999.60	0.00

2.0 Emissions Summary

Imperial and Euclid 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					
2022	0.2825	2.4933	2.6068	5.5700e-003	0.4264	0.1172	0.5436	0.1417	0.1098	0.2514	0.0000	498.8208	498.8208	0.0898	0.0140	505.2438
2023	0.7214	0.2698	0.3722	7.0000e-004	0.0174	0.0129	0.0303	4.6600e-003	0.0121	0.0168	0.0000	62.0428	62.0428	0.0127	8.6000e-004	62.6158
Maximum	**0.7214**	**2.4933**	**2.6068**	**5.5700e-003**	**0.4264**	**0.1172**	**0.5436**	**0.1417**	**0.1098**	**0.2514**	**0.0000**	**498.8208**	**498.8208**	**0.0898**	**0.0140**	**505.2438**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2022	0.0866	0.5029	2.7795	5.5700e-003	0.2580	8.0400e-003	0.2660	0.0796	7.9200e-003	0.0876	0.0000	498.8204	498.8204	0.0898	0.0140	505.2434
2023	0.6998	0.0468	0.4117	7.0000e-004	0.0174	9.4000e-004	0.0184	4.6600e-003	9.4000e-004	5.5900e-003	0.0000	62.0428	62.0428	0.0127	8.6000e-004	62.6158
Maximum	**0.6998**	**0.5029**	**2.7795**	**5.5700e-003**	**0.2580**	**8.0400e-003**	**0.2660**	**0.0796**	**7.9200e-003**	**0.0876**	**0.0000**	**498.8204**	**498.8204**	**0.0898**	**0.0140**	**505.2434**

Imperial and Euclid Residential Development - Orange County, Annual

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

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**21.66**	**80.10**	**-7.12**	**0.00**	**37.95**	**93.10**	**50.46**	**42.39**	**92.73**	**65.27**	**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	**1-3-2022**	**4-2-2022**	0.9062	0.1723
2	**4-3-2022**	**7-2-2022**	0.6141	0.1344
3	**7-3-2022**	**10-2-2022**	0.6209	0.1359
4	**10-3-2022**	**1-2-2023**	0.6226	0.1386
5	**1-3-2023**	**4-2-2023**	0.9730	0.7427
		Highest	0.9730	0.7427

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	0.8962	0.0382	1.2179	2.2000e-004		8.6400e-003	8.6400e-003		8.6400e-003	8.6400e-003	0.0000	30.0684	30.0684	2.4400e-003	5.2000e-004	30.2829
Energy	0.0102	0.0871	0.0371	5.6000e-004		7.0400e-003	7.0400e-003		7.0400e-003	7.0400e-003	0.0000	205.1627	205.1627	0.0107	2.9200e-003	206.3002
Mobile	0.4260	0.4413	4.4417	9.9700e-003	1.0942	6.6900e-003	1.1009	0.2916	6.2100e-003	0.2978	0.0000	928.6372	928.6372	0.0552	0.0361	940.7685
Waste						0.0000	0.0000		0.0000	0.0000	10.9250	0.0000	10.9250	0.6457	0.0000	27.0662
Water						0.0000	0.0000		0.0000	0.0000	2.4184	27.0722	29.4906	0.2507	6.1400e-003	37.5880
Total	**1.3324**	**0.5666**	**5.6967**	**0.0108**	**1.0942**	**0.0224**	**1.1166**	**0.2916**	**0.0219**	**0.3135**	**13.3434**	**1,190.9405**	**1,204.2839**	**0.9647**	**0.0457**	**1,242.0057**

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	0.8962	0.0382	1.2179	2.2000e-004		8.6400e-003	8.6400e-003		8.6400e-003	8.6400e-003	0.0000	30.0684	30.0684	2.4400e-003	5.2000e-004	30.2829
Energy	0.0102	0.0871	0.0371	5.6000e-004		7.0400e-003	7.0400e-003		7.0400e-003	7.0400e-003	0.0000	121.7597	121.7597	3.6900e-003	2.0600e-003	122.4669
Mobile	0.4260	0.4413	4.4417	9.9700e-003	1.0942	6.6900e-003	1.1009	0.2916	6.2100e-003	0.2978	0.0000	928.6372	928.6372	0.0552	0.0361	940.7685
Waste						0.0000	0.0000		0.0000	0.0000	10.9250	0.0000	10.9250	0.6457	0.0000	27.0662
Water						0.0000	0.0000		0.0000	0.0000	2.4184	27.0722	29.4906	0.2507	6.1400e-003	37.5880
Total	**1.3324**	**0.5666**	**5.6967**	**0.0108**	**1.0942**	**0.0224**	**1.1166**	**0.2916**	**0.0219**	**0.3135**	**13.3434**	**1,107.5375**	**1,120.8809**	**0.9576**	**0.0448**	**1,158.1724**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**7.00**	**6.93**	**0.73**	**1.88**	**6.75**

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	1/3/2022	1/28/2022	5	20	
2	Site Preparation	Site Preparation	1/29/2022	2/11/2022	5	10	
3	Grading	Grading	2/12/2022	3/11/2022	5	20	

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

4	Building Construction	Building Construction	3/12/2022	1/27/2023	5	230	
5	Paving	Paving	1/28/2023	2/24/2023	5	20	
6	Architectural Coating	Architectural Coating	2/25/2023	3/24/2023	5	20	

Acres of Grading (Site Preparation Phase): 15

Acres of Grading (Grading Phase): 20

Acres of Paving: 1.36

Residential Indoor: 439,547; Residential Outdoor: 146,516; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 3,552 (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	Excavators	3	8.00	158	0.38
Demolition	Rubber Tired Dozers	2	8.00	247	0.40
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	1	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38

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

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	6	15.00	0.00	958.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	18.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	6	15.00	0.00	105.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	109.00	22.00	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	22.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Use Soil Stabilizer

Replace Ground Cover

Water Exposed Area

Water Unpaved Roads

Reduce Vehicle Speed on Unpaved Roads

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

3.2 Demolition - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1036	0.0000	0.1036	0.0157	0.0000	0.0157	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0264	0.2572	0.2059	3.9000e-004		0.0124	0.0124		0.0116	0.0116	0.0000	33.9902	33.9902	9.5500e-003	0.0000	34.2289
Total	**0.0264**	**0.2572**	**0.2059**	**3.9000e-004**	**0.1036**	**0.0124**	**0.1161**	**0.0157**	**0.0116**	**0.0272**	**0.0000**	**33.9902**	**33.9902**	**9.5500e-003**	**0.0000**	**34.2289**

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	1.9200e-003	0.0784	0.0211	2.9000e-004	8.2200e-003	5.6000e-004	8.7900e-003	2.2600e-003	5.4000e-004	2.8000e-003	0.0000	29.3821	29.3821	2.8000e-003	4.7100e-003	30.8545
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.5000e-004	3.4000e-004	4.7000e-003	1.0000e-005	1.6500e-003	1.0000e-005	1.6600e-003	4.4000e-004	1.0000e-005	4.5000e-004	0.0000	1.3014	1.3014	3.0000e-005	3.0000e-005	1.3119
Total	**2.3700e-003**	**0.0788**	**0.0258**	**3.0000e-004**	**9.8700e-003**	**5.7000e-004**	**0.0105**	**2.7000e-003**	**5.5000e-004**	**3.2500e-003**	**0.0000**	**30.6836**	**30.6836**	**2.8300e-003**	**4.7400e-003**	**32.1665**

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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 - 2022

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0396	0.0000	0.0396	6.0000e-003	0.0000	6.0000e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.6200e-003	0.0200	0.2328	3.9000e-004		6.2000e-004	6.2000e-004		6.2000e-004	6.2000e-004	0.0000	33.9902	33.9902	9.5500e-003	0.0000	34.2289
Total	**4.6200e-003**	**0.0200**	**0.2328**	**3.9000e-004**	**0.0396**	**6.2000e-004**	**0.0403**	**6.0000e-003**	**6.2000e-004**	**6.6200e-003**	**0.0000**	**33.9902**	**33.9902**	**9.5500e-003**	**0.0000**	**34.2289**

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	1.9200e-003	0.0784	0.0211	2.9000e-004	8.2200e-003	5.6000e-004	8.7900e-003	2.2600e-003	5.4000e-004	2.8000e-003	0.0000	29.3821	29.3821	2.8000e-003	4.7100e-003	30.8545
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.5000e-004	3.4000e-004	4.7000e-003	1.0000e-005	1.6500e-003	1.0000e-005	1.6600e-003	4.4000e-004	1.0000e-005	4.5000e-004	0.0000	1.3014	1.3014	3.0000e-005	3.0000e-005	1.3119
Total	**2.3700e-003**	**0.0788**	**0.0258**	**3.0000e-004**	**9.8700e-003**	**5.7000e-004**	**0.0105**	**2.7000e-003**	**5.5000e-004**	**3.2500e-003**	**0.0000**	**30.6836**	**30.6836**	**2.8300e-003**	**4.7400e-003**	**32.1665**

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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 - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0983	0.0000	0.0983	0.0505	0.0000	0.0505	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0159	0.1654	0.0985	1.9000e-004		8.0600e-003	8.0600e-003		7.4200e-003	7.4200e-003	0.0000	16.7197	16.7197	5.4100e-003	0.0000	16.8549
Total	**0.0159**	**0.1654**	**0.0985**	**1.9000e-004**	**0.0983**	**8.0600e-003**	**0.1064**	**0.0505**	**7.4200e-003**	**0.0579**	**0.0000**	**16.7197**	**16.7197**	**5.4100e-003**	**0.0000**	**16.8549**

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	2.7000e-004	2.0000e-004	2.8200e-003	1.0000e-005	9.9000e-004	1.0000e-005	9.9000e-004	2.6000e-004	0.0000	2.7000e-004	0.0000	0.7809	0.7809	2.0000e-005	2.0000e-005	0.7872
Total	**2.7000e-004**	**2.0000e-004**	**2.8200e-003**	**1.0000e-005**	**9.9000e-004**	**1.0000e-005**	**9.9000e-004**	**2.6000e-004**	**0.0000**	**2.7000e-004**	**0.0000**	**0.7809**	**0.7809**	**2.0000e-005**	**2.0000e-005**	**0.7872**

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

3.3 Site Preparation - 2022

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0376	0.0000	0.0376	0.0193	0.0000	0.0193	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.3300e-003	0.0101	0.1043	1.9000e-004		3.1000e-004	3.1000e-004		3.1000e-004	3.1000e-004	0.0000	16.7197	16.7197	5.4100e-003	0.0000	16.8549
Total	**2.3300e-003**	**0.0101**	**0.1043**	**1.9000e-004**	**0.0376**	**3.1000e-004**	**0.0379**	**0.0193**	**3.1000e-004**	**0.0196**	**0.0000**	**16.7197**	**16.7197**	**5.4100e-003**	**0.0000**	**16.8549**

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	2.7000e-004	2.0000e-004	2.8200e-003	1.0000e-005	9.9000e-004	1.0000e-005	9.9000e-004	2.6000e-004	0.0000	2.7000e-004	0.0000	0.7809	0.7809	2.0000e-005	2.0000e-005	0.7872
Total	**2.7000e-004**	**2.0000e-004**	**2.8200e-003**	**1.0000e-005**	**9.9000e-004**	**1.0000e-005**	**9.9000e-004**	**2.6000e-004**	**0.0000**	**2.7000e-004**	**0.0000**	**0.7809**	**0.7809**	**2.0000e-005**	**2.0000e-005**	**0.7872**

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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 - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0709	0.0000	0.0709	0.0343	0.0000	0.0343	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0195	0.2086	0.1527	3.0000e-004		9.4100e-003	9.4100e-003		8.6600e-003	8.6600e-003	0.0000	26.0548	26.0548	8.4300e-003	0.0000	26.2654
Total	**0.0195**	**0.2086**	**0.1527**	**3.0000e-004**	**0.0709**	**9.4100e-003**	**0.0803**	**0.0343**	**8.6600e-003**	**0.0429**	**0.0000**	**26.0548**	**26.0548**	**8.4300e-003**	**0.0000**	**26.2654**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	2.1000e-004	8.6000e-003	2.3100e-003	3.0000e-005	9.0000e-004	6.0000e-005	9.6000e-004	2.5000e-004	6.0000e-005	3.1000e-004	0.0000	3.2204	3.2204	3.1000e-004	5.2000e-004	3.3818
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.5000e-004	3.4000e-004	4.7000e-003	1.0000e-005	1.6500e-003	1.0000e-005	1.6600e-003	4.4000e-004	1.0000e-005	4.5000e-004	0.0000	1.3014	1.3014	3.0000e-005	3.0000e-005	1.3119
Total	**6.6000e-004**	**8.9400e-003**	**7.0100e-003**	**4.0000e-005**	**2.5500e-003**	**7.0000e-005**	**2.6200e-003**	**6.9000e-004**	**7.0000e-005**	**7.6000e-004**	**0.0000**	**4.5218**	**4.5218**	**3.4000e-004**	**5.5000e-004**	**4.6937**

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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 - 2022

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0271	0.0000	0.0271	0.0131	0.0000	0.0131	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.6300e-003	0.0157	0.1775	3.0000e-004		4.8000e-004	4.8000e-004		4.8000e-004	4.8000e-004	0.0000	26.0547	26.0547	8.4300e-003	0.0000	26.2654
Total	**3.6300e-003**	**0.0157**	**0.1775**	**3.0000e-004**	**0.0271**	**4.8000e-004**	**0.0276**	**0.0131**	**4.8000e-004**	**0.0136**	**0.0000**	**26.0547**	**26.0547**	**8.4300e-003**	**0.0000**	**26.2654**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	2.1000e-004	8.6000e-003	2.3100e-003	3.0000e-005	9.0000e-004	6.0000e-005	9.6000e-004	2.5000e-004	6.0000e-005	3.1000e-004	0.0000	3.2204	3.2204	3.1000e-004	5.2000e-004	3.3818
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.5000e-004	3.4000e-004	4.7000e-003	1.0000e-005	1.6500e-003	1.0000e-005	1.6600e-003	4.4000e-004	1.0000e-005	4.5000e-004	0.0000	1.3014	1.3014	3.0000e-005	3.0000e-005	1.3119
Total	**6.6000e-004**	**8.9400e-003**	**7.0100e-003**	**4.0000e-005**	**2.5500e-003**	**7.0000e-005**	**2.6200e-003**	**6.9000e-004**	**7.0000e-005**	**7.6000e-004**	**0.0000**	**4.5218**	**4.5218**	**3.4000e-004**	**5.5000e-004**	**4.6937**

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

3.5 Building Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1792	1.6396	1.7182	2.8300e-003		0.0850	0.0850		0.0799	0.0799	0.0000	243.3115	243.3115	0.0583	0.0000	244.7688
Total	**0.1792**	**1.6396**	**1.7182**	**2.8300e-003**		**0.0850**	**0.0850**		**0.0799**	**0.0799**	**0.0000**	**243.3115**	**243.3115**	**0.0583**	**0.0000**	**244.7688**

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	3.8100e-003	0.1086	0.0374	4.4000e-004	0.0146	1.0100e-003	0.0156	4.2000e-003	9.7000e-004	5.1600e-003	0.0000	43.4596	43.4596	2.4900e-003	6.2300e-003	45.3792
Worker	0.0345	0.0259	0.3585	1.0800e-003	0.1256	6.9000e-004	0.1263	0.0334	6.4000e-004	0.0340	0.0000	99.2988	99.2988	2.4600e-003	2.4800e-003	100.0993
Total	**0.0383**	**0.1345**	**0.3959**	**1.5200e-003**	**0.1402**	**1.7000e-003**	**0.1419**	**0.0376**	**1.6100e-003**	**0.0392**	**0.0000**	**142.7584**	**142.7584**	**4.9500e-003**	**8.7100e-003**	**145.4785**

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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 - 2022

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0344	0.2346	1.8333	2.8300e-003		4.2800e-003	4.2800e-003		4.2800e-003	4.2800e-003	0.0000	243.3112	243.3112	0.0583	0.0000	244.7685
Total	**0.0344**	**0.2346**	**1.8333**	**2.8300e-003**		**4.2800e-003**	**4.2800e-003**		**4.2800e-003**	**4.2800e-003**	**0.0000**	**243.3112**	**243.3112**	**0.0583**	**0.0000**	**244.7685**

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	3.8100e-003	0.1086	0.0374	4.4000e-004	0.0146	1.0100e-003	0.0156	4.2000e-003	9.7000e-004	5.1600e-003	0.0000	43.4596	43.4596	2.4900e-003	6.2300e-003	45.3792
Worker	0.0345	0.0259	0.3585	1.0800e-003	0.1256	6.9000e-004	0.1263	0.0334	6.4000e-004	0.0340	0.0000	99.2988	99.2988	2.4600e-003	2.4800e-003	100.0993
Total	**0.0383**	**0.1345**	**0.3959**	**1.5200e-003**	**0.1402**	**1.7000e-003**	**0.1419**	**0.0376**	**1.6100e-003**	**0.0392**	**0.0000**	**142.7584**	**142.7584**	**4.9500e-003**	**8.7100e-003**	**145.4785**

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	0.0157	0.1439	0.1624	2.7000e-004		7.0000e-003	7.0000e-003		6.5800e-003	6.5800e-003	0.0000	23.1805	23.1805	5.5100e-003	0.0000	23.3183
Total	**0.0157**	**0.1439**	**0.1624**	**2.7000e-004**		**7.0000e-003**	**7.0000e-003**		**6.5800e-003**	**6.5800e-003**	**0.0000**	**23.1805**	**23.1805**	**5.5100e-003**	**0.0000**	**23.3183**

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	2.2000e-004	8.0800e-003	3.2400e-003	4.0000e-005	1.3900e-003	4.0000e-005	1.4300e-003	4.0000e-004	4.0000e-005	4.4000e-004	0.0000	3.9432	3.9432	2.3000e-004	5.7000e-004	4.1177
Worker	3.0800e-003	2.2000e-003	0.0318	1.0000e-004	0.0120	6.0000e-005	0.0120	3.1800e-003	6.0000e-005	3.2400e-003	0.0000	9.2121	9.2121	2.1000e-004	2.2000e-004	9.2828
Total	**3.3000e-003**	**0.0103**	**0.0350**	**1.4000e-004**	**0.0134**	**1.0000e-004**	**0.0135**	**3.5800e-003**	**1.0000e-004**	**3.6800e-003**	**0.0000**	**13.1552**	**13.1552**	**4.4000e-004**	**7.9000e-004**	**13.4006**

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	3.2800e-003	0.0224	0.1746	2.7000e-004		4.1000e-004	4.1000e-004		4.1000e-004	4.1000e-004	0.0000	23.1805	23.1805	5.5100e-003	0.0000	23.3183
Total	**3.2800e-003**	**0.0224**	**0.1746**	**2.7000e-004**		**4.1000e-004**	**4.1000e-004**		**4.1000e-004**	**4.1000e-004**	**0.0000**	**23.1805**	**23.1805**	**5.5100e-003**	**0.0000**	**23.3183**

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	2.2000e-004	8.0800e-003	3.2400e-003	4.0000e-005	1.3900e-003	4.0000e-005	1.4300e-003	4.0000e-004	4.0000e-005	4.4000e-004	0.0000	3.9432	3.9432	2.3000e-004	5.7000e-004	4.1177
Worker	3.0800e-003	2.2000e-003	0.0318	1.0000e-004	0.0120	6.0000e-005	0.0120	3.1800e-003	6.0000e-005	3.2400e-003	0.0000	9.2121	9.2121	2.1000e-004	2.2000e-004	9.2828
Total	**3.3000e-003**	**0.0103**	**0.0350**	**1.4000e-004**	**0.0134**	**1.0000e-004**	**0.0135**	**3.5800e-003**	**1.0000e-004**	**3.6800e-003**	**0.0000**	**13.1552**	**13.1552**	**4.4000e-004**	**7.9000e-004**	**13.4006**

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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 - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0103	0.1019	0.1458	2.3000e-004		5.1000e-003	5.1000e-003		4.6900e-003	4.6900e-003	0.0000	20.0269	20.0269	6.4800e-003	0.0000	20.1888
Paving	1.7800e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0121**	**0.1019**	**0.1458**	**2.3000e-004**		**5.1000e-003**	**5.1000e-003**		**4.6900e-003**	**4.6900e-003**	**0.0000**	**20.0269**	**20.0269**	**6.4800e-003**	**0.0000**	**20.1888**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.2000e-004	3.0000e-004	4.3800e-003	1.0000e-005	1.6500e-003	1.0000e-005	1.6600e-003	4.4000e-004	1.0000e-005	4.5000e-004	0.0000	1.2677	1.2677	3.0000e-005	3.0000e-005	1.2775
Total	**4.2000e-004**	**3.0000e-004**	**4.3800e-003**	**1.0000e-005**	**1.6500e-003**	**1.0000e-005**	**1.6600e-003**	**4.4000e-004**	**1.0000e-005**	**4.5000e-004**	**0.0000**	**1.2677**	**1.2677**	**3.0000e-005**	**3.0000e-005**	**1.2775**

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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 - 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	2.8000e-003	0.0122	0.1730	2.3000e-004		3.7000e-004	3.7000e-004		3.7000e-004	3.7000e-004	0.0000	20.0268	20.0268	6.4800e-003	0.0000	20.1888
Paving	1.7800e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**4.5800e-003**	**0.0122**	**0.1730**	**2.3000e-004**		**3.7000e-004**	**3.7000e-004**		**3.7000e-004**	**3.7000e-004**	**0.0000**	**20.0268**	**20.0268**	**6.4800e-003**	**0.0000**	**20.1888**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.2000e-004	3.0000e-004	4.3800e-003	1.0000e-005	1.6500e-003	1.0000e-005	1.6600e-003	4.4000e-004	1.0000e-005	4.5000e-004	0.0000	1.2677	1.2677	3.0000e-005	3.0000e-005	1.2775
Total	**4.2000e-004**	**3.0000e-004**	**4.3800e-003**	**1.0000e-005**	**1.6500e-003**	**1.0000e-005**	**1.6600e-003**	**4.4000e-004**	**1.0000e-005**	**4.5000e-004**	**0.0000**	**1.2677**	**1.2677**	**3.0000e-005**	**3.0000e-005**	**1.2775**

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

3.7 Architectural Coating - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.6873					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.9200e-003	0.0130	0.0181	3.0000e-005		7.1000e-004	7.1000e-004		7.1000e-004	7.1000e-004	0.0000	2.5533	2.5533	1.5000e-004	0.0000	2.5571
Total	**0.6893**	**0.0130**	**0.0181**	**3.0000e-005**		**7.1000e-004**	**7.1000e-004**		**7.1000e-004**	**7.1000e-004**	**0.0000**	**2.5533**	**2.5533**	**1.5000e-004**	**0.0000**	**2.5571**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.2000e-004	4.4000e-004	6.4200e-003	2.0000e-005	2.4200e-003	1.0000e-005	2.4300e-003	6.4000e-004	1.0000e-005	6.5000e-004	0.0000	1.8593	1.8593	4.0000e-005	4.0000e-005	1.8736
Total	**6.2000e-004**	**4.4000e-004**	**6.4200e-003**	**2.0000e-005**	**2.4200e-003**	**1.0000e-005**	**2.4300e-003**	**6.4000e-004**	**1.0000e-005**	**6.5000e-004**	**0.0000**	**1.8593**	**1.8593**	**4.0000e-005**	**4.0000e-005**	**1.8736**

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

3.7 Architectural Coating - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.6873					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.0000e-004	1.2900e-003	0.0183	3.0000e-005		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005	0.0000	2.5533	2.5533	1.5000e-004	0.0000	2.5571
Total	**0.6876**	**1.2900e-003**	**0.0183**	**3.0000e-005**		**4.0000e-005**	**4.0000e-005**		**4.0000e-005**	**4.0000e-005**	**0.0000**	**2.5533**	**2.5533**	**1.5000e-004**	**0.0000**	**2.5571**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.2000e-004	4.4000e-004	6.4200e-003	2.0000e-005	2.4200e-003	1.0000e-005	2.4300e-003	6.4000e-004	1.0000e-005	6.5000e-004	0.0000	1.8593	1.8593	4.0000e-005	4.0000e-005	1.8736
Total	**6.2000e-004**	**4.4000e-004**	**6.4200e-003**	**2.0000e-005**	**2.4200e-003**	**1.0000e-005**	**2.4300e-003**	**6.4000e-004**	**1.0000e-005**	**6.5000e-004**	**0.0000**	**1.8593**	**1.8593**	**4.0000e-005**	**4.0000e-005**	**1.8736**

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	0.4260	0.4413	4.4417	9.9700e-003	1.0942	6.6900e-003	1.1009	0.2916	6.2100e-003	0.2978	0.0000	928.6372	928.6372	0.0552	0.0361	940.7685
Unmitigated	0.4260	0.4413	4.4417	9.9700e-003	1.0942	6.6900e-003	1.1009	0.2916	6.2100e-003	0.2978	0.0000	928.6372	928.6372	0.0552	0.0361	940.7685

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Condo/Townhouse	856.44	952.38	734.76	2,914,020	2,914,020
Parking Lot	0.00	0.00	0.00		
Total	856.44	952.38	734.76	2,914,020	2,914,020

4.3 Trip Type Information

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

4.4 Fleet Mix

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

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Condo/Townhouse	0.551165	0.059549	0.189089	0.130914	0.024666	0.004164	0.009093	0.003100	0.000419	0.000246	0.024617	0.000462	0.002517
Parking Lot	0.544795	0.058861	0.186903	0.129401	0.024381	0.006522	0.014242	0.004855	0.000656	0.000385	0.024332	0.000723	0.003942

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Percent of Electricity Use Generated with Renewable 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	20.8508	20.8508	1.7600e-003	2.1000e-004	20.9583
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	104.2538	104.2538	8.8000e-003	1.0700e-003	104.7917
NaturalGas Mitigated	0.0102	0.0871	0.0371	5.6000e-004		7.0400e-003	7.0400e-003		7.0400e-003	7.0400e-003	0.0000	100.9089	100.9089	1.9300e-003	1.8500e-003	101.5085
NaturalGas Unmitigated	0.0102	0.0871	0.0371	5.6000e-004		7.0400e-003	7.0400e-003		7.0400e-003	7.0400e-003	0.0000	100.9089	100.9089	1.9300e-003	1.8500e-003	101.5085

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	1.89096e+006	0.0102	0.0871	0.0371	5.6000e-004		7.0400e-003	7.0400e-003		7.0400e-003	7.0400e-003	0.0000	100.9089	100.9089	1.9300e-003	1.8500e-003	101.5085
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0102**	**0.0871**	**0.0371**	**5.6000e-004**		**7.0400e-003**	**7.0400e-003**		**7.0400e-003**	**7.0400e-003**	**0.0000**	**100.9089**	**100.9089**	**1.9300e-003**	**1.8500e-003**	**101.5085**

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	1.89096e+006	0.0102	0.0871	0.0371	5.6000e-004		7.0400e-003	7.0400e-003		7.0400e-003	7.0400e-003	0.0000	100.9089	100.9089	1.9300e-003	1.8500e-003	101.5085
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0102**	**0.0871**	**0.0371**	**5.6000e-004**		**7.0400e-003**	**7.0400e-003**		**7.0400e-003**	**7.0400e-003**	**0.0000**	**100.9089**	**100.9089**	**1.9300e-003**	**1.8500e-003**	**101.5085**

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	567135	100.5789	8.4900e-003	1.0300e-003	101.0978
Parking Lot	20721.8	3.6749	3.1000e-004	4.0000e-005	3.6939
Total		**104.2538**	**8.8000e-003**	**1.0700e-003**	**104.7917**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Condo/Townhouse	113427	20.1158	1.7000e-003	2.1000e-004	20.2196
Parking Lot	4144.35	0.7350	6.0000e-005	1.0000e-005	0.7388
Total		**20.8508**	**1.7600e-003**	**2.2000e-004**	**20.9583**

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	0.8962	0.0382	1.2179	2.2000e-004		8.6400e-003	8.6400e-003		8.6400e-003	8.6400e-003	0.0000	30.0684	30.0684	2.4400e-003	5.2000e-004	30.2829
Unmitigated	0.8962	0.0382	1.2179	2.2000e-004		8.6400e-003	8.6400e-003		8.6400e-003	8.6400e-003	0.0000	30.0684	30.0684	2.4400e-003	5.2000e-004	30.2829

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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	0.0687					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.7882					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	2.8400e-003	0.0243	0.0103	1.5000e-004		1.9600e-003	1.9600e-003		1.9600e-003	1.9600e-003	0.0000	28.0961	28.0961	5.4000e-004	5.2000e-004	28.2630
Landscaping	0.0364	0.0139	1.2076	6.0000e-005		6.6800e-003	6.6800e-003		6.6800e-003	6.6800e-003	0.0000	1.9724	1.9724	1.9000e-003	0.0000	2.0199
Total	**0.8962**	**0.0382**	**1.2179**	**2.1000e-004**		**8.6400e-003**	**8.6400e-003**		**8.6400e-003**	**8.6400e-003**	**0.0000**	**30.0685**	**30.0685**	**2.4400e-003**	**5.2000e-004**	**30.2829**

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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	0.0687					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.7882					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	2.8400e-003	0.0243	0.0103	1.5000e-004		1.9600e-003	1.9600e-003		1.9600e-003	1.9600e-003	0.0000	28.0961	28.0961	5.4000e-004	5.2000e-004	28.2630
Landscaping	0.0364	0.0139	1.2076	6.0000e-005		6.6800e-003	6.6800e-003		6.6800e-003	6.6800e-003	0.0000	1.9724	1.9724	1.9000e-003	0.0000	2.0199
Total	**0.8962**	**0.0382**	**1.2179**	**2.1000e-004**		**8.6400e-003**	**8.6400e-003**		**8.6400e-003**	**8.6400e-003**	**0.0000**	**30.0685**	**30.0685**	**2.4400e-003**	**5.2000e-004**	**30.2829**

7.0 Water Detail

7.1 Mitigation Measures Water

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

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	29.4906	0.2507	6.1400e-003	37.5880
Unmitigated	29.4906	0.2507	6.1400e-003	37.5880

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Condo/Townhouse	7.62302 / 4.80582	29.4906	0.2507	6.1400e-003	37.5880
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**29.4906**	**0.2507**	**6.1400e-003**	**37.5880**

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	7.62302 / 4.80582	29.4906	0.2507	6.1400e-003	37.5880
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**29.4906**	**0.2507**	**6.1400e-003**	**37.5880**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	10.9250	0.6457	0.0000	27.0662
Unmitigated	10.9250	0.6457	0.0000	27.0662

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	53.82	10.9250	0.6457	0.0000	27.0662
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Total		**10.9250**	**0.6457**	**0.0000**	**27.0662**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Condo/Townhouse	53.82	10.9250	0.6457	0.0000	27.0662
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Total		**10.9250**	**0.6457**	**0.0000**	**27.0662**

9.0 Operational Offroad

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

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation