Greenhouse Gas Emissions Analysis

FPC Residential Project City of Carlsbad, California

JUNE 2022

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Acronyms and Abbreviations

Acronym/Abbreviation	Definition
AB	Assembly Bill
CAP	Climate Action Plan
CARB	California Air Resources Board
CAT	Climate Action Team
CEC	California Energy Commission
CALGreen	California's Green Building Standards
CalEEMod	California Emissions Estimator Model
CEQA	California Environmental Quality Act
CH_4	methane
City	City of Carlsbad
CO_2	carbon dioxide
CO_2e	carbon dioxide equivalent
CAPCOA	California Air Pollution Control Officers Association
CPUC	California Public Utilities Commission
EPA	United States Environmental Protection Agency
GHG	greenhouse gas
GWP	global warming potential
HFCs	hydrofluorocarbons
IPCC	Intergovernmental Panel on Climate Change
MMT	million metric tons
MT	metric tons
NF_3	nitrogen trifluoride
NHTSA	National Highway Traffic Safety Association
N_2	nitrogen gas
N_2O	nitrous oxide
PFCs	perfluorocarbons
Project	FPC Residential Project
RPS	Renewable Portfolio Standard
RTP/SCS	Regional Transportation Plan/Sustainable Communities Strategy
SB	Senate Bill
SDAB	San Diego Air Basin
SDAPCD	San Diego Air Pollution Control District
SDG&E	San Diego Gas and Electric
SF_6	sulfur hexafluoride
SMAQMD	Sacramento Metropolitan Air Quality Management District

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Executive Summary

The purpose of this technical report is to assess the potential greenhouse gas (GHG) emissions impacts associated with implementation of the proposed FPC Residential Project (Project). This assessment utilizes the significance thresholds in Appendix G of the California Environmental Quality Act (CEQA) Guidelines (14 CCR 15000 et seq.).

Project Overview

The Project proposes to redevelop a 4.68-acre site with 86 residential units consisting of a combination of rowhomes, townhomes, and triplexes, for a project density of 18.4 du/acre. The rowhomes and townhomes will be 3-story and the triplexes will be 2-story. The mix of units consists of eight 2-bedroom units, 40 3-bedroom units, and 38 4-bedroom units. The Project will include 15% of the units (13) as affordable to low-income and will utilize a density bonus, which would allow for up to 19.125du/ac. The Project will include 191 parking spaces with 2 internal per unit and 19 guest parking spaces.

Project Design Features

The proposed project would implement construction-related design features intended to reduce emissions of criteria air pollutants and toxic air contaminants; the following measure would also be expected to reduce construction-related GHG emissions.

PDF-AQ-1: Prior to the start of construction activities and issuance of grading permits, the project applicant, or its designee, shall ensure that all 84 horsepower or greater diesel-powered equipment are powered with California Air Resources Board (CARB)-certified Tier 4 Interim engines or better, except where the project applicant establishes to the satisfaction of the City of San Diego (City) that Tier 4 Interim equipment is not available.

An exemption from this requirement may be granted by the City if (1) the City documents equipment with Tier 4 interim engines are not reasonably available, and (2) the required corresponding reductions in criteria air pollutant emissions can be achieved for the project from other combinations of construction equipment. Before an exemption may be granted, the construction contractor shall: confirm that the proposed replacement equipment has been evaluated using California Emissions Estimator Model (CalEEMod) or other industry standard emission estimation method and documentation provided to the City to confirm that necessary project-generated emissions reductions are achieved.

Although the proposed project's GHG emissions are below the CAP Checklist screening level the following CAP Checklist items are voluntarily proposes as project design features and would be expected to achieve additional reductions to the project's projected GHG emissions levels.

PDF-GHG-1 On-site photovoltaic systems which complies with CMC Section 18.30.130 and the 2019 California Conde Section 150.1(c)14.

PDF-GHG-2 Alternative water heating systems which complies with CMC Section 18.30.150 and 18.30.170

PDF-GHG-3 Electric Vehicle (EV) Charging which complies with CMC Section 18.21.140

PDFs would be required as City-imposed Conditions of Approval to ensure they are implemented during construction and operation of the proposed project.

Greenhouse Gas Emissions

Global climate change is primarily considered a cumulative impact but must also be evaluated on a project-level under CEQA. A project participates in this potential impact through its incremental contribution combined with the cumulative increase of all other sources of GHG emissions. GHGs are gases that absorb infrared radiation in the atmosphere. Principal GHGs regulated under state and federal law and regulations include carbon dioxide (CO_2), methane (CH_4), and nitrous oxide (N_2O). GHG emissions are measured in metric tons of CO_2 equivalent (MT CO_2e), which account for weighted global warming potential (GWP) factors for CH_4 and N_2O.

Project Impacts

Construction of the Project would result in GHG emissions primarily associated with the use of off-road construction equipment, on-road hauling and vendor (material delivery) trucks, and worker vehicles. The Project would generate operational GHG emissions from area sources (landscape maintenance), energy sources (electricity consumption), stationary source (lift station), mobile sources (vehicle trips), water supply and wastewater treatment, and solid waste. Estimated annual Project-generated operational GHG emissions at buildout in 2025 would be approximately 806 MT CO_2e per year. Estimated annual Project-generated operational emissions in 2025, plus amortized Project construction emissions would be approximately 765 MT CO_2e per year.

As discussed in Section 5, the Project operational emissions in 2025 plus amortized project construction emissions would be less than the City's CAP GHG threshold of 900 MT CO_2e per year. As such, the Project would be consistent with the CAP and would not be required to complete the CAP Checklist. The Project is consistent with the statewide GHG reduction goals addressed in CARB's 2008 and 2017 Scoping Plans and SANDAG's 2021 Regional Plan. The Project's consistency stems from its location on an urban, infill site; its numerous design attributes that serve to reduce natural gas consumption, promote building electrification, and achieve other efficiencies in the consumption of energy, water and transportation fuels; and, its provision of residential opportunities (including affordable units) in a jurisdiction with a jobs/housing ratio that evidences the need for more housing. Therefore, the Project would be consistent with the statewide GHG reduction goals set forth in AB 32 and SB 32 and demonstrate progress toward attaining the 2050 reduction goals within EO S-3-05. Impacts would be **less than significant**.

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1 Introduction

1.1 Report Purpose and Scope

The purpose of this technical report is to assess the potential greenhouse gas (GHG) emissions impacts associated with implementation of the proposed FPC Residential Project (Project). This assessment utilizes the significance thresholds in Appendix G of the California Environmental Quality Act (CEQA) Guidelines (14 CCR 15000 et seq.).

This introductory section provides a description of the Project and the Project location. Section 2 describes existing GHG-related conditions and Section 3 provides a summary of the regulatory setting. Section 4 presents the thresholds of significance applied in the impact analysis contained in Section 5. Lastly, Section 6 includes a list of the references cited.

1.2 Project Location

The approximate 4.68-acre Project site is located within the City of Carlsbad (City), California, San Diego County, California. Specifically, the Project site is located at 7290 Ponto Drive in Carlsbad, California (City). The existing project site consists of three parcels (APN's: 214-160-25, 214-160-28, and 214-171-11) and is currently occupied by a self-storage facility and junkyard. See Figure 1, and Figure 2.

The General Plan designation for the site is (R-15)/VC Q for two of the parcels, which represents residential development with a density of 8 – 15 dwelling units (du) per acre (ac), and Visitor Commercial (VC) with a qualified development overlay zone (Q); and R-15 for the third while the zoning of the site is Residential Density – Multiple and Commercial Tourist (RD-M-Q/C-T) and Residential Density – Multiple with a qualified development overlay zone (RD-M-Q) respectively. The proposed Project is consistent with both the General Plan designation and Zoning for the property.

1.3 Project Description

The Project proposes to redevelop a 4.68-acre site with 86 multifamily residential units consisting of a combination of rowhomes, townhomes, and triplexes, for a project density of 18.4 du/acre. The rowhomes and townhomes will be 3-story and the triplexes will be 2-story. The mix of units consists of eight 2-bedroom units, 40 3-bedroom units, and 38 4-bedroom units. The Project will include 15% of the units (13) as affordable to low-income households and will utilize a density bonus, which would allow for up to 19.125du/ac.

The Project will include 191 parking spaces with 2 internal garage spaces per unit and 19 open-air guest parking spaces.

Site improvements consist of an internal primary arterial street, dog park, and additional open space. Existing dry utilities will be undergrounded and new water and stormwater connections will be made to existing facilities in Ponto Drive. A private lift station will serve a new sewer connection north of the railroad tracks.

Off-site improvements consist of right of way dedication and construction of street, curb, and gutter along Ponto Road and Ponto Drive.

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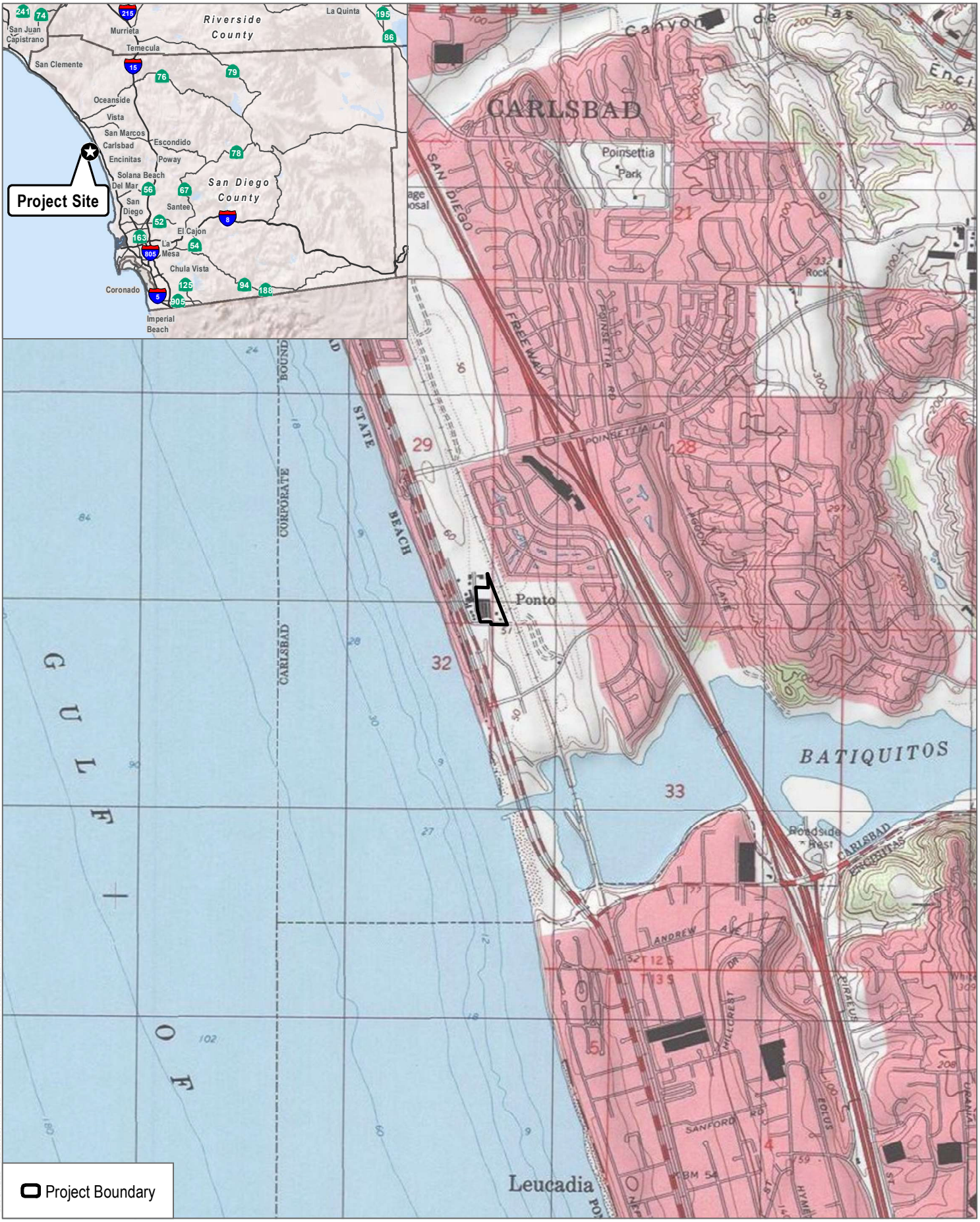

SOURCE: USGS 7.5-Minute Series Encinitas Quadrangle
Township 12S; Range 4W; Sections 28, 29, 32

DUDEK

0 1,000 2,000 Feet

FIGURE 1

Regional Location

Ponto Storage Townhomes Project

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SOURCE: SanGIS 2017

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0 100 200 Feet

FIGURE 2

Project Site

Ponto Storage Townhomes Project

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2 Existing Conditions

2.1 Climate Change Overview

Climate change refers to any significant change in measures of climate, such as temperature, precipitation, or wind patterns, lasting for an extended period of time (decades or longer). The Earth's temperature depends on the balance between energy entering and leaving the planet's system. Many factors, both natural and human, can cause changes in Earth's energy balance, including variations in the sun's energy reaching Earth, changes in the reflectivity of Earth's atmosphere and surface, and changes in the greenhouse effect, which affects the amount of heat retained by Earth's atmosphere (EPA 2017a).

The greenhouse effect is the trapping and build-up of heat in the atmosphere (troposphere) near the Earth's surface. The greenhouse effect traps heat in the troposphere through a threefold process as follows: Short-wave radiation emitted by the Sun is absorbed by the Earth; the Earth emits a portion of this energy in the form of long-wave radiation; and GHGs in the upper atmosphere absorb this long-wave radiation and emit it into space and toward the Earth. The greenhouse effect is a natural process that contributes to regulating the Earth's temperature and creates a pleasant, livable environment on the Earth. Human activities that emit additional GHGs to the atmosphere increase the amount of infrared radiation that gets absorbed before escaping into space, thus enhancing the greenhouse effect and causing the Earth's surface temperature to rise.

The scientific record of the Earth's climate shows that the climate system varies naturally over a wide range of time scales and that in general, climate changes prior to the Industrial Revolution in the 1700s can be explained by natural causes, such as changes in solar energy, volcanic eruptions, and natural changes in GHG concentrations. Recent climate changes, in particular the warming observed over the past century, however, cannot be explained by natural causes alone. Rather, it is extremely likely that human activities have been the dominant cause of that warming since the mid-20th century and is the most significant driver of observed climate change (IPCC 2014; EPA 2017a). Human influence on the climate system is evident from the increasing GHG concentrations in the atmosphere, positive radiative forcing, observed warming, and improved understanding of the climate system (IPCC 2014). The atmospheric concentrations of GHGs have increased to levels unprecedented in the last 800,000 years, primarily from fossil fuel emissions and secondarily from emissions associated with land use changes (IPCC 2014). Continued emissions of GHGs will cause further warming and changes in all components of the climate system, which is discussed further in Section 2.5, Potential Effects of Climate Change.

2.2 Greenhouse Gases and other Climate Forcing Substances

A GHG is any gas that absorbs infrared radiation in the atmosphere; in other words, GHGs trap heat in the atmosphere. GHGs include, but are not limited to, carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), ozone (O_3), water vapor, hydrofluorocarbons (HFCs), hydrochlorofluorocarbons (HCFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF_6).[1] Some GHGs, such as CO_2, CH_4, and N_2O, occur naturally and are emitted to the atmosphere through natural processes and human activities. Of these gases, CO_2 and CH_4 are emitted in the

[1] California Health and Safety Code 38505 identifies seven GHGs that CARB is responsible to monitor and regulate to reduce emissions: CO_2, CH_4, N_2O, SF_6, HFCs, PFCs, and NF_3.

greatest quantities from human activities. Manufactured GHGs, which have a much greater heat-absorption potential than CO_2, include fluorinated gases, such as HFCs, HCFCs, PFCs, and SF_6, which are associated with certain industrial products and processes. A summary of the most common GHGs and their sources is included in the following text.[2] Also included is a discussion of other climate forcing substances.

Carbon Dioxide (CO2). CO_2 is a naturally occurring gas and a by-product of human activities and is the principal anthropogenic GHG that affects the Earth's radiative balance. Natural sources of CO_2 include respiration of bacteria, plants, animals, and fungus; evaporation from oceans; volcanic out-gassing; and decomposition of dead organic matter. Human activities that generate CO_2 are from the combustion of fuels such as coal, oil, natural gas, and wood and changes in land use.

Methane (CH4). CH_4 is produced through both natural and human activities. CH_4 is a flammable gas and is the main component of natural gas. Methane is produced through anaerobic (without oxygen) decomposition of waste in landfills, flooded rice fields, animal digestion, decomposition of animal wastes, production and distribution of natural gas and petroleum, coal production, and incomplete fossil fuel combustion.

Nitrous Oxide (N2O). N_2O is produced through natural and human activities, mainly through agricultural activities and natural biological processes, although fuel burning and other processes also create N_2O. Sources of N_2O include soil cultivation practices (microbial processes in soil and water), especially the use of commercial and organic fertilizers, manure management, industrial processes (such as in nitric acid production, nylon production, and fossil-fuel-fired power plants), vehicle emissions, and using N_2O as a propellant (such as in rockets, racecars, and aerosol sprays).

Fluorinated Gases. Fluorinated gases (also referred to as F-gases) are synthetic powerful GHGs emitted from many industrial processes. Fluorinated gases are commonly used as substitutes for stratospheric ozone-depleting substances (e.g., CFCs, HCFCs, and halons). The most prevalent fluorinated gases include the following:

- **Hydrofluorocarbons:** HFCs are compounds containing only hydrogen, fluorine, and carbon atoms. HFCs are synthetic chemicals used as alternatives to ozone-depleting substances in serving many industrial, commercial, and personal needs. HFCs are emitted as by-products of industrial processes and are used in manufacturing.
- **Perfluorocarbons:** PFCs are a group of human-made chemicals composed of carbon and fluorine only. These chemicals were introduced as alternatives, with HFCs, to the ozone depleting substances. The two main sources of PFCs are primary aluminum production and semiconductor manufacturing. Since PFCs have stable molecular structures and do not break down through the chemical processes in the lower atmosphere, these chemicals have long lifetimes, ranging between 10,000 and 50,000 years.
- **Sulfur Hexafluoride:** SF_6 is a colorless gas soluble in alcohol and ether and slightly soluble in water. SF_6 is used for insulation in electric power transmission and distribution equipment, semiconductor manufacturing, the magnesium industry, and as a tracer gas for leak detection.
- **Nitrogen Trifluoride:** NF_3 is used in the manufacture of a variety of electronics, including semiconductors and flat panel displays.

[2] The descriptions of GHGs are summarized from the Intergovernmental Panel on Climate Change (IPCC) Second Assessment Report (1995), IPCC Fourth Assessment Report (2007), CARB's Glossary of Air Pollution Terms (2015), and EPA's Glossary of Climate Change Terms (2016).

Chlorofluorocarbons (CFCs). CFCs are synthetic chemicals that have been used as cleaning solvents, refrigerants, and aerosol propellants. CFCs are chemically unreactive in the lower atmosphere (troposphere) and the production of CFCs was prohibited in 1987 due to the chemical destruction of stratospheric O_3.

Hydrochlorofluorocarbons (HCFCs). HCFCs are a large group of compounds, whose structure is very close to that of CFCs—containing hydrogen, fluorine, chlorine, and carbon atoms—but including one or more hydrogen atoms. Like HFCs, HCFCs are used in refrigerants and propellants. HCFCs were also used in place of CFCs for some applications; however, their use in general is being phased out.

Black Carbon. Black carbon is a component of fine particulate matter, which has been identified as a leading environmental risk factor for premature death. It is produced from the incomplete combustion of fossil fuels and biomass burning, particularly from older diesel engines and forest fires. Black carbon warms the atmosphere by absorbing solar radiation, influences cloud formation, and darkens the surface of snow and ice, which accelerates heat absorption and melting. Black carbon is a short-lived species that varies spatially, which makes it difficult to quantify the global warming potential. Diesel particulate matter emissions are a major source of black carbon and are toxic air contaminates (TACs) that have been regulated and controlled in California for several decades to protect public health. In relation to declining diesel particulate matter from the California Air Resources Board's (CARB's) regulations pertaining to diesel engines, diesel fuels, and burning activities, CARB estimates that annual black carbon emissions in California have reduced by 70% between 1990 and 2010, with 95% control expected by 2020 (CARB 2014a).

Water Vapor. The primary source of water vapor is evaporation from the ocean, with additional vapor generated by sublimation (change from solid to gas) from ice and snow, evaporation from other water bodies, and transpiration from plant leaves. Water vapor is the most important, abundant, and variable GHG in the atmosphere and maintains a climate necessary for life.

Ozone (O3). Tropospheric O_3, which is created by photochemical reactions involving gases from both natural sources and human activities, acts as a GHG. Stratospheric O_3, which is created by the interaction between solar ultraviolet radiation and molecular oxygen (O_2), plays a decisive role in the stratospheric radiative balance. Depletion of stratospheric O_3, due to chemical reactions that may be enhanced by climate change, results in an increased ground-level flux of ultraviolet-B radiation.

Aerosols. Aerosols are suspensions of particulate matter in a gas emitted into the air through burning biomass (plant material) and fossil fuels. Aerosols can warm the atmosphere by absorbing and emitting heat and can cool the atmosphere by reflecting light.

2.3 Global Warming Potential

Gases in the atmosphere can contribute to climate change both directly and indirectly. Direct effects occur when the gas itself absorbs radiation. Indirect radiative forcing occurs when chemical transformations of the substance produce other GHGs, when a gas influences the atmospheric lifetimes of other gases, and/or when a gas affects atmospheric processes that alter the radiative balance of the Earth (e.g., affect cloud formation or albedo) (EPA 2017a). The Intergovernmental Panel on Climate Change (IPCC) developed the global warming potential (GWP) concept to compare the ability of each GHG to trap heat in the atmosphere relative to another gas. The GWP of a GHG is defined as the ratio of the time-integrated radiative forcing from the instantaneous release of 1 kilogram of

a trace substance relative to that of 1 kilogram of a reference gas (IPCC 2014). The reference gas used is CO_2; therefore, GWP-weighted emissions are measured in MT CO_2 equivalent (CO_2e).

The current version of the California Emissions Estimator Model (CalEEMod) (version 2020.4.0) assumes that the GWP for CH_4 is 25 (so emissions of 1 MT of CH_4 are equivalent to emissions of 25 MT of CO_2), and the GWP for N_2O is 298, based on the IPCC Fourth Assessment Report (IPCC 2007). The GWP values identified in CalEEMod were applied to the Project.

2.4 Sources of Greenhouse Gas Emissions

Global Inventory

Anthropogenic GHG emissions worldwide in 2017 (the most recent year for which data is available) totaled approximately 50,860 MMT of CO_2e, excluding land use change and forestry (Olivier and Peters 2018). Six countries—China, the United States, the Russian Federation, India, Japan, and Brazil—and the European community accounted for approximately 65% of the total global emissions, or approximately 33,290 MMT CO_2e (Olivier and Peters 2018). Table 1 presents the top GHG-emissions-producing countries, as well as the European Union.

Table 1. Six Top GHG Producer Countries and the European Union

Emitting Countries	2014 GHG Emissions (MMT CO_2e)[a,b]
China	13,530
United States	6,640
European Union	4,560
India	3,650
Russian Federation	2,220
Japan	1,490
Brazil	1,200
Total	**33,290**

Source: Olivier and Peters 2018.
Notes: MMT CO_2e = million metric tons of carbon dioxide equivalent.
[a] Column may not add due to rounding.
[b] GHG emissions do not include land use change and forestry-related GHG emissions.

National, State, and Local Inventories

Per the 2019 EPA Inventory of U.S. GHG Emissions and Sinks: 1990–2017, total U.S. GHG emissions were approximately 6,457 MMT CO_2e in 2017 (EPA 2019). The primary GHG emitted by human activities in the United States was CO_2, which represented approximately 81.6% of total GHG emissions (6,457 MMT CO_2e). The largest source of CO_2, and of overall GHG emissions, was fossil-fuel combustion, which accounted for approximately 93.2% of CO_2 emissions in 2017 (4,912.0 MMT CO_2e). Relative to the 1990 emissions level, gross U.S. GHG emissions in 2017 were 1.3% higher; however, the gross emissions were down from a high of 15.7% above the 1990 level that occurred in 2007. GHG emissions decreased from 2016 to 2017 by 0.5% (35.5 MMT CO_2e) and, overall, net emissions in 2017 were 13% below 2005 levels (EPA 2019).

According to California's 2000–2018 GHG emissions inventory (2020 edition), California emitted 425 MMT CO_2e in 2018, including emissions resulting from out-of-state electrical generation (CARB 2020c). The sources of GHG

emissions in California include transportation, industry, electric power production from both in-state and out-of-state sources, residential and commercial activities, agriculture, high GWP substances, and recycling and waste. The California GHG emission source categories and their relative contributions in 2018 are presented in Table 2, Greenhouse Gas Emissions Sources in California.

Table 2. GHG Emissions Sources in California

Source Category	Annual GHG Emissions (MMT CO_2e)	Percent of Total*
Transportation	169.5	39.9%
Industrial	89.2	21%
Electricity (in state)	38.5	9.1%
Electricity (imports)	24.6	5.8%
Agriculture	32.6	7.7%
Residential	25.7	6.0%
Commercial	15.6	3.7%
High GWP	20.5	4.8%
Recycling & Waste	9.1	2.1%
Total	**425.3**	**100%**

Source: CARB 2020c.
Notes: GHG = greenhouse gas; MMT CO_2e = million metric tons of carbon dioxide equivalent.
* Column may not add due to rounding.

Between 2000 and 2018, per-capita GHG emissions in California have dropped from a peak of 14.0 MT per person in 2001 to 10.7 MT per person in 2018, representing a 24% decrease. In addition, total GHG emissions in 2018 were approximately 0.8 MMT CO_2e less than 2017 emissions (CARB 2020c).

According to the GHG inventory data compiled by the Energy Policy Initiative Center, in 2010, the County (as defined to include all cities therein and unincorporated County areas) emitted 34.7 MMT CO_2e (EPIC 2015). As outlined in Table 3, San Diego County GHG Emissions by Sectors, on-road transportation created 37% of these emissions. Similar to emissions trends statewide, electricity generation is the second biggest emitter.

Table 3. San Diego County GHG Emissions by Sectors

Source Category	Annual GHG Emissions (MMT CO_2e)	Percent of Total
On-road transportation	13.14	37.2
Electricity generation	7.97	22.6
Natural gas end uses	2.84	8.0
Heavy Duty Trucks & Vehicles	1.89	5.4
Solid Waste	1.75	4.9
Other Fuels	1.64	4.6
Industrial	1.43	4.1
Aviation	1.37	3.9
Off-Road	0.92	2.6
Wildfire	0.81	2.3

Table 3. San Diego County GHG Emissions by Sectors

Source Category	Annual GHG Emissions (MMT CO_2e)	Percent of Total
Other – Thermal Cogeneration	0.64	1.8
Water	0.52	1.5
Wastewater	0.16	0.5
Rail	0.11	0.3
Agriculture	0.08	0.2
Marine Vessels	0.05	0.1
Development and Sequestration	(0.65)	N/A
Total	**34.67**	**100**

Source: EPIC 2015.
Notes: GHG = greenhouse gas; MMT CO_2e = million metric tons of carbon dioxide equivalent per year

The 2012 emissions inventory for the City is shown in Table 4 below.

Table 4. City GHG Emissions by Sectors

Source Category	Annual GHG Emissions (MT CO_2e)	Percent of Total
On-road transportation[1]	488,000	49.9
Electricity	301,000	30.8
Natural gas	134,000	13.7
Solid Waste	25,000	2.6
Off-Road Transportation[2]	14,000	1.4
Water	12,000	1.2
Wastewater	3,000	0.3
Total	**977,000**	**100**

Source: Grim, pers. Comm. 2020
Notes: GHG emissions for each category are rounded. Sums may not add up to totals due to rounding.
1 Based on SANDAG Series 13 vehicle miles traveled estimates. 2012 is the Series 13 Base Year.
2 This category includes emissions from the off-road equipment sub-categories as identified in the Carlsbad CAP (lawn and garden, construction, industrial, and light commercial equipment). The sub-categories do not include all off-road vehicles and equipment.

2.5 Potential Effects of Human Activity on Climate Change

Globally, climate change has the potential to affect numerous environmental resources through uncertain impacts related to future air temperatures and precipitation patterns. The 2014 Intergovernmental Panel on Climate Change Synthesis Report indicated that warming of the climate system is unequivocal and since the 1950s, many of the observed changes are unprecedented over decades to millennia. Signs that global climate change has occurred include warming of the atmosphere and ocean, diminished amounts of snow and ice, and rising sea levels (IPCC 2014).

In California, climate change impacts have the potential to affect sea level rise, agriculture, snowpack and water supply, forestry, wildfire risk, public health, and electricity demand and supply. The primary effect of global climate

change has been a 0.2°C rise in average global tropospheric temperature per decade, determined from meteorological measurements worldwide between 1990 and 2005. Scientific modeling predicts that continued emissions of GHGs at or above current rates would induce more extreme climate changes during the twenty-first century than were observed during the twentieth century. A warming of about 0.2°C (0.36°F) per decade is projected, and there are identifiable signs that global warming could be taking place.

Although climate change is driven by global atmospheric conditions, climate change impacts are felt locally. A scientific consensus confirms that climate change is already affecting California. The average temperatures in California have increased, leading to more extreme hot days and fewer cold nights; shifts in the water cycle have been observed, with less winter precipitation falling as snow, and both snowmelt and rainwater running off earlier in the year; sea levels have risen; and wildland fires are becoming more frequent and intense due to dry seasons that start earlier and end later (CAT 2010).

An increase in annual average temperature is a reasonably foreseeable effect of climate change. Observed changes over the last several decades across the western United States reveal clear signals of climate change. Statewide average temperatures increased by about 1.7°F from 1895 to 2011, and warming has been greatest in the Sierra Nevada. By 2050, California is projected to warm by approximately 2.7°F above 2000 averages, a threefold increase in the rate of warming over the last century. By 2100, average temperatures could increase by 4.1°F to 8.6°F, depending on emissions levels. Springtime warming—a critical influence on snowmelt—will be particularly pronounced. Summer temperatures will rise more than winter temperatures, and the increases will be greater in inland California, compared to the coast. Heat waves will be more frequent, hotter, and longer. There will be fewer extremely cold nights. A decline of Sierra snowpack, which accounts for approximately half of the surface water storage in California and much of the State's water supply, by 30% to as much as 90% is predicted over the next 100 years (CAT 2010).

Model projections for precipitation over California continue to show the Mediterranean pattern of wet winters and dry summers with seasonal, year-to-year, and decade-to-decade variability. For the first time, however, several of the improved climate models shift toward drier conditions by the mid-to-late 21st century in Central and, most notably, Southern California. By late-century, all projections show drying, and half of them suggest 30-year average precipitation will decline by more than 10% below the historical average (CAT 2010).

A summary of current and future climate change impacts to resource areas in California, as discussed in the Safeguarding California: Reducing Climate Risk (CNRA 2014), is provided in the following text.

Agriculture. The impacts of climate change on the agricultural sector are far more severe than the typical variability in weather and precipitation patterns that occur year to year. Some of the specific challenges faced by the agricultural sector and farmers include more drastic and unpredictable precipitation and weather patterns; extreme weather events that range from severe flooding to extreme drought, to destructive storm events; significant shifts in water availably and water quality; changes in pollinator lifecycles; temperature fluctuations, including extreme heat stress and decreased chill hours; increased risks from invasive species and weeds, agricultural pests and plant diseases; and disruptions to the transportation and energy infrastructure supporting agricultural production. These challenges and associated short-term and long-term impacts can have both positive and negative effects on agricultural production. Nonetheless, it is predicted that current crop and livestock production will suffer long-term negative effects resulting in a substantial decrease in the agricultural sector if not managed or mitigated.

Biodiversity and Habitat. The state's extensive biodiversity stems from its varied climate and assorted landscapes, which have resulted in numerous habitats where species have evolved and adapted over time. Specific climate change challenges to biodiversity and habitat include species migration in response to climatic changes, range shift, and novel combinations of species; pathogens, parasites and disease; invasive species; extinction risks; changes in the timing of seasonal life-cycle events; food web disruptions; and threshold effects (i.e., a change in the ecosystem that results in a "tipping point" beyond which irreversible damage or loss has occurs). Habitat restoration, conservation, and resource management across California and through collaborative efforts amongst public, private and nonprofit agencies has assisted in the effort to fight climate change impacts on biodiversity and habitat. One of the key measures in these efforts is ensuring species' ability to relocate as temperature and water availability fluctuate as a result of climate change, based on geographic region.

Energy. The energy sector provides California residents with a supply of reliable and affordable energy through a complex integrated system. Specific climate change challenges for the energy sector include temperature, fluctuating precipitation patterns, increasing extreme weather events and sea level rise. Increasing temperatures and reduced snowpack negatively impact the availability of a steady flow of snowmelt to hydroelectric reservoirs. Higher temperatures also reduce the capacity of thermal power plants since power plant cooling is less efficient at higher ambient temperatures. Natural gas infrastructure in coastal California is threatened by sea level rise and extreme storm events.

Forestry. Forests occupy approximately 33% of California's 100 million acres and provide key benefits such as wildlife habitat, absorption of CO_2, renewable energy and building materials. The most significant climate change related risk to forests is accelerated risk of wildfire and more frequent and severe droughts. Droughts have resulted in more large scale mortalities and combined with increasing temperatures have led to an overall increase in wildfire risks. Increased wildfire intensity subsequently increases public safety risks, property damage, fire suppression and emergency response costs, watershed and water quality impacts and vegetation conversions. These factors contribute to decreased forest growth, geographic shifts in tree distribution, loss of fish and wildlife habitat and decreased carbon absorption. Climate change may result in increased establishment of non-native species, particularly in rangelands where invasive species are already a problem. Invasive species may be able to exploit temperature or precipitation changes, or quickly occupy areas denuded by fire, insect mortality or other climate change effects on vegetation.

Ocean and Coastal Ecosystems and Resources. Sea level rise, changing ocean conditions and other climate change stressors are likely to exacerbate long-standing challenges related to ocean and coastal ecosystems in addition to threatening people and infrastructure located along the California coastline and in coastal communities. Sea level rise in addition to more frequent and severe coastal storms and erosion are threatening vital infrastructure such as roads, bridges, power plants, ports and airports, gasoline pipes, and emergency facilities, as well as negatively impacting the coastal recreational assets such as beaches and tidal wetlands. Water quality and ocean acidification threaten the abundance of seafood and other plant and wildlife habitats throughout California and globally.

Public Health. Climate change can impact public health through various environmental changes and is the largest threat to human health in the twenty-first century. Changes in precipitation patterns affect public health primarily through potential for altered water supplies, and extreme events such as heat, floods, droughts, and wildfires. Increased frequency, intensity and duration of extreme heat and heat waves is likely to increase the risk of mortality due to heat related illness as well as exacerbate existing chronic health conditions. Other extreme weather events are likely to negatively impact air quality and increase or intensify respiratory illness such as asthma and allergies. Additional health impacts that may be impacted by climate change include cardiovascular disease, vector-borne

diseases, mental health impacts, and malnutrition injuries. Increased frequency of these ailments is likely to subsequently increase the direct risk of injury and/or mortality.

Transportation. Residents of California rely on airports, seaports, public transportation and an extensive roadway network to gain access to destinations, goods and services. While the transportation industry is a source of GHG emissions it is also vulnerable to climate change risks. Particularly, sea level rise and erosion threaten many coastal California roadways, airports, seaports, transit systems, bridge supports, and energy and fueling infrastructure. Increasing temperatures and extended periods of extreme heat threaten the integrity of the roadways and rail lines. High temperatures cause the road surfaces to expand which leads to increased pressure and pavement buckling. High temperatures can also cause rail breakages, which could lead to train derailment. Other forms of extreme weather events, such as extreme storm events, can negatively impact infrastructure which can impair movement of peoples and goods, or potentially block evacuation routes and emergency access roads. Increased wildfires, flooding, erosion risks, landslides, mudslides, and rockslides can all profoundly impact the transportation system and pose a serious risk to public safety.

Water. Water resources in California support residences, plants, wildlife, farmland, landscapes and ecosystems and bring trillions of dollars in economic activity. Climate change could seriously impact the timing, form, amount of precipitation, runoff patterns, and frequency and severity of precipitation events. Higher temperatures reduce the amount of snowpack and lead to earlier snowmelt, which can impact water supply availability, natural ecosystems and winter recreation. Water supply availability during the intense dry summer months is heavily dependent on the snowpack accumulated during the winter time. Increased risk of flooding has a variety of public health concerns including water quality, public safety, property damage, displacement and post-disaster mental health problems. Prolonged and intensified droughts can also negatively groundwater reserves and result in increased overdraft and subsidence. Droughts can also negatively impact agriculture and farmland throughout the state. The higher risk of wildfires can lead to increased erosion, which can negatively impact watersheds and result in poor water quality. Water temperatures are also prone to increase, which can negatively impact wildlife that rely on a specific range of temperatures for suitable habitat.

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3 Regulatory Setting

3.1 Federal

Massachusetts v. EPA. In *Massachusetts v. EPA* (April 2007), the U.S. Supreme Court directed the EPA administrator to determine whether GHG emissions from new motor vehicles cause or contribute to air pollution that may reasonably be anticipated to endanger public health or welfare, or whether the science is too uncertain to make a reasoned decision. In December 2009, the administrator signed a final rule with the following two distinct findings regarding GHGs under Section 202(a) of the federal Clean Air Act:

- The Administrator found that elevated concentrations of GHGs—CO_2, CH_4, N_2O, HFCs, PFCs, and SF_6—in the atmosphere threaten the public health and welfare of current and future generations. This is the "endangerment finding."
- The Administrator further found the combined emissions of GHGs—CO_2, CH_4, N_2O, and HFCs—from new motor vehicles and new motor vehicle engines contribute to the GHG air pollution that endangers public health and welfare. This is the "cause or contribute finding."

These two findings were necessary to establish the foundation for regulation of GHGs from new motor vehicles as air pollutants under the Clean Air Act.

Energy Independence and Security Act of 2007. The Energy Independence and Security Act of 2007 (December 2007), among other key measures, would do the following, which would aid in the reduction of national GHG emissions (EPA 2007):

- Increase the supply of alternative fuel sources by setting a mandatory Renewable Fuel Standard requiring fuel producers to use at least 36 billion gallons of biofuel in 2022.
- Set a target of 35 miles per gallon for the combined fleet of cars and light trucks by model year 2020, and directs National Highway Traffic Safety Administration (NHTSA) to establish a fuel economy program for medium- and heavy-duty trucks and create a separate fuel economy standard for work trucks.
- Prescribe or revise standards affecting regional efficiency for heating and cooling products and procedures for new or amended standards, energy conservation, energy-efficiency labeling for consumer electronic products, residential boiler efficiency, electric motor efficiency, and home appliances.

Federal Vehicle Standards. In response to the U.S. Supreme Court ruling discussed above, the Bush Administration issued Executive Order (EO) 13432 in 2007 directing the EPA, the Department of Transportation, and the Department of Energy to establish regulations that reduce GHG emissions from motor vehicles, non-road vehicles, and non-road engines by 2008. In 2009, the NHTSA issued a final rule regulating fuel efficiency and GHG emissions from cars and light-duty trucks for model year 2011, and in 2010, the EPA and NHTSA issued a final rule regulating cars and light-duty trucks for model years 2012–2016 (EPA 2010).

In 2010, President Barack Obama issued a memorandum directing the Department of Transportation, Department of Energy, EPA, and NHTSA to establish additional standards regarding fuel efficiency and GHG reduction, clean fuels, and advanced vehicle infrastructure. In response to this directive, EPA and NHTSA proposed stringent, coordinated federal GHG and fuel economy standards for model years 2017–2025 light-duty vehicles. The

proposed standards projected to achieve 163 grams per mile of CO_2 in model year 2025, on an average industry fleet-wide basis, which is equivalent to 54.5 miles per gallon if this level were achieved solely through fuel efficiency. The final rule was adopted in 2012 for model years 2017–2021.

In addition to the regulations applicable to cars and light-duty trucks described above, in 2011, the EPA and NHTSA announced fuel economy and GHG standards for medium- and heavy-duty trucks for model years 2014–2018. The standards for CO_2 emissions and fuel consumption are tailored to three main vehicle categories: combination tractors, heavy-duty pickup trucks and vans, and vocational vehicles. According to the EPA, this regulatory program will reduce GHG emissions and fuel consumption for the affected vehicles by 6%–23% over the 2010 baselines.

In August 2016, the EPA and NHTSA announced the adoption of the phase two program related to the fuel economy and GHG standards for medium- and heavy-duty trucks. The phase two program will apply to vehicles with model year 2018 through 2027 for certain trailers, and model years 2021 through 2027 for semi-trucks, large pickup trucks, vans, and all types and sizes of buses and work trucks. The final standards are expected to lower CO_2 emissions by approximately 1.1 billion MT and reduce oil consumption by up to 2 billion barrels over the lifetime of the vehicles sold under the program (EPA and NHTSA 2016).

On September 19, 2019, the NHTSA and the EPA issued a final action entitled the "One National Program Rule" to enable the federal government to provide nationwide uniform fuel economy and greenhouse gas emission standards for automobile and light-duty trucks (EPA 2019). This action finalizes critical parts of the Safer, Affordable, Fuel-Efficient (SAFE) Vehicles Rule that was first proposed in August 2018. This action makes clear that federal law preempts state and local tailpipe GHG emissions standards as well as zero emission vehicle (ZEV) mandates. California and other states have challenged federal actions that would delay or eliminate GHG reduction measures and have committed to cooperating with other countries to implement global climate change initiatives. The timing and consequences of these types of federal decisions and subsequent challenges are speculative at this time (CARB 2019a). Relatedly, CARB has not determined at this time what impacts the SAFE rule may have on GHG emissions.

3.2 State

The statewide GHG emissions regulatory framework is summarized below by category: state climate change targets, building energy, renewable energy and energy procurement, mobile sources, solid waste, water, and other state regulations and goals. The following text describes executive orders, legislation, regulations, and other plans and policies that would directly or indirectly reduce GHG emissions and/or address climate change issues.

State Climate Change Targets

Executive Order (EO) S-3-05. EO S-3-05 (June 2005) established the following statewide goals: GHG emissions should be reduced to 2000 levels by 2010, GHG emissions should be reduced to 1990 levels by 2020, and GHG emissions should be reduced to 80% below 1990 levels by 2050.

Assembly Bill (AB) 32 and CARB's Climate Change Scoping Plan. In furtherance of the goals established in EO S-3-05, the Legislature enacted AB 32, the California Global Warming Solutions Act of 2006. AB 32 requires California to reduce its GHG emissions to 1990 levels by 2020.

Under AB 32, CARB is responsible for and is recognized as having the expertise to carry out and develop the programs and requirements necessary to achieve the GHG emissions reduction mandate of AB 32. Under AB 32, CARB must adopt regulations requiring the reporting and verification of statewide GHG emissions from specified sources. This program is used to monitor and enforce compliance with established standards. CARB also is required to adopt rules and regulations to achieve the maximum technologically feasible and cost-effective GHG emission reductions. AB 32 relatedly authorized CARB to adopt market-based compliance mechanisms to meet the specified requirements. Finally, CARB is ultimately responsible for monitoring compliance and enforcing any rule, regulation, order, emission limitation, emission reduction measure, or market-based compliance mechanism adopted.

In 2007, CARB approved a limit on the statewide GHG emissions level for year 2020 consistent with the determined 1990 baseline (427 MMT CO_2e). CARB's adoption of this limit is in accordance with Health and Safety Code Section 38550.

Further, in 2008, CARB adopted the Climate Change Scoping Plan: A Framework for Change (Scoping Plan) in accordance with Health and Safety Code Section 38561. The Scoping Plan establishes an overall framework for the measures that will be adopted to reduce California's GHG emissions for various emission sources/sectors to 1990 levels by 2020. The Scoping Plan evaluates opportunities for sector-specific reductions, integrates all CARB and Climate Action Team early actions and additional GHG reduction features by both entities, identifies additional measures to be pursued as regulations, and outlines the role of a cap-and-trade program. The key elements of the Scoping Plan include the following (CARB 2008):

1. Expanding and strengthening existing energy efficiency programs as well as building and appliance standards
2. Achieving a statewide renewable energy mix of 33%
3. Developing a California cap-and-trade program that links with other Western Climate Initiative partner programs to create a regional market system and caps sources contributing 85% of California's GHG emissions
4. Establishing targets for transportation-related GHG emissions for regions throughout California, and pursuing policies and incentives to achieve those targets
5. Adopting and implementing measures pursuant to existing state laws and policies, including California's clean car standards, goods movement measures, and the Low Carbon Fuel Standard
6. Creating targeted fees, including a public goods charge on water use, fees on high GWP gases, and a fee to fund the administrative costs of the State of California's long-term commitment to AB 32 implementation

In the Scoping Plan, CARB determined that achieving the 1990 emissions level in 2020 would require a reduction in GHG emissions of approximately 28.5% from the otherwise projected 2020 emissions level; i.e., those emissions that would occur in 2020, absent GHG-reducing laws and regulations (referred to as "Business-As-Usual" [BAU]). For purposes of calculating this percent reduction, CARB assumed that all new electricity generation would be supplied by natural gas plants, no further regulatory action would impact vehicle fuel efficiency, and building energy efficiency codes would be held at 2005 standards.

In the 2011 Final Supplement to the Scoping Plan's Functional Equivalent Document, CARB revised its estimates of the projected 2020 emissions level in light of the economic recession and the availability of updated information about GHG reduction regulations. Based on the new economic data, CARB determined that achieving the 1990 emissions level by 2020 would require a reduction in GHG emissions of 21.7% (down from 28.5%) from the BAU conditions. When the 2020 emissions level projection also was updated to account for newly implemented regulatory measures, including Pavley I (model years 2009–2016) and the Renewable Portfolio Standard (12% to

20%), CARB determined that achieving the 1990 emissions level in 2020 would require a reduction in GHG emissions of 16% (down from 28.5%) from the BAU conditions.

In 2014, CARB adopted the First Update to the Climate Change Scoping Plan: Building on the Framework (First Update). The stated purpose of the First Update is to "highlight California's success to date in reducing its GHG emissions and lay the foundation for establishing a broad framework for continued emission reductions beyond 2020, on the path to 80% below 1990 levels by 2050" (CARB 2014b). The First Update found that California is on track to meet the 2020 emissions reduction mandate established by AB 32, and noted that California could reduce emissions further by 2030 to levels squarely in line with those needed to stay on track to reduce emissions to 80% below 1990 levels by 2050 if the state realizes the expected benefits of existing policy goals.

In conjunction with the First Update, CARB (2014b) identified "six key focus areas comprising major components of the state's economy to evaluate and describe the larger transformative actions that will be needed to meet the state's more expansive emission reduction needs by 2050." Those six areas are: (1) energy; (2) transportation (vehicles/equipment, sustainable communities, housing, fuels, and infrastructure); (3) agriculture; (4) water; (5) waste management; and, (6) natural and working lands. The First Update identifies key recommended actions for each sector that will facilitate achievement of EO S-3-05's 2050 reduction goal.

Based on CARB's research efforts presented in the First Update, it has a "strong sense of the mix of technologies needed to reduce emissions through 2050." Those technologies include energy demand reduction through efficiency and activity changes; large-scale electrification of on-road vehicles, buildings and industrial machinery; decarbonizing electricity and fuel supplies; and, the rapid market penetration of efficient and clean energy technologies (CARB 2014b).

As part of the First Update, CARB (2014b) recalculated the state's 1990 emissions level using more recent global warming potentials identified by the IPCC. Using the recalculated 1990 emissions level (431 MMT CO_2e) and the revised 2020 emissions level projection identified in the 2011 Final Supplement, CARB determined that achieving the 1990 emissions level by 2020 would require a reduction in GHG emissions of approximately 15% (instead of 28.5% or 16%) from the BAU conditions.

In December 2017, CARB adopted California's 2017 Climate Change Scoping Plan (2017 Scoping Plan) (CARB 2017b). This plan outlines CARB's strategy for achieving the state's 2030 GHG target as established in Senate Bill (SB) 32 (discussed below), including continuing the Cap-and-Trade Program through 2030. The 2017 Scoping Plan incorporates approaches to cutting short-lived climate pollutants (SLCPs) under the Short-Lived Climate Pollutant Reduction Strategy (a planning document that was adopted by CARB in March 2017) and acknowledges the need for reducing emissions in agriculture and highlights the work underway to ensure that California's natural and working lands increasingly sequester carbon. During development of the 2017 Scoping Plan, CARB held a number of public workshops in the Natural and Working Lands, Agriculture, Energy, and Transportation sectors to inform development of the 2030 Scoping Plan Update (CARB 2017b).

The Scoping Plan recommends strategies for implementation at the statewide level to meet the goals of AB 32, SB 32 and the Executive Orders and establishes an overall framework for the measures that will be adopted to reduce California's GHG emissions. A project is considered consistent with the statutes and Executive Orders if it meets the general policies in reducing GHG emissions in order to facilitate the achievement of the state's goals and does not impede attainment of those goals. As discussed in several cases, a given project need not be in perfect

conformity with each and every planning policy or goals to be consistent. A project would be consistent, if it will further the objectives and not obstruct their attainment.

EO B-30-15. EO B-30-15 (April 2015) identified an interim GHG reduction target in support of targets previously identified under EO S-3-05 and AB 32. EO B-30-15 set an interim target goal of reducing statewide GHG emissions to 40% below 1990 levels by 2030 to keep California on its trajectory toward meeting or exceeding the long-term goal of reducing statewide GHG emissions to 80% below 1990 levels by 2050 as set forth in EO S-3-05. To facilitate achievement of this goal, EO B-30-15 calls for an update to CARB's Scoping Plan to express the 2030 target in terms of MMT CO_2e. The EO also calls for state agencies to continue to develop and implement GHG emission reduction programs in support of the reduction targets. Sector-specific agencies in transportation, energy, water, and forestry were required to prepare GHG reduction plans by September 2015, followed by a report on action taken in relation to these plans in June 2016. EO B-30-15 does not require local agencies to take any action to meet the new interim GHG reduction target.

SB 32 and AB 197. SB 32 and AB 197 (enacted in 2016) are companion bills that set a new statewide GHG reduction targets; make changes to CARB's membership, and increase legislative oversight of CARB's climate change-based activities; and expand dissemination of GHG and other air quality-related emissions data to enhance transparency and accountability. More specifically, SB 32 codified the 2030 emissions reduction goal of EO B-30-15 by requiring CARB to ensure that statewide GHG emissions are reduced to 40% below 1990 levels by 2030. AB 197 established the Joint Legislative Committee on Climate Change Policies, consisting of at least three members of the Senate and three members of the Assembly, in order to provide ongoing oversight over implementation of the state's climate policies. AB 197 also added two members of the Legislature to CARB as nonvoting members; requires CARB to make available and update (at least annually via its website) emissions data for GHGs, criteria air pollutants, and TACs from reporting facilities; and, requires CARB to identify specific information for GHG emissions reduction measures when updating the scoping plan.

SB 605 and SB 1383. SB 605 (2014) requires CARB to complete a comprehensive strategy to reduce emissions of short-lived climate pollutants in the state; and SB 1383 (2016) requires CARB to approve and implement that strategy by January 1, 2018. SB 1383 also establishes specific targets for the reduction of SLCPs (40% below 2013 levels by 2030 for methane and HFCs, and 50% below 2013 levels by 2030 for anthropogenic black carbon), and provides direction for reductions from dairy and livestock operations and landfills. Accordingly, and as mentioned above, CARB adopted its Short-Lived Climate Pollutant Reduction Strategy (SLCP Reduction Strategy) in March 2017. The SLCP Reduction Strategy establishes a framework for the statewide reduction of emissions of black carbon, methane and fluorinated gases.

EO B-55-18 (September 2018) established a new statewide goal "to achieve carbon neutrality as soon as possible, and no later than 2045, and achieve and maintain net negative emissions thereafter." This executive order directed CARB to "work with relevant state agencies to ensure future Scoping Plans identify and recommend measures to achieve the carbon neutrality goal."

Building Energy

The 2019 Title 24 standards are the currently applicable building energy efficiency standards, and became effective on January 1, 2020.

Title 24, Part 6. Title 24 of the California Code of Regulations was established in 1978 and serves to enhance and regulate California's building standards. While not initially promulgated to reduce GHG emissions, Part 6 of Title 24 specifically establishes Building Energy Efficiency Standards that are designed to ensure new and existing buildings in California achieve energy efficiency and preserve outdoor and indoor environmental quality. The California Energy Commission (CEC) is required by law to adopt standards every 3 years that are cost effective for homeowners over the 30-year lifespan of a building. These standards are updated to consider and incorporate new energy efficient technologies and construction methods. As a result, these standards save energy, increase electricity supply reliability, increase indoor comfort, avoid the need to construct new power plants, and help preserve the environment. As an example, single-family residences built to the 2019 standards are anticipated to use approximately 7% less energy due to energy efficiency measures than those built to the 2016 standards; once rooftop solar electricity generation is factored in, single-family residences built under the 2019 standards will use approximately 53% less energy than those under the 2016 standards (CEC 2018a). Nonresidential buildings built to the 2019 standards are anticipated to use an estimated 30% less energy than those built to the 2016 standards (CEC 2018a).

Title 24, Part 11. In addition to the CEC's efforts, in 2008, the California Building Standards Commission adopted the nation's first green building standards. The California Green Building Standards Code (Part 11 of Title 24) is commonly referred to as California's Green Building Standards (CALGreen), and establishes minimum mandatory standards and voluntary standards pertaining to the planning and design of sustainable site development, energy efficiency (in excess of the California Energy Code requirements), water conservation, material conservation, and interior air quality. The CALGreen standards took effect in January 2011 and instituted mandatory minimum environmental performance standards for all ground-up, new construction of commercial, low-rise residential and state-owned buildings, schools, and hospitals. The CALGreen 2019 standards, which are the current standards, became effective January 1, 2020.

Title 20. Title 20 of the California Code of Regulations requires manufacturers of appliances to meet state and federal standards for energy and water efficiency. Performance of appliances must be certified through the CEC to demonstrate compliance with standards. New appliances regulated under Title 20 include: refrigerators, refrigerator-freezers and freezers; room air conditioners and room air-conditioning heat pumps; central air conditioners; spot air conditioners; vented gas space heaters; gas pool heaters; plumbing fittings and plumbing fixtures; fluorescent lamp ballasts; lamps; emergency lighting; traffic signal modules; dishwaters; clothes washers and dryers; cooking products; electric motors; low voltage dry-type distribution transformers; power supplies; televisions and consumer audio and video equipment; and battery charger systems. Title 20 presents protocols for testing for each type of appliance covered under the regulations and appliances must meet the standards for energy performance, energy design, water performance and water design. Title 20 contains three types of standards for appliances: federal and state standards for federally regulated appliances, state standards for federally regulated appliances, and state standards for non-federally regulated appliances.

SB 1. SB 1 (2006) established a $3 billion rebate program to support the goal of the state to install rooftop solar energy systems with a generation capacity of 3,000 megawatts through 2016. SB 1 added sections to the Public Resources Code, including Chapter 8.8 (California Solar Initiative), which require building projects applying for ratepayer-funded incentives for photovoltaic systems to meet minimum energy efficiency levels and performance requirements. Section 25780 established that it is a goal of the state to establish a self-sufficient solar industry in which solar energy systems are a viable mainstream option for both homes and businesses within 10 years of adoption, and to place solar energy systems on 50% of new homes within 13 years of adoption. SB 1, also termed "GoSolarCalifornia," was previously titled "Million Solar Roofs."

AB 1470. This bill established the Solar Water Heating and Efficiency Act of 2007. The bill makes findings and declarations of the Legislature relating to the promotion of solar water heating systems and other technologies that reduce natural gas demand. The bill defines several terms for purposes of the act. The bill requires the commission to evaluate the data available from a specified pilot program, and, if it makes a specified determination, to design and implement a program of incentives for the installation of 200,000 solar water heating systems in homes and businesses throughout the state by 2017.

AB 1109. Enacted in 2007, AB 1109 required the CEC to adopt minimum energy efficiency standards for general purpose lighting, to reduce electricity consumption 50% for indoor residential lighting and 25% for indoor commercial lighting.

California AB 1470 (Solar Water Heating). This bill established the Solar Water Heating and Efficiency Act of 2007. AB 1470 makes findings and declarations of the Legislature relating to the promotion of solar water heating systems and other technologies that reduce natural gas demand. AB 1470 defines several terms for purposes of the act. The bill required a commission to evaluate the data available from a specified pilot program, and to design and implement a program of incentives for the installation of 200,000 solar water heating systems in homes and businesses throughout the state by 2017.

Renewable Energy and Energy Procurement

SB 1078. SB 1078 (2002) established the Renewable Portfolio Standard (RPS) program, which requires an annual increase in renewable generation by the utilities equivalent to at least 1% of sales, with an aggregate goal of 20% by 2017. This goal was subsequently accelerated, requiring utilities to obtain 20% of their power from renewable sources by 2010.

SB 1368. SB 1368 (2006) requires the CEC to develop and adopt regulations for GHG emission performance standards for the long-term procurement of electricity by local publicly owned utilities. These standards must be consistent with the standards adopted by the California Public Utilities Commission (CPUC). This effort will help protect energy customers from financial risks associated with investments in carbon-intensive generation by allowing new capital investments in power plants whose GHG emissions are as low as or lower than new combined-cycle natural gas plants by requiring imported electricity to meet GHG performance standards in California and by requiring that the standards be developed and adopted in a public process.

SB X1 2. SB X1 2 (2011) expanded the RPS by establishing that 20% of the total electricity sold to retail customers in California per year by December 31, 2013, and 33% by December 31, 2020, and in subsequent years be secured from qualifying renewable energy sources. Under the bill, a renewable electrical generation facility is one that uses biomass, solar thermal, photovoltaic, wind, geothermal, fuel cells using renewable fuels, small hydroelectric generation of 30 megawatts or less, digester gas, municipal solid waste conversion, landfill gas, ocean wave, ocean thermal, or tidal current, and that meets other specified requirements with respect to its location. In addition to the retail sellers previously covered by the RPS, SB X1 2 added local, publicly owned electric utilities to the RPS.

SB 350. SB 350 (2015) further expanded the RPS by establishing that 50% of the total electricity sold to retail customers in California per year by December 31, 2030 be secured from qualifying renewable energy sources. In addition, SB 350 includes the goal to double the energy efficiency savings in electricity and natural gas final end uses (such as heating, cooling, lighting, or class of energy uses on which an energy-efficiency program is focused)

of retail customers through energy conservation and efficiency. The bill also requires the CPUC, in consultation with the CEC, to establish efficiency targets for electrical and gas corporations consistent with this goal.

SB 100 (2018) increased the standards set forth in SB 350 establishing that 44% of the total electricity sold to retail customers in California per year by December 31, 2024, 52% by December 31, 2027, and 60% by December 31, 2030, be secured from qualifying renewable energy sources. Under SB 100, it is the policy of the state that eligible renewable energy resources and zero-carbon resources supply 100% of the retail sales of electricity to California. This bill requires that the achievement of 100% zero-carbon electricity resources does not increase the carbon emissions elsewhere in the western grid and that the achievement not occur through resource shuffling.

Mobile Sources

AB 1493. In a response to the transportation sector accounting for more than half of California's CO_2 emissions, AB 1493 was enacted in July 2002. AB 1493 required CARB to set GHG emission standards for passenger vehicles, light-duty trucks, and other vehicles determined by the state board to be vehicles that are primarily used for noncommercial personal transportation in the state. The bill required that CARB set GHG emission standards for motor vehicles manufactured in 2009 and all subsequent model years. CARB adopted the standards in September 2004. When fully phased in, the near-term (2009–2012) standards will result in a reduction of about 22% in GHG emissions compared to the emissions from the 2002 fleet, while the mid-term (2013–2016) standards will result in a reduction of about 30%.

EO S-1-07. Issued on January 18, 2007, EO S-1-07 sets a declining Low Carbon Fuel Standard for GHG emissions measured in CO_2e grams per unit of fuel energy sold in California. The target of the Low Carbon Fuel Standard is to reduce the carbon intensity of California passenger vehicle fuels by at least 10% by 2020. The carbon intensity measures the amount of GHG emissions in the lifecycle of a fuel, including extraction/feedstock production, processing, transportation, and final consumption, per unit of energy delivered. CARB adopted the implementing regulation in April 2009. The regulation is expected to increase the production of biofuels, including those from alternative sources, such as algae, wood, and agricultural waste.

SB 375. SB 375 (2008) addresses GHG emissions associated with the transportation sector through regional transportation and sustainability plans. SB 375 required CARB to adopt regional GHG reduction targets for the automobile and light-truck sector for 2020 and 2035. Regional metropolitan planning organizations (MPOs) are then responsible for preparing a Sustainable Communities Strategy within their Regional Transportation Plan. The goal of the Sustainable Communities Strategy is to establish a forecasted development pattern for the region that, after considering transportation measures and policies, will achieve, if feasible, the GHG reduction targets. If a Sustainable Communities Strategy is unable to achieve the GHG reduction target, an MPO must prepare an Alternative Planning Strategy demonstrating how the GHG reduction target would be achieved through alternative development patterns, infrastructure, or additional transportation measures or policies.

Pursuant to Government Code Section 65080(b)(2)(K), a sustainable communities strategy does not: (i) regulate the use of land; (ii) supersede the land use authority of cities and counties; or (iii) require that a city's or county's land use policies and regulations, including those in a general plan, be consistent with it. Nonetheless, SB 375 makes regional and local planning agencies responsible for developing those strategies as part of the federally required metropolitan transportation planning process and the state-mandated housing element process.

In 2010, CARB adopted the first round of SB 375 targets for the regional MPOs. The original targets for San Diego Association of Governments (SANDAG) are a 7% reduction in emissions per capita by 2020 and a 13% reduction by 2035. In March 2018, CARB adopted updated SB 375 targets for the regional MPOs. The updated targets for SANDAG are a 15% reduction in emissions per capita by 2020 and a 19% reduction by 2035. The reduction targets are expressed as a percent change in per capita passenger vehicle GHG emissions relative to 2005 levels.

SANDAG completed and adopted its 2050 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) in October 2011. In November 2011, CARB, by resolution, accepted SANDAG's GHG emissions quantification analysis and determination that, if implemented, the SCS would achieve CARB's 2020 and 2035 GHG emissions reduction targets for the region.

In 2015, SANDAG adopted the next iteration of its RTP/SCS in accordance with statutorily mandated timelines. More specifically, in October 2015, SANDAG adopted San Diego Forward: The Regional Plan. Like the 2050 RTP/SCS, this planning document meets CARB's 2020 and 2035 reduction targets for the region (SANDAG 2015). In December 2015, CARB, by resolution, accepted SANDAG's GHG emissions quantification analysis and determination that, if implemented, the SCS would achieve CARB's 2020 and 2035 GHG emissions reduction targets for the region.

On September 23, 2016, SANDAG's Board of Directors adopted the final 2016 Regional Transportation Improvement Program (RTIP), which is a multibillion-dollar, multiyear program of proposed major transportation projects in the San Diego region. Transportation projects funded with federal, state, and TransNet (the San Diego transportation sales tax program) must be included in an approved RTIP. The programming of locally funded projects also may be programmed at the discretion of the agency. The 2016 RTIP covers five fiscal years and incrementally implements the Regional Plan (SANDAG 2016). The latest draft of the 2021 Regional Plan was released in May 2021 and at its meeting on February 26, 2021, the SANDAG Board of Directors adopted the final 2021 RTIP. The 2021 RTIP and its conformity determination were approved by FHWA and FTA on April 16, 2021. The 2021 Regional Plan provides a long-term blueprint for the San Diego region that seeks to meet regulatory requirements, address traffic congestion, and create equal access to jobs, education, healthcare, and other community resources (SANDAG 2021). The plan is the result of years of planning, data analysis, and community engagement to reimagine the San Diego region with a transformative transportation system, a sustainable pattern of growth and development, and innovative demand and management strategies.

The 2021 Regional Plan includes a Sustainable Communities Strategy (SCS), as required by California Senate Bill 375 (SB 375), for the San Diego region. This SCS describes coordinated transportation and land use planning that exceeds the state's target for reducing per capita GHG emissions set by the California Air Resources Board. The state-mandated target is a 19% reduction—compared with 2005—in per capita GHG emissions from cars and light-duty trucks by 2035. The 2021 Regional Plan achieves a 20% reduction by then.

The 2021 Regional Plan also puts forth a forecasted development pattern that is driven by regional goals for sustainability, mobility, housing affordability, and economic prosperity.

Advanced Clean Cars Program. In January 2012, CARB approved the Advanced Clean Cars program, a new emissions-control program for model years 2015 through 2025. The program combines the control of smog- and soot-causing pollutants and GHG emissions into a single coordinated package. The package includes elements to reduce smog-forming pollution, reduce GHG emissions, promote clean cars, and provide the fuels for clean cars (CARB 2011). To improve air quality, CARB has implemented new emission standards to reduce smog-forming emissions beginning with 2015 model year vehicles. It is estimated that in 2025 cars will emit 75% less smog-

forming pollution than the average new car sold today. To reduce GHG emissions, CARB, in conjunction with the EPA and the NHTSA, has adopted new GHG standards for model year 2017 to 2025 vehicles; the new standards are estimated to reduce GHG emissions by 34% in 2025. The Zero Emissions Vehicle (ZEV) program will act as the focused technology of the Advanced Clean Cars program by requiring manufacturers to produce increasing numbers of ZEVs and plug-in hybrid electric vehicles in the 2018 to 2025 model years. The Clean Fuels Outlet regulation will ensure that fuels such as electricity and hydrogen are available to meet the fueling needs of the new advanced technology vehicles as they come to the market.

EO B-16-12. EO B-16-12 (2012) directs state entities under the Governor's direction and control to support and facilitate development and distribution ZEVs. This EO also sets a long-term target of reaching 1.5 million zero-emission vehicles on California's roadways by 2025. On a statewide basis, EO B-16-12 also establishes a GHG emissions reduction target from the transportation sector equaling 80% less than 1990 levels by 2050. In furtherance of this EO, the Governor convened an Interagency Working Group on Zero-Emission Vehicles that has published multiple reports regarding the progress made on the penetration of ZEVs in the statewide vehicle fleet.

SB 350. In 2015, SB 350 – the Clean Energy and Pollution Reduction Act – was enacted into law. As one of its elements, SB 350 establishes a statewide policy for widespread electrification of the transportation sector, recognizing that such electrification is required for achievement of the state's 2030 and 2050 reduction targets (see Public Utilities Code section 740.12).

EO B-48-18 (2018) launched an eight-year initiative to accelerate the sale of EVs through a mix of rebate programs and infrastructure improvements. The order also set a new EV target of 5 million EVs in California by 2030. EO B-48-18 included funding for multiple state agencies, including the CEC, to increase EV charging infrastructure and for CARB to provide rebates for the purchase of new EVs and purchase incentives for low-income customers.

Solid Waste

AB 939 and AB 341. In 1989, AB 939, known as the Integrated Waste Management Act (Public Resources Code Sections 40000 et seq.), was passed because of the increase in waste stream and the decrease in landfill capacity. The statute established the California Integrated Waste Management Board, which oversees a disposal reporting system. AB 939 mandated a reduction of waste being disposed where jurisdictions were required to meet diversion goals of all solid waste through source reduction, recycling, and composting activities of 25% by 1995 and 50% by the year 2000.

AB 341 (2011) amended the California Integrated Waste Management Act of 1989 to include a provision declaring that it is the policy goal of the state that not less than 75% of solid waste generated be source-reduced, recycled, or composted by the year 2020, and annually thereafter. In addition, AB 341 required the California Department of Resources Recycling and Recovery (CalRecycle) to develop strategies to achieve the state's policy goal. CalRecycle has conducted multiple workshops and published documents that identify priority strategies that CalRecycle believes would assist the state in reaching the 75% goal by 2020.

Increasing the amount of commercial solid waste that is recycled, reused, or composted will reduce GHG emissions primarily by 1) reducing the energy requirements associated with the extraction, harvest, and processing of raw materials and 2) using recyclable materials that require less energy than raw materials to manufacture finished products (CalRecycle 2015). Increased diversion of organic materials (green and food waste) will also reduce GHG

emissions (CO_2 and CH_4) resulting from decomposition in landfills by redirecting this material to processes that use the solid waste material to produce vehicle fuels, heat, electricity, or compost.

Water

EO B-29-15. In response to the ongoing drought in California, EO B-29-15 (April 2015) set a goal of achieving a statewide reduction in potable urban water usage of 25% relative to water use in 2013. The term of the EO extended through February 28, 2016, although many of the directives have since become permanent water-efficiency standards and requirements. The EO includes specific directives that set strict limits on water usage in the state. In response to EO B-29-15, the California Department of Water Resources has modified and adopted a revised version of the Model Water Efficient Landscape Ordinance that, among other changes, significantly increases the requirements for landscape water use efficiency and broadens its applicability to include new development projects with smaller landscape areas.

Other State Regulations and Goals

SB 97 (August 2007) directed the Governor's Office of Planning and Research (OPR) to develop guidelines under CEQA for the mitigation of GHG emissions. In 2008, OPR issued a technical advisory as interim guidance regarding the analysis of GHG emissions in CEQA documents. The advisory indicated that the lead agency should identify and estimate a project's GHG emissions, including those associated with vehicular traffic, energy consumption, water usage, and construction activities (OPR 2008). The advisory further recommended that the lead agency determine significance of the impacts and impose all mitigation measures necessary to reduce GHG emissions to a level that is less than significant. The California Natural Resources Agency (CNRA) adopted the CEQA Guidelines amendments in December 2009, which became effective in March 2010.

Under the amended CEQA Guidelines, a lead agency has the discretion to determine whether to use a quantitative or qualitative analysis or apply performance standards to determine the significance of GHG emissions resulting from a particular project (14 CCR 15064.4[a]). The CEQA Guidelines require a lead agency to consider the extent to which a project complies with regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of GHG emissions (14 CCR 15064.4[b]). The CEQA Guidelines also allow a lead agency to consider feasible means of mitigating the significant effects of GHG emissions, including reductions in emissions through the implementation of project features or off-site measures. The adopted amendments do not establish a GHG emission threshold, instead allowing a lead agency to develop, adopt, and apply its own thresholds of significance or those developed by other agencies or experts. The CNRA also acknowledges that a lead agency may consider compliance with regulations or requirements implementing AB 32 in determining the significance of a project's GHG emissions (CNRA 2009a).

With respect to GHG emissions, the CEQA Guidelines, Section 15064.4(a), state that lead agencies should "make a good faith effort, to the extent possible on scientific and factual data, to describe, calculate or estimate" GHG emissions. The CEQA Guidelines note that an agency may identify emissions by either selecting a "model or methodology" to quantify the emissions or by relying on "qualitative analysis or performance based standards" (14 CCR 15064.4[a, c]). Section 15064.4(b) states that the lead agency should consider the following when assessing the significance of impacts from GHG emissions on the environment: (1) the extent a project may increase or reduce GHG emissions as compared to the existing environmental setting; (2) whether project emissions exceed a threshold of significance that the lead agency determines applies to the project; and (3) the extent to which a project

complies with regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of GHG emissions (14 CCR 15064.4[b]).

EO S-13-08. EO S-13-08 (November 2008) is intended to hasten California's response to the impacts of global climate change, particularly sea-level rise. Therefore, the EO directs state agencies to take specified actions to assess and plan for such impacts. The final 2009 California Climate Adaptation Strategy report was issued in December 2009 (CNRA 2009a), and an update, Safeguarding California: Reducing Climate Risk, followed in July 2014 (CNRA 2014). To assess the state's vulnerability, the report summarizes key climate change impacts to the state for the following areas: agriculture, biodiversity and habitat, emergency management, energy, forestry, ocean and coastal ecosystems and resources, public health, transportation, and water. Issuance of the Safeguarding California: Implementation Action Plans followed in March 2016 (CNRA 2016). In January 2018, the CNRA released the Safeguarding California Plan: 2018 Update, which communicates current and needed actions that state government should take to build climate change resiliency (CNRA 2018).

3.3 Local

City of Carlsbad General Plan

The State of California requires cities and counties to prepare and adopt a general plan to set out a long-range vision and comprehensive policy framework for its future. The State also mandates that the general plan be updated periodically to ensure relevance and utility. The City of Carlsbad General Plan (General Plan) was unanimously adopted by the City Council on September 22, 2015. The General Plan builds upon many of the goals and strategies of the former 1994 General Plan, in addition to offering new policy direction in the areas of urban form, neighborhood character, historic preservation, public facilities, recreation, conservation, mobility, housing affordability, economic prosperity, and equitable development. It also outlines the plan amendment process, and other implementation strategies, and considers the continued growth of the City beyond the year 2020 (City of Carlsbad 2015a).

Sustainability Element. The Sustainability Element provides the overarching framework and includes policies focused on topics central to sustainability not covered elsewhere. This element provides the overarching framework for sustainability in the City and outlines policies focused on:

- Climate change and GHG reduction;
- Water conservation, recycling, and supply;
- Green building;
- Sustainable energy and energy security; and
- Sustainable food.

The Sustainability Element is closely tied to the City's Community Vision Core Value 6-Sustainability, which aims to build on the City's sustainability initiatives to emerge as a leader in green development and sustainability, and pursue public/ private partnerships, particularly on sustainable water, energy, recycling, and foods. The following goals identified in the Sustainability Element support reduction of GHG emissions in the City:

- **9-G.2:** Undertake initiatives to enhance sustainability by reducing the community's GHG emissions and fostering green development patterns—including buildings, sites, and landscapes.

- **9-G.3:** Promote energy efficiency and conservation in the community.

The following policies identified in the Sustainability Element support reduction of GHG emissions in the City:

- **9-P.1:** Enforce the Climate Action Plan as the city's strategy to reduce greenhouse gas emissions.
- **9-P.2:** Continue efforts to decrease use of energy and fossil fuel consumption in municipal operations, including transportation, waste reduction and recycling, and efficient building design and use.

The Sustainability Element also identifies policies for water conservation, recycling, and supply; green building; sustainable energy; and sustainable food.

City of Carlsbad Climate Action Plan

The City of Carlsbad Climate Action Plan (CAP) was unanimously adopted by the City Council on September 22, 2015 (City of Carlsbad 2015b). The City Council approved CAP Amendment No. 1, which included the establishment of a 2020 GHG inventory, recalculation of GHG emission targets and forecasts, and incorporation Community Choice Energy as a CAP measure. These revisions were made to the CAP to allow the city to meet its 2020 and 2035 GHG reduction targets, enable the plan to be considered a qualified CAP under CEQA, and be used to streamline the permit process through discretionary environmental review.

The CAP is designed to reduce the City's GHG emissions and streamline environmental review of future development projects in the city in accordance with the California Environmental Quality Act (CEQA).

The CAP includes goals, policies, and actions for the City to reduce GHG emissions and combat climate change and includes: an inventory of citywide and local government GHG emissions; forecasts of future citywide and local government GHG emissions; a comprehensive, citywide strategy and actions to manage and reduce GHG emissions, with emission targets through 2035; and actions that demonstrate the City's commitment to achieve state GHG reduction targets by creating enforceable measures, and monitoring and reporting processes to ensure targets are met. The timeframe for the CAP extends from the date of adoption through 2035. The CAP is considered a qualified plan as described in CEQA Guidelines Section 15183.5(b).

The CAP is intended to be a tool for policy makers, community members and others to guide the implementation of actions that limit the City's GHG emissions. Ensuring that the mitigation measures in the CAP translate from policy language to on-the-ground results is critical to the success of the CAP.

The CAP set the GHG reduction goals for the City at 15% below 2005 levels by 2020, 49% reduction by 2035, and 80% reduction by 2050. The GHG reduction measures outlined in the CAP include the following categories (City of Carlsbad 2020):

- Commercial and industrial photovoltaic systems
- Single-family, multi-family and commercial efficiency retrofits
- Solar water heater/heat pump installation
- Efficient lighting standards
- Increased zero-emissions vehicle travel
- Transportation Demand Management (TDM)

- Citywide renewable projects
- Water delivery and conservation

The CAP also outlines two approaches for projects to show consistency with the CAP (City of Carlsbad 2015b):

- **Checklist Approach.** The Project Review Checklist provides direction about measures to be incorporated in individual projects, which will be used during the normal development review process. Project features that help a project meet the provisions of the CAP shall then become part of project conditions of approval.
- **Self-Developed Program Approach.** Rather than use the standard checklist, project proponents can develop their own program that would result in the same outcome as the checklist. Appendix E of the CAP provides a non-exclusive list of potential mitigation measures that can be applied at the project level to reduce project-level greenhouse gas emissions. Other measures not listed in the Appendix may be considered, provided that their effectiveness in reducing greenhouse gas emissions can be demonstrated. The self-developed program approach and selection of mitigation measures shall be subject to city review and approval.

CAP CEQA Streamlining - Project Screening Thresholds

The California Air Pollution Control Officers Association (CAPCOA) provides various screening thresholds to guide lead agencies in determining which projects require greenhouse gas analysis and mitigation for significant impacts related to climate change. Utilizing this guidance, the City has determined that new development projects emitting less than 900 MTCO2e annual GHG would not contribute considerably to cumulative climate change impacts, and therefore do not need to demonstrate consistency with the CAP.

The city prepared a "Climate Action Plan Consistency Checklist" and "Guidance to Demonstrating Consistency with the Climate Action Plan For Discretionary Projects Subject to CEQA," which lists the types and sizes of projects that correspond to the 900 MTCO2e screening threshold. The documents were revised to reflect adoption of CAP ordinances. For proposed projects above the screening threshold, project proponents shall complete the Checklist.

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4 Thresholds of Significance

The significance criteria used to evaluate the Project's GHG emissions impacts are based on the recommendations provided in Appendix G of the CEQA Guidelines. For the purposes of this GHG emissions analysis, the Project would have a significant environmental impact if it would (14 CCR 15000 et seq.):

1. Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment?
2. Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs?

The Appendix G thresholds for GHGs do not prescribe specific methodologies for performing an assessment, do not establish specific quantitative thresholds, and do not mandate specific mitigation measures. Rather, the CEQA Guidelines emphasize the lead agency's discretion to determine the appropriate methodologies and thresholds of significance consistent with the manner in which other impact areas are handled in CEQA (CNRA 2009a). Additional guidance regarding assessment of GHG's is discussed below.

CEQA Guidelines

With respect to GHG emissions, the CEQA Guidelines Section 15064.4(a) states that lead agencies "shall make a good-faith effort, based to the extent possible on scientific and factual data, to describe, calculate or estimate" GHG emissions resulting from a project. The CEQA Guidelines note that an agency has the discretion to either quantify a project's GHG emissions or rely on a "qualitative analysis or performance based standards" (14 CCR 15064.4[a]). A lead agency may use a "model or methodology" to estimate greenhouse gas emissions and has the discretion to select the model or methodology it considers "most appropriate to enable decision makers to intelligently take into account the project's incremental contribution to climate change" (14 CCR 15064.4[c]). The CEQA Guidelines provide that the lead agency should consider the following when determining the significance of impacts from GHG emissions on the environment (14 CCR 15064.4[b]):

1. The extent a project may increase or reduce GHG emissions as compared to the existing environmental setting.
2. Whether the project emissions exceed a threshold of significance that the lead agency determines applies to the project.
3. The extent to which the project complies with regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of GHG emissions.

In addition, the CEQA Guidelines specify that "[w]hen adopting or using thresholds of significance, a lead agency may consider thresholds of significance previously adopted or recommended by other public agencies, or recommended by experts, provided the decision of the lead agency to adopt such thresholds is supported by substantial evidence" (14 CCR 15064.7[c]).

Governor's Office of Planning and Research Guidance

The Governor's Office of Planning and Research (OPR) technical advisory titled, CEQA and Climate Change: Addressing Climate Change through California Environmental Quality Act (CEQA) Review, states that "public agencies are encouraged but not required to adopt thresholds of significance for environmental impacts. Even in the absence of clearly defined thresholds for GHG emissions, the law requires that such emissions from CEQA

projects must be disclosed and mitigated to the extent feasible whenever the lead agency determines that the project contributes to a significant, cumulative climate change impact" (OPR 2008). Furthermore, the advisory document indicates that "in the absence of regulatory standards for GHG emissions or other scientific data to clearly define what constitutes a 'significant impact,' individual lead agencies may undertake a project-by-project analysis, consistent with available guidance and current CEQA practice" (OPR 2008).

Cumulative Nature of Climate Change

Global climate change is a cumulative impact; a project participates in this potential impact through its incremental contribution combined with the cumulative increase of all other sources of GHGs. There are currently no established thresholds for assessing whether the GHG emissions of a project in the San Diego Air Basin (SDAB), such as the Project, would be considered a cumulatively considerable contribution to global climate change; however, all reasonable efforts should be made to minimize a project's contribution to global climate change.

While the Project would result in emissions of GHGs during construction and operation, no current guidance exists to indicate what level of GHG emissions would be considered substantial enough to result in a significant adverse impact on global climate. However, it is generally believed that an individual project is of insufficient magnitude by itself to directly influence climate change as scientific uncertainty regarding the significance a project's individual and cumulative effects on global climate change remains.

Thus, GHG impacts are recognized as exclusively cumulative impacts; there are no non-cumulative GHG emission impacts from a climate change perspective (CAPCOA 2008). This approach is consistent with that recommended by the CNRA, which noted in its Public Notice for the proposed CEQA amendments (pursuant to SB97) that the evidence before it indicates that in most cases, the impact of GHG emissions should be considered in the context of a cumulative impact, rather than a project-level impact (CNRA 2009a). Similarly, the Final Statement of Reasons for Regulatory Action on the CEQA Amendments confirm that an environmental impact report or other environmental document must analyze the incremental contribution of a project to GHG levels and determine whether those emissions are cumulatively considerable (CNRA 2009a).

Approaches to Determining Significance

The City has determined that new development projects emitting less than 900 MTCO2e annual GHG would not contribute considerably to cumulative climate change impacts, and therefore do not need to demonstrate consistency with the CAP. Projects greater than 900 MTCO2e would be required to show CAP Checklist consistency.

5 Impacts

Would the Project generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

Would the Project conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

Project GHG Emissions

Construction GHG Emissions

Construction Scenario Assumptions

GHG emissions would be associated with the construction phase of the Project components through use of construction equipment and vehicle trips. Emissions of CO_2 were estimated using the California Emissions Estimator Model (CalEEMod), Version 2020.4.0.[3]

For the purposes of modeling, it was assumed that construction of Project components would commence in March 2023 and last approximately 22 months. Table 5 provides the construction timeline and potential phasing of the components that would come online to achieve the target milestones. The construction schedule has been developed based on available information provided by the Project applicant, typical construction practices, and best engineering judgment. Construction phasing is intended to represent a schedule of anticipated activities for use in estimating potential Project-generated construction emissions.

Table 5. Construction Scenario Assumptions

Construction Phase (Duration)	One-Way Vehicle Trips			Equipment		
	Average Daily Worker Trips	Average Daily Vendor Truck Trips	Total Haul Truck Trips	Equipment Type	Quantity	Usage Hours
Demolition	12	4	428	Concrete/Industrial Saws	1	8
				Excavator	3	8
				Rubber-tired dozers	2	8
Site preparation	10	4	0	Rubber-tired dozers	2	8
				Tractors/loaders/backhoes	2	8
Grading/Trenching/Site Work	16	4	6	Excavators	1	8
				Graders	1	8
				Rubber-tired dozers	1	8

[3] CalEEMod is a statewide land use emissions computer model designed to provide a uniform platform to calculate construction and operational emissions from land use development projects. The model was developed for the California Air Pollution Control Officers Association in collaboration with multiple air districts across the State. Numerous lead agencies in the State, including the SDAPCD, utilize CalEEMod to estimate GHG emissions in accordance with CEQA Guidelines section 15064.4(a)(1).

Table 5. Construction Scenario Assumptions

Construction Phase (Duration)	One-Way Vehicle Trips			Equipment		
	Average Daily Worker Trips	Average Daily Vendor Truck Trips	Total Haul Truck Trips	Equipment Type	Quantity	Usage Hours
				Tractors/loaders/backhoes	3	8
Building construction	40	12	0	Forklifts	1	8
				Cement Mortar Mixers	2	6
				Generator sets	1	8
				Tractors/loaders/backhoes	3	8
				Welders	1	8
Paving	20	0	0	Pavers	1	8
				Paving equipment	2	6
				Rollers	2	6
				Tractors/Loaders/Backhoes	1	8
				Air Compressors	1	6
Architectural coating	16	0	0	Air compressors	1	6

Note: See Appendix A for additional details.

The equipment mix assumptions were based on Project design documents, review of related documents, and CalEEMod default equipment, where appropriate. The equipment mix is meant to represent a reasonably conservative estimate of construction activity. For the analysis, it is generally assumed that heavy construction equipment would be operating at the site for approximately 8 hours per day, 5 days per week. Default assumptions provided in CalEEMod were utilized to determine worker trips and vendor truck trips for each potential construction phase. The default CalEEMod trip distance for construction vehicles was assumed, which was a one-way distance of 10.8 miles for worker trips, 7.3 miles for vendor trips, and a project specific value of 25 miles for haul trips. Based on project specific information, 50 cubic yards of material export is expected from the construction of the project and included in the modeling analysis.

Estimated Construction Emissions

Table 6 shows the estimated annual GHG construction emissions associated with the Project. Complete details of the emissions calculations are provided in Appendix A of this document.

Table 6. Estimated Annual Construction GHG Emissions

Year	CO_2	CH_4	N_2O	CO_2e
	Metric Tons			
2023	217.40	0.05	<0.01	220.01
2024	292.81	0.05	<0.01	295.50
Total	**510.21**	**0.10**	**<0.01**	**515.51**

Source: CalEEMod Version 2020.4.0.
Notes: GHG = greenhouse gas; CO_2 = carbon dioxide; CH_4 = methane; N_2O = nitrous oxide; CO_2e = carbon dioxide equivalent.

See Appendix A for complete results. <0.01 = reported value is less than 0.01.

As shown in Table 6, the estimated total GHG emissions from construction of the Project would be 511 MT CO_2e. When amortized over 30 years, the estimated annual GHG emissions from construction of the Project would be 17 MT CO_2e per year.

Operational Emissions

Operation of the Project would result in direct GHG emissions from area sources, indirect GHG emissions from use of electricity, vehicular traffic, waste, and water and wastewater including a wastewater lift station pump.

Operational Scenario Assumptions

Area

The area source category calculates direct sources of GHG emissions located at the Project site including hearths and landscape maintenance equipment. (This source category does not include the emissions associated with natural gas usage in space heating and water heating as these are calculated in the building energy use module of CalEEMod.) The Project will not have natural gas or woodburning fireplaces or woodstoves; as such, the only area source pertinent to this analysis is landscape maintenance equipment.

Landscape maintenance includes fuel combustion emissions from equipment such as lawn mowers, roto tillers, shredders/grinders, blowers, trimmers, chain saws, and hedge trimmers, as well as air compressors, generators, and pumps. The emissions associated from landscape equipment use were estimated using CalEEMod defaults. For San Diego County, CalEEMod assumes that landscaping equipment would operate 180 days per year. To be conservative, emissions were estimated assuming that landscape maintenance equipment was powered by gasoline or diesel fuel, and not electrified.

Energy

As represented in CalEEMod, energy sources include emissions associated with building electricity and natural gas usage (non-hearth). CalEEMod default values for energy consumption were applied to each land use. The energy use from residential land uses is calculated in CalEEMod based on the Residential Appliance Saturation Survey (CAPCOA 2021).

Annual natural gas (non-hearth) and electricity emissions were estimated in CalEEMod using default values for emissions factors for San Diego Gas and Electric (SDG&E), which would be the energy source provider for the Project.

Mobile Sources (Motor Vehicles)

Following the completion of construction activities, the Project would generate GHG emissions from mobile sources (vehicular traffic), as a result of residents and employees associated with the 86 residential units. The CalEEMod Version 2020.4.0 model was used to estimate daily emissions from vehicular sources (refer to Appendix A). CalEEMod Version 2020.4.0 default data, including temperature, trip characteristics, variable start information, and emissions factors were used for the model inputs. Project specific trip rates, and transportation demand

management (TDM) measures including increased residential density and percent affordable housing, were taken from the Linscott Law & Greenspan VMT Analyses, May 18, 2022, LLG Ref. 3-22-3538. Emission factors representing the vehicle mix and emissions for 2025 were conservatively used to estimate emissions associated with vehicular sources. The 2025 operational year represents the first full year the Project would be operational.

Solid Waste

The Project would generate solid waste, and therefore, result in CO_2e emissions associated with landfill off-gassing. CalEEMod default values for solid waste generation were used to estimate GHG emissions associated with solid waste.

Water and Wastewater

Supply, conveyance, treatment, and distribution of water for the Project require the use of electricity, which would result in associated indirect GHG emissions. Similarly, wastewater generated by the Project requires the use of electricity for conveyance and treatment, along with GHG emissions generated during wastewater treatment. Water consumption estimates for both indoor and outdoor water use and associated electricity consumption from water use and wastewater generation were estimated using CalEEMod default values.

Stationary Source

The project would require a wastewater lift station for intermittent transfer of wastewater from the operation of the project. The lift station requires a wastewater pump and 15 horsepower (hp) engine. The lift station would normally be operated by and electric motor and would have a diesel engine as back up in the event electrical power is interrupted to the electric motor. The expected operation of the lift station is 1 hour per day in two 30-minute intervals over the course of the day. For worst case GHG emission operating scenario, the total operation was modeled with diesel backup engine operating.

Estimated Operational Emissions

Table 7 shows the total operational GHG emissions for the Project after accounting for amortized construction emissions.

Table 7. Summary of Estimated Annual GHG Emissions

Emissions Source	MT CO_2	MT CH_4	MT N_2O	MT CO_2e
Area	1.04	<0.01	0.00	1.07
Energy	164.49	0.01	<0.01	165.24
Mobile	516.55	0.04	0.02	524.45
Stationary[a]	2.08	<0.01	0.00	2.09
Waste	8.03	0.47	0.00	19.89
Water	29.26	0.18	<0.01	35.21
			Amortized Construction Emissions	*17.05*
			Total Project Emissions	**765.13**

Source: See Appendix A for complete results.
Notes: GHG = greenhouse gas; MT = metric tons; CO_2 = carbon dioxide; CH_4 = methane; N_2O = nitrous oxide; CO_2e = carbon dioxide equivalent. <0.01 = reported value is less than 0.01.
Emissions presented represent the "mitigated" output in CalEEMod.
[a] Assumes lift station pump is operated by diesel engine 1 hour per day, 365 days per year.

Impact Analysis

Consistency with the City of Carlsbad CAP

Implementation of the Project would emit approximately 765 MT CO_2e per year. The Project-generated operational emissions in 2025 plus amortized project construction emissions would be less than the City's CAP GHG threshold of 900 MT CO_2e per year. As such, the Project would be consistent with the CAP and would not be required to complete the CAP Checklist. Impacts would be **less than significant**.

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Appendix A
CalEEMod Outputs

Ponto Townhomes Project - San Diego County, Annual

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

Ponto Townhomes Project

San Diego County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Asphalt Surfaces	49.83	1000sqft	1.14	49,830.00	0
Parking Lot	25.00	Space	0.22	10,000.00	0
Condo/Townhouse	86.00	Dwelling Unit	3.28	145,700.00	246

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.6	**Precipitation Freq (Days)**	40
Climate Zone	13			**Operational Year**	2025
Utility Company	San Diego Gas & Electric				
CO2 Intensity (lb/MWhr)	539.98	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Per client provided information. Other apshalt surface represents interior roads.

Construction Phase - Per applicant provided construction schedule.

Off-road Equipment - Default values.

Off-road Equipment - Per applicant provided information.

Off-road Equipment - Default values.

Off-road Equipment - Default values

Off-road Equipment - Per applicant provided information.

Off-road Equipment - Per applicant provided information.

Trips and VMT - Per applicant provided information.

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

On-road Fugitive Dust - Default values.

Demolition - Per applicant provided information on existing buildings and paved surface to be removed.

Grading - Per applicant provided information.

Architectural Coating - Default values.

Vehicle Trips - Based on VMT analysis: LLG Ref. 3-22-3538.

Vehicle Emission Factors - Default values.

Vehicle Emission Factors - Default values.

Vehicle Emission Factors - Default values.

Road Dust - Default values.

Woodstoves - Per applicant, no woodstoves or fireplaces.

Consumer Products - Default values.

Area Coating - Default values.

Landscape Equipment - Default values.

Energy Use - Default values.

Water And Wastewater - Default values.

Solid Waste - Default values.

Construction Off-road Equipment Mitigation - Project includes as a PDF Tier 4i for equipment 84hp and greater.

Fleet Mix - Default values.

Stationary Sources - Emergency Generators and Fire Pumps - Actual source is a wastewater lift station pump, fire pump used as a surrogate for calclation of emissions.

Stationary Sources - Emergency Generators and Fire Pumps EF - Default values.

Mobile Land Use Mitigation - Increase density and below market rate housing based on LLG VMT Study, LLG Ref. 3-22-3538.

Table Name	Column Name	Default Value	New Value
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	5.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	9.00

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

tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstructionPhase	NumDays	20.00	23.00
tblConstructionPhase	NumDays	5.00	7.00
tblConstructionPhase	NumDays	8.00	64.00
tblConstructionPhase	NumDays	230.00	294.00
tblConstructionPhase	NumDays	18.00	7.00
tblConstructionPhase	NumDays	18.00	65.00
tblFireplaces	FireplaceDayYear	82.00	0.00
tblFireplaces	FireplaceHourDay	3.00	0.00
tblFireplaces	FireplaceWoodMass	3,078.40	0.00
tblFireplaces	NumberGas	47.30	0.00
tblFireplaces	NumberNoFireplace	8.60	0.00
tblFireplaces	NumberWood	30.10	0.00
tblGrading	MaterialExported	0.00	50.00
tblLandUse	LandUseSquareFeet	86,000.00	145,700.00
tblLandUse	LotAcreage	5.38	3.28
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblTripsAndVMT	HaulingTripLength	20.00	25.00
tblTripsAndVMT	HaulingTripLength	20.00	25.00
tblTripsAndVMT	HaulingTripNumber	427.00	428.00

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

tblTripsAndVMT	VendorTripNumber	0.00	4.00
tblTripsAndVMT	VendorTripNumber	0.00	4.00
tblTripsAndVMT	VendorTripNumber	0.00	4.00
tblTripsAndVMT	VendorTripNumber	19.00	12.00
tblTripsAndVMT	WorkerTripNumber	15.00	12.00
tblTripsAndVMT	WorkerTripNumber	15.00	16.00
tblTripsAndVMT	WorkerTripNumber	87.00	40.00
tblTripsAndVMT	WorkerTripNumber	18.00	20.00
tblTripsAndVMT	WorkerTripNumber	17.00	16.00
tblWoodstoves	NumberCatalytic	4.30	0.00
tblWoodstoves	NumberNoncatalytic	4.30	0.00
tblWoodstoves	WoodstoveDayYear	82.00	0.00
tblWoodstoves	WoodstoveWoodMass	3,019.20	0.00

2.0 Emissions Summary

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

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2023	0.1271	1.2364	1.1770	2.4600e-003	0.3417	0.0539	0.3957	0.1463	0.0502	0.1965	0.0000	217.4012	217.4012	0.0519	4.3900e-003	220.0073
2024	2.4668	1.3437	1.9086	3.3800e-003	0.0526	0.0586	0.1112	0.0142	0.0559	0.0700	0.0000	292.8136	292.8136	0.0481	4.9800e-003	295.5024
Maximum	**2.4668**	**1.3437**	**1.9086**	**3.3800e-003**	**0.3417**	**0.0586**	**0.3957**	**0.1463**	**0.0559**	**0.1965**	**0.0000**	**292.8136**	**292.8136**	**0.0519**	**4.9800e-003**	**295.5024**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2023	0.0530	0.8315	1.3985	2.4600e-003	0.1661	7.1400e-003	0.1732	0.0692	7.1100e-003	0.0763	0.0000	217.4010	217.4010	0.0519	4.3900e-003	220.0071
2024	2.4093	1.2397	1.9946	3.3800e-003	0.0526	0.0154	0.0680	0.0142	0.0153	0.0295	0.0000	292.8133	292.8133	0.0481	4.9800e-003	295.5022
Maximum	**2.4093**	**1.2397**	**1.9946**	**3.3800e-003**	**0.1661**	**0.0154**	**0.1732**	**0.0692**	**0.0153**	**0.0763**	**0.0000**	**292.8133**	**292.8133**	**0.0519**	**4.9800e-003**	**295.5022**

Ponto Townhomes Project - San Diego 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	**5.07**	**19.72**	**-9.97**	**0.00**	**44.54**	**79.99**	**52.41**	**48.06**	**78.92**	**60.33**	**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	**3-1-2023**	**5-31-2023**	0.3002	0.2001
3	**9-1-2023**	**11-30-2023**	0.8567	0.5280
4	**12-1-2023**	**2-29-2024**	0.4671	0.3851
5	**3-1-2024**	**5-31-2024**	0.3917	0.3475
6	**6-1-2024**	**8-31-2024**	0.4326	0.3877
7	**9-1-2024**	**9-30-2024**	0.1276	0.1132
		Highest	0.8567	0.5280

Ponto Townhomes Project - San Diego County, Annual

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

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.8221	7.3500e-003	0.6386	3.0000e-005		3.5400e-003	3.5400e-003		3.5400e-003	3.5400e-003	0.0000	1.0444	1.0444	1.0000e-003	0.0000	1.0695
Energy	6.2200e-003	0.0532	0.0226	3.4000e-004		4.3000e-003	4.3000e-003		4.3000e-003	4.3000e-003	0.0000	164.4936	164.4936	7.4700e-003	1.8900e-003	165.2440
Mobile	0.3033	0.3373	2.8520	6.0600e-003	0.6695	4.7200e-003	0.6742	0.1787	4.4000e-003	0.1831	0.0000	574.3244	574.3244	0.0400	0.0254	582.9023
Stationary	4.4900e-003	0.0234	0.0216	2.0000e-005		1.3200e-003	1.3200e-003		1.3200e-003	1.3200e-003	0.0000	2.0849	2.0849	2.9000e-004	0.0000	2.0922
Waste						0.0000	0.0000		0.0000	0.0000	8.0303	0.0000	8.0303	0.4746	0.0000	19.8948
Water						0.0000	0.0000		0.0000	0.0000	1.7777	27.4826	29.2603	0.1843	4.5100e-003	35.2122
Total	**1.1361**	**0.4213**	**3.5348**	**6.4500e-003**	**0.6695**	**0.0139**	**0.6834**	**0.1787**	**0.0136**	**0.1922**	**9.8080**	**769.4299**	**779.2379**	**0.7076**	**0.0318**	**806.4150**

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	0.8221	7.3500e-003	0.6386	3.0000e-005		3.5400e-003	3.5400e-003		3.5400e-003	3.5400e-003	0.0000	1.0444	1.0444	1.0000e-003	0.0000	1.0695
Energy	6.2200e-003	0.0532	0.0226	3.4000e-004		4.3000e-003	4.3000e-003		4.3000e-003	4.3000e-003	0.0000	164.4936	164.4936	7.4700e-003	1.8900e-003	165.2440
Mobile	0.2868	0.3094	2.6179	5.4500e-003	0.6004	4.2800e-003	0.6047	0.1602	3.9900e-003	0.1642	0.0000	516.5515	516.5515	0.0371	0.0234	524.4498
Stationary	4.4900e-003	0.0234	0.0216	2.0000e-005		1.3200e-003	1.3200e-003		1.3200e-003	1.3200e-003	0.0000	2.0849	2.0849	2.9000e-004	0.0000	2.0922
Waste						0.0000	0.0000		0.0000	0.0000	8.0303	0.0000	8.0303	0.4746	0.0000	19.8948
Water						0.0000	0.0000		0.0000	0.0000	1.7777	27.4826	29.2603	0.1843	4.5100e-003	35.2122
Total	**1.1197**	**0.3933**	**3.3008**	**5.8400e-003**	**0.6004**	**0.0134**	**0.6139**	**0.1602**	**0.0132**	**0.1734**	**9.8080**	**711.6569**	**721.4649**	**0.7047**	**0.0298**	**747.9625**

	ROG	NOx	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	**1.45**	**6.63**	**6.62**	**9.46**	**10.32**	**3.17**	**10.17**	**10.32**	**3.02**	**9.81**	**0.00**	**7.51**	**7.41**	**0.41**	**6.41**	**7.25**

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	3/1/2023	3/31/2023	5	23	
2	Site Preparation	Site Preparation	9/1/2023	9/11/2023	5	7	

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

3	Grading/Trenching/Site Work	Grading	9/12/2023	12/10/2023	5	64	
4	Building Construction	Building Construction	10/15/2023	11/28/2024	5	294	
5	Paving	Paving	6/15/2024	6/25/2024	5	7	
6	Architectural Coating	Architectural Coating	10/2/2024	12/31/2024	5	65	

Acres of Grading (Site Preparation Phase): 7

Acres of Grading (Grading Phase): 64

Acres of Paving: 1.36

Residential Indoor: 295,043; Residential Outdoor: 98,348; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 3,590 (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	2	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Grading/Trenching/Site Work	Excavators	1	8.00	158	0.38
Grading/Trenching/Site Work	Graders	1	8.00	187	0.41
Grading/Trenching/Site Work	Rubber Tired Dozers	1	8.00	247	0.40
Grading/Trenching/Site Work	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Building Construction	Cement and Mortar Mixers	2	6.00	9	0.56
Building Construction	Cranes	0	7.00	231	0.29
Building Construction	Forklifts	2	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	Air Compressors	1	6.00	78	0.48

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

Paving	Cement and Mortar Mixers	0	6.00	9	0.56
Paving	Pavers	1	8.00	130	0.42
Paving	Paving Equipment	2	6.00	132	0.36
Paving	Rollers	2	6.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	6	12.00	4.00	428.00	10.80	7.30	25.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	4	10.00	4.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading/Trenching/Site Work	6	16.00	4.00	6.00	10.80	7.30	25.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	40.00	12.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	7	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	16.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Water Exposed Area

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

3.2 Demolition - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0468	0.0000	0.0468	7.0900e-003	0.0000	7.0900e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0261	0.2471	0.2259	4.5000e-004		0.0115	0.0115		0.0107	0.0107	0.0000	39.0909	39.0909	0.0110	0.0000	39.3646
Total	**0.0261**	**0.2471**	**0.2259**	**4.5000e-004**	**0.0468**	**0.0115**	**0.0583**	**7.0900e-003**	**0.0107**	**0.0178**	**0.0000**	**39.0909**	**39.0909**	**0.0110**	**0.0000**	**39.3646**

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	5.4000e-004	0.0353	8.8700e-003	1.6000e-004	4.5800e-003	3.0000e-004	4.8800e-003	1.2600e-003	2.8000e-004	1.5400e-003	0.0000	15.9189	15.9189	8.0000e-004	2.5300e-003	16.6934
Vendor	5.0000e-005	2.0400e-003	7.2000e-004	1.0000e-005	3.1000e-004	1.0000e-005	3.2000e-004	9.0000e-005	1.0000e-005	1.0000e-004	0.0000	0.9230	0.9230	3.0000e-005	1.3000e-004	0.9635
Worker	3.7000e-004	2.6000e-004	3.1500e-003	1.0000e-005	1.1100e-003	1.0000e-005	1.1100e-003	2.9000e-004	1.0000e-005	3.0000e-004	0.0000	0.8867	0.8867	3.0000e-005	2.0000e-005	0.8946
Total	**9.6000e-004**	**0.0376**	**0.0127**	**1.8000e-004**	**6.0000e-003**	**3.2000e-004**	**6.3100e-003**	**1.6400e-003**	**3.0000e-004**	**1.9400e-003**	**0.0000**	**17.7285**	**17.7285**	**8.6000e-004**	**2.6800e-003**	**18.5516**

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

3.2 Demolition - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0211	0.0000	0.0211	3.1900e-003	0.0000	3.1900e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	9.2400e-003	0.1600	0.2814	4.5000e-004		2.0900e-003	2.0900e-003		2.0900e-003	2.0900e-003	0.0000	39.0908	39.0908	0.0110	0.0000	39.3645
Total	**9.2400e-003**	**0.1600**	**0.2814**	**4.5000e-004**	**0.0211**	**2.0900e-003**	**0.0232**	**3.1900e-003**	**2.0900e-003**	**5.2800e-003**	**0.0000**	**39.0908**	**39.0908**	**0.0110**	**0.0000**	**39.3645**

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	5.4000e-004	0.0353	8.8700e-003	1.6000e-004	4.5800e-003	3.0000e-004	4.8800e-003	1.2600e-003	2.8000e-004	1.5400e-003	0.0000	15.9189	15.9189	8.0000e-004	2.5300e-003	16.6934
Vendor	5.0000e-005	2.0400e-003	7.2000e-004	1.0000e-005	3.1000e-004	1.0000e-005	3.2000e-004	9.0000e-005	1.0000e-005	1.0000e-004	0.0000	0.9230	0.9230	3.0000e-005	1.3000e-004	0.9635
Worker	3.7000e-004	2.6000e-004	3.1500e-003	1.0000e-005	1.1100e-003	1.0000e-005	1.1100e-003	2.9000e-004	1.0000e-005	3.0000e-004	0.0000	0.8867	0.8867	3.0000e-005	2.0000e-005	0.8946
Total	**9.6000e-004**	**0.0376**	**0.0127**	**1.8000e-004**	**6.0000e-003**	**3.2000e-004**	**6.3100e-003**	**1.6400e-003**	**3.0000e-004**	**1.9400e-003**	**0.0000**	**17.7285**	**17.7285**	**8.6000e-004**	**2.6800e-003**	**18.5516**

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

3.3 Site Preparation - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0459	0.0000	0.0459	0.0236	0.0000	0.0236	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	5.8500e-003	0.0606	0.0374	8.0000e-005		2.7800e-003	2.7800e-003		2.5500e-003	2.5500e-003	0.0000	7.1668	7.1668	2.3200e-003	0.0000	7.2247
Total	**5.8500e-003**	**0.0606**	**0.0374**	**8.0000e-005**	**0.0459**	**2.7800e-003**	**0.0487**	**0.0236**	**2.5500e-003**	**0.0261**	**0.0000**	**7.1668**	**7.1668**	**2.3200e-003**	**0.0000**	**7.2247**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.0000e-005	6.2000e-004	2.2000e-004	0.0000	9.0000e-005	0.0000	1.0000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.2809	0.2809	1.0000e-005	4.0000e-005	0.2933
Worker	9.0000e-005	7.0000e-005	8.0000e-004	0.0000	2.8000e-004	0.0000	2.8000e-004	7.0000e-005	0.0000	8.0000e-005	0.0000	0.2249	0.2249	1.0000e-005	1.0000e-005	0.2269
Total	**1.1000e-004**	**6.9000e-004**	**1.0200e-003**	**0.0000**	**3.7000e-004**	**0.0000**	**3.8000e-004**	**1.0000e-004**	**0.0000**	**1.1000e-004**	**0.0000**	**0.5058**	**0.5058**	**2.0000e-005**	**5.0000e-005**	**0.5201**

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

3.3 Site Preparation - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0206	0.0000	0.0206	0.0106	0.0000	0.0106	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.4600e-003	0.0252	0.0481	8.0000e-005		1.3000e-004	1.3000e-004		1.3000e-004	1.3000e-004	0.0000	7.1668	7.1668	2.3200e-003	0.0000	7.2247
Total	**1.4600e-003**	**0.0252**	**0.0481**	**8.0000e-005**	**0.0206**	**1.3000e-004**	**0.0208**	**0.0106**	**1.3000e-004**	**0.0107**	**0.0000**	**7.1668**	**7.1668**	**2.3200e-003**	**0.0000**	**7.2247**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.0000e-005	6.2000e-004	2.2000e-004	0.0000	9.0000e-005	0.0000	1.0000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.2809	0.2809	1.0000e-005	4.0000e-005	0.2933
Worker	9.0000e-005	7.0000e-005	8.0000e-004	0.0000	2.8000e-004	0.0000	2.8000e-004	7.0000e-005	0.0000	8.0000e-005	0.0000	0.2249	0.2249	1.0000e-005	1.0000e-005	0.2269
Total	**1.1000e-004**	**6.9000e-004**	**1.0200e-003**	**0.0000**	**3.7000e-004**	**0.0000**	**3.8000e-004**	**1.0000e-004**	**0.0000**	**1.1000e-004**	**0.0000**	**0.5058**	**0.5058**	**2.0000e-005**	**5.0000e-005**	**0.5201**

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

3.4 Grading/Trenching/Site Work - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.2267	0.0000	0.2267	0.1096	0.0000	0.1096	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0548	0.5740	0.4720	9.5000e-004		0.0248	0.0248		0.0228	0.0228	0.0000	83.3940	83.3940	0.0270	0.0000	84.0683
Total	**0.0548**	**0.5740**	**0.4720**	**9.5000e-004**	**0.2267**	**0.0248**	**0.2515**	**0.1096**	**0.0228**	**0.1324**	**0.0000**	**83.3940**	**83.3940**	**0.0270**	**0.0000**	**84.0683**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.0000e-005	5.0000e-004	1.2000e-004	0.0000	6.0000e-005	0.0000	7.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.2232	0.2232	1.0000e-005	4.0000e-005	0.2340
Vendor	1.5000e-004	5.6800e-003	2.0000e-003	3.0000e-005	8.5000e-004	3.0000e-005	8.8000e-004	2.5000e-004	3.0000e-005	2.8000e-004	0.0000	2.5683	2.5683	8.0000e-005	3.7000e-004	2.6812
Worker	1.3900e-003	9.6000e-004	0.0117	4.0000e-005	4.1100e-003	2.0000e-005	4.1300e-003	1.0900e-003	2.0000e-005	1.1100e-003	0.0000	3.2896	3.2896	1.0000e-004	9.0000e-005	3.3191
Total	**1.5500e-003**	**7.1400e-003**	**0.0138**	**7.0000e-005**	**5.0200e-003**	**5.0000e-005**	**5.0800e-003**	**1.3600e-003**	**5.0000e-005**	**1.4100e-003**	**0.0000**	**6.0811**	**6.0811**	**1.9000e-004**	**5.0000e-004**	**6.2342**

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

3.4 Grading/Trenching/Site Work - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1020	0.0000	0.1020	0.0493	0.0000	0.0493	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0166	0.3307	0.6077	9.5000e-004		1.5500e-003	1.5500e-003		1.5500e-003	1.5500e-003	0.0000	83.3939	83.3939	0.0270	0.0000	84.0682
Total	**0.0166**	**0.3307**	**0.6077**	**9.5000e-004**	**0.1020**	**1.5500e-003**	**0.1035**	**0.0493**	**1.5500e-003**	**0.0509**	**0.0000**	**83.3939**	**83.3939**	**0.0270**	**0.0000**	**84.0682**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.0000e-005	5.0000e-004	1.2000e-004	0.0000	6.0000e-005	0.0000	7.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.2232	0.2232	1.0000e-005	4.0000e-005	0.2340
Vendor	1.5000e-004	5.6800e-003	2.0000e-003	3.0000e-005	8.5000e-004	3.0000e-005	8.8000e-004	2.5000e-004	3.0000e-005	2.8000e-004	0.0000	2.5683	2.5683	8.0000e-005	3.7000e-004	2.6812
Worker	1.3900e-003	9.6000e-004	0.0117	4.0000e-005	4.1100e-003	2.0000e-005	4.1300e-003	1.0900e-003	2.0000e-005	1.1100e-003	0.0000	3.2896	3.2896	1.0000e-004	9.0000e-005	3.3191
Total	**1.5500e-003**	**7.1400e-003**	**0.0138**	**7.0000e-005**	**5.0200e-003**	**5.0000e-005**	**5.0800e-003**	**1.3600e-003**	**5.0000e-005**	**1.4100e-003**	**0.0000**	**6.0811**	**6.0811**	**1.9000e-004**	**5.0000e-004**	**6.2342**

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	0.0344	0.2926	0.3838	5.9000e-004		0.0144	0.0144		0.0137	0.0137	0.0000	49.7451	49.7451	0.0102	0.0000	50.0007
Total	**0.0344**	**0.2926**	**0.3838**	**5.9000e-004**		**0.0144**	**0.0144**		**0.0137**	**0.0137**	**0.0000**	**49.7451**	**49.7451**	**0.0102**	**0.0000**	**50.0007**

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	3.9000e-004	0.0147	5.1700e-003	7.0000e-005	2.1900e-003	9.0000e-005	2.2800e-003	6.3000e-004	8.0000e-005	7.2000e-004	0.0000	6.6215	6.6215	2.0000e-004	9.6000e-004	6.9124
Worker	2.9800e-003	2.0600e-003	0.0251	8.0000e-005	8.8200e-003	5.0000e-005	8.8700e-003	2.3400e-003	4.0000e-005	2.3900e-003	0.0000	7.0676	7.0676	2.1000e-004	1.9000e-004	7.1308
Total	**3.3700e-003**	**0.0167**	**0.0303**	**1.5000e-004**	**0.0110**	**1.4000e-004**	**0.0112**	**2.9700e-003**	**1.2000e-004**	**3.1100e-003**	**0.0000**	**13.6890**	**13.6890**	**4.1000e-004**	**1.1500e-003**	**14.0431**

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

3.5 Building Construction - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0197	0.2535	0.4034	5.9000e-004		2.8500e-003	2.8500e-003		2.8500e-003	2.8500e-003	0.0000	49.7451	49.7451	0.0102	0.0000	50.0006
Total	**0.0197**	**0.2535**	**0.4034**	**5.9000e-004**		**2.8500e-003**	**2.8500e-003**		**2.8500e-003**	**2.8500e-003**	**0.0000**	**49.7451**	**49.7451**	**0.0102**	**0.0000**	**50.0006**

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	3.9000e-004	0.0147	5.1700e-003	7.0000e-005	2.1900e-003	9.0000e-005	2.2800e-003	6.3000e-004	8.0000e-005	7.2000e-004	0.0000	6.6215	6.6215	2.0000e-004	9.6000e-004	6.9124
Worker	2.9800e-003	2.0600e-003	0.0251	8.0000e-005	8.8200e-003	5.0000e-005	8.8700e-003	2.3400e-003	4.0000e-005	2.3900e-003	0.0000	7.0676	7.0676	2.1000e-004	1.9000e-004	7.1308
Total	**3.3700e-003**	**0.0167**	**0.0303**	**1.5000e-004**	**0.0110**	**1.4000e-004**	**0.0112**	**2.9700e-003**	**1.2000e-004**	**3.1100e-003**	**0.0000**	**13.6890**	**13.6890**	**4.1000e-004**	**1.1500e-003**	**14.0431**

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

3.5 Building Construction - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1404	1.2005	1.6655	2.5600e-003		0.0545	0.0545		0.0519	0.0519	0.0000	216.2194	216.2194	0.0440	0.0000	217.3203
Total	**0.1404**	**1.2005**	**1.6655**	**2.5600e-003**		**0.0545**	**0.0545**		**0.0519**	**0.0519**	**0.0000**	**216.2194**	**216.2194**	**0.0440**	**0.0000**	**217.3203**

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	1.6200e-003	0.0632	0.0219	2.9000e-004	9.5200e-003	3.8000e-004	9.9000e-003	2.7500e-003	3.6000e-004	3.1100e-003	0.0000	28.2721	28.2721	8.9000e-004	4.1000e-003	29.5150
Worker	0.0122	8.0500e-003	0.1022	3.2000e-004	0.0383	2.0000e-004	0.0385	0.0102	1.9000e-004	0.0104	0.0000	29.9421	29.9421	8.2000e-004	7.9000e-004	30.1982
Total	**0.0138**	**0.0713**	**0.1242**	**6.1000e-004**	**0.0479**	**5.8000e-004**	**0.0484**	**0.0129**	**5.5000e-004**	**0.0135**	**0.0000**	**58.2142**	**58.2142**	**1.7100e-003**	**4.8900e-003**	**59.7132**

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

3.5 Building Construction - 2024

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0832	1.0968	1.7511	2.5600e-003		0.0115	0.0115		0.0115	0.0115	0.0000	216.2191	216.2191	0.0440	0.0000	217.3200
Total	**0.0832**	**1.0968**	**1.7511**	**2.5600e-003**		**0.0115**	**0.0115**		**0.0115**	**0.0115**	**0.0000**	**216.2191**	**216.2191**	**0.0440**	**0.0000**	**217.3200**

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	1.6200e-003	0.0632	0.0219	2.9000e-004	9.5200e-003	3.8000e-004	9.9000e-003	2.7500e-003	3.6000e-004	3.1100e-003	0.0000	28.2721	28.2721	8.9000e-004	4.1000e-003	29.5150
Worker	0.0122	8.0500e-003	0.1022	3.2000e-004	0.0383	2.0000e-004	0.0385	0.0102	1.9000e-004	0.0104	0.0000	29.9421	29.9421	8.2000e-004	7.9000e-004	30.1982
Total	**0.0138**	**0.0713**	**0.1242**	**6.1000e-004**	**0.0479**	**5.8000e-004**	**0.0484**	**0.0129**	**5.5000e-004**	**0.0135**	**0.0000**	**58.2142**	**58.2142**	**1.7100e-003**	**4.8900e-003**	**59.7132**

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

3.6 Paving - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	3.4100e-003	0.0313	0.0475	7.0000e-005		1.5300e-003	1.5300e-003		1.4300e-003	1.4300e-003	0.0000	6.3862	6.3862	1.8300e-003	0.0000	6.4318
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	**5.1900e-003**	**0.0313**	**0.0475**	**7.0000e-005**		**1.5300e-003**	**1.5300e-003**		**1.4300e-003**	**1.4300e-003**	**0.0000**	**6.3862**	**6.3862**	**1.8300e-003**	**0.0000**	**6.4318**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.8000e-004	1.2000e-004	1.5000e-003	0.0000	5.6000e-004	0.0000	5.6000e-004	1.5000e-004	0.0000	1.5000e-004	0.0000	0.4385	0.4385	1.0000e-005	1.0000e-005	0.4422
Total	**1.8000e-004**	**1.2000e-004**	**1.5000e-003**	**0.0000**	**5.6000e-004**	**0.0000**	**5.6000e-004**	**1.5000e-004**	**0.0000**	**1.5000e-004**	**0.0000**	**0.4385**	**0.4385**	**1.0000e-005**	**1.0000e-005**	**0.4422**

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

3.6 Paving - 2024

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	3.1500e-003	0.0310	0.0479	7.0000e-005		1.3200e-003	1.3200e-003		1.2300e-003	1.2300e-003	0.0000	6.3862	6.3862	1.8300e-003	0.0000	6.4318
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	**4.9300e-003**	**0.0310**	**0.0479**	**7.0000e-005**		**1.3200e-003**	**1.3200e-003**		**1.2300e-003**	**1.2300e-003**	**0.0000**	**6.3862**	**6.3862**	**1.8300e-003**	**0.0000**	**6.4318**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.8000e-004	1.2000e-004	1.5000e-003	0.0000	5.6000e-004	0.0000	5.6000e-004	1.5000e-004	0.0000	1.5000e-004	0.0000	0.4385	0.4385	1.0000e-005	1.0000e-005	0.4422
Total	**1.8000e-004**	**1.2000e-004**	**1.5000e-003**	**0.0000**	**5.6000e-004**	**0.0000**	**5.6000e-004**	**1.5000e-004**	**0.0000**	**1.5000e-004**	**0.0000**	**0.4385**	**0.4385**	**1.0000e-005**	**1.0000e-005**	**0.4422**

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

3.7 Architectural Coating - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	2.3000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	5.8700e-003	0.0396	0.0588	1.0000e-004		1.9800e-003	1.9800e-003		1.9800e-003	1.9800e-003	0.0000	8.2981	8.2981	4.7000e-004	0.0000	8.3098
Total	**2.3059**	**0.0396**	**0.0588**	**1.0000e-004**		**1.9800e-003**	**1.9800e-003**		**1.9800e-003**	**1.9800e-003**	**0.0000**	**8.2981**	**8.2981**	**4.7000e-004**	**0.0000**	**8.3098**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.3200e-003	8.8000e-004	0.0111	3.0000e-005	4.1700e-003	2.0000e-005	4.1900e-003	1.1100e-003	2.0000e-005	1.1300e-003	0.0000	3.2573	3.2573	9.0000e-005	9.0000e-005	3.2852
Total	**1.3200e-003**	**8.8000e-004**	**0.0111**	**3.0000e-005**	**4.1700e-003**	**2.0000e-005**	**4.1900e-003**	**1.1100e-003**	**2.0000e-005**	**1.1300e-003**	**0.0000**	**3.2573**	**3.2573**	**9.0000e-005**	**9.0000e-005**	**3.2852**

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

3.7 Architectural Coating - 2024

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	2.3000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	5.8700e-003	0.0396	0.0588	1.0000e-004		1.9800e-003	1.9800e-003		1.9800e-003	1.9800e-003	0.0000	8.2981	8.2981	4.7000e-004	0.0000	8.3098
Total	**2.3059**	**0.0396**	**0.0588**	**1.0000e-004**		**1.9800e-003**	**1.9800e-003**		**1.9800e-003**	**1.9800e-003**	**0.0000**	**8.2981**	**8.2981**	**4.7000e-004**	**0.0000**	**8.3098**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.3200e-003	8.8000e-004	0.0111	3.0000e-005	4.1700e-003	2.0000e-005	4.1900e-003	1.1100e-003	2.0000e-005	1.1300e-003	0.0000	3.2573	3.2573	9.0000e-005	9.0000e-005	3.2852
Total	**1.3200e-003**	**8.8000e-004**	**0.0111**	**3.0000e-005**	**4.1700e-003**	**2.0000e-005**	**4.1900e-003**	**1.1100e-003**	**2.0000e-005**	**1.1300e-003**	**0.0000**	**3.2573**	**3.2573**	**9.0000e-005**	**9.0000e-005**	**3.2852**

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

Increase Density

Integrate Below Market Rate Housing

	ROG	NOx	CO	SO2	Fugitive 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	0.2868	0.3094	2.6179	5.4500e-003	0.6004	4.2800e-003	0.6047	0.1602	3.9900e-003	0.1642	0.0000	516.5515	516.5515	0.0371	0.0234	524.4498
Unmitigated	0.3033	0.3373	2.8520	6.0600e-003	0.6695	4.7200e-003	0.6742	0.1787	4.4000e-003	0.1831	0.0000	574.3244	574.3244	0.0400	0.0254	582.9023

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Condo/Townhouse	629.52	700.04	540.08	1,789,753	1,605,108
Other Asphalt Surfaces	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Total	629.52	700.04	540.08	1,789,753	1,605,108

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	10.80	7.30	7.50	41.60	18.80	39.60	86	11	3
Other Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0

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

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Parking Lot	9.50	7.30	7.30	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	0.561854	0.062428	0.177046	0.117565	0.023832	0.006317	0.008949	0.006298	0.000705	0.000577	0.028723	0.000955	0.004751
Other Asphalt Surfaces	0.561854	0.062428	0.177046	0.117565	0.023832	0.006317	0.008949	0.006298	0.000705	0.000577	0.028723	0.000955	0.004751
Parking Lot	0.561854	0.062428	0.177046	0.117565	0.023832	0.006317	0.008949	0.006298	0.000705	0.000577	0.028723	0.000955	0.004751

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	102.8879	102.8879	6.2900e-003	7.6000e-004	103.2723
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	102.8879	102.8879	6.2900e-003	7.6000e-004	103.2723
NaturalGas Mitigated	6.2200e-003	0.0532	0.0226	3.4000e-004		4.3000e-003	4.3000e-003		4.3000e-003	4.3000e-003	0.0000	61.6056	61.6056	1.1800e-003	1.1300e-003	61.9717
NaturalGas Unmitigated	6.2200e-003	0.0532	0.0226	3.4000e-004		4.3000e-003	4.3000e-003		4.3000e-003	4.3000e-003	0.0000	61.6056	61.6056	1.1800e-003	1.1300e-003	61.9717

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	1.15445e+006	6.2200e-003	0.0532	0.0226	3.4000e-004		4.3000e-003	4.3000e-003		4.3000e-003	4.3000e-003	0.0000	61.6056	61.6056	1.1800e-003	1.1300e-003	61.9717
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
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		**6.2200e-003**	**0.0532**	**0.0226**	**3.4000e-004**		**4.3000e-003**	**4.3000e-003**		**4.3000e-003**	**4.3000e-003**	**0.0000**	**61.6056**	**61.6056**	**1.1800e-003**	**1.1300e-003**	**61.9717**

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

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Condo/Townhouse	1.15445e+006	6.2200e-003	0.0532	0.0226	3.4000e-004		4.3000e-003	4.3000e-003		4.3000e-003	4.3000e-003	0.0000	61.6056	61.6056	1.1800e-003	1.1300e-003	61.9717
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
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		**6.2200e-003**	**0.0532**	**0.0226**	**3.4000e-004**		**4.3000e-003**	**4.3000e-003**		**4.3000e-003**	**4.3000e-003**	**0.0000**	**61.6056**	**61.6056**	**1.1800e-003**	**1.1300e-003**	**61.9717**

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	416569	102.0307	6.2400e-003	7.6000e-004	102.4118
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	3500	0.8573	5.0000e-005	1.0000e-005	0.8605
Total		**102.8879**	**6.2900e-003**	**7.7000e-004**	**103.2723**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Condo/Townhouse	416569	102.0307	6.2400e-003	7.6000e-004	102.4118
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	3500	0.8573	5.0000e-005	1.0000e-005	0.8605
Total		**102.8879**	**6.2900e-003**	**7.7000e-004**	**103.2723**

6.0 Area Detail

6.1 Mitigation Measures Area

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

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.8221	7.3500e-003	0.6386	3.0000e-005		3.5400e-003	3.5400e-003		3.5400e-003	3.5400e-003	0.0000	1.0444	1.0444	1.0000e-003	0.0000	1.0695
Unmitigated	0.8221	7.3500e-003	0.6386	3.0000e-005		3.5400e-003	3.5400e-003		3.5400e-003	3.5400e-003	0.0000	1.0444	1.0444	1.0000e-003	0.0000	1.0695

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	0.2300					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.5729					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0192	7.3500e-003	0.6386	3.0000e-005		3.5400e-003	3.5400e-003		3.5400e-003	3.5400e-003	0.0000	1.0444	1.0444	1.0000e-003	0.0000	1.0695
Total	**0.8221**	**7.3500e-003**	**0.6386**	**3.0000e-005**		**3.5400e-003**	**3.5400e-003**		**3.5400e-003**	**3.5400e-003**	**0.0000**	**1.0444**	**1.0444**	**1.0000e-003**	**0.0000**	**1.0695**

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	0.2300					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.5729					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0192	7.3500e-003	0.6386	3.0000e-005		3.5400e-003	3.5400e-003		3.5400e-003	3.5400e-003	0.0000	1.0444	1.0444	1.0000e-003	0.0000	1.0695
Total	**0.8221**	**7.3500e-003**	**0.6386**	**3.0000e-005**		**3.5400e-003**	**3.5400e-003**		**3.5400e-003**	**3.5400e-003**	**0.0000**	**1.0444**	**1.0444**	**1.0000e-003**	**0.0000**	**1.0695**

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	29.2603	0.1843	4.5100e-003	35.2122
Unmitigated	29.2603	0.1843	4.5100e-003	35.2122

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Condo/Townhouse	5.60325 / 3.53248	29.2603	0.1843	4.5100e-003	35.2122
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**29.2603**	**0.1843**	**4.5100e-003**	**35.2122**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Condo/Townhouse	5.60325 / 3.53248	29.2603	0.1843	4.5100e-003	35.2122
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**29.2603**	**0.1843**	**4.5100e-003**	**35.2122**

8.0 Waste Detail

8.1 Mitigation Measures Waste

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

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	8.0303	0.4746	0.0000	19.8948
Unmitigated	8.0303	0.4746	0.0000	19.8948

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Condo/Townhouse	39.56	8.0303	0.4746	0.0000	19.8948
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Total		**8.0303**	**0.4746**	**0.0000**	**19.8948**

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

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Condo/Townhouse	39.56	8.0303	0.4746	0.0000	19.8948
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Total		**8.0303**	**0.4746**	**0.0000**	**19.8948**

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
Fire Pump	1	1	365	15	0.73	Diesel

Boilers

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

User Defined Equipment

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

Equipment Type	Number

10.1 Stationary Sources

Unmitigated/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
Equipment Type	tons/yr										MT/yr					
Fire Pump - Diesel (11 - 25 HP)	4.4900e-003	0.0234	0.0216	2.0000e-005		1.3200e-003	1.3200e-003		1.3200e-003	1.3200e-003	0.0000	2.0849	2.0849	2.9000e-004	0.0000	2.0922
Total	**4.4900e-003**	**0.0234**	**0.0216**	**2.0000e-005**		**1.3200e-003**	**1.3200e-003**		**1.3200e-003**	**1.3200e-003**	**0.0000**	**2.0849**	**2.0849**	**2.9000e-004**	**0.0000**	**2.0922**

11.0 Vegetation

Ponto Townhomes Project - San Diego County, Summer

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

Ponto Townhomes Project

San Diego County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Asphalt Surfaces	49.83	1000sqft	1.14	49,830.00	0
Parking Lot	25.00	Space	0.22	10,000.00	0
Condo/Townhouse	86.00	Dwelling Unit	3.28	145,700.00	246

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.6	**Precipitation Freq (Days)**	40
Climate Zone	13			**Operational Year**	2025
Utility Company	San Diego Gas & Electric				
CO2 Intensity (lb/MWhr)	539.98	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Per client provided information. Other apshalt surface represents interior roads.

Construction Phase - Per applicant provided construction schedule.

Off-road Equipment - Default values.

Off-road Equipment - Per applicant provided information.

Off-road Equipment - Default values.

Off-road Equipment - Default values

Off-road Equipment - Per applicant provided information.

Off-road Equipment - Per applicant provided information.

Trips and VMT - Per applicant provided information.

Ponto Townhomes Project - San Diego County, Summer

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

On-road Fugitive Dust - Default values.

Demolition - Per applicant provided information on existing buildings and paved surface to be removed.

Grading - Per applicant provided information.

Architectural Coating - Default values.

Vehicle Trips - Based on VMT analysis: LLG Ref. 3-22-3538.

Vehicle Emission Factors - Default values.

Vehicle Emission Factors - Default values.

Vehicle Emission Factors - Default values.

Road Dust - Default values.

Woodstoves - Per applicant, no woodstoves or fireplaces.

Consumer Products - Default values.

Area Coating - Default values.

Landscape Equipment - Default values.

Energy Use - Default values.

Water And Wastewater - Default values.

Solid Waste - Default values.

Construction Off-road Equipment Mitigation - Project includes as a PDF Tier 4i for equipment 84hp and greater.

Fleet Mix - Default values.

Stationary Sources - Emergency Generators and Fire Pumps - Actual source is a wastewater lift station pump, fire pump used as a surrogate for calclation of emissions.

Stationary Sources - Emergency Generators and Fire Pumps EF - Default values.

Mobile Land Use Mitigation - Increase density and below market rate housing based on LLG VMT Study, LLG Ref. 3-22-3538.

Table Name	Column Name	Default Value	New Value
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	5.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	9.00

Ponto Townhomes Project - San Diego 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 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstructionPhase	NumDays	20.00	23.00
tblConstructionPhase	NumDays	5.00	7.00
tblConstructionPhase	NumDays	8.00	64.00
tblConstructionPhase	NumDays	230.00	294.00
tblConstructionPhase	NumDays	18.00	7.00
tblConstructionPhase	NumDays	18.00	65.00
tblFireplaces	FireplaceDayYear	82.00	0.00
tblFireplaces	FireplaceHourDay	3.00	0.00
tblFireplaces	FireplaceWoodMass	3,078.40	0.00
tblFireplaces	NumberGas	47.30	0.00
tblFireplaces	NumberNoFireplace	8.60	0.00
tblFireplaces	NumberWood	30.10	0.00
tblGrading	MaterialExported	0.00	50.00
tblLandUse	LandUseSquareFeet	86,000.00	145,700.00
tblLandUse	LotAcreage	5.38	3.28
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblTripsAndVMT	HaulingTripLength	20.00	25.00
tblTripsAndVMT	HaulingTripLength	20.00	25.00
tblTripsAndVMT	HaulingTripNumber	427.00	428.00

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

tblTripsAndVMT	VendorTripNumber	0.00	4.00
tblTripsAndVMT	VendorTripNumber	0.00	4.00
tblTripsAndVMT	VendorTripNumber	0.00	4.00
tblTripsAndVMT	VendorTripNumber	19.00	12.00
tblTripsAndVMT	WorkerTripNumber	15.00	12.00
tblTripsAndVMT	WorkerTripNumber	15.00	16.00
tblTripsAndVMT	WorkerTripNumber	87.00	40.00
tblTripsAndVMT	WorkerTripNumber	18.00	20.00
tblTripsAndVMT	WorkerTripNumber	17.00	16.00
tblWoodstoves	NumberCatalytic	4.30	0.00
tblWoodstoves	NumberNoncatalytic	4.30	0.00
tblWoodstoves	WoodstoveDayYear	82.00	0.00
tblWoodstoves	WoodstoveWoodMass	3,019.20	0.00

2.0 Emissions Summary

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

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2023	3.1342	29.3707	30.3059	0.0585	13.2139	1.3042	14.0089	6.7646	1.2164	7.4960	0.0000	5,644.0356	5,644.0356	1.3610	0.2576	5,696.7379
2024	72.2831	19.5884	29.0360	0.0489	0.5742	0.9000	1.4741	0.1541	0.8473	1.0015	0.0000	4,700.9066	4,700.9066	1.0006	0.0480	4,740.2226
Maximum	**72.2831**	**29.3707**	**30.3059**	**0.0585**	**13.2139**	**1.3042**	**14.0089**	**6.7646**	**1.2164**	**7.4960**	**0.0000**	**5,644.0356**	**5,644.0356**	**1.3610**	**0.2576**	**5,696.7379**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2023	1.4075	20.3470	35.2571	0.0585	6.0063	0.2089	6.0458	3.0603	0.2077	3.0997	0.0000	5,644.0356	5,644.0356	1.3610	0.2576	5,696.7379
2024	71.8043	18.6271	29.8590	0.0489	0.5742	0.4784	1.0526	0.1541	0.4532	0.6073	0.0000	4,700.9066	4,700.9066	1.0006	0.0480	4,740.2226
Maximum	**71.8043**	**20.3470**	**35.2571**	**0.0585**	**6.0063**	**0.4784**	**6.0458**	**3.0603**	**0.4532**	**3.0997**	**0.0000**	**5,644.0356**	**5,644.0356**	**1.3610**	**0.2576**	**5,696.7379**

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	**2.92**	**20.39**	**-9.73**	**0.00**	**52.27**	**68.82**	**54.15**	**53.54**	**67.97**	**56.37**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

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	4.6130	0.0817	7.0960	3.8000e-004		0.0394	0.0394		0.0394	0.0394	0.0000	12.7919	12.7919	0.0123	0.0000	13.0988
Energy	0.0341	0.2915	0.1240	1.8600e-003		0.0236	0.0236		0.0236	0.0236		372.1018	372.1018	7.1300e-003	6.8200e-003	374.3131
Mobile	1.9411	1.9322	17.4035	0.0387	4.2076	0.0290	4.2366	1.1208	0.0270	1.1479		4,038.6548	4,038.6548	0.2612	0.1650	4,094.3641
Stationary	0.0246	0.1284	0.1183	1.2000e-004		7.2400e-003	7.2400e-003		7.2400e-003	7.2400e-003		12.5927	12.5927	1.7700e-003		12.6369
Total	**6.6128**	**2.4339**	**24.7418**	**0.0410**	**4.2076**	**0.0992**	**4.3068**	**1.1208**	**0.0972**	**1.2180**	**0.0000**	**4,436.1412**	**4,436.1412**	**0.2824**	**0.1719**	**4,494.4128**

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	lb/day										lb/day					
Area	4.6130	0.0817	7.0960	3.8000e-004		0.0394	0.0394		0.0394	0.0394	0.0000	12.7919	12.7919	0.0123	0.0000	13.0988
Energy	0.0341	0.2915	0.1240	1.8600e-003		0.0236	0.0236		0.0236	0.0236		372.1018	372.1018	7.1300e-003	6.8200e-003	374.3131
Mobile	1.8421	1.7721	15.9181	0.0348	3.7735	0.0263	3.7998	1.0052	0.0245	1.0297		3,631.8861	3,631.8861	0.2415	0.1518	3,683.1455
Stationary	0.0246	0.1284	0.1183	1.2000e-004		7.2400e-003	7.2400e-003		7.2400e-003	7.2400e-003		12.5927	12.5927	1.7700e-003		12.6369
Total	**6.5138**	**2.2737**	**23.2564**	**0.0371**	**3.7735**	**0.0964**	**3.8700**	**1.0052**	**0.0947**	**1.0999**	**0.0000**	**4,029.3725**	**4,029.3725**	**0.2626**	**0.1586**	**4,083.1941**

	ROG	NOx	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	**1.50**	**6.58**	**6.00**	**9.51**	**10.32**	**2.74**	**10.14**	**10.32**	**2.61**	**9.70**	**0.00**	**9.17**	**9.17**	**6.99**	**7.72**	**9.15**

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	3/1/2023	3/31/2023	5	23	
2	Site Preparation	Site Preparation	9/1/2023	9/11/2023	5	7	
3	Grading/Trenching/Site Work	Grading	9/12/2023	12/10/2023	5	64	
4	Building Construction	Building Construction	10/15/2023	11/28/2024	5	294	

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

5	Paving	Paving	6/15/2024	6/25/2024	5	7	
6	Architectural Coating	Architectural Coating	10/2/2024	12/31/2024	5	65	

Acres of Grading (Site Preparation Phase): 7

Acres of Grading (Grading Phase): 64

Acres of Paving: 1.36

Residential Indoor: 295,043; Residential Outdoor: 98,348; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 3,590 (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	2	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Grading/Trenching/Site Work	Excavators	1	8.00	158	0.38
Grading/Trenching/Site Work	Graders	1	8.00	187	0.41
Grading/Trenching/Site Work	Rubber Tired Dozers	1	8.00	247	0.40
Grading/Trenching/Site Work	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Building Construction	Cement and Mortar Mixers	2	6.00	9	0.56
Building Construction	Cranes	0	7.00	231	0.29
Building Construction	Forklifts	2	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	Air Compressors	1	6.00	78	0.48
Paving	Cement and Mortar Mixers	0	6.00	9	0.56
Paving	Pavers	1	8.00	130	0.42

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

Paving	Paving Equipment	2	6.00	132	0.36
Paving	Rollers	2	6.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	6	12.00	4.00	428.00	10.80	7.30	25.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	4	10.00	4.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading/Trenching/Site Work	6	16.00	4.00	6.00	10.80	7.30	25.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	40.00	12.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	7	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	16.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Water Exposed Area

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

3.2 Demolition - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					4.0700	0.0000	4.0700	0.6163	0.0000	0.6163			0.0000			0.0000
Off-Road	2.2691	21.4844	19.6434	0.0388		0.9975	0.9975		0.9280	0.9280		3,746.9840	3,746.9840	1.0494		3,773.2183
Total	**2.2691**	**21.4844**	**19.6434**	**0.0388**	**4.0700**	**0.9975**	**5.0675**	**0.6163**	**0.9280**	**1.5443**		**3,746.9840**	**3,746.9840**	**1.0494**		**3,773.2183**

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	0.0478	2.9593	0.7679	0.0138	0.4067	0.0258	0.4325	0.1115	0.0247	0.1361		1,525.3725	1,525.3725	0.0771	0.2426	1,599.5909
Vendor	4.7800e-003	0.1715	0.0618	8.2000e-004	0.0271	1.0400e-003	0.0281	7.8000e-003	1.0000e-003	8.8000e-003		88.4188	88.4188	2.6800e-003	0.0128	92.3009
Worker	0.0328	0.0204	0.2888	8.7000e-004	0.0986	5.3000e-004	0.0991	0.0262	4.9000e-004	0.0266		89.1424	89.1424	2.3900e-003	2.1900e-003	89.8561
Total	**0.0854**	**3.1512**	**1.1185**	**0.0155**	**0.5324**	**0.0273**	**0.5598**	**0.1454**	**0.0262**	**0.1716**		**1,702.9337**	**1,702.9337**	**0.0822**	**0.2576**	**1,781.7479**

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

3.2 Demolition - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					1.8315	0.0000	1.8315	0.2774	0.0000	0.2774			0.0000			0.0000
Off-Road	0.8031	13.9100	24.4726	0.0388		0.1816	0.1816		0.1816	0.1816	0.0000	3,746.9840	3,746.9840	1.0494		3,773.2183
Total	**0.8031**	**13.9100**	**24.4726**	**0.0388**	**1.8315**	**0.1816**	**2.0131**	**0.2774**	**0.1816**	**0.4589**	**0.0000**	**3,746.9840**	**3,746.9840**	**1.0494**		**3,773.2183**

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	0.0478	2.9593	0.7679	0.0138	0.4067	0.0258	0.4325	0.1115	0.0247	0.1361		1,525.3725	1,525.3725	0.0771	0.2426	1,599.5909
Vendor	4.7800e-003	0.1715	0.0618	8.2000e-004	0.0271	1.0400e-003	0.0281	7.8000e-003	1.0000e-003	8.8000e-003		88.4188	88.4188	2.6800e-003	0.0128	92.3009
Worker	0.0328	0.0204	0.2888	8.7000e-004	0.0986	5.3000e-004	0.0991	0.0262	4.9000e-004	0.0266		89.1424	89.1424	2.3900e-003	2.1900e-003	89.8561
Total	**0.0854**	**3.1512**	**1.1185**	**0.0155**	**0.5324**	**0.0273**	**0.5598**	**0.1454**	**0.0262**	**0.1716**		**1,702.9337**	**1,702.9337**	**0.0822**	**0.2576**	**1,781.7479**

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

3.3 Site Preparation - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					13.1047	0.0000	13.1047	6.7350	0.0000	6.7350			0.0000			0.0000
Off-Road	1.6721	17.3257	10.6753	0.0233		0.7935	0.7935		0.7300	0.7300		2,257.1544	2,257.1544	0.7300		2,275.4046
Total	**1.6721**	**17.3257**	**10.6753**	**0.0233**	**13.1047**	**0.7935**	**13.8981**	**6.7350**	**0.7300**	**7.4650**		**2,257.1544**	**2,257.1544**	**0.7300**		**2,275.4046**

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	4.7800e-003	0.1715	0.0618	8.2000e-004	0.0271	1.0400e-003	0.0281	7.8000e-003	1.0000e-003	8.8000e-003		88.4188	88.4188	2.6800e-003	0.0128	92.3009
Worker	0.0274	0.0170	0.2406	7.3000e-004	0.0822	4.4000e-004	0.0826	0.0218	4.1000e-004	0.0222		74.2854	74.2854	1.9900e-003	1.8300e-003	74.8801
Total	**0.0321**	**0.1885**	**0.3024**	**1.5500e-003**	**0.1092**	**1.4800e-003**	**0.1107**	**0.0296**	**1.4100e-003**	**0.0310**		**162.7041**	**162.7041**	**4.6700e-003**	**0.0146**	**167.1810**

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

3.3 Site Preparation - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					5.8971	0.0000	5.8971	3.0307	0.0000	3.0307			0.0000			0.0000
Off-Road	0.4181	7.2049	13.7453	0.0233		0.0380	0.0380		0.0380	0.0380	0.0000	2,257.1544	2,257.1544	0.7300		2,275.4046
Total	**0.4181**	**7.2049**	**13.7453**	**0.0233**	**5.8971**	**0.0380**	**5.9351**	**3.0307**	**0.0380**	**3.0687**	**0.0000**	**2,257.1544**	**2,257.1544**	**0.7300**		**2,275.4046**

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	4.7800e-003	0.1715	0.0618	8.2000e-004	0.0271	1.0400e-003	0.0281	7.8000e-003	1.0000e-003	8.8000e-003		88.4188	88.4188	2.6800e-003	0.0128	92.3009
Worker	0.0274	0.0170	0.2406	7.3000e-004	0.0822	4.4000e-004	0.0826	0.0218	4.1000e-004	0.0222		74.2854	74.2854	1.9900e-003	1.8300e-003	74.8801
Total	**0.0321**	**0.1885**	**0.3024**	**1.5500e-003**	**0.1092**	**1.4800e-003**	**0.1107**	**0.0296**	**1.4100e-003**	**0.0310**		**162.7041**	**162.7041**	**4.6700e-003**	**0.0146**	**167.1810**

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

3.4 Grading/Trenching/Site Work - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					7.0827	0.0000	7.0827	3.4248	0.0000	3.4248			0.0000			0.0000
Off-Road	1.7109	17.9359	14.7507	0.0297		0.7749	0.7749		0.7129	0.7129		2,872.6910	2,872.6910	0.9291		2,895.9182
Total	**1.7109**	**17.9359**	**14.7507**	**0.0297**	**7.0827**	**0.7749**	**7.8576**	**3.4248**	**0.7129**	**4.1377**		**2,872.6910**	**2,872.6910**	**0.9291**		**2,895.9182**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	2.4000e-004	0.0149	3.8700e-003	7.0000e-005	2.0500e-003	1.3000e-004	2.1800e-003	5.6000e-004	1.2000e-004	6.9000e-004		7.6848	7.6848	3.9000e-004	1.2200e-003	8.0587
Vendor	4.7800e-003	0.1715	0.0618	8.2000e-004	0.0271	1.0400e-003	0.0281	7.8000e-003	1.0000e-003	8.8000e-003		88.4188	88.4188	2.6800e-003	0.0128	92.3009
Worker	0.0438	0.0272	0.3850	1.1600e-003	0.1314	7.1000e-004	0.1321	0.0349	6.5000e-004	0.0355		118.8566	118.8566	3.1800e-003	2.9300e-003	119.8081
Total	**0.0488**	**0.2136**	**0.4507**	**2.0500e-003**	**0.1606**	**1.8800e-003**	**0.1625**	**0.0432**	**1.7700e-003**	**0.0450**		**214.9601**	**214.9601**	**6.2500e-003**	**0.0170**	**220.1677**

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

3.4 Grading/Trenching/Site Work - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					3.1872	0.0000	3.1872	1.5411	0.0000	1.5411			0.0000			0.0000
Off-Road	0.5200	10.3327	18.9906	0.0297		0.0484	0.0484		0.0484	0.0484	0.0000	2,872.6910	2,872.6910	0.9291		2,895.9182
Total	**0.5200**	**10.3327**	**18.9906**	**0.0297**	**3.1872**	**0.0484**	**3.2356**	**1.5411**	**0.0484**	**1.5896**	**0.0000**	**2,872.6910**	**2,872.6910**	**0.9291**		**2,895.9182**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	2.4000e-004	0.0149	3.8700e-003	7.0000e-005	2.0500e-003	1.3000e-004	2.1800e-003	5.6000e-004	1.2000e-004	6.9000e-004		7.6848	7.6848	3.9000e-004	1.2200e-003	8.0587
Vendor	4.7800e-003	0.1715	0.0618	8.2000e-004	0.0271	1.0400e-003	0.0281	7.8000e-003	1.0000e-003	8.8000e-003		88.4188	88.4188	2.6800e-003	0.0128	92.3009
Worker	0.0438	0.0272	0.3850	1.1600e-003	0.1314	7.1000e-004	0.1321	0.0349	6.5000e-004	0.0355		118.8566	118.8566	3.1800e-003	2.9300e-003	119.8081
Total	**0.0488**	**0.2136**	**0.4507**	**2.0500e-003**	**0.1606**	**1.8800e-003**	**0.1625**	**0.0432**	**1.7700e-003**	**0.0450**		**214.9601**	**214.9601**	**6.2500e-003**	**0.0170**	**220.1677**

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	lb/day										lb/day					
Off-Road	1.2509	10.6389	13.9566	0.0214		0.5225	0.5225		0.4971	0.4971		1,993.9867	1,993.9867	0.4097		2,004.2291
Total	**1.2509**	**10.6389**	**13.9566**	**0.0214**		**0.5225**	**0.5225**		**0.4971**	**0.4971**		**1,993.9867**	**1,993.9867**	**0.4097**		**2,004.2291**

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	0.0143	0.5144	0.1854	2.4600e-003	0.0813	3.1300e-003	0.0844	0.0234	3.0000e-003	0.0264		265.2564	265.2564	8.0400e-003	0.0384	276.9026
Worker	0.1094	0.0679	0.9626	2.9000e-003	0.3286	1.7700e-003	0.3304	0.0872	1.6300e-003	0.0888		297.1414	297.1414	7.9500e-003	7.3200e-003	299.5203
Total	**0.1237**	**0.5823**	**1.1479**	**5.3600e-003**	**0.4099**	**4.9000e-003**	**0.4148**	**0.1106**	**4.6300e-003**	**0.1152**		**562.3978**	**562.3978**	**0.0160**	**0.0457**	**576.4229**

Ponto Townhomes Project - San Diego 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 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	0.7150	9.2184	14.6679	0.0214		0.1037	0.1037		0.1037	0.1037	0.0000	1,993.9867	1,993.9867	0.4097		2,004.2291
Total	**0.7150**	**9.2184**	**14.6679**	**0.0214**		**0.1037**	**0.1037**		**0.1037**	**0.1037**	**0.0000**	**1,993.9867**	**1,993.9867**	**0.4097**		**2,004.2291**

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	0.0143	0.5144	0.1854	2.4600e-003	0.0813	3.1300e-003	0.0844	0.0234	3.0000e-003	0.0264		265.2564	265.2564	8.0400e-003	0.0384	276.9026
Worker	0.1094	0.0679	0.9626	2.9000e-003	0.3286	1.7700e-003	0.3304	0.0872	1.6300e-003	0.0888		297.1414	297.1414	7.9500e-003	7.3200e-003	299.5203
Total	**0.1237**	**0.5823**	**1.1479**	**5.3600e-003**	**0.4099**	**4.9000e-003**	**0.4148**	**0.1106**	**4.6300e-003**	**0.1152**		**562.3978**	**562.3978**	**0.0160**	**0.0457**	**576.4229**

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

3.5 Building Construction - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.1752	10.0463	13.9372	0.0214		0.4562	0.4562		0.4341	0.4341		1,994.4861	1,994.4861	0.4062		2,004.6412
Total	**1.1752**	**10.0463**	**13.9372**	**0.0214**		**0.4562**	**0.4562**		**0.4341**	**0.4341**		**1,994.4861**	**1,994.4861**	**0.4062**		**2,004.6412**

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	0.0138	0.5109	0.1810	2.4100e-003	0.0813	3.1500e-003	0.0844	0.0234	3.0100e-003	0.0264		260.6317	260.6317	8.2200e-003	0.0377	272.0824
Worker	0.1027	0.0611	0.8995	2.8100e-003	0.3286	1.6800e-003	0.3303	0.0872	1.5500e-003	0.0887		289.6631	289.6631	7.2400e-003	6.8400e-003	291.8814
Total	**0.1165**	**0.5720**	**1.0805**	**5.2200e-003**	**0.4099**	**4.8300e-003**	**0.4147**	**0.1106**	**4.5600e-003**	**0.1151**		**550.2948**	**550.2948**	**0.0155**	**0.0446**	**563.9638**

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

3.5 Building Construction - 2024

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.6964	9.1786	14.6537	0.0214		0.0960	0.0960		0.0960	0.0960	0.0000	1,994.4861	1,994.4861	0.4062		2,004.6412
Total	**0.6964**	**9.1786**	**14.6537**	**0.0214**		**0.0960**	**0.0960**		**0.0960**	**0.0960**	**0.0000**	**1,994.4861**	**1,994.4861**	**0.4062**		**2,004.6412**

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	0.0138	0.5109	0.1810	2.4100e-003	0.0813	3.1500e-003	0.0844	0.0234	3.0100e-003	0.0264		260.6317	260.6317	8.2200e-003	0.0377	272.0824
Worker	0.1027	0.0611	0.8995	2.8100e-003	0.3286	1.6800e-003	0.3303	0.0872	1.5500e-003	0.0887		289.6631	289.6631	7.2400e-003	6.8400e-003	291.8814
Total	**0.1165**	**0.5720**	**1.0805**	**5.2200e-003**	**0.4099**	**4.8300e-003**	**0.4147**	**0.1106**	**4.5600e-003**	**0.1151**		**550.2948**	**550.2948**	**0.0155**	**0.0446**	**563.9638**

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

3.6 Paving - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.9740	8.9396	13.5686	0.0208		0.4381	0.4381		0.4079	0.4079		2,011.2941	2,011.2941	0.5753		2,025.6770
Paving	0.5090					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.4830**	**8.9396**	**13.5686**	**0.0208**		**0.4381**	**0.4381**		**0.4079**	**0.4079**		**2,011.2941**	**2,011.2941**	**0.5753**		**2,025.6770**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0514	0.0306	0.4498	1.4000e-003	0.1643	8.4000e-004	0.1651	0.0436	7.8000e-004	0.0444		144.8316	144.8316	3.6200e-003	3.4200e-003	145.9407
Total	**0.0514**	**0.0306**	**0.4498**	**1.4000e-003**	**0.1643**	**8.4000e-004**	**0.1651**	**0.0436**	**7.8000e-004**	**0.0444**		**144.8316**	**144.8316**	**3.6200e-003**	**3.4200e-003**	**145.9407**

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

3.6 Paving - 2024

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.8997	8.8459	13.6750	0.0208		0.3767	0.3767		0.3518	0.3518	0.0000	2,011.2941	2,011.2941	0.5753		2,025.6770
Paving	0.5090					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.4087**	**8.8459**	**13.6750**	**0.0208**		**0.3767**	**0.3767**		**0.3518**	**0.3518**	**0.0000**	**2,011.2941**	**2,011.2941**	**0.5753**		**2,025.6770**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0514	0.0306	0.4498	1.4000e-003	0.1643	8.4000e-004	0.1651	0.0436	7.8000e-004	0.0444		144.8316	144.8316	3.6200e-003	3.4200e-003	145.9407
Total	**0.0514**	**0.0306**	**0.4498**	**1.4000e-003**	**0.1643**	**8.4000e-004**	**0.1651**	**0.0436**	**7.8000e-004**	**0.0444**		**144.8316**	**144.8316**	**3.6200e-003**	**3.4200e-003**	**145.9407**

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

3.7 Architectural Coating - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	70.7695					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1808	1.2188	1.8101	2.9700e-003		0.0609	0.0609		0.0609	0.0609		281.4481	281.4481	0.0159		281.8443
Total	**70.9503**	**1.2188**	**1.8101**	**2.9700e-003**		**0.0609**	**0.0609**		**0.0609**	**0.0609**		**281.4481**	**281.4481**	**0.0159**		**281.8443**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0411	0.0244	0.3598	1.1200e-003	0.1314	6.7000e-004	0.1321	0.0349	6.2000e-004	0.0355		115.8653	115.8653	2.9000e-003	2.7300e-003	116.7526
Total	**0.0411**	**0.0244**	**0.3598**	**1.1200e-003**	**0.1314**	**6.7000e-004**	**0.1321**	**0.0349**	**6.2000e-004**	**0.0355**		**115.8653**	**115.8653**	**2.9000e-003**	**2.7300e-003**	**116.7526**

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

3.7 Architectural Coating - 2024

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	70.7695					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1808	1.2188	1.8101	2.9700e-003		0.0609	0.0609		0.0609	0.0609	0.0000	281.4481	281.4481	0.0159		281.8443
Total	**70.9503**	**1.2188**	**1.8101**	**2.9700e-003**		**0.0609**	**0.0609**		**0.0609**	**0.0609**	**0.0000**	**281.4481**	**281.4481**	**0.0159**		**281.8443**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0411	0.0244	0.3598	1.1200e-003	0.1314	6.7000e-004	0.1321	0.0349	6.2000e-004	0.0355		115.8653	115.8653	2.9000e-003	2.7300e-003	116.7526
Total	**0.0411**	**0.0244**	**0.3598**	**1.1200e-003**	**0.1314**	**6.7000e-004**	**0.1321**	**0.0349**	**6.2000e-004**	**0.0355**		**115.8653**	**115.8653**	**2.9000e-003**	**2.7300e-003**	**116.7526**

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

Increase Density

Integrate Below Market Rate Housing

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	1.8421	1.7721	15.9181	0.0348	3.7735	0.0263	3.7998	1.0052	0.0245	1.0297		3,631.8861	3,631.8861	0.2415	0.1518	3,683.1455
Unmitigated	1.9411	1.9322	17.4035	0.0387	4.2076	0.0290	4.2366	1.1208	0.0270	1.1479		4,038.6548	4,038.6548	0.2612	0.1650	4,094.3641

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Condo/Townhouse	629.52	700.04	540.08	1,789,753	1,605,108
Other Asphalt Surfaces	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Total	629.52	700.04	540.08	1,789,753	1,605,108

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	10.80	7.30	7.50	41.60	18.80	39.60	86	11	3
Other Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0

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

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Parking Lot	9.50	7.30	7.30	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	0.561854	0.062428	0.177046	0.117565	0.023832	0.006317	0.008949	0.006298	0.000705	0.000577	0.028723	0.000955	0.004751
Other Asphalt Surfaces	0.561854	0.062428	0.177046	0.117565	0.023832	0.006317	0.008949	0.006298	0.000705	0.000577	0.028723	0.000955	0.004751
Parking Lot	0.561854	0.062428	0.177046	0.117565	0.023832	0.006317	0.008949	0.006298	0.000705	0.000577	0.028723	0.000955	0.004751

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0341	0.2915	0.1240	1.8600e-003		0.0236	0.0236		0.0236	0.0236		372.1018	372.1018	7.1300e-003	6.8200e-003	374.3131
NaturalGas Unmitigated	0.0341	0.2915	0.1240	1.8600e-003		0.0236	0.0236		0.0236	0.0236		372.1018	372.1018	7.1300e-003	6.8200e-003	374.3131

Ponto Townhomes Project - San Diego County, Summer

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

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Condo/Townhouse	3162.87	0.0341	0.2915	0.1240	1.8600e-003		0.0236	0.0236		0.0236	0.0236		372.1018	372.1018	7.1300e-003	6.8200e-003	374.3131
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
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		**0.0341**	**0.2915**	**0.1240**	**1.8600e-003**		**0.0236**	**0.0236**		**0.0236**	**0.0236**		**372.1018**	**372.1018**	**7.1300e-003**	**6.8200e-003**	**374.3131**

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

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Condo/Townhouse	3.16287	0.0341	0.2915	0.1240	1.8600e-003		0.0236	0.0236		0.0236	0.0236		372.1018	372.1018	7.1300e-003	6.8200e-003	374.3131
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
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		**0.0341**	**0.2915**	**0.1240**	**1.8600e-003**		**0.0236**	**0.0236**		**0.0236**	**0.0236**		**372.1018**	**372.1018**	**7.1300e-003**	**6.8200e-003**	**374.3131**

6.0 Area Detail

6.1 Mitigation Measures Area

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	4.6130	0.0817	7.0960	3.8000e-004		0.0394	0.0394		0.0394	0.0394	0.0000	12.7919	12.7919	0.0123	0.0000	13.0988
Unmitigated	4.6130	0.0817	7.0960	3.8000e-004		0.0394	0.0394		0.0394	0.0394	0.0000	12.7919	12.7919	0.0123	0.0000	13.0988

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	1.2603					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	3.1392					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.2135	0.0817	7.0960	3.8000e-004		0.0394	0.0394		0.0394	0.0394		12.7919	12.7919	0.0123		13.0988
Total	**4.6130**	**0.0817**	**7.0960**	**3.8000e-004**		**0.0394**	**0.0394**		**0.0394**	**0.0394**	**0.0000**	**12.7919**	**12.7919**	**0.0123**	**0.0000**	**13.0988**

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	1.2603					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	3.1392					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.2135	0.0817	7.0960	3.8000e-004		0.0394	0.0394		0.0394	0.0394		12.7919	12.7919	0.0123		13.0988
Total	**4.6130**	**0.0817**	**7.0960**	**3.8000e-004**		**0.0394**	**0.0394**		**0.0394**	**0.0394**	**0.0000**	**12.7919**	**12.7919**	**0.0123**	**0.0000**	**13.0988**

7.0 Water Detail

7.1 Mitigation Measures Water

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

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

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type
Fire Pump	1	1	365	15	0.73	Diesel

Boilers

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

User Defined Equipment

Equipment Type	Number

10.1 Stationary Sources

Unmitigated/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
Equipment Type	lb/day										lb/day					
Fire Pump - Diesel (11 - 25 HP)	0.0246	0.1284	0.1183	1.2000e-004		7.2400e-003	7.2400e-003		7.2400e-003	7.2400e-003		12.5927	12.5927	1.7700e-003		12.6369
Total	**0.0246**	**0.1284**	**0.1183**	**1.2000e-004**		**7.2400e-003**	**7.2400e-003**		**7.2400e-003**	**7.2400e-003**		**12.5927**	**12.5927**	**1.7700e-003**		**12.6369**

11.0 Vegetation

Ponto Townhomes Project - San Diego County, Winter

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

Ponto Townhomes Project

San Diego County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Asphalt Surfaces	49.83	1000sqft	1.14	49,830.00	0
Parking Lot	25.00	Space	0.22	10,000.00	0
Condo/Townhouse	86.00	Dwelling Unit	3.28	145,700.00	246

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.6	**Precipitation Freq (Days)**	40
Climate Zone	13			**Operational Year**	2025
Utility Company	San Diego Gas & Electric				
CO2 Intensity (lb/MWhr)	539.98	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Per client provided information. Other apshalt surface represents interior roads.

Construction Phase - Per applicant provided construction schedule.

Off-road Equipment - Default values.

Off-road Equipment - Per applicant provided information.

Off-road Equipment - Default values.

Off-road Equipment - Default values

Off-road Equipment - Per applicant provided information.

Off-road Equipment - Per applicant provided information.

Trips and VMT - Per applicant provided information.

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

On-road Fugitive Dust - Default values.

Demolition - Per applicant provided information on existing buildings and paved surface to be removed.

Grading - Per applicant provided information.

Architectural Coating - Default values.

Vehicle Trips - Based on VMT analysis: LLG Ref. 3-22-3538.

Vehicle Emission Factors - Default values.

Vehicle Emission Factors - Default values.

Vehicle Emission Factors - Default values.

Road Dust - Default values.

Woodstoves - Per applicant, no woodstoves or fireplaces.

Consumer Products - Default values.

Area Coating - Default values.

Landscape Equipment - Default values.

Energy Use - Default values.

Water And Wastewater - Default values.

Solid Waste - Default values.

Construction Off-road Equipment Mitigation - Project includes as a PDF Tier 4i for equipment 84hp and greater.

Fleet Mix - Default values.

Stationary Sources - Emergency Generators and Fire Pumps - Actual source is a wastewater lift station pump, fire pump used as a surrogate for calclation of emissions.

Stationary Sources - Emergency Generators and Fire Pumps EF - Default values.

Mobile Land Use Mitigation - Increase density and below market rate housing based on LLG VMT Study, LLG Ref. 3-22-3538.

Table Name	Column Name	Default Value	New Value
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	5.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	9.00

Ponto Townhomes Project - San Diego County, Winter

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

tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstructionPhase	NumDays	20.00	23.00
tblConstructionPhase	NumDays	5.00	7.00
tblConstructionPhase	NumDays	8.00	64.00
tblConstructionPhase	NumDays	230.00	294.00
tblConstructionPhase	NumDays	18.00	7.00
tblConstructionPhase	NumDays	18.00	65.00
tblFireplaces	FireplaceDayYear	82.00	0.00
tblFireplaces	FireplaceHourDay	3.00	0.00
tblFireplaces	FireplaceWoodMass	3,078.40	0.00
tblFireplaces	NumberGas	47.30	0.00
tblFireplaces	NumberNoFireplace	8.60	0.00
tblFireplaces	NumberWood	30.10	0.00
tblGrading	MaterialExported	0.00	50.00
tblLandUse	LandUseSquareFeet	86,000.00	145,700.00
tblLandUse	LotAcreage	5.38	3.28
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblTripsAndVMT	HaulingTripLength	20.00	25.00
tblTripsAndVMT	HaulingTripLength	20.00	25.00
tblTripsAndVMT	HaulingTripNumber	427.00	428.00

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

tblTripsAndVMT	VendorTripNumber	0.00	4.00
tblTripsAndVMT	VendorTripNumber	0.00	4.00
tblTripsAndVMT	VendorTripNumber	0.00	4.00
tblTripsAndVMT	VendorTripNumber	19.00	12.00
tblTripsAndVMT	WorkerTripNumber	15.00	12.00
tblTripsAndVMT	WorkerTripNumber	15.00	16.00
tblTripsAndVMT	WorkerTripNumber	87.00	40.00
tblTripsAndVMT	WorkerTripNumber	18.00	20.00
tblTripsAndVMT	WorkerTripNumber	17.00	16.00
tblWoodstoves	NumberCatalytic	4.30	0.00
tblWoodstoves	NumberNoncatalytic	4.30	0.00
tblWoodstoves	WoodstoveDayYear	82.00	0.00
tblWoodstoves	WoodstoveWoodMass	3,019.20	0.00

2.0 Emissions Summary

Ponto Townhomes Project - San Diego County, Winter

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

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2023	3.1466	29.4120	30.2464	0.0583	13.2139	1.3042	14.0089	6.7646	1.2164	7.4960	0.0000	5,621.6779	5,621.6779	1.3617	0.2580	5,674.6817
2024	72.2952	19.6214	28.9770	0.0487	0.5742	0.9000	1.4741	0.1541	0.8473	1.0015	0.0000	4,677.4575	4,677.4575	1.0013	0.0489	4,717.0654
Maximum	**72.2952**	**29.4120**	**30.2464**	**0.0583**	**13.2139**	**1.3042**	**14.0089**	**6.7646**	**1.2164**	**7.4960**	**0.0000**	**5,621.6779**	**5,621.6779**	**1.3617**	**0.2580**	**5,674.6817**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2023	1.4199	20.3884	35.1976	0.0583	6.0063	0.2090	6.0458	3.0603	0.2078	3.0997	0.0000	5,621.6778	5,621.6778	1.3617	0.2580	5,674.6817
2024	71.8164	18.6601	29.7999	0.0487	0.5742	0.4784	1.0526	0.1541	0.4532	0.6073	0.0000	4,677.4575	4,677.4575	1.0013	0.0489	4,717.0654
Maximum	**71.8164**	**20.3884**	**35.1976**	**0.0583**	**6.0063**	**0.4784**	**6.0458**	**3.0603**	**0.4532**	**3.0997**	**0.0000**	**5,621.6778**	**5,621.6778**	**1.3617**	**0.2580**	**5,674.6817**

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	**2.92**	**20.36**	**-9.75**	**0.00**	**52.27**	**68.82**	**54.15**	**53.54**	**67.97**	**56.37**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

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	4.6130	0.0817	7.0960	3.8000e-004		0.0394	0.0394		0.0394	0.0394	0.0000	12.7919	12.7919	0.0123	0.0000	13.0988
Energy	0.0341	0.2915	0.1240	1.8600e-003		0.0236	0.0236		0.0236	0.0236		372.1018	372.1018	7.1300e-003	6.8200e-003	374.3131
Mobile	1.8952	2.0932	17.8573	0.0370	4.2076	0.0290	4.2366	1.1208	0.0271	1.1479		3,863.1563	3,863.1563	0.2758	0.1737	3,921.8221
Stationary	0.0246	0.1284	0.1183	1.2000e-004		7.2400e-003	7.2400e-003		7.2400e-003	7.2400e-003		12.5927	12.5927	1.7700e-003		12.6369
Total	**6.5669**	**2.5948**	**25.1957**	**0.0393**	**4.2076**	**0.0992**	**4.3068**	**1.1208**	**0.0972**	**1.2180**	**0.0000**	**4,260.6427**	**4,260.6427**	**0.2970**	**0.1806**	**4,321.8708**

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	lb/day										lb/day					
Area	4.6130	0.0817	7.0960	3.8000e-004		0.0394	0.0394		0.0394	0.0394	0.0000	12.7919	12.7919	0.0123	0.0000	13.0988
Energy	0.0341	0.2915	0.1240	1.8600e-003		0.0236	0.0236		0.0236	0.0236		372.1018	372.1018	7.1300e-003	6.8200e-003	374.3131
Mobile	1.7934	1.9206	16.4102	0.0333	3.7735	0.0263	3.7998	1.0052	0.0245	1.0297		3,474.6807	3,474.6807	0.2559	0.1599	3,528.7260
Stationary	0.0246	0.1284	0.1183	1.2000e-004		7.2400e-003	7.2400e-003		7.2400e-003	7.2400e-003		12.5927	12.5927	1.7700e-003		12.6369
Total	**6.4651**	**2.4222**	**23.7485**	**0.0356**	**3.7735**	**0.0965**	**3.8700**	**1.0052**	**0.0947**	**1.0999**	**0.0000**	**3,872.1671**	**3,872.1671**	**0.2771**	**0.1667**	**3,928.7747**

	ROG	NOx	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	**1.55**	**6.65**	**5.74**	**9.46**	**10.32**	**2.74**	**10.14**	**10.32**	**2.61**	**9.70**	**0.00**	**9.12**	**9.12**	**6.70**	**7.67**	**9.10**

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	3/1/2023	3/31/2023	5	23	
2	Site Preparation	Site Preparation	9/1/2023	9/11/2023	5	7	
3	Grading/Trenching/Site Work	Grading	9/12/2023	12/10/2023	5	64	
4	Building Construction	Building Construction	10/15/2023	11/28/2024	5	294	

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

5	Paving	Paving	6/15/2024	6/25/2024	5	7	
6	Architectural Coating	Architectural Coating	10/2/2024	12/31/2024	5	65	

Acres of Grading (Site Preparation Phase): 7

Acres of Grading (Grading Phase): 64

Acres of Paving: 1.36

Residential Indoor: 295,043; Residential Outdoor: 98,348; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 3,590 (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	2	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Grading/Trenching/Site Work	Excavators	1	8.00	158	0.38
Grading/Trenching/Site Work	Graders	1	8.00	187	0.41
Grading/Trenching/Site Work	Rubber Tired Dozers	1	8.00	247	0.40
Grading/Trenching/Site Work	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Building Construction	Cement and Mortar Mixers	2	6.00	9	0.56
Building Construction	Cranes	0	7.00	231	0.29
Building Construction	Forklifts	2	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	Air Compressors	1	6.00	78	0.48
Paving	Cement and Mortar Mixers	0	6.00	9	0.56
Paving	Pavers	1	8.00	130	0.42

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

Paving	Paving Equipment	2	6.00	132	0.36
Paving	Rollers	2	6.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	6	12.00	4.00	428.00	10.80	7.30	25.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	4	10.00	4.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading/Trenching/Site Work	6	16.00	4.00	6.00	10.80	7.30	25.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	40.00	12.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	7	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	16.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Water Exposed Area

Ponto Townhomes Project - San Diego County, Winter

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

3.2 Demolition - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					4.0700	0.0000	4.0700	0.6163	0.0000	0.6163			0.0000			0.0000
Off-Road	2.2691	21.4844	19.6434	0.0388		0.9975	0.9975		0.9280	0.9280		3,746.9840	3,746.9840	1.0494		3,773.2183
Total	**2.2691**	**21.4844**	**19.6434**	**0.0388**	**4.0700**	**0.9975**	**5.0675**	**0.6163**	**0.9280**	**1.5443**		**3,746.9840**	**3,746.9840**	**1.0494**		**3,773.2183**

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	0.0453	3.0759	0.7760	0.0138	0.4067	0.0258	0.4326	0.1115	0.0247	0.1362		1,526.5678	1,526.5678	0.0770	0.2428	1,600.8421
Vendor	4.6500e-003	0.1787	0.0637	8.2000e-004	0.0271	1.0500e-003	0.0281	7.8000e-003	1.0000e-003	8.8000e-003		88.5445	88.5445	2.6700e-003	0.0128	92.4352
Worker	0.0356	0.0229	0.2744	8.2000e-004	0.0986	5.3000e-004	0.0991	0.0262	4.9000e-004	0.0266		84.2424	84.2424	2.5400e-003	2.3700e-003	85.0133
Total	**0.0855**	**3.2776**	**1.1140**	**0.0155**	**0.5324**	**0.0274**	**0.5598**	**0.1454**	**0.0262**	**0.1716**		**1,699.3547**	**1,699.3547**	**0.0822**	**0.2580**	**1,778.2906**

Ponto Townhomes Project - San Diego County, Winter

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

3.2 Demolition - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					1.8315	0.0000	1.8315	0.2774	0.0000	0.2774			0.0000			0.0000
Off-Road	0.8031	13.9100	24.4726	0.0388		0.1816	0.1816		0.1816	0.1816	0.0000	3,746.9840	3,746.9840	1.0494		3,773.2183
Total	**0.8031**	**13.9100**	**24.4726**	**0.0388**	**1.8315**	**0.1816**	**2.0131**	**0.2774**	**0.1816**	**0.4589**	**0.0000**	**3,746.9840**	**3,746.9840**	**1.0494**		**3,773.2183**

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	0.0453	3.0759	0.7760	0.0138	0.4067	0.0258	0.4326	0.1115	0.0247	0.1362		1,526.5678	1,526.5678	0.0770	0.2428	1,600.8421
Vendor	4.6500e-003	0.1787	0.0637	8.2000e-004	0.0271	1.0500e-003	0.0281	7.8000e-003	1.0000e-003	8.8000e-003		88.5445	88.5445	2.6700e-003	0.0128	92.4352
Worker	0.0356	0.0229	0.2744	8.2000e-004	0.0986	5.3000e-004	0.0991	0.0262	4.9000e-004	0.0266		84.2424	84.2424	2.5400e-003	2.3700e-003	85.0133
Total	**0.0855**	**3.2776**	**1.1140**	**0.0155**	**0.5324**	**0.0274**	**0.5598**	**0.1454**	**0.0262**	**0.1716**		**1,699.3547**	**1,699.3547**	**0.0822**	**0.2580**	**1,778.2906**

Ponto Townhomes Project - San Diego County, Winter

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

3.3 Site Preparation - 2023

Unmitigated Construction 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					13.1047	0.0000	13.1047	6.7350	0.0000	6.7350			0.0000			0.0000
Off-Road	1.6721	17.3257	10.6753	0.0233		0.7935	0.7935		0.7300	0.7300		2,257.1544	2,257.1544	0.7300		2,275.4046
Total	**1.6721**	**17.3257**	**10.6753**	**0.0233**	**13.1047**	**0.7935**	**13.8981**	**6.7350**	**0.7300**	**7.4650**		**2,257.1544**	**2,257.1544**	**0.7300**		**2,275.4046**

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	4.6500e-003	0.1787	0.0637	8.2000e-004	0.0271	1.0500e-003	0.0281	7.8000e-003	1.0000e-003	8.8000e-003		88.5445	88.5445	2.6700e-003	0.0128	92.4352
Worker	0.0297	0.0191	0.2287	6.9000e-004	0.0822	4.4000e-004	0.0826	0.0218	4.1000e-004	0.0222		70.2020	70.2020	2.1200e-003	1.9800e-003	70.8444
Total	**0.0343**	**0.1978**	**0.2923**	**1.5100e-003**	**0.1092**	**1.4900e-003**	**0.1107**	**0.0296**	**1.4100e-003**	**0.0310**		**158.7465**	**158.7465**	**4.7900e-003**	**0.0148**	**163.2796**

Ponto Townhomes Project - San Diego County, Winter

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

3.3 Site Preparation - 2023

Mitigated Construction 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					5.8971	0.0000	5.8971	3.0307	0.0000	3.0307			0.0000			0.0000
Off-Road	0.4181	7.2049	13.7453	0.0233		0.0380	0.0380		0.0380	0.0380	0.0000	2,257.1544	2,257.1544	0.7300		2,275.4046
Total	**0.4181**	**7.2049**	**13.7453**	**0.0233**	**5.8971**	**0.0380**	**5.9351**	**3.0307**	**0.0380**	**3.0687**	**0.0000**	**2,257.1544**	**2,257.1544**	**0.7300**		**2,275.4046**

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	4.6500e-003	0.1787	0.0637	8.2000e-004	0.0271	1.0500e-003	0.0281	7.8000e-003	1.0000e-003	8.8000e-003		88.5445	88.5445	2.6700e-003	0.0128	92.4352
Worker	0.0297	0.0191	0.2287	6.9000e-004	0.0822	4.4000e-004	0.0826	0.0218	4.1000e-004	0.0222		70.2020	70.2020	2.1200e-003	1.9800e-003	70.8444
Total	**0.0343**	**0.1978**	**0.2923**	**1.5100e-003**	**0.1092**	**1.4900e-003**	**0.1107**	**0.0296**	**1.4100e-003**	**0.0310**		**158.7465**	**158.7465**	**4.7900e-003**	**0.0148**	**163.2796**

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

3.4 Grading/Trenching/Site Work - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					7.0827	0.0000	7.0827	3.4248	0.0000	3.4248			0.0000			0.0000
Off-Road	1.7109	17.9359	14.7507	0.0297		0.7749	0.7749		0.7129	0.7129		2,872.6910	2,872.6910	0.9291		2,895.9182
Total	**1.7109**	**17.9359**	**14.7507**	**0.0297**	**7.0827**	**0.7749**	**7.8576**	**3.4248**	**0.7129**	**4.1377**		**2,872.6910**	**2,872.6910**	**0.9291**		**2,895.9182**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	2.3000e-004	0.0155	3.9100e-003	7.0000e-005	2.0500e-003	1.3000e-004	2.1800e-003	5.6000e-004	1.2000e-004	6.9000e-004		7.6908	7.6908	3.9000e-004	1.2200e-003	8.0650
Vendor	4.6500e-003	0.1787	0.0637	8.2000e-004	0.0271	1.0500e-003	0.0281	7.8000e-003	1.0000e-003	8.8000e-003		88.5445	88.5445	2.6700e-003	0.0128	92.4352
Worker	0.0474	0.0306	0.3659	1.1000e-003	0.1314	7.1000e-004	0.1321	0.0349	6.5000e-004	0.0355		112.3233	112.3233	3.3900e-003	3.1600e-003	113.3511
Total	**0.0523**	**0.2248**	**0.4334**	**1.9900e-003**	**0.1606**	**1.8900e-003**	**0.1625**	**0.0432**	**1.7700e-003**	**0.0450**		**208.5585**	**208.5585**	**6.4500e-003**	**0.0172**	**213.8513**

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

3.4 Grading/Trenching/Site Work - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					3.1872	0.0000	3.1872	1.5411	0.0000	1.5411			0.0000			0.0000
Off-Road	0.5200	10.3327	18.9906	0.0297		0.0484	0.0484		0.0484	0.0484	0.0000	2,872.6910	2,872.6910	0.9291		2,895.9182
Total	**0.5200**	**10.3327**	**18.9906**	**0.0297**	**3.1872**	**0.0484**	**3.2356**	**1.5411**	**0.0484**	**1.5896**	**0.0000**	**2,872.6910**	**2,872.6910**	**0.9291**		**2,895.9182**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	2.3000e-004	0.0155	3.9100e-003	7.0000e-005	2.0500e-003	1.3000e-004	2.1800e-003	5.6000e-004	1.2000e-004	6.9000e-004		7.6908	7.6908	3.9000e-004	1.2200e-003	8.0650
Vendor	4.6500e-003	0.1787	0.0637	8.2000e-004	0.0271	1.0500e-003	0.0281	7.8000e-003	1.0000e-003	8.8000e-003		88.5445	88.5445	2.6700e-003	0.0128	92.4352
Worker	0.0474	0.0306	0.3659	1.1000e-003	0.1314	7.1000e-004	0.1321	0.0349	6.5000e-004	0.0355		112.3233	112.3233	3.3900e-003	3.1600e-003	113.3511
Total	**0.0523**	**0.2248**	**0.4334**	**1.9900e-003**	**0.1606**	**1.8900e-003**	**0.1625**	**0.0432**	**1.7700e-003**	**0.0450**		**208.5585**	**208.5585**	**6.4500e-003**	**0.0172**	**213.8513**

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	lb/day										lb/day					
Off-Road	1.2509	10.6389	13.9566	0.0214		0.5225	0.5225		0.4971	0.4971		1,993.9867	1,993.9867	0.4097		2,004.2291
Total	**1.2509**	**10.6389**	**13.9566**	**0.0214**		**0.5225**	**0.5225**		**0.4971**	**0.4971**		**1,993.9867**	**1,993.9867**	**0.4097**		**2,004.2291**

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	0.0139	0.5361	0.1910	2.4600e-003	0.0813	3.1500e-003	0.0844	0.0234	3.0100e-003	0.0264		265.6335	265.6335	8.0000e-003	0.0385	277.3056
Worker	0.1186	0.0764	0.9147	2.7400e-003	0.3286	1.7700e-003	0.3304	0.0872	1.6300e-003	0.0888		280.8081	280.8081	8.4700e-003	7.9100e-003	283.3777
Total	**0.1326**	**0.6125**	**1.1056**	**5.2000e-003**	**0.4099**	**4.9200e-003**	**0.4148**	**0.1106**	**4.6400e-003**	**0.1152**		**546.4416**	**546.4416**	**0.0165**	**0.0464**	**560.6833**

Ponto Townhomes Project - San Diego 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 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	0.7150	9.2184	14.6679	0.0214		0.1037	0.1037		0.1037	0.1037	0.0000	1,993.9867	1,993.9867	0.4097		2,004.2291
Total	**0.7150**	**9.2184**	**14.6679**	**0.0214**		**0.1037**	**0.1037**		**0.1037**	**0.1037**	**0.0000**	**1,993.9867**	**1,993.9867**	**0.4097**		**2,004.2291**

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	0.0139	0.5361	0.1910	2.4600e-003	0.0813	3.1500e-003	0.0844	0.0234	3.0100e-003	0.0264		265.6335	265.6335	8.0000e-003	0.0385	277.3056
Worker	0.1186	0.0764	0.9147	2.7400e-003	0.3286	1.7700e-003	0.3304	0.0872	1.6300e-003	0.0888		280.8081	280.8081	8.4700e-003	7.9100e-003	283.3777
Total	**0.1326**	**0.6125**	**1.1056**	**5.2000e-003**	**0.4099**	**4.9200e-003**	**0.4148**	**0.1106**	**4.6400e-003**	**0.1152**		**546.4416**	**546.4416**	**0.0165**	**0.0464**	**560.6833**

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

3.5 Building Construction - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.1752	10.0463	13.9372	0.0214		0.4562	0.4562		0.4341	0.4341		1,994.4861	1,994.4861	0.4062		2,004.6412
Total	**1.1752**	**10.0463**	**13.9372**	**0.0214**		**0.4562**	**0.4562**		**0.4341**	**0.4341**		**1,994.4861**	**1,994.4861**	**0.4062**		**2,004.6412**

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	0.0134	0.5325	0.1866	2.4100e-003	0.0813	3.1600e-003	0.0844	0.0234	3.0300e-003	0.0264		261.0128	261.0128	8.1800e-003	0.0378	272.4886
Worker	0.1117	0.0687	0.8564	2.6500e-003	0.3286	1.6800e-003	0.3303	0.0872	1.5500e-003	0.0887		273.7763	273.7763	7.7300e-003	7.3900e-003	276.1724
Total	**0.1251**	**0.6012**	**1.0430**	**5.0600e-003**	**0.4099**	**4.8400e-003**	**0.4147**	**0.1106**	**4.5800e-003**	**0.1151**		**534.7891**	**534.7891**	**0.0159**	**0.0452**	**548.6610**

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

3.5 Building Construction - 2024

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.6964	9.1786	14.6537	0.0214		0.0960	0.0960		0.0960	0.0960	0.0000	1,994.4861	1,994.4861	0.4062		2,004.6412
Total	**0.6964**	**9.1786**	**14.6537**	**0.0214**		**0.0960**	**0.0960**		**0.0960**	**0.0960**	**0.0000**	**1,994.4861**	**1,994.4861**	**0.4062**		**2,004.6412**

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	0.0134	0.5325	0.1866	2.4100e-003	0.0813	3.1600e-003	0.0844	0.0234	3.0300e-003	0.0264		261.0128	261.0128	8.1800e-003	0.0378	272.4886
Worker	0.1117	0.0687	0.8564	2.6500e-003	0.3286	1.6800e-003	0.3303	0.0872	1.5500e-003	0.0887		273.7763	273.7763	7.7300e-003	7.3900e-003	276.1724
Total	**0.1251**	**0.6012**	**1.0430**	**5.0600e-003**	**0.4099**	**4.8400e-003**	**0.4147**	**0.1106**	**4.5800e-003**	**0.1151**		**534.7891**	**534.7891**	**0.0159**	**0.0452**	**548.6610**

Ponto Townhomes Project - San Diego County, Winter

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

3.6 Paving - 2024

Unmitigated Construction 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	0.9740	8.9396	13.5686	0.0208		0.4381	0.4381		0.4079	0.4079		2,011.2941	2,011.2941	0.5753		2,025.6770
Paving	0.5090					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.4830**	**8.9396**	**13.5686**	**0.0208**		**0.4381**	**0.4381**		**0.4079**	**0.4079**		**2,011.2941**	**2,011.2941**	**0.5753**		**2,025.6770**

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	0.0559	0.0344	0.4282	1.3300e-003	0.1643	8.4000e-004	0.1651	0.0436	7.8000e-004	0.0444		136.8882	136.8882	3.8600e-003	3.7000e-003	138.0862
Total	**0.0559**	**0.0344**	**0.4282**	**1.3300e-003**	**0.1643**	**8.4000e-004**	**0.1651**	**0.0436**	**7.8000e-004**	**0.0444**		**136.8882**	**136.8882**	**3.8600e-003**	**3.7000e-003**	**138.0862**

Ponto Townhomes Project - San Diego County, Winter

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

3.6 Paving - 2024

Mitigated Construction 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	0.8997	8.8459	13.6750	0.0208		0.3767	0.3767		0.3518	0.3518	0.0000	2,011.2941	2,011.2941	0.5753		2,025.6770
Paving	0.5090					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.4087**	**8.8459**	**13.6750**	**0.0208**		**0.3767**	**0.3767**		**0.3518**	**0.3518**	**0.0000**	**2,011.2941**	**2,011.2941**	**0.5753**		**2,025.6770**

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	0.0559	0.0344	0.4282	1.3300e-003	0.1643	8.4000e-004	0.1651	0.0436	7.8000e-004	0.0444		136.8882	136.8882	3.8600e-003	3.7000e-003	138.0862
Total	**0.0559**	**0.0344**	**0.4282**	**1.3300e-003**	**0.1643**	**8.4000e-004**	**0.1651**	**0.0436**	**7.8000e-004**	**0.0444**		**136.8882**	**136.8882**	**3.8600e-003**	**3.7000e-003**	**138.0862**

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

3.7 Architectural Coating - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	70.7695					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1808	1.2188	1.8101	2.9700e-003		0.0609	0.0609		0.0609	0.0609		281.4481	281.4481	0.0159		281.8443
Total	**70.9503**	**1.2188**	**1.8101**	**2.9700e-003**		**0.0609**	**0.0609**		**0.0609**	**0.0609**		**281.4481**	**281.4481**	**0.0159**		**281.8443**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0447	0.0275	0.3426	1.0600e-003	0.1314	6.7000e-004	0.1321	0.0349	6.2000e-004	0.0355		109.5105	109.5105	3.0900e-003	2.9600e-003	110.4690
Total	**0.0447**	**0.0275**	**0.3426**	**1.0600e-003**	**0.1314**	**6.7000e-004**	**0.1321**	**0.0349**	**6.2000e-004**	**0.0355**		**109.5105**	**109.5105**	**3.0900e-003**	**2.9600e-003**	**110.4690**

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

3.7 Architectural Coating - 2024

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	70.7695					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1808	1.2188	1.8101	2.9700e-003		0.0609	0.0609		0.0609	0.0609	0.0000	281.4481	281.4481	0.0159		281.8443
Total	**70.9503**	**1.2188**	**1.8101**	**2.9700e-003**		**0.0609**	**0.0609**		**0.0609**	**0.0609**	**0.0000**	**281.4481**	**281.4481**	**0.0159**		**281.8443**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0447	0.0275	0.3426	1.0600e-003	0.1314	6.7000e-004	0.1321	0.0349	6.2000e-004	0.0355		109.5105	109.5105	3.0900e-003	2.9600e-003	110.4690
Total	**0.0447**	**0.0275**	**0.3426**	**1.0600e-003**	**0.1314**	**6.7000e-004**	**0.1321**	**0.0349**	**6.2000e-004**	**0.0355**		**109.5105**	**109.5105**	**3.0900e-003**	**2.9600e-003**	**110.4690**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Increase Density

Integrate Below Market Rate Housing

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	1.7934	1.9206	16.4102	0.0333	3.7735	0.0263	3.7998	1.0052	0.0245	1.0297		3,474.6807	3,474.6807	0.2559	0.1599	3,528.7260
Unmitigated	1.8952	2.0932	17.8573	0.0370	4.2076	0.0290	4.2366	1.1208	0.0271	1.1479		3,863.1563	3,863.1563	0.2758	0.1737	3,921.8221

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Condo/Townhouse	629.52	700.04	540.08	1,789,753	1,605,108
Other Asphalt Surfaces	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Total	629.52	700.04	540.08	1,789,753	1,605,108

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	10.80	7.30	7.50	41.60	18.80	39.60	86	11	3
Other Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0

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

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Parking Lot	9.50	7.30	7.30	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	0.561854	0.062428	0.177046	0.117565	0.023832	0.006317	0.008949	0.006298	0.000705	0.000577	0.028723	0.000955	0.004751
Other Asphalt Surfaces	0.561854	0.062428	0.177046	0.117565	0.023832	0.006317	0.008949	0.006298	0.000705	0.000577	0.028723	0.000955	0.004751
Parking Lot	0.561854	0.062428	0.177046	0.117565	0.023832	0.006317	0.008949	0.006298	0.000705	0.000577	0.028723	0.000955	0.004751

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0341	0.2915	0.1240	1.8600e-003		0.0236	0.0236		0.0236	0.0236		372.1018	372.1018	7.1300e-003	6.8200e-003	374.3131
NaturalGas Unmitigated	0.0341	0.2915	0.1240	1.8600e-003		0.0236	0.0236		0.0236	0.0236		372.1018	372.1018	7.1300e-003	6.8200e-003	374.3131

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	3162.87	0.0341	0.2915	0.1240	1.8600e-003		0.0236	0.0236		0.0236	0.0236		372.1018	372.1018	7.1300e-003	6.8200e-003	374.3131
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
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		**0.0341**	**0.2915**	**0.1240**	**1.8600e-003**		**0.0236**	**0.0236**		**0.0236**	**0.0236**		**372.1018**	**372.1018**	**7.1300e-003**	**6.8200e-003**	**374.3131**

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

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Condo/Townhouse	3.16287	0.0341	0.2915	0.1240	1.8600e-003		0.0236	0.0236		0.0236	0.0236		372.1018	372.1018	7.1300e-003	6.8200e-003	374.3131
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
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		**0.0341**	**0.2915**	**0.1240**	**1.8600e-003**		**0.0236**	**0.0236**		**0.0236**	**0.0236**		**372.1018**	**372.1018**	**7.1300e-003**	**6.8200e-003**	**374.3131**

6.0 Area Detail

6.1 Mitigation Measures Area

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	4.6130	0.0817	7.0960	3.8000e-004		0.0394	0.0394		0.0394	0.0394	0.0000	12.7919	12.7919	0.0123	0.0000	13.0988
Unmitigated	4.6130	0.0817	7.0960	3.8000e-004		0.0394	0.0394		0.0394	0.0394	0.0000	12.7919	12.7919	0.0123	0.0000	13.0988

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	1.2603					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	3.1392					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.2135	0.0817	7.0960	3.8000e-004		0.0394	0.0394		0.0394	0.0394		12.7919	12.7919	0.0123		13.0988
Total	**4.6130**	**0.0817**	**7.0960**	**3.8000e-004**		**0.0394**	**0.0394**		**0.0394**	**0.0394**	**0.0000**	**12.7919**	**12.7919**	**0.0123**	**0.0000**	**13.0988**

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	1.2603					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	3.1392					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.2135	0.0817	7.0960	3.8000e-004		0.0394	0.0394		0.0394	0.0394		12.7919	12.7919	0.0123		13.0988
Total	**4.6130**	**0.0817**	**7.0960**	**3.8000e-004**		**0.0394**	**0.0394**		**0.0394**	**0.0394**	**0.0000**	**12.7919**	**12.7919**	**0.0123**	**0.0000**	**13.0988**

7.0 Water Detail

7.1 Mitigation Measures Water

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

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

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type
Fire Pump	1	1	365	15	0.73	Diesel

Boilers

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

User Defined Equipment

Equipment Type	Number

10.1 Stationary Sources

Unmitigated/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
Equipment Type	lb/day										lb/day					
Fire Pump - Diesel (11 - 25 HP)	0.0246	0.1284	0.1183	1.2000e-004		7.2400e-003	7.2400e-003		7.2400e-003	7.2400e-003		12.5927	12.5927	1.7700e-003		12.6369
Total	**0.0246**	**0.1284**	**0.1183**	**1.2000e-004**		**7.2400e-003**	**7.2400e-003**		**7.2400e-003**	**7.2400e-003**		**12.5927**	**12.5927**	**1.7700e-003**		**12.6369**

11.0 Vegetation