Appendix “M”

Air Quality, Energy, and Greenhouse Gas Emissions Impact Analysis

AIR QUALITY, ENERGY, AND GREENHOUSE GAS EMISSIONS IMPACT ANALYSIS

HIGHLAND GROVE 5 TTM NO. 39011 RESIDENTIAL PROJECT

COUNTY OF RIVERSIDE

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ACRONYMS AND ABBREVIATIONS

AB	Assembly Bill
Air Basin	South Coast Air Basin
AQMP	Air Quality Management Plan
BACT	Best Available Control Technology
BSFC	Brake Specific Fuel Consumption
CAAQS	California Ambient Air Quality Standards
CalEEMod	California Emissions Estimator Model
CalEPA	California Environmental Protection Agency
CAPCOA	California Air Pollution Control Officers Association
CARB	California Air Resources Board
CEC	California Energy Commission
CEQA	California Environmental Quality Act
CFCs	chlorofluorocarbons
Cf_4	tetrafluoromethane
C_2F_6	hexafluoroethane
CH_4	Methane
CO	Carbon monoxide
CO_2	Carbon dioxide
CO_2e	Carbon dioxide equivalent
County	County of Riverside
DPM	Diesel particulate matter
EPA	Environmental Protection Agency
ºF	Fahrenheit
FTIP	Federal Transportation Improvement Program
GHG	Greenhouse gas
GWP	Global warming potential
HAP	Hazardous Air Pollutants
HFCs	Hydrofluorocarbons
IPCC	International Panel on Climate Change
kWhr	kilowatt-hour
LCFS	Low Carbon Fuel Standard

LST	Localized Significant Thresholds
MATES	Multiple Air Toxics Exposure Study
$MMTCO_2e$	Million metric tons of carbon dioxide equivalent
MPO	Metropolitan Planning Organization
MWh	Megawatt-hour
NAAQS	National Ambient Air Quality Standards
NO_x	Nitrogen oxides
NO_2	Nitrogen dioxide
OPR	Office of Planning and Research
Pfc	Perfluorocarbons
PM	Particle matter
PM10	Particles that are less than 10 micrometers in diameter
PM2.5	Particles that are less than 2.5 micrometers in diameter
PPM	Parts per million
PPB	Parts per billion
PPT	Parts per trillion
RTIP	Regional Transportation Improvement Plan
RTP/SCS	Regional Transportation Plan/Sustainable Communities Strategy
SB	Senate Bill
SCAQMD	South Coast Air Quality Management District
SCAG	Southern California Association of Governments
SF_6	Sulfur Hexafluoride
SIP	State Implementation Plan
SO_x	Sulfur oxides
TAC	Toxic air contaminants
UNFCCC	United Nations' Framework Convention on Climate Change
VOC	Volatile organic compounds

1.0 INTRODUCTION

1.1 Purpose of Analysis and Study Objectives

This Air Quality, Energy, and Greenhouse Gas (GHG) Emissions Impact Analysis has been completed to determine the air quality, energy, and GHG emissions impacts associated with the proposed Highland Grove 5 Tentative Tract Map (TTM) No. 39011 Residential project (proposed project). The following is provided in this report:

- A description of the proposed project;
- A description of the atmospheric setting;
- A description of the criteria pollutants and GHGs;
- A description of the air quality regulatory framework;
- A description of the energy conservation regulatory framework;
- A description of the GHG emissions regulatory framework;
- A description of the air quality, energy, and GHG emissions thresholds including the California Environmental Quality Act (CEQA) significance thresholds;
- An analysis of the conformity of the proposed project with the South Coast Air Quality Management District (SCAQMD) Air Quality Management Plan (AQMP);
- An analysis of the short-term construction related and long-term operational air quality, energy, and GHG emissions impacts; and
- An analysis of the conformity of the proposed project with all applicable energy and GHG emissions reduction plans and policies.

1.2 Site Locations and Study Area

The project site is located in an unincorporated area of the County of Riverside (County) within the Lake Matthews/Woodcrest area. The approximately 36.55-acre project site is currently vacant and is bounded by vacant land that is entitled for single-family homes (TTM 36805) to the north and west, vacant land and single-family homes on Cambria Court to the northeast, vacant land to the east, and rural residential uses and El Sobrante Road to the south. The project local study area is shown in Figure 1.

Sensitive Receptors in Project Vicinity

The nearest sensitive receptors to the project site are residents at the ranch homes located as near as 440 feet south of the project site and at the single-family homes located as near as 500 feet northeast of the project site. The nearest school is Lake Matthews Elementary School that is located as near as 1.2 mile west of the project site.

1.3 Proposed Project Description

The proposed project would disturb approximately 29 acres of the 36.55-acre project site and would consist of development of 73 single-family homes with an onsite road network and a water quality detention basin. This analysis also analyzed emissions from limited blasting that may be required during grading of the project site. The proposed site plan is shown in Figure 2.

1.4 Executive Summary

Standard Air Quality, Energy, and GHG Regulatory Conditions

The proposed project will be required to comply with the following regulatory conditions from the SCAQMD and State of California (State).

South Coast Air Quality Management District Rules

The following lists the SCAQMD rules that are applicable, but not limited to the proposed project.

- Rule 402 Nuisance – Controls the emissions of odors and other air contaminants;
- Rule 403 Fugitive Dust – Controls the emissions of fugitive dust;
- Rule 445 Fireplaces – Controls the emissions of fireplaces and restricts all new fireplaces to either natural gas only or electric;
- Rules 1108 and 1108.1 Cutback and Emulsified Asphalt – Controls the VOC content in asphalt;
- Rule 1113 Architectural Coatings – Controls the VOC content in paints and solvents; and
- Rule 1143 Paint Thinners – Controls the VOC content in paint thinners.

State of California Rules

The following lists the State of California Code of Regulations (CCR) air quality emission rules that are applicable, but not limited to the proposed project.

- CCR Title 13, Article 4.8, Chapter 9, Section 2449 – In use Off-Road Diesel Vehicles;
- CCR Title 13, Section 2025 – On-Road Diesel Truck Fleets;
- CCR Title 24 Part 6 – California Building Energy Standards; and
- CCR Title 24 Part 11 – California Green Building Standards.

Summary of Analysis Results

The following is a summary of the proposed project's impacts with regard to the State CEQA Guidelines air quality, energy, and GHG emissions checklist questions.

Conflict with or obstruct implementation of the applicable air quality plan?

Less than significant impact.

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

Less than significant impact.

Expose sensitive receptors to substantial pollutant concentrations?

Less than significant impact.

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

Less than significant impact.

Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation;

Less than significant impact.

Conflict with or obstruct a state or local plan for renewable energy;

Less than significant impact.

Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment?

Less than significant impact.

Conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of GHGs?

Less than significant impact.

1.5 Project Design Features Incorporated into the Proposed Project

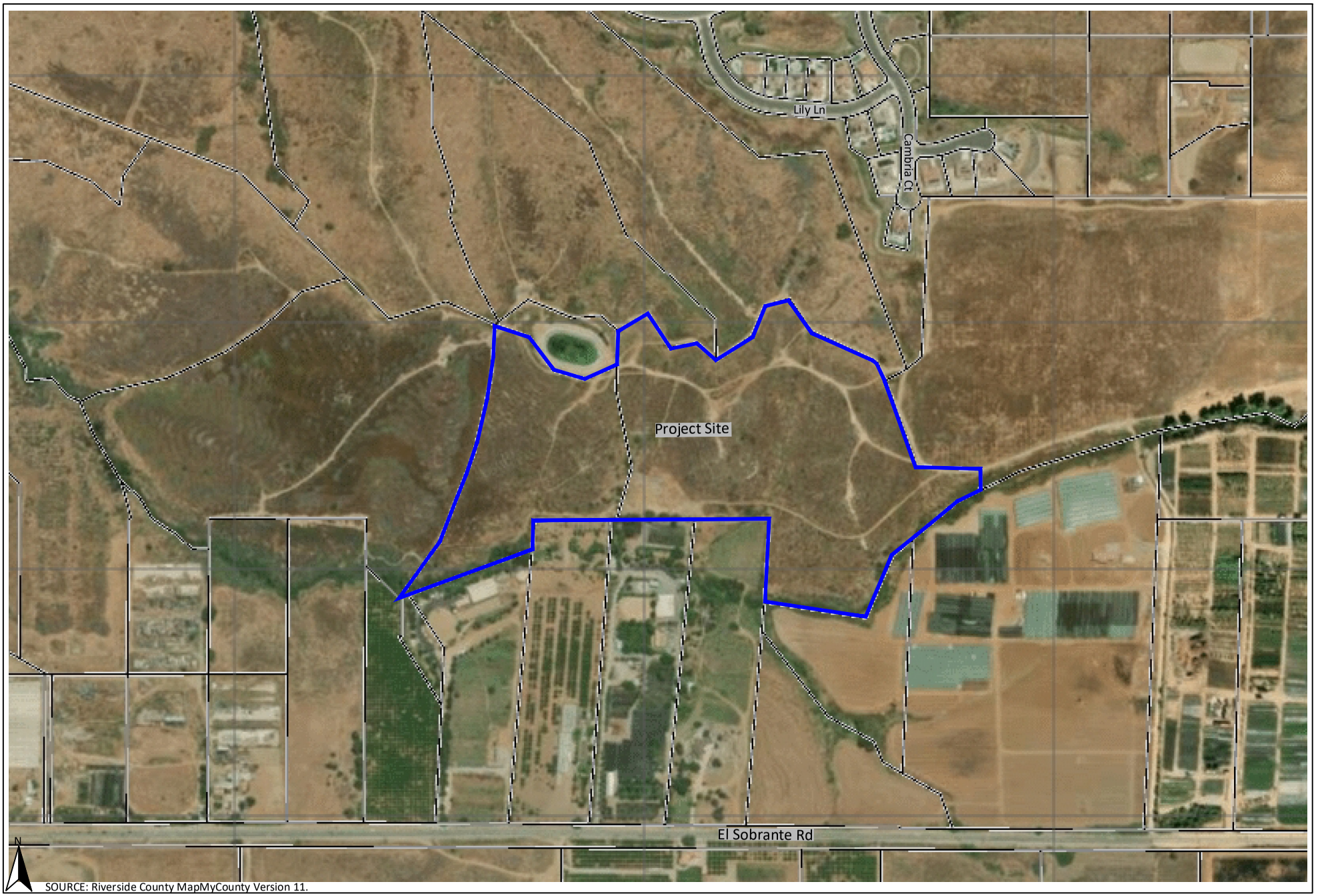
This analysis was based on implementation of the following project design feature that the project applicant has committed to implementing, since the current 2022 Title 24 Part 6 building energy efficiency standards now require each home to have at least one heat pump for either space heating or water heating as well as require all natural gas appliances utilized to provide wiring for future electrical appliances now makes new home developments cost prohibitive to include natural gas hookups to the homes[1].

Project Design Feature 1:
The proposed project shall be designed as an All-Electric Development, which requires all appliances that are installed into the proposed homes to be electric powered and no natural gas lines shall be run to the proposed homes.

1.6 Mitigation Measures for the Proposed Project

This analysis found that implementation of the State and SCAQMD air quality, energy, and GHG emissions reductions regulations and through implementation of Project Design Feature 1, were adequate to limit criteria pollutants, toxic air contaminants, odors, energy, and GHG emissions from the proposed project to less than significant levels. No mitigation measures are required for the proposed project with respect to air quality, energy, and GHG emissions.

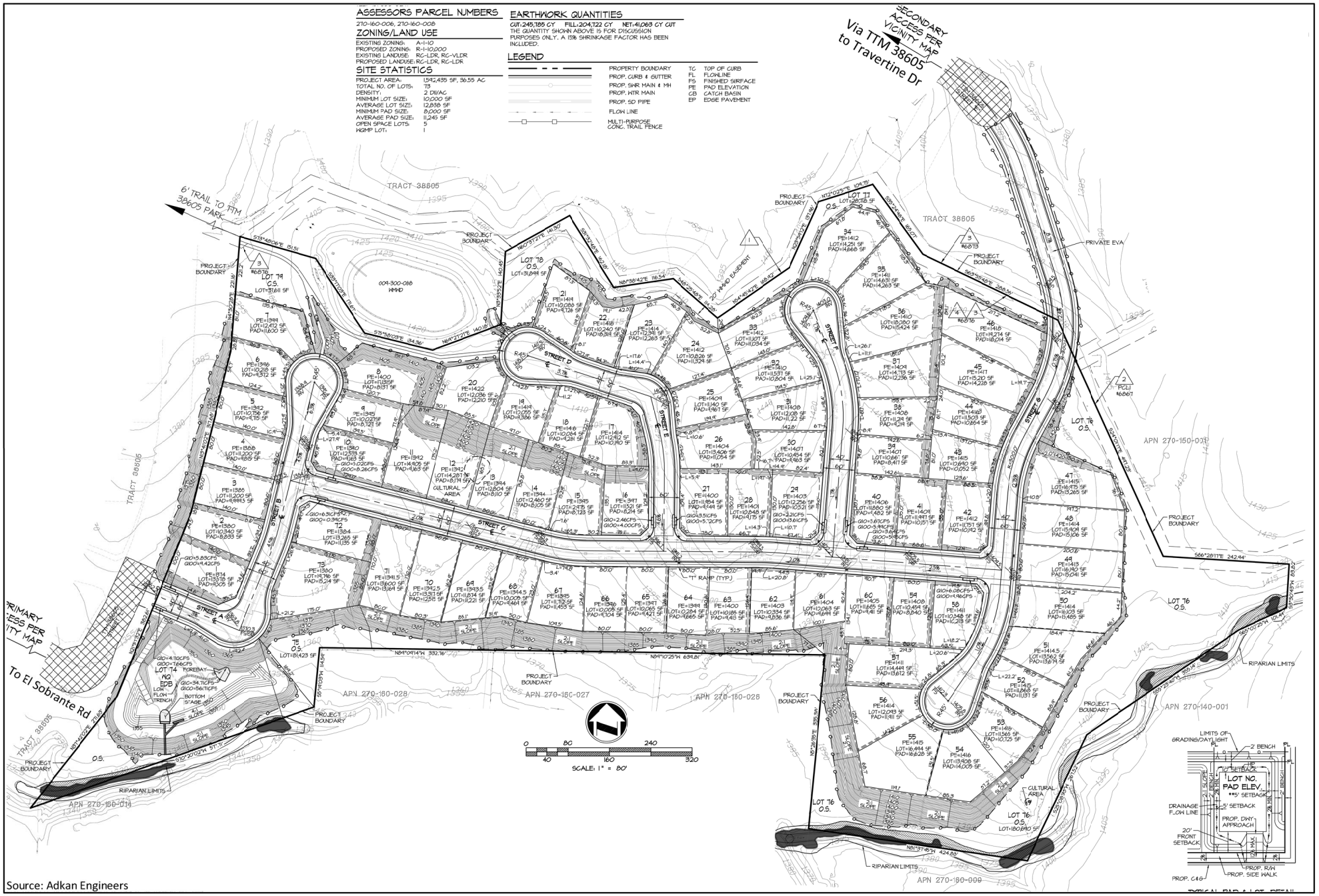
1 Obtained from: https://www.nrdc.org/press-releases/california-passes-nations-first-building-code-establishes-pollution-free-electric



SOURCE: Riverside County MapMyCounty Version 11.

VISTA ENVIRONMENTAL

Figure 1
Project Local Study Area



Source: Adkan Engineers

VISTA ENVIRONMENTAL

Figure 2
Proposed Site Plan

2.0 AIR POLLUTANTS

Air pollutants are generally classified as either criteria pollutants or non-criteria pollutants. Federal ambient air quality standards have been established for criteria pollutants, whereas no ambient standards have been established for non-criteria pollutants. For some criteria pollutants, separate standards have been set for different periods. Most standards have been set to protect public health. For some pollutants, standards have been based on other values (such as protection of crops, protection of materials, or avoidance of nuisance conditions). A summary of federal and state ambient air quality standards is provided in the Regulatory Framework section.

2.1 Criteria Pollutants and Ozone Precursors

The criteria pollutants consist of: ozone, nitrogen oxides (NOx), CO, sulfur oxides (SOx), lead, and particulate matter (PM). The ozone precursors consist of NOx and VOC. These pollutants can harm your health and the environment, and cause property damage. The Environmental Protection Agency (EPA) calls these pollutants "criteria" air pollutants because it regulates them by developing human health-based and/or environmentally-based criteria for setting permissible levels. The following provides descriptions of each of the criteria pollutants and ozone precursors.

Nitrogen Oxides

NOx is the generic term for a group of highly reactive gases which contain nitrogen and oxygen. While most NOx are colorless and odorless, concentrations of nitrogen dioxide (NO_2) can often be seen as a reddish-brown layer over many urban areas. NOx form when fuel is burned at high temperatures, as in a combustion process. The primary manmade sources of NOx are motor vehicles, electric utilities, and other industrial, commercial, and residential sources that burn fuel. NOx reacts with other pollutants to form, ground-level ozone, nitrate particles, acid aerosols, as well as NO_2, which cause respiratory problems. NOx and the pollutants formed from NOx can be transported over long distances, following the patterns of prevailing winds. Therefore, controlling NOx is often most effective if done from a regional perspective, rather than focusing on the nearest sources.

Ozone

Ozone is not usually emitted directly into the air, instead it is created by a chemical reaction between NOx and VOCs in the presence of sunlight. Motor vehicle exhaust, industrial emissions, gasoline vapors, chemical solvents as well as natural sources emit NOx and VOC that help form ozone. Ground-level ozone is the primary constituent of smog. Sunlight and hot weather cause ground-level ozone to form with the greatest concentrations usually occurring downwind from urban areas. Ozone is subsequently considered a regional pollutant. Ground-level ozone is a respiratory irritant and an oxidant that increases susceptibility to respiratory infections and can cause substantial damage to vegetation and other materials. Because NOx and VOC are ozone precursors, the health effects associated with ozone are also indirect health effects associated with significant levels of NOx and VOC emissions.

Carbon Monoxide

CO is a colorless, odorless gas that is formed when carbon in fuel is not burned completely. It is a component of motor vehicle exhaust, which contributes approximately 56 percent of all CO emissions nationwide. In cities, 85 to 95 percent of all CO emissions may come from motor vehicle exhaust. Other sources of CO emissions include industrial processes (such as metals processing and chemical manufacturing), residential wood burning, and natural sources such as forest fires. Woodstoves, gas

stoves, cigarette smoke, and unvented gas and kerosene space heaters are indoor sources of CO. The highest levels of CO in the outside air typically occur during the colder months of the year when inversion conditions are more frequent. The air pollution becomes trapped near the ground beneath a layer of warm air. CO is described as having only a local influence because it dissipates quickly. Since CO concentrations are strongly associated with motor vehicle emissions, high CO concentrations generally occur in the immediate vicinity of roadways with high traffic volumes and traffic congestion, active parking lots, and in automobile tunnels. Areas adjacent to heavily traveled and congested intersections are particularly susceptible to high CO concentrations.

CO is a public health concern because it combines readily with hemoglobin and thus reduces the amount of oxygen transported in the bloodstream. The health threat from lower levels of CO is most serious for those who suffer from heart disease such as angina, clogged arteries, or congestive heart failure. For a person with heart disease, a single exposure to CO at low levels may cause chest pain and reduce that person's ability to exercise; repeated exposures may contribute to other cardiovascular effects. High levels of CO can affect even healthy people. People who breathe high levels of CO can develop vision problems, reduced ability to work or learn, reduced manual dexterity, and difficulty performing complex tasks. At extremely high levels, CO is poisonous and can cause death.

Sulfur Oxides

SOx gases are formed when fuel containing sulfur, such as coal and oil is burned, as well as from the refining of gasoline. SOx dissolves easily in water vapor to form acid and interacts with other gases and particles in the air to form sulfates and other products that can be harmful to people and the environment.

Lead

Lead is a metal found naturally in the environment as well as manufactured products. The major sources of lead emissions have historically been motor vehicles and industrial sources. Due to the phase out of leaded gasoline, metal processing is now the primary source of lead emissions to the air. High levels of lead in the air are typically only found near lead smelters, waste incinerators, utilities, and lead-acid battery manufacturers. Exposure of fetuses, infants and children to low levels of lead can adversely affect the development and function of the central nervous system, leading to learning disorders, distractibility, inability to follow simple commands, and lower intelligence quotient. In adults, increased lead levels are associated with increased blood pressure.

Particulate Matter

PM is the term for a mixture of solid particles and liquid droplets found in the air. PM is made up of a number of components including acids (such as nitrates and sulfates), organic chemicals, metals, and soil or dust particles. The size of particles is directly linked to their potential for causing health problems. Particles that are less than 10 micrometers in diameter (PM10) that are also known as *Respirable Particulate Matter* are the particles that generally pass through the throat and nose and enter the lungs. Once inhaled, these particles can affect the heart and lungs and cause serious health effects. Particles that are less than 2.5 micrometers in diameter (PM2.5) that are also known as *Fine Particulate Matter* have been designated as a subset of PM10 due to their increased negative health impacts and its ability to remain suspended in the air longer and travel further.

Volatile Organic Compounds

Hydrocarbons are organic gases that are formed from hydrogen and carbon and sometimes other elements. Hydrocarbons that contribute to formation of ozone are referred to and regulated as VOCs (also

referred to as reactive organic gases). Combustion engine exhaust, oil refineries, and fossil-fueled power plants are the sources of hydrocarbons. Other sources of hydrocarbons include evaporation from petroleum fuels, solvents, dry cleaning solutions, and paint.

VOC is not classified as a criteria pollutant, since VOCs by themselves are not a known source of adverse health effects. The primary health effects of VOCs result from the formation of ozone and its related health effects. High levels of VOCs in the atmosphere can interfere with oxygen intake by reducing the amount of available oxygen through displacement. Carcinogenic forms of hydrocarbons, such as benzene, are considered TACs. There are no separate health standards for VOCs as a group.

2.2 Other Pollutants of Concern

Toxic Air Contaminants

In addition to the above-listed criteria pollutants, TACs are another group of pollutants of concern. TACs is a term that is defined under the California Clean Air Act and consists of the same substances that are defined as Hazardous Air Pollutants (HAPs) in the Federal Clean Air Act. There are over 700 hundred different types of TACs with varying degrees of toxicity. Sources of TACs include industrial processes such as petroleum refining and chrome plating operations, commercial operations such as gasoline stations and dry cleaners, and motor vehicle exhaust. Cars and trucks release at least 40 different toxic air contaminants. The most important of these TACs, in terms of health risk, are diesel particulates, benzene, formaldehyde, 1,3-butadiene, and acetaldehyde. Public exposure to TACs can result from emissions from normal operations as well as from accidental releases. Health effects of TACs include cancer, birth defects, neurological damage, and death.

TACs are less pervasive in the urban atmosphere than criteria air pollutants, however they are linked to short-term (acute) or long-term (chronic or carcinogenic) adverse human health effects. There are hundreds of different types of TACs with varying degrees of toxicity. Sources of TACs include industrial processes, commercial operations (e.g., gasoline stations and dry cleaners), and motor vehicle exhaust.

According to *The California Almanac of Emissions and Air Quality 2013 Edition*, the majority of the estimated health risk from TACs can be attributed to relatively few compounds, the most important of which is DPM. DPM is a subset of PM2.5 because the size of diesel particles are typically 2.5 microns and smaller. The identification of DPM as a TAC in 1998 led the California Air Resources Board (CARB) to adopt the Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-fueled Engines and Vehicles in September 2000. The plan's goals are a 75-percent reduction in DPM by 2010 and an 85-percent reduction by 2020 from the 2000 baseline. Diesel engines emit a complex mixture of air pollutants, composed of gaseous and solid material. The visible emissions in diesel exhaust are known as particulate matter or PM, which includes carbon particles or "soot." Diesel exhaust also contains a variety of harmful gases and over 40 other cancer-causing substances. California's identification of DPM as a toxic air contaminant was based on its potential to cause cancer, premature deaths, and other health problems. Exposure to DPM is a health hazard, particularly to children whose lungs are still developing and the elderly who may have other serious health problems. Overall, diesel engine emissions are responsible for the majority of California's potential airborne cancer risk from combustion sources.

Asbestos

Asbestos is listed as a TAC by CARB and as a HAP by the EPA. Asbestos occurs naturally in mineral formations and crushing or breaking these rocks, through construction or other means, can release

asbestiform fibers into the air. Asbestos emissions can result from the sale or use of asbestos-containing materials, road surfacing with such materials, grading activities, and surface mining. The risk of disease is dependent upon the intensity and duration of exposure. When inhaled, asbestos fibers may remain in the lungs and with time may be linked to such diseases as asbestosis, lung cancer, and mesothelioma. The nearest likely locations of naturally occurring asbestos, as identified in the *General Location Guide for Ultramafic Rocks in California*, prepared by the California Division of Mines and Geology, is located in Santa Barbara County. The nearest historic asbestos mine to the project site, as identified in the *Reported Historic Asbestos Mines, Historic Asbestos Prospects, and Other Natural Occurrences of Asbestos in California,* prepared by U.S. Geological Survey, is located at Asbestos Mountain, which is approximately 55 miles east of the project site in the San Jacinto Mountains. Due to the distance to the nearest natural occurrences of asbestos, the project site is not likely to contain asbestos.

3.0 GREENHOUSE GASES

3.1 Greenhouse Gases

Constituent gases of the Earth's atmosphere, called atmospheric GHGs, play a critical role in the Earth's radiation amount by trapping infrared radiation from the Earth's surface, which otherwise would have escaped to space. Prominent greenhouse gases contributing to this process include carbon dioxide (CO_2), methane (CH_4), ozone, water vapor, nitrous oxide (N_2O), and chlorofluorocarbons (CFCs). This phenomenon, known as the Greenhouse Effect, is responsible for maintaining a habitable climate. Anthropogenic (caused or produced by humans) emissions of these greenhouse gases in excess of natural ambient concentrations are responsible for the enhancement of the Greenhouse Effect and have led to a trend of unnatural warming of the Earth's natural climate, known as global warming or climate change. Emissions of gases that induce global warming are attributable to human activities associated with industrial/manufacturing, agriculture, utilities, transportation, and residential land uses. Emissions of CO_2 and N_2O are byproducts of fossil fuel combustion. Methane, a potent greenhouse gas, results from off-gassing associated with agricultural practices and landfills. Sinks of CO_2, where CO_2 is stored outside of the atmosphere, include uptake by vegetation and dissolution into the ocean. The following provides a description of each of the greenhouse gases and their global warming potential.

Water Vapor

Water vapor is the most abundant, important, and variable GHG in the atmosphere. Water vapor is not considered a pollutant; in the atmosphere it maintains a climate necessary for life. Changes in its concentration are primarily considered a result of climate feedbacks related to the warming of the atmosphere rather than a direct result of industrialization. The feedback loop in which water is involved is critically important to projecting future climate change. As the temperature of the atmosphere rises, more water is evaporated from ground storage (rivers, oceans, reservoirs, soil). Because the air is warmer, the relative humidity can be higher (in essence, the air is able to "hold" more water when it is warmer), leading to more water vapor in the atmosphere. As a GHG, the higher concentration of water vapor is then able to absorb more thermal indirect energy radiated from the Earth, thus further warming the atmosphere. The warmer atmosphere can then hold more water vapor and so on and so on. This is referred to as a "positive feedback loop." The extent to which this positive feedback loop will continue is unknown as there is also dynamics that put the positive feedback loop in check. As an example, when water vapor increases in the atmosphere, more of it will eventually also condense into clouds, which are more able to reflect incoming solar radiation (thus allowing less energy to reach the Earth's surface and heat it up).

Carbon Dioxide

The natural production and absorption of CO_2 is achieved through the terrestrial biosphere and the ocean. However, humankind has altered the natural carbon cycle by burning coal, oil, natural gas, and wood. Since the industrial revolution began in the mid 1700s, each of these activities has increased in scale and distribution. CO_2 was the first GHG demonstrated to be increasing in atmospheric concentration with the first conclusive measurements being made in the last half of the 20th century. Prior to the industrial revolution, concentrations were fairly stable at 280 parts per million (ppm). The International Panel on Climate Change (IPCC) indicates that concentrations were 379 ppm in 2005, an increase of more than 30 percent. Left unchecked, the IPCC projects that concentration of carbon dioxide in the atmosphere is projected to increase to a minimum of 540 ppm by 2100 as a direct result of anthropogenic sources. This

could result in an average global temperature rise of at least two degrees Celsius or 3.6 degrees Fahrenheit.

Methane

CH_4 is an extremely effective absorber of radiation, although its atmospheric concentration is less than that of CO_2. Its lifetime in the atmosphere is brief (10 to 12 years), compared to some other GHGs (such as CO_2, N_2O, and CFCs). CH_4 has both natural and anthropogenic sources. It is released as part of the biological processes in low oxygen environments, such as in swamplands or in rice production (at the roots of the plants). Over the last 50 years, human activities such as growing rice, raising cattle, using natural gas, and mining coal have added to the atmospheric concentration of methane. Other anthropocentric sources include fossil-fuel combustion and biomass burning.

Nitrous Oxide

Concentrations of N_2O also began to rise at the beginning of the industrial revolution. In 1998, the global concentration of this GHG was documented at 314 parts per billion (ppb). N_2O is produced by microbial processes in soil and water, including those reactions which occur in fertilizer containing nitrogen. In addition to agricultural sources, some industrial processes (fossil fuel-fired power plants, nylon production, nitric acid production, and vehicle emissions) also contribute to its atmospheric load. N_2O is also commonly used as an aerosol spray propellant (i.e., in whipped cream bottles, in potato chip bags to keep chips fresh, and in rocket engines and race cars).

Chlorofluorocarbons

CFCs are gases formed synthetically by replacing all hydrogen atoms in methane or ethane with chlorine and/or fluorine atoms. CFCs are nontoxic, nonflammable, insoluble, and chemically unreactive in the troposphere (the level of air at the Earth's surface). CFCs have no natural source, but were first synthesized in 1928. They were used for refrigerants, aerosol propellants, and cleaning solvents. Due to the discovery that they are able to destroy stratospheric ozone, a global effort to halt their production was undertaken and in 1989 the European Community agreed to ban CFCs by 2000 and subsequent treaties banned CFCs worldwide by 2010. This effort was extremely successful, and the levels of the major CFCs are now remaining level or declining. However, their long atmospheric lifetimes mean that some of the CFCs will remain in the atmosphere for over 100 years.

Hydrofluorocarbons

Hydrofluorocarbons (HFCs) are synthetic man-made chemicals that are used as a substitute for CFCs. Out of all the GHGs, they are one of three groups with the highest global warming potential. The HFCs with the largest measured atmospheric abundances are (in order), HFC-23 (CHF_3), HFC-134a (CF_3CH_2F), and HFC-152a (CH_3CHF_2). Prior to 1990, the only significant emissions were HFC-23. HFC-134a use is increasing due to its use as a refrigerant. Concentrations of HFC-23 and HFC-134a in the atmosphere are now about 10 parts per trillion (ppt) each. Concentrations of HFC-152a are about 1 ppt. HFCs are manmade for applications such as automobile air conditioners and refrigerants.

Perfluorocarbons

Perfluorocarbons (PFCs) have stable molecular structures and do not break down through the chemical processes in the lower atmosphere. High-energy ultraviolet rays about 60 kilometers above Earth's surface are able to destroy the compounds. Because of this, PFCs have very long lifetimes, between 10,000 and 50,000 years. Two common PFCs are tetrafluoromethane (CF_4) and hexafluoroethane (C_2F_6).

Concentrations of CF_4 in the atmosphere are over 70 ppt. The two main sources of PFCs are primary aluminum production and semiconductor manufacturing.

Sulfur Hexafluoride

Sulfur Hexafluoride (SF_6) is an inorganic, odorless, colorless, nontoxic, nonflammable gas. SF_6 has the highest global warming potential of any gas evaluated; 23,900 times that of CO_2. Concentrations in the 1990s were about 4 ppt. Sulfur hexafluoride is used for insulation in electric power transmission and distribution equipment, in the magnesium industry, in semiconductor manufacturing, and as a tracer gas for leak detection.

Aerosols

Aerosols are particles 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. Cloud formation can also be affected by aerosols. Sulfate aerosols are emitted when fuel containing sulfur is burned. Black carbon (or soot) is emitted during biomass burning due to the incomplete combustion of fossil fuels. Particulate matter regulation has been lowering aerosol concentrations in the United States; however, global concentrations are likely increasing.

3.2 Global Warming Potential

GHGs have varying global warming potential (GWP). The GWP is the potential of a gas or aerosol to trap heat in the atmosphere; it is the cumulative radiative forcing effects of a gas over a specified time horizon resulting from the emission of a unit mass of gas relative to the reference gas, CO_2. The GHGs listed by the IPCC and the CEQA Guidelines are discussed in this section in order of abundance in the atmosphere. Water vapor, the most abundant GHG, is not included in this list because its natural concentrations and fluctuations far outweigh its anthropogenic (human-made) sources. To simplify reporting and analysis, GHGs are commonly defined in terms of their GWP. The IPCC defines the GWP of various GHG emissions on a normalized scale that recasts all GHG emissions in terms of CO_2 equivalent (CO_2e). As such, the GWP of CO_2 is equal to 1. The GWP values used in this analysis are based on the 2007 IPCC Fourth Assessment Report, which are used in CARB's 2014 Scoping Plan Update and the CalEEMod Model Version 2022.1 and are detailed in Table A. The IPCC has updated the Global Warming Potentials of some gases in their Fifth Assessment Report, however the new values have not yet been incorporated into the CalEEMod model that has been utilized in this analysis.

Table A – Global Warming Potentials, Atmospheric Lifetimes and Abundances of GHGs

Gas	Atmospheric Lifetime (years)[1]	Global Warming Potential (100 Year Horizon)[2]	Atmospheric Abundance
Carbon Dioxide (CO_2)	50-200	1	379 ppm
Methane (CH_4)	9-15	25	1,774 ppb
Nitrous Oxide (N_2O)	114	298	319 ppb
HFC-23	270	14,800	18 ppt
HFC-134a	14	1,430	35 ppt
HFC-152a	1.4	124	3.9 ppt
PFC: Tetrafluoromethane (CF_4)	50,000	7,390	74 ppt
PFC: Hexafluoroethane (C_2F_6)	10,000	12,200	2.9 ppt
Sulfur Hexafluoride (SF_6)	3,200	22,800	5.6 ppt

Notes:

[1] Defined as the half-life of the gas.
[2] Compared to the same quantity of CO_2 emissions and is based on the Intergovernmental Panel On Climate Change (IPCC) 2007 standard, which is utilized in CalEEMod (Version 2022.1),that is used in this report (CalEEMod user guide: Appendix A).
Definitions: ppm = parts per million; ppb = parts per billion; ppt = parts per trillion
Source: IPCC 2007, EPA 2015

3.3 Greenhouse Gas Emissions Inventory

According to the Carbon Dioxide Information Analysis Center[2], 9,855 million metric tons (MMT) of CO_2e emissions were created globally in the year 2014. According to the Environmental Protection Agency (EPA), the breakdown of global GHG emissions by sector consists of: 25 percent from electricity and heat production; 21 percent from industry; 24 percent from agriculture, forestry and other land use activities; 14 percent from transportation; 6 percent from building energy use; and 10 percent from all other sources of energy use[3].

According to *Inventory of U.S. Greenhouse Gas Emissions and Sinks 1990-2022,* prepared by EPA, April 2024, total U.S. GHG emissions in 2022 were 6,343.2 million metric tons (MMT) of CO_2e emissions. Total U.S. emissions have decreased by 3.0 percent between 1990 and 2022, which is down from a high of 15.2 percent above 1990 levels in 2007. Emissions increased from 2021 to 2022 by 0.2 percent. The increase in total GHG emissions was driven largely in an increase in CO_2 emissions from fossil fuel combustion.

According to *California Greenhouse Gas Emissions for 2000 to 2022 Trends of Emissions and Other Indicators*, prepared by the CARB, September 20, 2024, the State of California created 371.1 $MMTCO_2e$ in 2022. The 2022 emissions were 9.3 $MMTCO_2e$ lower than in 2021. The 2022 emissions data shows the State is continuing its established long-term trend of GHG emissions declines, despite the anomalous emissions trends from 2019 through 2021, due in large part to the impacts of the COVID-19 pandemic. The transportation sector showed the largest decrease in emissions of 5.2 $MMTCO_2e$ compared to 2021.

2 Obtained from: https://cdiac.ess-dive.lbl.gov/trends/emis/tre_glob_2014.html
3 Obtained from: https://www.epa.gov/ghgemissions/global-greenhouse-gas-emissions-data

4.0 AIR QUALITY MANAGEMENT

The air quality at the project site is addressed through the efforts of various federal, state, regional, and local government agencies. These agencies work jointly, as well as individually, to improve air quality through legislation, regulations, planning, policy-making, education, and a variety of programs. The agencies responsible for improving the air quality are discussed below.

4.1 Federal – United States Environmental Protection Agency

The Clean Air Act, first passed in 1963 with major amendments in 1970, 1977 and 1990, is the overarching legislation covering regulation of air pollution in the United States. The Clean Air Act has established the mandate for requiring regulation of both mobile and stationary sources of air pollution at the state and federal level. The EPA was created in 1970 in order to consolidate research, monitoring, standard-setting and enforcement authority into a single agency.

The EPA is responsible for setting and enforcing the National Ambient Air Quality Standards (NAAQS) for atmospheric pollutants. It regulates emission sources that are under the exclusive authority of the federal government, such as aircraft, ships, and certain locomotives. NAAQS pollutants were identified using medical evidence and are shown below in Table B.

Table B – State and Federal Criteria Pollutant Standards

Air Pollutant	Concentration / Averaging Time		Most Relevant Effects
	California Standards	Federal Primary Standards	
Ozone (O_3)	0.09 ppm / 1-hour 0.07 ppm / 8-hour	0.070 ppm, / 8-hour	a) Pulmonary function decrements and localized lung injury in humans and animals; (b) asthma exacerbation; (c) chronic obstructive pulmonary disease (COPD) exacerbation; (d) respiratory infection; (e) increased school absences, and hospital admissions and emergency department (ED) visits for combined respiratory diseases; (e) increased mortality; (f) possible metabolic effects. Vegetation damage; property damage
Carbon Monoxide (CO)	20.0 ppm / 1-hour 9.0 ppm / 8-hour	35.0 ppm / 1-hour 9.0 ppm / 8-hour	Visibility reduction (a) Aggravation of angina pectoris and other aspects of coronary heart disease; (b) decreased exercise tolerance in persons with peripheral vascular disease and lung disease; (c) possible impairment of central nervous system functions; (d) possible increased risk to fetuses; (f) possible increased risk of pulmonary disease; (g) possible emergency department visits for respiratory diseases overall and visits for asthma.
Nitrogen Dioxide (NO_2)	0.18 ppm / 1-hour 0.030 ppm / annual	100 ppb / 1-hour 0.053 ppm / annual	Short-term (a) asthma exacerbations (“asthma attacks”) Long-term (a) asthma development; (b) higher risk of all-cause, cardiovascular, and respiratory mortality. Both short and long term NO2 exposure is also associated with chronic obstructive pulmonary disease (COPD) risk. Potential impacts on cardiovascular health, mortality and cancer, aggravate chronic respiratory disease. Contribution to atmospheric discoloration

Air Pollutant	Concentration / Averaging Time		Most Relevant Effects
	California Standards	Federal Primary Standards	
Sulfur Dioxide (SO_2)	0.25 ppm / 1-hour 0.04 ppm / 24-hour	75 ppb / 1-hour	Respiratory symptoms (bronchoconstriction, possible wheezing or shortness of breath) during exercise or physical activity in persons with asthma. Possible allergic sensitization, airway inflammation, asthma development.
Respirable Particulate Matter (PM_{10})	50 µg/m^3 / 24-hour 20 µg/m^3 / annual	150 µg/m^3 / 24-hour	Short -term (a) increase in mortality rates; (b) increase in respiratory infections; (c) increase in number and severity of asthma attacks; (d) COPD exacerbation; (e) increase in combined respiratory-diseases and number of hospital admissions; (f) increased mortality due to cardiovascular or respiratory diseases; (g) increase in hospital admissions for acute respiratory conditions; (h) increase in school absences; (i) increase in lost work days; (j) decrease in respiratory function in children; (k) increase medication use in children and adults with asthma. Long-term (a) reduced lung function growth in children; (b) changes in lung development; (c) development of asthma in children; (d) increased risk of cardiovascular diseases; (e) increased total mortality from lung cancer; (f) increased risk of premature death. Possible link to metabolic, nervous system, and reproductive and developmental effects for short-term and long-term exposure to PM2.5.
Suspended Particulate Matter ($PM_{2.5}$)	12 µg/m^3 / annual	35 µg/m^3 / 24-hour 9 µg/m^3 / annual	
Sulfates	25 µg/m^3 / 24-hour	No Federal Standards	(a) Decrease in lung function; (b) aggravation of asthmatic symptoms; (c) vegetation damage; (d) Degradation of visibility; (e) property damage
Lead	1.5 µg/m^3 / 30-day	0.15 µg/m^3 /3-month rolling	(a) Learning disabilities; (b) impairment of blood formation and nerve function; (c) cardiovascular effects, including coronary heart disease and hypertension Possible male reproductive system effects
Hydrogen Sulfide	0.03 ppm / 1-hour	No Federal Standards	Exposure to lower ambient concentrations above the standard may result in objectionable odor and may be accompanied by symptoms such as headaches, nausea, dizziness, nasal irritation, cough, and shortness of breath

Source: CARB, 2024 (https://ww2.arb.ca.gov/sites/default/files/2024-08/AAQS%20Table_ADA_FINAL_07222024.pdf) and SCAQMD, 2022.

As part of its enforcement responsibilities, the EPA requires each state with federal nonattainment areas to prepare and submit a State Implementation Plan (SIP) that demonstrates the means to attain the national standards. The SIP must integrate federal, state, and local components and regulations to identify specific measures to reduce pollution, using a combination of performance standards and market-based programs within the timeframe identified in the SIP. The CARB defines attainment as the category given to an area with no violations in the past three years. As indicated below in Table C, the Air Basin has been designated by EPA for the national standards as a non-attainment area for ozone and PM2.5 and partial non-attainment for lead. Currently, the Air Basin is in attainment with the national ambient air quality standards for CO, PM10, SO_2, and NO_2.

Table C – National Air Quality Standards Attainment Status – South Coast Air Basin

Criteria Pollutant	Averaging Time	Designation[a]	Attainment Date[b]
Ozone	1979 1-Hour (0.12 ppm)	Nonattainment (Extreme)	2/6/2023 (revised deadline)
	2015 8-Hour (0.07 ppm)[d]	Nonattainment (Extreme)	8/3/2038
	2008 8-Hour (0.075 ppm)[d]	Nonattainment (Extreme)	7/20/2032
	1997 8-Hour (0.08 ppm)[d]	Nonattainment (Extreme)	6/15/2024
PM2.5[e]	2006 24-Hour (35 µg/m^3)	Nonattainment (Serious)	12/31/2019
	2012 Annual (12 µg/m^3)	Nonattainment (Serious)	12/31/2021
	1997 Annual (15 µg/m^3)	Attainment (final determination pending)	4/5/2015 (attained 2013)
PM10[f]	1987 24-Hour (150 µg/m^3)	Attainment (Maintenance)	7/26/2013 (attained)
Lead[g]	2008 3-Months Rolling (0.15 µg/m^3)	Nonattainment (Partial) (Attainment determination requested)	12/31/2015
CO	1971 1-Hour (35 ppm)	Attainment (Maintenance)	6/11/2007
	1971 8-Hour (9 ppm)	Attainment (Maintenance)	6/11/2007
NO_2[h]	2010 1-Hour (100 ppb)	Unclassifiable/Attainment	N/A (attained)
	1971 Annual (0.053 ppm)	Attainment (Maintenance)	9/22/1998 (attained)
SO_2[i]	2010 1-Hour (75 ppb)	Unclassifiable/Attainment	1/9/2018
	1971 24-Hour (0.14 ppm)	Unclassifiable/Attainment	3/19/1979

Source: SCAQMD, 2022

Notes:

a) U.S. EPA often only declares Nonattainment areas; everywhere else is listed as Unclassifiable/Attainment or Unclassifiable.

b) A design value below the NAAQS for data through the full year or smog season prior to the attainment date is typically required for attainment demonstration.

c) The 1979 1-hour ozone NAAQS (0.12 ppm) was revoked, effective June 15, 2005; however, the Basin has not attained this standard and therefore has some continuing obligations with respect to the revoked standard; original attainment date was 11/15/2010; the revised attainment date is 2/6/2023.

d) The 2008 8-hour ozone NAAQS (0.075 ppm) was revised to 0.070 ppm, effective 12/28/20115 with classifications and implementation goals to be finalized by 10/1/2017; the 1997 8-hour ozone NAAQS (0.08 ppm) was revoked in the 2008 ozone implementation rule, effective 4/6/2015; there are continuing obligations under the revoked 1997 and revised 2008 ozone NAAQS until they are attained.

e) The attainment deadline for the 2006 24-Hour PM2.5 NAAQS was 12/31/15 for the former "moderate" classification; the EPA approved reclassification to "serious", effective 2/12/16 with an attainment deadline of 12/31/2019; the 2012 (proposal year) annual PM2.5 NAAQS was revised on 1/15/2013, effective 3/18/2013, from 15 to 12 µg/m^3; new annual designations were final 1/15/2015, effective 4/15/2015; on 7/25/2016 the EPA finalized a determination that the Basin attained the 1997 annual (15.0 µg/m^3) and 24-hour PM2.5 (65 µg/m^3) NAAQS, effective 8/24/2016.

f) The annual PM10 standard was revoked, effective 12/18/2006; the 24-hour PM10 NAAQS deadline was 12/31/2006; the Basin's Attainment Re-designation Request and PM10 Maintenance Plan was approved by the EPA on 6/26/2103, effective 7/26/2013.

g) Partial Nonattainment designation – Los Angeles County portion of the Basin only for near-source monitors; expect to remain in attainment based on current monitoring data; attainment re-designation request pending.

h) New 1-hour NO_2 NAAQS became effective 8/2/2010, with attainment designations 1/20/2012; annual NO_2 NAAQS retained.

i) The 1971 annual and 24-hour SO_2 NAAQS were revoked, effective 8/23/2010.

Despite substantial improvements in air quality over the past few decades, some air monitoring stations in the Air Basin still exceed the NAAQS and frequently record the highest ozone levels in the United States. In 2020, monitoring stations in the Air Basin exceeded the most current federal standards on a total of 181 days (49 percent of the year), including: 8-hour ozone (157 days over the 2015 ozone NAAQS), 24-hour PM2.5 (39 days), PM10 (3 days), and NO_2 (1 day). Nine of the top 10 stations in the nation most frequently exceeding the 2015 8-hour ozone NAAQS in 2020 were located within the Air Basin, including stations in San Bernardino, Riverside, and Los Angeles Counties (SCAQMD, 2022).

PM2.5 levels in the Air Basin have improved significantly in recent years. Since 2015, none of the monitoring stations in the Air Basin have recorded violations of the former 1997 annual PM2.5 NAAQS (15.0 µg/m^3). On July 25, 2016 the U.S. EPA finalized a determination that the Air Basin attained the 1997 annual (15.0 µg/m^3) and 24-hour PM2.5 (65 µg/m^3) NAAQS, effective August 24, 2016. However, the Air Basin does not meet the 2012 annual PM2.5 NAAQS (12.0 µg/m^3), with six monitoring stations having design values above the standard for the 2018-2020 period (SCAQMD, 2022).

4.2 State – California Air Resources Board

The CARB, which is a part of the California Environmental Protection Agency, is responsible for the coordination and administration of both federal and state air pollution control programs within California. In this capacity, the CARB conducts research, sets the California Ambient Air Quality Standards (CAAQS), compiles emission inventories, develops suggested control measures, provides oversight of local programs, and prepares the SIP. The CAAQS for criteria pollutants in the Air Basin are shown in Table D. In addition, the CARB establishes emission standards for motor vehicles sold in California, consumer products (e.g. hairspray, aerosol paints, and barbeque lighter fluid), and various types of commercial equipment. It also sets fuel specifications to further reduce vehicular emissions.

Table D – California Ambient Air Quality Standards Attainment Status – South Coast Air Basin

Criteria Pollutant	Averaging Time	Level[a]	Designation[b]
Ozone	1-Hour	0.09 ppm	Nonattainment
	8-Hour	0.070 ppm	Nonattainment
PM2.5	Annual	12 µg/m^3	Nonattainment
PM10	24-Hour	50 µg/m^3	Nonattainment
	Annual	20 µg/m^3	Nonattainment
Lead	30-Day Average	1.5 µg/m^3	Attainment
CO	1-Hour	20 ppm	Attainment
	8-Hour	9.0 ppm	Attainment
NO_2	1-Hour	0.18 ppm	Attainment
	Annual	0.030	Attainment[c]
SO_2	1-Hour	0.25 ppm	Attainment
	24-Hour	0.04 ppm	Attainment
Sulfates	24-Hour	25 µg/m^3	Attainment
Hydrogen Sulfide	1-Hour	0.03 ppm	Unclassified

Source: CARB, 2024 (https://ww2.arb.ca.gov/sites/default/files/2024-08/AAQS%20Table_ADA_FINAL_07222024.pdf) and SCAQMD, 2022
Notes:
a) CA State standards, or CAAQS, for ozone, SO_2, NO_2, PM10 and PM2.5 are values not to be exceeded; lead, sulfates and H_2S standards are values not to be equaled or exceeded; CAAQS are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.
b) CA State designations shown were updated by CARB in 2019, based on the 2016-2018 3-year period; stated designations are based on a 3-year data period after consideration of outliers and exceptional events.
c) The CA-60 near road portion of San Bernardino, Riverside and Los Angeles Counties has recently been redesignated as an attainment area based on data collected between 2018 and 2020

As shown in Table D, the Air Basin has been designated by the CARB as a non-attainment area for ozone, PM10 and PM2.5 and partial nonattainment for NO_2. Currently, the Air Basin is in attainment with the ambient air quality standards for lead, CO, SO_2 and sulfates, and is unclassified for Hydrogen Sulfide.

The following lists the State of California Code of Regulations (CCR) air quality emission rules that are applicable, but not limited to residential projects in the State.

Assembly Bill 2588

The Air Toxics "Hot Spots" Information and Assessment Act (Assembly Bill [AB] 2588, 1987, Connelly) was enacted in 1987 as a means to establish a formal air toxics emission inventory risk quantification program. AB 2588, as amended, establishes a process that requires stationary sources to report the type and quantities of certain substances their facilities routinely release in California. The data is ranked by high, intermediate, and low categories, which are determined by: the potency, toxicity, quantity, volume, and proximity of the facility to nearby receptors.

CARB Regulation for In-Use Off-Road Diesel Vehicles

On July 26, 2007, the CARB adopted California Code of Regulations Title 13, Article 4.8, Chapter 9, Section 2449 to reduce DPM and NOx emissions from in-use off-road heavy-duty diesel vehicles in California. Such vehicles are used in construction, mining, and industrial operations. The regulation limits idling to no more than five consecutive minutes, requires reporting and labeling, and requires disclosure of the regulation upon vehicle sale. Performance requirements of the rule are based on a fleet's average NOx emissions, which can be met by replacing older vehicles with newer, cleaner vehicles or by applying exhaust retrofits. The regulation was amended in 2010 to delay the original timeline of the performance requirement making the first compliance deadline January 1, 2014 for large fleets (over 5,000 horsepower), 2017 for medium fleets (2,501-5,000 horsepower), and 2019 for small fleets (2,500 horsepower or less). Currently, no commercial operation in California may add any equipment to their fleet that has a Tier 0, Tier 1, or Tier 2 engine. It should be noted that commercial fleets may continue to use their existing Tier 0, 1 and 2 equipment, if they can demonstrate that the average emissions from their entire fleet emissions meet the NOx emissions targets.

CARB Resolution 08-43 for On-Road Diesel Truck Fleets

On December 12, 2008 the CARB adopted Resolution 08-43, which limits NOx, PM10 and PM2.5 emissions from on-road diesel truck fleets that operate in California. On October 12, 2009 Executive Order R-09-010 was adopted that codified Resolution 08-43 into Section 2025, title 13 of the California Code of Regulations. This regulation requires that by the year 2023 all commercial diesel trucks that operate in California shall meet model year 2010 (Tier 4 Final) or latter emission standards. This regulation also provides a few exemptions including a onetime per year 3-day pass for trucks registered outside of California. All on-road diesel trucks utilized during construction of the proposed project will be required to comply with Resolution 08-43.

4.3 Regional – Southern California

The SCAQMD is the agency principally responsible for comprehensive air pollution control in the South Coast Air Basin. To that end, as a regional agency, the SCAQMD works directly with the Southern California Association of Governments (SCAG), county transportation commissions, and local governments and cooperates actively with all federal and state agencies.

South Coast Air Quality Management District

SCAQMD develops rules and regulations, establishes permitting requirements for stationary sources, inspects emission sources, and enforces such measures through educational programs or fines, when necessary. SCAQMD is directly responsible for reducing emissions from stationary, mobile, and indirect sources. It has responded to this requirement by preparing a sequence of AQMPs. The *Final 2022 Air Quality Management Plan* (2022 AQMP) and has been submitted to the ARB for adoption before submittal to the U.S. EPA for final approval, which are anticipated to occur sometime this year. After the 2022

AQMP has been adopted by ARB and U.S. EPA, the 2022 AQMP will be incorporated into the State Implementation Plan (SIP). The 2022 AQMP establishes actions and strategies to reduce ozone levels to the U.S. EPA 2015 ozone standard of 70 ppb by 2037. The 2022 AQMP promotes extensive use of zero-emission technologies across all stationary and mobile sources coupled with rules and regulations, investment strategies, and incentives.

Although SCAQMD is responsible for regional air quality planning efforts, it does not have the authority to directly regulate air quality issues associated with plans and new development projects throughout the Air Basin. Instead, this is controlled through local jurisdictions in accordance to the California Environmental Quality Act (CEQA). In order to assist local jurisdictions with air quality compliance issues the *CEQA Air Quality Handbook* (SCAQMD CEQA Handbook), prepared by SCAQMD, 1993, with the most current updates found at http://www.aqmd.gov/ceqa/hdbk.html, was developed in accordance with the projections and programs detailed in the AQMPs. The purpose of the SCAQMD CEQA Handbook is to assist Lead Agencies, as well as consultants, project proponents, and other interested parties in evaluating a proposed project's potential air quality impacts. Specifically, the SCAQMD CEQA Handbook explains the procedures that SCAQMD recommends be followed for the environmental review process required by CEQA. The SCAQMD CEQA Handbook provides direction on how to evaluate potential air quality impacts, how to determine whether these impacts are significant, and how to mitigate these impacts. The SCAQMD intends that by providing this guidance, the air quality impacts of plans and development proposals will be analyzed accurately and consistently throughout the Air Basin, and adverse impacts will be minimized.

The following lists the SCAQMD rules that are applicable but not limited to residential development projects in the Air Basin.

Rule 402 - Nuisance

Rule 402 prohibits a person from discharging from any source whatsoever such quantities of air contaminants or other material which causes injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public, or which endanger the comfort, repose, health or safety of any such persons or the public, or which cause, or have a natural tendency to cause, injury or damage to business or property. Compliance with Rule 402 will reduce local air quality and odor impacts to nearby sensitive receptors.

Rule 403- Fugitive Dust

Rule 403 governs emissions of fugitive dust during construction activities and requires that no person shall cause or allow the emissions of fugitive dust such that dust remains visible in the atmosphere beyond the property line or the dust emission exceeds 20 percent opacity, if the dust is from the operation of a motorized vehicle. Compliance with this rule is achieved through application of standard Best Available Control Measures, which include but are not limited to the measures below. Compliance with these rules would reduce local air quality impacts to nearby sensitive receptors.

- Utilize either a pad of washed gravel 50 feet long, 100 feet of paved surface, a wheel shaker, or a wheel washing device to remove material from vehicle tires and undercarriages before leaving project site.
- Do not allow any track out of material to extend more than 25 feet onto a public roadway and remove all track out at the end of each workday.

- Water all exposed areas on active sites at least three times per day and pre-water all areas prior to clearing and soil moving activities.
- Apply nontoxic chemical stabilizers according to manufacturer specifications to all construction areas that will remain inactive for 10 days or longer.
- Pre-water all material to be exported prior to loading, and either cover all loads or maintain at least 2 feet of freeboard in accordance with the requirements of California Vehicle Code Section 23114.
- Replant all disturbed area as soon as practical.
- Suspend all grading activities when wind speeds (including wind gusts) exceed 25 miles per hour.
- Restrict traffic speeds on all unpaved roads to 15 miles per hour or less.

Rule 445- Fireplaces

Rule 445 governs emissions from fireplaces. This rule restricts the installation of wood-burning fireplaces into any new development and only allows the installation of either dedicated gaseous-fueled fireplaces or electric fireplaces.

Rules 1108 and 1108.1 – Cutback and Emulsified Asphalt

Rules 1108 and 1108.1 govern the sale, use, and manufacturing of asphalt and limits the VOC content in asphalt. This rule regulates the VOC contents of asphalt used during construction as well as any on-going maintenance during operations. Therefore, all asphalt used during construction and operation of the proposed project must comply with SCAQMD Rules 1108 and 1108.1.

Rule 1113 – Architectural Coatings

Rule 1113 governs the sale, use, and manufacturing of architectural coatings and limits the VOC content in sealers, coatings, paints and solvents. This rule regulates the VOC contents of paints available during construction. Therefore, all paints and solvents used during construction and operation of the proposed project must comply with SCAQMD Rule 1113.

Rule 1143 – Paint Thinners

Rule 1143 governs the sale, use, and manufacturing of paint thinners and multi-purpose solvents that are used in thinning of coating materials, cleaning of coating application equipment, and other solvent cleaning operations. This rule regulates the VOC content of solvents used during construction. Solvents used during construction and operation of the proposed project must comply with SCAQMD Rule 1143.

Southern California Association of Governments

The SCAG is the regional planning agency for Los Angeles, Orange, Ventura, Riverside, San Bernardino, and Imperial Counties and addresses regional issues relating to transportation, the economy, community development and the environment. SCAG is the federally designated Metropolitan Planning Organization (MPO) for the majority of the southern California region and is the largest MPO in the nation. With respect to air quality planning, SCAG has prepared the *2024-2050 Regional Transportation Plan/Sustainable Communities Strategy* (Connect SoCal 2024), adopted by SCAG on April 4, 2024 which is based on the regional development and growth forecasts provided in the *2023 Federal Transportation Improvement* Program (2023 FTIP), adopted October 2022. In September 2024, SCAG adopted the *Final 2025 Federal*

Transportation Improvement Program (2025 FTIP), that provides a comprehensive listing of projects that will receive federal funding and/or are regionally significant projects that are proposed over the Federal Fiscal years of 2024/2025 through 2027/2028 as well as years 2028/2029 and 2029/2030 that have been included for informational purposes. The projects included in the 2025 FTIP are consistent with programs and projects and subsequent amendments contained in Connect SoCal 2024.

Although the Connect SoCal 2024 and 2025 FTIP are primarily planning documents for future transportation projects, a key component of these plans is to integrate land use planning with transportation planning that promotes higher density infill development in close proximity to existing transit service. These plans form the basis for the land use and transportation components of the 2022 AQMP, which are utilized in the preparation of air quality forecasts and in the consistency analysis included in the 2022 AQMP. The Connect SoCal 2024, 2025 FTIP, and 2022 AQMP are based on projections originating within the City and County General Plans.

4.4 Local – County of Riverside

Local jurisdictions, such as the County of Riverside have the authority and responsibility to reduce air pollution through its police power and decision-making authority. Specifically, the County is responsible for the assessment and mitigation of air emissions resulting from its land use decisions. The County is also responsible for the implementation of transportation control measures as outlined in the AQMPs. Examples of such measures include bus turnouts, energy-efficient streetlights, and synchronized traffic signals. In accordance with CEQA requirements and the CEQA review process, the County assesses the air quality impacts of new development projects, requires mitigation of potentially significant air quality impacts by conditioning discretionary permits, and monitors and enforces implementation of such mitigation.

In accordance with the CEQA requirements, the County does not, however, have the expertise to develop plans, programs, procedures, and methodologies to ensure that air quality within the County and region will meet federal and state standards. Instead, the County relies on the expertise of the SCAQMD and utilizes the SCAQMD CEQA Handbook as the guidance document for the environmental review of plans and development proposals within its jurisdiction.

General Plan

The *County of Riverside General Plan*, prepared December 2015, provides the following air quality-related goals and policies that are applicable to the proposed project.

Multi-jurisdictional Cooperation

Policy AQ-1.4: Coordinate with the SCAQMD and MDAQMD to ensure that all elements of air quality plans regarding reduction of air pollutant emissions are being enforced.

Policy AQ-1.5: Establish and implement air quality, land use and circulation measures that improve not only the County's environment but the entire region.

Sensitive Receptors

Policy AQ-2.1: The County land use planning efforts shall assure that sensitive receptors are separated and protected from polluting point sources to the greatest extent possible.

Policy AQ-2.2: Require site plan designs to protect people and land uses sensitive to air pollution through the use of barriers and/or distance from emissions sources when possible.

Policy AQ-2.3: Encourage the use of pollution control measures such as landscaping, vegetation and other materials, which trap particulate matter or control pollution.

Stationary Pollution Sources

Policy AQ-4.1: Require the use of all feasible building materials/methods which reduce emissions.

Policy AQ-4.2: Require the use of all feasible efficient heating equipment and other appliances, such as water heaters, swimming pool heaters, cooking equipment, refrigerators, furnaces and boiler units.

Policy AQ-4.4: Require residential building construction to comply with energy use guidelines detailed in Part 6 (California Energy Code) and/or Part 11 (California Green Building Standards Code) of Title 24 of the California Code of Regulations.

Policy AQ-4.6: Require stationary air pollution sources to comply with applicable air district rules and measures.

Policy AQ-4.7: To the greatest extent possible, require every project to mitigate any of its anticipated emissions which exceed allowable emissions as established by the SCAQMD, MDAQMD, SCAB (Air Basin), the Environmental Protection Agency and the California Air Resources Board.

Policy AQ-4.9: Require compliance with SCAQMD Rules 403 and 403.1, and support appropriate future measures to reduce fugitive dust emanating from construction sites.

Efficiency and Conservation

Policy AQ-5.1: Utilize source reduction, recycling and other appropriate measures to reduce the amount of solid waste disposed of in landfills.

Policy AQ-5.2: Adopt incentives and/or regulations to enact energy conservation requirements for private and public developments.

Policy AQ-5.4: Encourage the incorporation of energy-efficient design elements, including appropriate site orientation and the use of shade and windbreak trees to reduce fuel consumption for heating and cooling.

Jobs-to-Housing-Ratio

Policy AQ-8.8: Promote land use patterns which reduce the number and length of motor vehicle trips.

Policy AQ-8.9: Promote land use patterns that promote alternative modes of travel.

Multi-jurisdictional Coordination

Policy AQ-9.2: Attain performance goals and/or VMT reductions which are consistent with SCAG's Growth Management Plan.

GHG Emissions Reduction Focus Areas

Policy AQ-20.1: Reduce VMT by requiring expanded multi-modal facilities and services that provide transportation alternatives, such as transit, bicycle and pedestrian modes. Improve connectivity of the multi-modal facilities by providing linkages between various uses in the developments.

Policy AQ-20.5: Reduce emissions from standard gasoline vehicles, through VMT, by requiring all new residential units to install circuits and provide capacity for electric vehicle charging stations.

Policy AQ-20.10: Reduce energy consumption of the new developments (residential, commercial and industrial) through efficient site design that takes into consideration solar orientation and shading, as well as passive solar design.

Policy AQ-20.14: Reduce the amount of water used for landscaping irrigation through implementation of County Ordinance 859 and increase use of non-potable water.

Policy AQ-20.18: Encourage the installation of solar panels and other energy-efficient improvements and facilitate residential and commercial renewable energy facilities (solar array installations, individual wind energy generators, etc.).

Policy AQ-20.20: Reduce the amount of solid waste generation by increasing solid waste recycle, maximizing waste diversion, and composting for residential and commercial generators. Reduction in decomposable organic solid waste will reduce the methane emissions at County landfills.

5.0 ENERGY CONSERVATION MANAGEMENT

The regulatory setting related to energy conservation is primarily addressed through State and County regulations, which are discussed below.

5.1 State

Energy conservation management in the State was initiated by the 1974 Warren-Alquist State Energy Resources Conservation and Development Act that created the California Energy Resource Conservation and Development Commission (currently named California Energy Commission [CEC]), which was originally tasked with certifying new electric generating plants based on the need for the plant and the suitability of the site of the plant. In 1976 the Warren-Alquist Act was expanded to include new restrictions on nuclear generating plants, that effectively resulted in a moratorium of any new nuclear generating plants in the State. The following details specific regulations adopted by the State in order to reduce the consumption of energy.

California Code of Regulations (CCR) Title 20

On November 3, 1976 the CEC adopted the *Regulations for Appliance Efficiency Standards Relating to Refrigerators, Refrigerator-Freezers and Freezers and Air Conditioners,* which were the first energy-efficiency standards for appliances. The appliance efficiency regulations have been updated several times by the CEC and the most current version is the *2016 Appliance Efficiency Regulations*, adopted January 2017 and now includes almost all types of appliances and lamps that use electricity, natural gas as well as plumbing fixtures. The authority for the CEC to control the energy-efficiency of appliances is detailed in CCR Title 20, Division 2, Chapter 4, Article 4, Sections 1601-1609.

California Code of Regulations (CCR) Title 24, Part 6

CCR Title 24, Part 6: *California's Energy Efficiency Standards for Residential and Nonresidential Buildings* (Title 24) were first established in 1978 in response to a legislative mandate to reduce California's energy consumption. The California Energy Commission (CEC) is the agency responsible for the standards that are updated periodically to allow consideration and possible incorporation of new energy efficiency technologies and methods. In 2008 the State set an energy-use reduction goal of zero-net-energy use of all new homes by 2020 and the CEC was mandated to meet this goal through revisions to the Title 24, Part 6 regulations.

The Title 24 standards are updated on a three-year schedule and since 2008 the standards have been incrementally moving to the 2020 goal of the zero-net-energy use. The 2022 Title 24 standards are the current standards that went into effect on January 1, 2023.

According to the Title 24 Part 6 Fact Sheet, the CEC estimates that over 30 years the 2022 Title 24 standards will reduce GHG emissions by 16,230 $MMTCO_2e$ per year, when compared to the 2019 Title 24 standards, which is equivalent of taking 3,641 gas cars off the road each year. The 2022 Title 24 standards will: (1) Increase onsite renewable energy generation; (2) Increases electric load flexibility to support grid reliability; (3) Reduces emissions from newly constructed buildings; (4) Reduces air pollution for improved public health; and (5) Encourages adoption of environmentally beneficial efficient electric technologies.

California Code of Regulations (CCR) Title 24, Part 11

CCR Title 24, Part 11: *California Green Building Standards* (CalGreen Code) was developed in response to continued efforts to reduce GHG emissions associated with energy consumption. The CalGreen Code is also updated every three years and the current version is the 2022 CalGreen Code that went into effect on January 1, 2023.

The CALGreen Code contains requirements for construction site selection; storm water control during construction; construction waste reduction; indoor water use reduction; material selection; natural resource conservation; site irrigation conservation; and more. The code provides for design options allowing the designer to determine how best to achieve compliance for a given site or building condition. The code also requires building commissioning, which is a process for verifying that all building systems (e.g., heating and cooling equipment and lighting systems) are functioning at their maximum efficiency.

The CALGreen Code provides standards for bicycle parking, carpool/vanpool/electric vehicle spaces, light and glare reduction, grading and paving, energy efficient appliances, renewable energy, graywater systems, water efficient plumbing fixtures, recycling and recycled materials, pollutant controls (including moisture control and indoor air quality), acoustical controls, storm water management, building design, insulation, flooring, and framing, among others. Implementation of the CALGreen Code measures reduces energy consumption and vehicle trips and encourages the use of alternative-fuel vehicles, which reduces pollutant emissions.

Some of the notable changes in the 2022 CalGreen Code over the prior 2019 CalGreen Code for nonresidential development mandatory requirements include repeal of the designated parking spaces for clean air vehicles, an increase in the number of electric vehicle (EV) ready parking spaces and a new requirement for installed Level 2 or DCFC EV charging stations for autos and added EV charging readiness requirements to loading docks, enhanced thermal insulation requirements, and acoustical ceilings are now required.

Senate Bill 1020

Senate Bill 1020 (SB 1020) was adopted September 16, 2022 and would speed up the timeline retail electricity is supplied by renewable energy sources over the prior adoption timelines provided in SB 100, SB 350, SB 1078, SB 107, and SB X1-2. SB 1020 requires that retail sales of electricity are from renewable energy resources and zero-carbon resources supply 90 percent by December 31, 2035, 95 percent by December 31, 2040, and 100 percent by December 31, 2045.

Executive Order N-79-20

The California Governor issued Executive Order N-79-20 on September 23, 2020 that requires all new passenger cars and trucks and commercial drayage trucks sold in California to be zero-emissions by the year 2035 and all medium- heavy-duty vehicles (commercial trucks) sold in the state to be zero-emission by 2045 for all operations where feasible. Executive Order N-79-20 also requires all off-road vehicles and equipment to transition to 100 percent zero-emission equipment, where feasible by 2035.

Executive Order B-48-18 and Assembly Bill 2127

The California Governor issued Executive Order B-48-18 on January 26, 2018 that orders all state entities to work with the private sector to put at least five million zero-emission vehicles on California roads by 2030 and to install 200 hydrogen fueling stations and 250,000 electric vehicle chargers by 2025. Currently there are approximately 350,000 electric vehicles operating in California, which represents approximately

1.5 percent of the 24 million vehicles total currently operating in California. Implementation of Executive Order B-48-18 would result in approximately 20 percent of all vehicles in California to be zero emission electric vehicles. Assembly Bill 2127 (AB 2127) was codified into statute on September 13, 2018 and requires that the CEC working with CARB prepare biannual assessments of the statewide electric vehicle charging infrastructure needed to support the levels of zero emission vehicle adoption required for the State to meet its goals of putting at least 5 million zero-emission vehicles on California roads by 2030.

Assembly Bill 1109

California Assembly Bill 1109 (AB 1109) was adopted October 2007, also known as the Lighting Efficiency and Toxics Reduction Act, prohibits the manufacturing of lights after January 1, 2010 that contain levels of hazardous substances prohibited by the European Union pursuant to the RoHS Directive. AB 1109 also requires reductions in energy usage for lighting and is structured to reduce lighting electrical consumption by: (1) At least 50 percent reduction from 2007 levels for indoor residential lighting; and (2) At least 25 percent reduction from 2007 levels for indoor commercial and all outdoor lighting by 2018. AB 1109 would reduce GHG emissions through reducing the amount of electricity required to be generated by fossil fuels in California.

Assembly Bill 1493

California Assembly Bill 1493 (also known as the Pavley Bill, in reference to its author Fran Pavley) was enacted on July 22, 2002 and required CARB to develop and adopt regulations that reduce GHGs emitted by passenger vehicles and light duty trucks. In 2004, CARB approved the "Pavley I" regulations limiting the amount of GHGs that may be released from new passenger automobiles that are being phased in between model years 2009 through 2016. These regulations will reduce GHG emissions by 30 percent from 2002 levels by 2016. In June 2009, the EPA granted California the authority to implement GHG emission reduction standards for light duty vehicles, in September 2009, amendments to the Pavley I regulations were adopted by CARB and implementation of the "Pavley I" regulations started in 2009.

The second set of regulations "Pavley II" was developed in 2010, and is being phased in between model years 2017 through 2025 with the goal of reducing GHG emissions by 45 percent by the year 2020 as compared to the 2002 fleet. The Pavley II standards were developed by linking the GHG emissions and formerly separate toxic tailpipe emissions standards previously known as the "LEV III" (third stage of the Low Emission Vehicle standards) into a single regulatory framework. The new rules reduce emissions from gasoline-powered cars as well as promote zero-emissions auto technologies such as electricity and hydrogen, and through increasing the infrastructure for fueling hydrogen vehicles. In 2009, the U.S. EPA granted California the authority to implement the GHG standards for passenger cars, pickup trucks and sport utility vehicles and these GHG emissions standards are currently being implemented nationwide.

The EPA has performed a midterm evaluation of the longer-term standards for model years 2022-2025, and based on the findings of this midterm evaluation, the EPA proposed The Safer Affordable Fuel Efficient (SAFE) Vehicles Proposed Rule for Model Years 2021-2026 that amends the corporate average fuel economy (CAFE) and GHG emissions standards for light vehicles for model years 2021 through 2026. The SAFE Vehicles Rule were made effective on June 29, 2020.

5.2 Local – County of Riverside

The applicable energy plan for the proposed project is the *County of Riverside General Plan 2035*, Revised July 17, 2018. The applicable energy-related policies in the General Plan for the proposed project are shown in Table E.

Table E – Applicable County of Riverside General Plan Energy-Related Policies

Policy No.	General Plan Policy
AQ 4.1	Require the use of all feasible building materials/ methods which reduce emissions.
AQ 4.2	Require the use of all feasible efficient heating equipment and other appliances, such as water heaters, swimming pool heaters, cooking equipment, refrigerators, furnaces and boiler units.
AQ 4.3	Require centrally heated facilities to utilize automated time clocks or occupant sensors to control heating where feasible.
AQ 4.4	Require residential building construction to comply with energy use guidelines detailed in Part 6 (California Energy Code) and/or Part 11 (California Green Building Standards Code) of Title 24 of the California Code of Regulations.
AQ 5.4	Encourage the incorporation of energy-efficient design elements, including appropriate site orientation and the use of shade and windbreak trees to reduce fuel consumption for heating and cooling.
AQ 20.7	Reduce VMT through increased densities in urban centers and encouraging emphasis on mixed use to provide residential, commercial and employment opportunities in closer proximity to each other. Such measures will also support achieving the appropriate jobs-housing balance within the communities. (AI 47, 53, 117, 146)
AQ 20.8	Reduce VMT by increasing options for non-vehicular access through urban design principles that promote higher residential densities with easily accessible parks and recreation opportunities nearby. (AI 115, 117, 146)
AQ 20.9	Reduce urban sprawl in order to minimize energy costs associated with infrastructure construction and transmission to distant locations, and to maximize protection of open space. (AI 26)
AQ 20.10	Reduce energy consumption of the new developments (residential, commercial and industrial) through efficient site design that takes into consideration solar orientation and shading, as well as passive solar design. (AI 147)
AQ 20.11	Increase energy efficiency of the new developments through efficient use of utilities (water, electricity, natural gas) and infrastructure design. Also, increase energy efficiency through use of energy efficient mechanical systems and equipment. (AI 147)
AQ 20.18	Encourage the installation of solar panels and other energy-efficient improvements and facilitate residential and commercial renewable energy facilities (solar array installations, individual wind energy generators, etc.). (AI 147)

Source: County of Riverside, 2018.

6.0 GLOBAL CLIMATE CHANGE MANAGEMENT

The regulatory setting related to global climate change is addressed through the efforts of various international, federal, state, regional, and local government agencies. These agencies work jointly, as well as individually, to reduce GHG emissions through legislation, regulations, planning, policy-making, education, and a variety of programs. The agencies responsible for global climate change regulations are discussed below.

6.1 International

In 1988, the United Nations established the IPCC to evaluate the impacts of global climate change and to develop strategies that nations could implement to curtail global climate change. In 1992, the United States joined other countries around the world in signing the United Nations' Framework Convention on Climate Change (UNFCCC) agreement with the goal of controlling GHG emissions. The parties of the UNFCCC adopted the Kyoto Protocol, which set binding GHG reduction targets for 37 industrialized countries, the objective of reducing their collective GHG emissions by five percent below 1990 levels by 2012. The Kyoto Protocol has been ratified by 182 countries, but has not been ratified by the United States. It should be noted that Japan and Canada opted out of the Kyoto Protocol and the remaining developed countries that ratified the Kyoto Protocol have not met their Kyoto targets. The Kyoto Protocol expired in 2012 and the amendment for the second commitment period from 2013 to 2020 has not yet entered into legal force. The Parties to the Kyoto Protocol negotiated the Paris Agreement in December 2015, agreeing to set a goal of limiting global warming to less than 2 degrees Celsius compared with pre-industrial levels. The Paris Agreement has been adopted by 195 nations with 147 ratifying it, including the United States by President Obama, who ratified it by Executive Order on September 3, 2016. On June 1, 2017, President Trump announced that the United States is withdrawing from the Paris Agreement and on January 21, 2021 President Biden signed an executive order rejoining the Paris Agreement.

Additionally, the Montreal Protocol was originally signed in 1987 and substantially amended in 1990 and 1992. The Montreal Protocol stipulates that the production and consumption of compounds that deplete ozone in the stratosphere—CFCs, halons, carbon tetrachloride, and methyl chloroform—were to be phased out, with the first three by the year 2000 and methyl chloroform by 2005.

6.2 Federal – United States Environmental Protection Agency

The United States Environmental Protection Agency (EPA) is responsible for implementing federal policy to address global climate change. The Federal government administers a wide array of public-private partnerships to reduce U.S. GHG intensity. These programs focus on energy efficiency, renewable energy, methane, and other non-CO_2 gases, agricultural practices and implementation of technologies to achieve GHG reductions. EPA implements several voluntary programs that substantially contribute to the reduction of GHG emissions.

In Massachusetts v. Environmental Protection Agency (Docket No. 05–1120), argued November 29, 2006 and decided April 2, 2007, the U.S. Supreme Court held that not only did the EPA have authority to regulate greenhouse gases, but the EPA's reasons for not regulating this area did not fit the statutory requirements. As such, the U.S. Supreme Court ruled that the EPA should be required to regulate CO2 and other greenhouse gases as pollutants under the federal Clean Air Act (CAA).

In response to the FY2008 Consolidations Appropriations Act (H.R. 2764; Public Law 110-161), EPA proposed a rule on March 10, 2009 that requires mandatory reporting of GHG emissions from large sources in the United States. On September 22, 2009, the Final Mandatory Reporting of GHG Rule was signed and published in the Federal Register on October 30, 2009. The rule became effective on December 29, 2009. This rule requires suppliers of fossil fuels or industrial GHGs, manufacturers of vehicles and engines, and facilities that emit 25,000 metric tons or more per year of GHG emissions to submit annual reports to EPA.

On December 7, 2009, the EPA Administrator signed two distinct findings under section 202(a) of the Clean Air Act. One is an endangerment finding that finds concentrations of the six GHGs in the atmosphere threaten the public health and welfare of current and future generations. The other is a cause or contribute finding, that finds emissions from new motor vehicles and new motor vehicle engines contribute to the GHG pollution which threatens public health and welfare. These actions did not impose any requirements on industry or other entities, however, since 2009 the EPA has been providing GHG emission standards for vehicles and other stationary sources of GHG emissions that are regulated by the EPA. On September 13, 2013 the EPA Administrator signed 40 CFR Part 60, that limits emissions from new sources to 1,100 pounds of CO_2 per mega-watt hour (MWh) for fossil fuel-fired utility boilers and 1,000 pounds of CO_2 per MWh for large natural gas-fired combustion units.

On August 3, 2015, the EPA announced the Clean Power Plan, emissions guidelines for U.S. states to follow in developing plans to reduce GHG emissions from existing fossil fuel-fired power plants (Federal Register Vol. 80, No. 205, October 23 2015). On October 11, 2017, the EPA issued a formal proposal to repeal the Clean Power Plan and on June 19, 2019 the EPA replaced the Clean Power Plan with the Affordable Clean Energy rule that is anticipated to lower power sector GHG emissions by 11 million tons by the year 2030.

On April 30, 2020, the EPA and the National Highway Safety Administration published the Final Rule for the *Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule for Model Years 2021-2026 Passenger Cars and Light Trucks* (SAFE Vehicles Rule). Part One of the Rule revokes California's authority to set its own GHG emissions standards and zero-emission vehicle mandates in California, which results in one emission standard to be used nationally for all passenger cars and light trucks that is set by the EPA.

6.3 State

The CARB has the primary responsible for implementing state policy to address global climate change, however there are State regulations related to global climate change that affect a variety of State agencies. CARB, which is a part of the California Environmental Protection Agency, is responsible for the coordination and administration of both the federal and state air pollution control programs within California. In this capacity, the CARB conducts research, sets California Ambient Air Quality Standards (CAAQS), compiles emission inventories, develops suggested control measures, provides oversight of local programs, and prepares the SIP. In addition, the CARB establishes emission standards for motor vehicles sold in California, consumer products (e.g. hairspray, aerosol paints, and barbeque lighter fluid), and various types of commercial equipment. It also sets fuel specifications to further reduce vehicular emissions.

In 2008, CARB approved a Climate Change Scoping Plan that proposes a "comprehensive set of actions designed to reduce overall carbon GHG emissions in California, improve our environment, reduce our dependence on oil, diversify our energy sources, save energy, create new jobs, and enhance public health" (CARB 2008). The Climate Change Scoping Plan has a range of GHG reduction actions which include direct

regulations; alternative compliance mechanisms; monetary and non-monetary incentives; voluntary actions; market-based mechanisms such as a cap-and-trade system. In 2014, CARB approved the First Update to the Climate Change Scoping Plan (CARB, 2014) that identifies additional strategies moving beyond the 2020 targets to the year 2050. On December 14, 2017 CARB adopted the California's 2017 Climate Change Scoping Plan, November 2017 (CARB, 2017) that provides specific statewide policies and measures to achieve the 2030 GHG reduction target of 40 percent below 1990 levels by 2030 and the aspirational 2050 GHG reduction target of 80 percent below 1990 levels by 2050. On December 15, 2022, CARB adopted the *2022 Scoping Plan for Achieving Carbon Neutrality,* November 16, 2022 (CARB, 2022) that lays out a path to achieve targets for carbon neutrality and reduce anthropogenic GHG emissions by 85 percent below 1990 levels no later than 2045, as directed by Assembly Bill 1279.

Senate Bill 1020

SB 1020 requires that by December 1, 2045 that 100 percent of retail sales of electricity to be generated from renewable or zero-carbon emission sources of electricity and is described in more detail above in Section 5.1 under Energy Conservation Management.

Executive Order B-55-18 and Assembly Bill 1279

The California Governor issued Executive Order B-55-18 in September 2018 that establishes a new statewide goal to achieve carbon neutrality as soon as possible, but no later than 2045. This executive order directs the CARB to work with relevant State agencies to develop a framework for implementation and accounting that tracks progress toward this goal as well as ensuring future scoping plans identify and recommend measures to achieve this carbon neutrality goal. Assembly Bill 1279 was passed by the legislature in September 2022 that codifies the carbon neutrality targets provided in Executive Order B-55-18. The *2022 Scoping Plan for Achieving Carbon Neutrality,* adopted by CARB on December 16, 2022, was prepared in order to meet the carbon neutrality goal targets developed in Executive Order B-55-18 and codified in Assembly Bill 1279.

Executive Order N-79-20

EO N-79-20 establish targets for when all new vehicles and equipment are zero-emission and is described in more detail above in Section 5.1 under Energy Conservation Management.

California Code of Regulations (CCR) Title 24, Part 6

The Title 24 Part 6 standards have been developed by the CEC primarily for energy conservation and is described in more detail above in Section 5.1 under Energy Conservation Management. It should be noted that implementation of the Title 24 Part 6 building standards would also reduce GHG emissions, since energy usage is the primary source of human generated GHG emissions.

California Code of Regulations (CCR) Title 24, Part 11

The CalGreen Building standards have been developed by the CEC primarily for energy conservation and is described in more detail above in Section 5.1 under Energy Conservation Management. It should be noted that implementation of the CalGreen Building standards would also reduce GHG emissions, since energy usage is the primary source of human generated GHG emissions.

Executive Order B-48-18 and Assembly Bill 2127

Executive Order B-48-18 and AB 2127 provides measures to put at least five million zero-emission vehicles on California roads by 2030 and to install 200 hydrogen fueling stations and 250,000 electric vehicle

chargers by 2025 and is described in more detail above in Section 5.1 under Energy Conservation Management.

Executive Order B-30-15, Senate Bill 32 and Assembly Bill 197

The California Governor issued Executive Order B-30-15 on April 29, 2015 that aims to reduce California's GHG emissions 40 percent below 1990 levels by 2030. This executive order aligns California's GHG reduction targets with those of other international governments, such as the European Union that set the same target for 2030 in October, 2014. This target will make it possible to reach the ultimate goal of reducing GHG emissions 80 percent under 1990 levels by 2050 that is based on scientifically established levels needed in the U.S.A to limit global warming below 2 degrees Celsius – the warming threshold at which scientists say there will likely be major climate disruptions such as super droughts and rising sea levels. Assembly Bill 197 (AB 197) (September 8, 2016) and Senate Bill 32 (SB 32) (September 8, 2016) codified into statute the GHG emissions reduction targets of at least 40 percent below 1990 levels by 2030 as detailed in Executive Order B-30-15. AB 197 also requires additional GHG emissions reporting that is broken down to sub-county levels and requires CARB to consider the social costs of emissions impacting disadvantaged communities.

Executive Order B-29-15

The California Governor issued Executive Order B-29-15 on April 1, 2015 and directed the State Water Resources Control Board to impose restrictions to achieve a statewide 25% reduction in urban water usage and directed the Department of Water Resources to replace 50 million square feet of lawn with drought tolerant landscaping through an update to the State's Model Water Efficient Landscape Ordinance. The Ordinance also requires installation of more efficient irrigation systems, promotion of greywater usage and onsite stormwater capture, and limits the turf planted in new residential landscapes to 25 percent of the total area and restricts turf from being planted in median strips or in parkways unless the parkway is next to a parking strip and a flat surface is required to enter and exit vehicles. Executive Order B-29-15 would reduce GHG emissions associated with the energy used to transport and filter water.

Assembly Bill 341 and Senate Bills 939 and 1374

Senate Bill 939 (SB 939) requires that each jurisdiction in California to divert at least 50 percent of its waste away from landfills, whether through waste reduction, recycling or other means. Senate Bill 1374 (SB 1374) requires the California Integrated Waste Management Board to adopt a model ordinance by March 1, 2004 suitable for adoption by any local agency to require 50 to 75 percent diversion of construction and demolition of waste materials from landfills. Assembly Bill 341 (AB 341) was adopted in 2011 and builds upon the waste reduction measures of SB 939 and 1374, and sets a new target of a 75 percent reduction in solid waste generated by the year 2020.

Senate Bill 375

Senate Bill 375 (SB 375) was adopted September 2008 in order to support the State's climate action goals to reduce GHG emissions through coordinated regional transportation planning efforts, regional GHG emission reduction targets, and land use and housing allocation. SB 375 requires CARB to set regional targets for GHG emissions reductions from passenger vehicle use. In 2010, CARB established targets for 2020 and 2035 for each Metropolitan Planning Organizations (MPO) within the State. It was up to each MPO to adopt a sustainable communities strategy (SCS) that will prescribe land use allocation in that MPOs Regional Transportation Plan (RTP) to meet CARB's 2020 and 2035 GHG emission reduction targets. These reduction targets are required to be updated every eight years and the most current targets are detailed at: https://ww2.arb.ca.gov/our-work/programs/sustainable-communities-program/regional-

plan-targets, which provides GHG emissions reduction targets for SCAG of 8 percent by 2020 and 19 percent by 2035.

The Connect SoCal 2024 provides a 2035 GHG emission reduction target of 19 percent reduction over the 2005 per capita emissions levels. The Connect SoCal 2024 include new initiatives of land use, transportation and technology to meet the 19 percent GHG emission reduction target for 2035. CARB is also charged with reviewing SCAG's RTP/SCS for consistency with its assigned targets.

City and County land use policies, including General Plans, are not required to be consistent with the RTP and associated SCS. However, new provisions of CEQA incentivize, through streamlining and other provisions, qualified projects that are consistent with an approved SCS and categorized as "transit priority projects."

Assembly Bill 1109

AB 1109 requires reductions in energy usage for lighting and is described in more detail above in Section 5.1 under Energy Conservation Management.

Executive Order S-1-07

Executive Order S-1-07 was issued in 2007 and proclaims that the transportation sector is the main source of GHG emissions in the State, since it generates more than 40 percent of the State's GHG emissions. It establishes a goal to reduce the carbon intensity of transportation fuels sold in the State by at least ten percent by 2020. This Executive Order also directs CARB to determine whether this Low Carbon Fuel Standard (LCFS) could be adopted as a discrete early-action measure as part of the effort to meet the mandates in AB 32.

In 2009 CARB approved the proposed regulation to implement the LCFS. The standard was challenged in the courts, but has been in effect since 2011 and was re-approved by the CARB in 2015. The LCFS is anticipated to reduce GHG emissions by about 16 MMT per year by 2020. The LCFS is designed to provide a framework that uses market mechanisms to spur the steady introduction of lower carbon fuels. The framework establishes performance standards that fuel producers and importers must meet annually. Reformulated gasoline mixed with corn-derived ethanol and low-sulfur diesel fuel represent the baseline fuels. Lower carbon fuels may be ethanol, biodiesel, renewable diesel, or blends of these fuels with gasoline or diesel. Compressed natural gas and liquefied natural gas also may be low-carbon fuels. Hydrogen and electricity, when used in fuel cells or electric vehicles, are also considered as low-carbon fuels.

Senate Bill 97

Senate Bill 97 (SB 97) was adopted August 2007 and acknowledges that climate change is a prominent environmental issue that requires analysis under CEQA. SB 97 directed the Governor's Office of Planning and Research (OPR), which is part of the State Natural Resources Agency, to prepare, develop, and transmit to CARB guidelines for the feasible mitigation of GHG emissions or the effects of GHG emissions, as required by CEQA, by July 1, 2009. The Natural Resources Agency was required to certify and adopt those guidelines by January 1, 2010.

Pursuant to the requirements of SB 97 as stated above, on December 30, 2009 the Natural Resources Agency adopted amendments to the State CEQA guidelines that addresses GHG emissions. The CEQA Guidelines Amendments changed 14 sections of the CEQA Guidelines and incorporated GHG language

throughout the Guidelines. However, no GHG emissions thresholds of significance were provided and no specific mitigation measures were identified. The GHG emission reduction amendments went into effect on March 18, 2010 and are summarized below:

- Climate Action Plans and other greenhouse gas reduction plans can be used to determine whether a project has significant impacts, based upon its compliance with the plan.
- Local governments are encouraged to quantify the GHG emissions of proposed projects, noting that they have the freedom to select the models and methodologies that best meet their needs and circumstances. The section also recommends consideration of several qualitative factors that may be used in the determination of significance, such as the extent to which the given project complies with state, regional, or local GHG reduction plans and policies. OPR does not set or dictate specific thresholds of significance. Consistent with existing CEQA Guidelines, OPR encourages local governments to develop and publish their own thresholds of significance for GHG impacts assessment.
- When creating their own thresholds of significance, local governments may consider the thresholds of significance adopted or recommended by other public agencies, or recommended by experts.
- New amendments include guidelines for determining methods to mitigate the effects of GHG emissions in Appendix F of the CEQA Guidelines.
- OPR is clear to state that "to qualify as mitigation, specific measures from an existing plan must be identified and incorporated into the project; general compliance with a plan, by itself, is not mitigation."
- OPR's emphasizes the advantages of analyzing GHG impacts on an institutional, programmatic level. OPR therefore approves tiering of environmental analyses and highlights some benefits of such an approach.
- Environmental impact reports must specifically consider a project's energy use and energy efficiency potential.

Assembly Bill 32

In 2006, the California State Legislature adopted AB 32, the California Global Warming Solutions Act of 2006. AB 32 requires CARB, to adopt rules and regulations that would achieve GHG emissions equivalent to statewide levels in 1990 by 2020 through an enforceable statewide emission cap which will be phased in starting in 2012. Emission reductions shall include carbon sequestration projects that would remove carbon from the atmosphere and utilize best management practices that are technologically feasible and cost effective. In 2007 CARB released the calculated Year 1990 GHG emissions of 431 $MMTCO_2e$. The 2020 target of 431 $MMTCO_2e$ requires the reduction of 78 $MMTCO_2e$, or approximately 16 percent from the State's projected 2020 business as usual emissions of 509 $MMTCO_2e$ (CARB, 2014). Under AB 32, CARB was required to adopt regulations by January 1, 2011 to achieve reductions in GHGs to meet the 1990 cap by 2020. The CARB has adopted a series of Scoping Plans that are described above, in order to meet the GHG reduction goals provided in AB 32.

Assembly Bill 1493

AB 1493 or the Pavley Bill sets tailpipe GHG emissions limits for passenger vehicles in California as well as fuel economy standards and is described in more detail above in Section 5.1 under Energy Conservation Management.

6.4 Regional – Southern California

The SCAQMD is the agency principally responsible for comprehensive air pollution control in the Air Basin. To that end, as a regional agency, the SCAQMD works directly with SCAG, county transportation commissions, and local governments and cooperates actively with all federal and state agencies.

South Coast Air Quality Management District

SCAQMD develops rules and regulations, establishes permitting requirements for stationary sources, inspects emission sources, and enforces such measures through educational programs or fines, when necessary. SCAQMD is directly responsible for reducing emissions from stationary, mobile, and indirect sources. The SCAQMD is also responsible for GHG emissions for projects where it is the lead agency. However, for other projects in the Air Basin where it is not the lead agency, it is limited to providing resources to other lead agencies in order to assist them in determining GHG emission thresholds and GHG reduction measures. In order to assist local agencies with direction on GHG emissions, the SCAQMD organized a working group, which is described below.

SCAQMD Working Group

Since neither CARB nor the OPR has developed GHG emissions threshold, the SCAQMD formed a Working Group to develop significance thresholds related to GHG emissions. At the September 28, 2010 Working Group meeting, the SCAQMD released its most current version of the draft GHG emissions thresholds, which recommends a tiered approach that either provides a quantitative annual thresholds of 3,500 $MTCO_2e$ for residential uses, 1,400 $MTCO_2e$ for commercial uses, and 3,000 $MTCO_2e$ for mixed uses. An alternative annual threshold of 3,000 $MTCO_2e$ for all land use types is also proposed.

Southern California Association of Governments

As detailed above in Section 4.3, the current applicable RTP/SCS for the project area region is the Connect SoCal 2024 and 2025 FTIP, which have been prepared to meet the GHG emissions reduction targets set by SB 375 for the SCAG region of 19 percent reduction over the 2005 per capita emissions levels. The Connect SoCal 2024 includes new land use, transportation, and technology strategies to meet the new 19 percent GHG emission reduction target for 2035.

Although the Connect SoCal 2024 and 2025 FTIP are primarily planning documents for future transportation projects, a key component of these plans are to integrate land use planning with transportation planning that promotes higher density infill development in close proximity to existing transit service. These plans form the basis for the land use and transportation components of the 2022 AQMP, which are utilized in the preparation of air quality forecasts and in the consistency analysis included in the 2022 AQMP. The Connect SoCal 2024, 2025 FTIP, and 2022 AQMP are based on projections originating within the City and County General Plans.

6.5 Local – County of Riverside

Local jurisdictions, such as the County of Riverside, have the authority and responsibility to reduce GHG emissions through their police power and decision-making authority. Specifically, the County is responsible for the assessment and mitigation of GHG emissions resulting from its land use decisions. In accordance with CEQA requirements and the CEQA review process, the County assesses the global climate change potential of new development projects, requires mitigation of potentially significant global climate change impacts by conditioning discretionary permits, and monitors and enforces implementation of such mitigation.

County of Riverside General Plan

The *County of Riverside General Plan*, Revised July 17, 2018, provides the following GHG emissions-related goals and policies that are applicable to the proposed project.

GHG Emissions Reduction Focus Areas

Policy AQ-20.1: Reduce VMT by requiring expanded multi-modal facilities and services that provide transportation alternatives, such as transit, bicycle and pedestrian modes. Improve connectivity of the multi-modal facilities by providing linkages between various uses in the developments.

Policy AQ-20.5: Reduce emissions from standard gasoline vehicles, through VMT, by requiring all new residential units to install circuits and provide capacity for electric vehicle charging stations.

Policy AQ-20.10: Reduce energy consumption of the new developments (residential, commercial and industrial) through efficient site design that takes into consideration solar orientation and shading, as well as passive solar design.

Policy AQ-20.14: Reduce the amount of water used for landscaping irrigation through implementation of County Ordinance 859 and increase use of non-potable water.

Policy AQ-20.18: Encourage the installation of solar panels and other energy-efficient improvements and facilitate residential and commercial renewable energy facilities (solar array installations, individual wind energy generators, etc.).

Policy AQ-20.20: Reduce the amount of solid waste generation by increasing solid waste recycle, maximizing waste diversion, and composting for residential and commercial generators. Reduction in decomposable organic solid waste will reduce the methane emissions at County landfills.

County of Riverside Climate Action Plan

The County of Riverside has adopted the *County of Riverside Climate Action Plan* (CAP) that was revised November 2019 (County of Riverside, 2019). The CAP was updated in 2019 in order to bring the CAP in conformance with SB 32 and AB 197 that set a statewide 2030 goal of reducing GHG emissions to 40 percent below 1990 levels by 2030. The CAP meets the requirements of State CEQA Guidelines 15183.5(b)(1) for a qualified GHG emissions reduction plan. The CAP has developed a process for determining significance of greenhouse gas impacts from new development projects that includes (1) apply an emissions level that is determined to be less than significant for small projects, and (2) utilizing Screening Tables to mitigate project greenhouse gas emissions that exceed the threshold level. The CAP has provide a threshold of 3,000 $MTCO_2e$ per year used to identify projects that require the use of Screening Tables or a project-specific technical analysis to quantify and mitigate project emissions.

The CAP was developed in compliance with AB 32 and meets the CEQA Guideline requirements to fulfill cumulative mitigation for GHG emissions. Each mitigation measure provided in the CAP Screening Tables is assigned a point value and according to the document, if a project garners at least 100 points, it will be consistent with the reduction quantities anticipated in the County's CAP.

7.0 ATMOSPHERIC SETTING

7.1 South Coast Air Basin

The project site is located within western Riverside County, which is part of the South Coast Air Basin (Air Basin) that includes the non-desert portions of Riverside, San Bernardino, and Los Angeles Counties and all of Orange County. The Air Basin is located on a coastal plain with connecting broad valleys and low hills to the east. Regionally, the Air Basin is bounded by the Pacific Ocean to the southwest and high mountains to the east forming the inland perimeter.

7.2 Local Climate

The climate of western Riverside County, technically called an interior valley subclimate of the Southern California's Mediterranean-type climate, is characterized by hot dry summers, mild moist winters with infrequent rainfall, moderate afternoon breezes, and generally fair weather. Occasional periods of strong Santa Ana winds and winter storms interrupt the otherwise mild weather pattern. The clouds and fog that form along the area's coastline rarely extend as far inland as western Riverside County. When morning clouds and fog form, they typically burn off quickly after sunrise. The most important weather pattern from an air quality perspective is associated with the warm season airflow across the densely populated areas located west of the project site. This airflow brings polluted air into western Riverside County late in the afternoon. This transport pattern creates unhealthful air quality that may extend to the project site particularly during the summer months.

Winds are an important parameter in characterizing the air quality environment of a project site because they both determine the regional pattern of air pollution transport and control the rate of dispersion near a source. Daytime winds in western Riverside County are usually light breezes from off the coast as air moves regionally onshore from the cool Pacific Ocean to the warm Mojave Desert interior of Southern California. These winds allow for good local mixing, but as discussed above, these coastal winds carry significant amounts of industrial and automobile air pollutants from the densely urbanized western portion of the Air Basin into the interior valleys which become trapped by the mountains that border the eastern and northern edges of the Air Basin.

In the summer, strong temperature inversions may occur that limit the vertical depth through which air pollution can be dispersed. Air pollutants concentrate because they cannot rise through the inversion layer and disperse. These inversions are more common and persistent during the summer months. Over time, sunlight produces photochemical reactions within this inversion layer that creates ozone, a particularly harmful air pollutant. Occasionally, strong thermal convections occur which allows the air pollutants to rise high enough to pass over the mountains and ultimately dilute the smog cloud.

In the winter, light nocturnal winds result mainly from the drainage of cool air off of the mountains toward the valley floor while the air aloft over the valley remains warm. This forms a type of inversion known as a radiation inversion. Such winds are characterized by stagnation and poor local mixing and trap pollutants such as automobile exhaust near their source. While these inversions may lead to air pollution "hot spots" in heavily developed coastal areas of the Air Basin, there is not enough traffic in inland valleys to cause any winter air pollution problems. Despite light wind conditions, especially at night and in the early morning, winter is generally a period of good air quality in the project vicinity.

The temperature and precipitation levels for the Riverside Fire Station No. 3 Monitoring Station, which is located approximately six miles north of the project site and is the nearest weather station to the project site with historical data are shown below in Table F. Table F shows that July is typically the warmest month and January is typically the coolest month. Rainfall in the project area varies considerably in both time and space. Almost all the annual rainfall comes from the fringes of mid-latitude storms from late November to early April, with summers being almost completely dry.

Table F – Monthly Climate Data

Month	Average Maximum Temperature (°F)	Average Minimum Temperature (°F)	Average Total Precipitation (inches)
January	66.8	39.1	2.01
February	68.3	41.1	2.20
March	71.3	43.2	1.84
April	75.6	46.7	0.77
May	80.0	51.1	0.23
June	87.0	54.8	0.05
July	94.2	59.5	0.04
August	94.4	59.6	0.13
September	90.9	56.2	0.19
October	82.9	50.0	0.44
November	74.5	42.8	0.84
December	67.8	39.2	1.46
Annual	**79.5**	**48.6**	**10.21**

Source: https://wrcc.dri.edu/cgi-bin/cliMAIN.pl?ca7470

7.3 Monitored Local Air Quality

The air quality at any site is dependent on the regional air quality and local pollutant sources. Regional air quality is determined by the release of pollutants throughout the Air Basin. Improvements in cleaner technology and strict regulations have reduced ozone levels since its peak in the mid-twentieth century. However, ozone levels have remained unacceptably high over the past decade despite significant reductions. This trend is due to the changes in climate and other weather conditions such as the increase in hot, stagnant days that can lead to the formation of ozone that we have experienced in recent years. (SCAQMD, 2022).

SCAQMD has divided the Air Basin into 38 air-monitoring areas. The project site is located in Air Monitoring Area 23, which covers Metropolitan Riverside County, with the southern boundary aligned with El Sobrante Road. The nearest air monitoring station to the project site is the Mira Loma Van Buren Monitoring Station (Mira Loma Station), which is located approximately 9.5 miles north of the project site at 5130 Poinsettia Place, Jurupa Valley. However, it should be noted that due to the air monitoring station's distance from the project site, recorded air pollution levels at the Mira Loma Station reflect with varying degrees of accuracy, local air quality conditions at the project site. Table G shows that ozone and particulate matter (PM10 and PM2.5) are the air pollutants of primary concern in the project area, which are detailed below:

Table G – Local Area Air Quality Monitoring Summary

Pollutant (Standard)	Year[1] 2021	2022	2023
Ozone:			
Maximum 1-Hour Concentration (ppm)	0.116	0.120	0.129
Days > CAAQS (0.09 ppm)	**20**	**19**	**39**
Maximum 8-Hour Concentration (ppm)	0.094	0.094	0.102
Days > NAAQS (0.070 ppm)	**53**	**57**	**59**
Days > CAAQs (0.070 ppm)	**59**	**58**	**65**
Nitrogen Dioxide:			
Maximum 1-Hour Concentration (ppb)	53.3	47.4	48.4
Days > NAAQS (100 ppb)	0	0	0
Days > CAAQS (180 ppb)	0	0	0
Inhalable Particulates (PM10):			
Maximum 24-Hour National Measurement (ug/m^3)	98.7	81.6	118.7
Days > NAAQS (150 ug/m^3)	0	0	0
Days > CAAQS (50 ug/m^3)	**15**	**11**	**6**
Annual Arithmetic Mean (AAM) (ug/m^3)	40.8	37.3	22.4
Annual > NAAQS (50 ug/m^3)	No	No	No
Annual > CAAQS (20 ug/m^3)	**Yes**	**Yes**	**Yes**
Ultra-Fine Particulates (PM2.5):			
Maximum 24-Hour National Measurement (ug/m^3)	85.1	32.1	69.0
Days > NAAQS (35 ug/m^3)	**14**	0	**4**
Annual Arithmetic Mean (AAM) (ug/m^3)	14.1	11.4	11.7
Annual > NAAQS and CAAQS (12 ug/m^3)	**Yes**	No	No

Notes: Exceedances are listed in **bold.** CAAQS = California Ambient Air Quality Standard; NAAQS = National Ambient Air Quality Standard; ppm = parts per million; ppb = parts per billion; ND = no data available.
[1] Data obtained from the Mira Loma Station.
Source: http://www.arb.ca.gov/adam/

Ozone

The State 1-hour concentration standard for ozone has been exceeded between 19 and 39 days each year over the past three years at the Mira Loma Station. The State 8-hour ozone standard has been exceeded between 58 and 65 days each year over the past three years at the Mira Loma Station. The Federal 8-hour ozone standard has been exceeded between 53 and 59 days each year over the past three years at the Mira Loma Station.

Ozone is a secondary pollutant as it is not directly emitted. Ozone is the result of chemical reactions between other pollutants, most importantly hydrocarbons and NO_2, which occur only in the presence of bright sunlight. Pollutants emitted from upwind cities react during transport downwind to produce the oxidant concentrations experienced in the area. Many areas of Southern California contribute to the

ozone levels experienced at this monitoring station, with the more significant areas being those directly upwind.

Nitrogen Dioxide

The Mira Loma Station did not record an exceedance of either the Federal or State 1-hour NO_2 standards for the last three years.

Particulate Matter

The State 24-hour concentration standard for PM10 has been exceeded between six and 15 days each year over the past three years at the Mira Loma Station. Over the past three years the Federal 24-hour standard for PM10 has not been exceeded at the Mira Loma Station. The annual PM10 concentration at the Mira Loma Station has exceeded the State standard for the past three years and has not exceeded the Federal standard over the past three years.

The Federal 24-hour concentration standard for PM2.5 has been exceeded between zero and 14 days each year over the past three years at the Mira Loma Station. The annual PM2.5 concentration exceeded both the State and Federal standard for one of the past three years at the Mira Loma Station. Particulate levels in the area are due to natural sources, grading operations, and motor vehicles.

According to the EPA, some people are much more sensitive than others to breathing fine particles (PM10 and PM2.5). People with influenza, chronic respiratory and cardiovascular diseases, and the elderly may suffer worsening illness and premature death due to breathing these fine particles. People with bronchitis can expect aggravated symptoms from breathing in fine particles. Children may experience decline in lung function due to breathing in PM10 and PM2.5. Other groups considered sensitive are smokers and people who cannot breathe well through their noses. Exercising athletes are also considered sensitive, because many breathe through their mouths during exercise.

7.4 Toxic Air Contaminant Levels in the Air Basin

In order to determine the Air Basin-wide risks associated with major airborne carcinogens, the SCAQMD conducted the Multiple Air Toxics Exposure Study (MATES) studies. According to the MATES V study (SCAQMD, 2021), the project site has an estimated cancer risk of 302 per million persons chance of cancer in the vicinity of the project site. In comparison, the average cancer risk for the Air Basin is 455 per million persons. The MATES V study that monitored air toxins between May 1, 2018 to April 30, 2019 found that cancer risk from air toxics has declined significantly in the Air Basin with a 40 percent decrease in cancer risk since the monitoring for the MATES IV study that occurred between July 1, 2012 and June 30, 2013 and an 84 percent decrease in cancer risk since the monitoring for the MATES II study that occurred between April 1, 1998 and March 31, 1999.

The MATES V study also analyzed impacts specific to the communities experiencing environmental injustices (EJ communities) that were evaluated using the Senate Bill 535 definition of disadvantaged communities, which found that between MATES IV and MATES V, the cancer risk from air toxics decreased by 57 percent in EJ communities overall, compared to a 53 percent reduction in non-EJ communities.

In order to provide a perspective of risk, it is often estimated that the incidence in cancer over a lifetime for the U.S. population ranges around 1 in 3, or a risk of about 300,000 per million persons. The MATES-III study referenced a Harvard Report on Cancer Prevention, which estimated that of cancers associated with known risk factors, about 30 percent were related to tobacco, about 30 percent were related to diet

and obesity, and about 2 percent were associated with environmental pollution related exposures that includes hazardous air pollutants.

8.0 MODELING PARAMETERS AND ASSUMPTIONS

8.1 CalEEMod Model Input Parameters

The criteria air pollution and GHG emissions impacts created by the proposed project have been analyzed through use of the California Emissions Estimator Model (CalEEMod) Version 2022.1.1.29. CalEEMod is a computer model published by the California Air Pollution Control Officers Association (CAPCOA) for estimating air pollutant and GHG emissions. The CalEEMod program uses the EMFAC2021 computer program to calculate the emission rates specific for the South Coast Air Basin portion of Riverside County for employee, vendor and haul truck vehicle trips and the OFFROAD2007 and OFFROAD2011 computer programs to calculate emission rates for heavy equipment operations. EMFAC2021, OFFROAD2007 and OFFROAD2011 are computer programs generated by CARB that calculates composite emission rates for vehicles. Emission rates are reported by the program in grams per trip and grams per mile or grams per running hour.

The project characteristics in the CalEEMod model were set to a project location of the South Coast Air Basin portion of Riverside County, utility companies of Southern California Edison and Southern California Gas (with 2028 forecast factors) and a project opening year of 2028.

Land Use Parameters

The proposed project would disturb up to 29 acres of the 36.55-acre project site and would consist of development of 73 single-family homes with an onsite road network and a water quality detention basin. The proposed project's land use parameters that were entered into the CalEEMod model are shown in Table H.

Table H – CalEEMod Land Use Parameters

Proposed Land Use	Land Use Subtype in CalEEMod	Land Use Size[1]	Lot Acreage[2]	Building[3] (square feet)	Landscaped Area (sq ft)
Single-Family Homes	Single Family Housing	73 DU	21.00	142,350	182,952
Onsite Roads and Driveways	Other Asphalt Surfaces	8 AC	8.00	--	69,696

Notes:
[1] DU = Dwelling unit; AC = Acre.
[2] Lot acreage calculated based on the total onsite disturbed area of 29 acres.
[3] Building square feet represent area where architectural coatings will be applied. [4] Landscaped area based on a minimum of 20 percent of the total area landscaped, spread proportionally between land uses.

Construction Parameters

Construction of the proposed project is anticipated to start around December 2025 and would be completed by February 2028, which is based on the CalEEMod default construction timing. According to the grading plan, grading of the project will require the export of 41,063 cubic yards of material that was split proportionally (based on phase duration) between the Site Preparation and Grading phases, which resulted in 12,635 cubic yards being exported during the Site Preparation phase and 28,428 cubic yards being exported during the Grading phase.

The construction-related GHG emissions were based on a 30-year amortization rate as recommended in the SCAQMD GHG Working Group meeting on November 19, 2009. The phases of construction activities

that have been analyzed are detailed below and include: 1) Site Preparation, 2) Grading, 3) Building construction, 4) Paving, and 5) Application of architectural coatings.

CalEEMod provides the selection of "mitigation" to account for project conditions that would result in less emissions than a project without these conditions, however it should be noted that this "mitigation" may represent regulatory requirements. This includes the required to adherence to SCAQMD Rule 403, which requires that the Best Available Control Measures be utilized to reduce fugitive dust emissions and was modeled in CalEEMod by selection of mitigation of water all exposed areas three times per day, water unpaved roads twice daily, reduce vehicle speeds on dirt roads and sweep paved roads once per month.

Site Preparation

The site preparation phase would consist of removing any vegetation, tree stumps, and stones onsite prior to grading. The site preparation was modeled as starting December 2025 and occurring over 20 workdays. During the site preparation phase, it is anticipated that 12,635 cubic yards of dirt will be exported from the project site that would generate an average of 79 haul truck trips per day over the duration of the site preparation phase.

The site preparation activities would generate an average of 17.5 worker trips per day. In order to account for water truck emissions, three onsite truck trips per day with a half-mile length was added to the site preparation phase. The onsite equipment would consist of three rubber-tired dozers, and four of either tractors, loaders, or backhoes, which is based on the CalEEMod default equipment mix.

Grading

The grading phase was modeled as starting after completion of the site preparation phase and was modeled as occurring over 45 workdays. During the grading phase it is anticipated that 28,428 cubic yards of dirt will be exported from the project site. The export of dirt would generate an average of 79 haul truck trips per day over the duration of the grading phase.

The onsite equipment would consist of two excavators, one grader, one rubber-tired dozer, two scrapers, and two of either tractors, loaders, or backhoes, which is based on the CalEEMod default equipment mix. The grading activities would generate an average of 20 automobile trips per day for the workers. In order to account for water truck emissions, three onsite truck trips per day with a half-mile length was added to the grading phase.

Building Construction

The building construction would occur after the completion of the grading phase and was modeled as occurring over 440 workdays (1.8 years). The building construction phase would generate an average of 26.3 worker trips and 7.8 vendor trips per day. The onsite equipment would consist of the simultaneous operation of one crane, three forklifts, one generator, one welder, and three of either tractors, loaders, or backhoes, which is based on the CalEEMod default equipment mix.

Paving

The paving phase would consist of paving the onsite and offsite roads, driveways, sidewalks and hardscapes. The paving phase was modeled as occurring concurrently with the final six months of the building construction phase. The paving phase would generate an average of 15 worker trips per day.

The onsite equipment would consist of the simultaneous operation of two pavers, two paving equipment, and two rollers, which is based on the CalEEMod default equipment mix.

Architectural Coating

The application of architectural coatings phase was modeled as occurring concurrently with the final six months of the building construction phase and concurrently with the paving phase. The architectural coating phase was modeled based on covering 1,650,375 square feet of residential interior area, 550,125 square feet of residential exterior area, 225 square feet of non-residential interior area, 75 square feet of non-residential exterior area, and 34,100 square feet of parking area. The architectural coating phase would generate an average of 11.7 worker trips per day. The onsite equipment would consist of one air compressor, which is based on the CalEEMod default equipment mix.

Operational Emissions Modeling

The operations-related criteria air pollutant emissions and GHG emissions created by the proposed project have been analyzed through use of the CalEEMod model. The proposed project was analyzed in the CalEEMod model based on the land use parameters provided above and the parameters entered for each operational source is described below.

Mobile Sources

Mobile sources include emissions the additional vehicle miles generated from the proposed project. The 9.43 daily trips per home rate provided in the *Highland Grove 5 (TTM No. 39011) Project Trip Generation Memo* (Traffic Memo), matches the CalEEMod default weekday trip generation rate for the proposed single-family homes. As such, the weekday daily trip rate was not changed in CalEEMod. Since the Trip Generation Memo does not provide Saturday or Sunday daily trip rates, the CalEEMod default values of 9.54 daily trips per home for Saturdays and 8.55 daily trips per home for Sundays were utilized.

Area Sources

Area sources include emissions from consumer products, landscape equipment, hearths and architectural coatings. The area source emissions were based on the on-going use of the proposed project in the CalEEMod model. According to the project applicant, a fireplace may be an optional item in each home. Since SCAQMD Rule 445 restricts the installation of wood-burning fireplaces into new developments and since Project Design Feature 1 (PDF-1) commits the project to be an All-Electric Development, 73 electric fireplaces were modeled in the CalEEMod model. No other changes were made to the default area source parameters in the CalEEMod model.

Energy Usage

Energy usage includes emissions from electricity and natural gas used onsite. The energy usage was based on the ongoing use of the proposed project in the CalEEMod Model. No changes were made to the default energy usage parameters in the CalEEMod model. The CalEEMod mitigation of Require All Electric Development was selected, since the project applicant has committed to only using electric power in the proposed homes and no natural gas lines will be run to the project site as part of the proposed project (see PDF-1). It should be noted that the 2022 Title 24, Part 6 building energy efficiency standards have been developed so that the average new home built in California will have zero-net-energy that require installation of rooftop photovoltaic (PV) systems, however the CalEEMod model does not allow the selection of both mitigation of All Electric Development and Establish Onsite Renewable Energy System,

as such only the All Electric Development mitigation was selected and no emission reduction credit was taken for the required rooftop PV systems on the proposed homes.

Solid Waste

Waste includes the GHG emissions associated with the processing of waste from the proposed project as well as the GHG emissions from the waste once it is interred into a landfill. The analysis was based on the default CalEEMod waste generation rate of 67 tons of solid waste per year from the proposed project. No changes were made to the default solid waste parameters or mitigation measures in the CalEEMod model.

Water and Wastewater

Water includes the water used for the interior of the buildings as well as for landscaping and is based on the GHG emissions associated with the energy used to transport and filter the water. The analysis was based on the default CalEEMod water usage rates of 2,969,1865 gallons per year of indoor water use and 4,650,544 gallons per year of outdoor water use. No changes were made to the default water and wastewater parameters in the CalEEMod model.

8.2 Blasting Calculations

According to the project applicant limited blasting may be required during grading of the eastern and southern portions of the project site. Since the CalEEMod model does not analyze emissions from blasting, the blasting emission modeling for NOx, CO, and SOx was obtained from Chapter 13.3 Explosive Detonations from AP-42, prepared by EPA, January 1995. The daily NOx, CO, and SOx emissions from blasting of explosives were calculated using the following equation:

Rock blasted (cubic yards/day) x Powder Factor (pounds explosive/cubic yard of rock) ÷ 2,000 (pounds to ton conversion) x Emission Factor (pounds/ton of explosive) = pounds/day

Where:

Powder Factor = 0.758 pounds of explosive/cubic yard of rock[4]

Emission factors:

53 pounds/ton for NOx,

104 pounds/ton for CO and

1 pound/ton for SOx

The PM10 and PM2.5 emissions from blasting of explosives modeling was obtained from Chapter 11.9 Western Surface Coal Mining from AP-42, prepared by EPA, October 1998. The daily PM10 and PM2.5 emissions were calculated using the following equation:

$E = k \times 0.000014 \times A^{1.5}$

Where:

E = pounds of PM10 or PM2.5 per blast

K = particle size (0.52 for PM10 and 0.03 for PM2.5)

A = horizontal area shifted by each blast in square feet

4 Based on the average of Medium Rock types and obtained from: https://www.leg.mn.gov/docs/2015/other/150681/PFEISref_1/Dyno%20Nobel%202010.pdf

It is anticipated that the maximum blasting that would occur in a day would consist of blasting 2,000 cubic yards of rock over a 10,000 square foot area. This would result in a maximum of 40.2 pounds of NOx per day, 78.9 pounds of CO per day, 0.76 pounds of SOx per day, 7.28 pounds of PM10 per day, and 0.42 pounds of PM2.5 per day from blasting activities.

8.3 Energy Use Calculations

The proposed project is anticipated to consume energy during both construction and operation of the proposed project and the parameters utilized to calculate energy use from construction and operation of the proposed project are detailed separately below.

Construction-Related Energy Use

Construction of the proposed project is anticipated to use energy in the forms of petroleum fuel for both off-road equipment as well as from the transport of workers and materials to and from the project site and the calculations for each source are described below.

Off-Road Construction Equipment

The off-road construction equipment fuel usage was calculated through use of the CalEEMod model's default off-road equipment assumptions detailed above in Section 8.1. For each piece of off-road equipment, the fuel usage was calculated through use of the *2017 Off-road Diesel Emission Factors* spreadsheet, prepared by CARB (https://ww3.arb.ca.gov/msei/ordiesel.htm). The Spreadsheet provides the following formula to calculate fuel usage from off-road equipment:

Fuel Used = Load Factor x Horsepower x Total Operational Hours x BSFC / Unit Conversion

Where:

Load Factor - Obtained from CalEEMod default values

Horsepower – Obtained from CalEEMod default values

Total Operational Hours – Calculated by multiplying CalEEMod default daily hours by CalEEMod default number of working days for each phase of construction

BSFC – Brake Specific Fuel Consumption (pounds per horsepower-hour) – If less than 100 Horsepower = 0.408, if greater than 100 Horsepower = 0.367

Unit Conversion – Converts pounds to gallons = 7.109

Table I shows the off-road construction equipment fuel calculations based on the above formula. Table I shows that the off-road equipment utilized during construction of the proposed project would consume 70,427 gallons of diesel fuel.

Table I – Off-Road Equipment and Fuel Consumption from Construction of the Proposed Project

Equipment Type	Equipment Quantity	Horse-power	Load Factor	Operating Hours per Day	Total Operational Hours[1]	Fuel Used (gallons)
Site Preparation						
Rubber Tired Dozers	3	367	0.40	8	480	3,638
Tractors/Loaders/Backhoes	4	84	0.37	8	640	1,142
Grading						
Excavators	2	36	0.38	8	720	565
Grader	1	148	0.41	8	360	1,128
Rubber Tired Dozer	1	367	0.40	8	360	2,728

Equipment Type	Equipment Quantity	Horse-power	Load Factor	Operating Hours per Day	Total Operational Hours[1]	Fuel Used (gallons)
Scrapers	2	423	0.48	8	720	7,547
Tractors/Loaders/Backhoes	2	84	0.37	8	720	1,284
Building Construction						
Crane	1	367	0.29	7	3,080	16,923
Forklifts	3	82	0.20	8	10,560	9,939
Generator Set	1	14	0.74	8	3,520	2,093
Tractors/Loaders/Backhoes	3	84	0.37	7	9,240	16,482
Welder	1	46	0.45	8	3,520	4,182
Paving						
Pavers	2	81	0.42	8	560	1,093
Paving Equipment	2	89	0.36	8	560	1,030
Rollers	2	36	0.38	8	560	440
Architectural Coating						
Air Compressor	1	37	0.48	6	210	214
Total Off-Road Equipment Diesel Fuel Used during Construction (gallons)						**70,427**

Notes:
[1] Based on: 20 days for Site Preparation, 45 days for Grading; 440 days for Building Construction; 35 days for Paving; and 35 days for Architectural Coating.
Source: CalEEMod Version 2022.1 (see Appendix A); CARB, 2017.

On-Road Construction-Related Vehicle Trips

The on-road construction-related vehicle trips fuel usage was calculated through use of the construction vehicle trip assumptions from the CalEEMod model run as detailed above in Section 8.1. The calculated total construction miles was then divided by the fleet average for the South Coast Air Basin portion of Riverside County miles per gallon rates for the year 2025 calculated through use of the EMFAC2021 model and the EMFAC2021 model printouts are shown in Appendix B. The worker trips were based on the combined fleet average miles per gallon rates for gasoline powered automobiles, SUVs and pickup trucks and the vendor and haul truck trips were based on the combined T6 and T7 diesel trucks fleet average miles per gallon rate. Table J shows the on-road construction vehicle trips modeled in CalEEMod and the fuel usage calculations.

Table J – On-Road Vehicle Trips and Fuel Consumption from Construction of the Proposed Project

Vehicle Trip Types / Fuel Type	Daily Trips	Trip Length (miles)	Total Miles per Day	Total Miles per Phase[1]	Fleet Average Miles per Gallon[2]	Fuel Used (gallons)
Site Preparation						
Worker (Gasoline)	17.5	18.5	324	6,475	26.4	246
Haul Trucks (Diesel)	79	20	1,580	31,600	7.7	4,081
Water Trucks (Diesel)	3	0.5	1.5	30	7.7	4
Grading						
Worker (Gasoline)	20	18.5	370	16,650	26.4	632
Haul Trucks (Diesel)	79	20	1,580	71,100	7.7	9,183
Water Trucks (Diesel)	3	0.5	1.5	68	7.7	9
Building Construction						
Worker (Gasoline)	26.3	18.5	487	214,082	26.4	8,121
Vendor (Diesel)	7.8	10.2	80	35,006	7.7	4,521

Vehicle Trip Types / Fuel Type	Daily Trips	Trip Length (miles)	Total Miles per Day	Total Miles per Phase[1]	Fleet Average Miles per Gallon[2]	Fuel Used (gallons)
Paving						
Worker (Gasoline)	15	18.5	278	9,713	26.4	368
Architectural Coatings						
Worker (Gasoline)	5.26	18.5	97	3,406	26.4	129
Total Gasoline Fuel Used from On-Road Construction Vehicles (gallons)						**9,496**
Total Diesel Fuel Used from On-Road Construction Vehicles (gallons)						**17,798**

Notes:
[1] Based on: 20 days for Site Preparation, 45 days for Grading; 440 days for Building Construction; 35 days for Paving; and 35 days for Painting.
[2] From EMFAC 2021 model (see Appendix B). Worker Trips based on entire fleet of gasoline vehicles and Vendor Trips based on only truck fleet of diesel vehicles.
Source: CalEEMod Version 2022.1; CARB, 2018.

Table J shows that the on-road construction-related vehicle trips would consume 9,496 gallons of gasoline and 17,798 gallons of diesel fuel. As detailed above, Table I shows that the off-road construction equipment would consume 70,427 gallons of diesel fuel. This would result in the total consumption of 9,496 gallons of gasoline and 88,226 gallons of diesel fuel from construction of the proposed project.

Operations-Related Energy Use

The operation of the proposed project is anticipated to use energy in the forms of petroleum fuel and electricity, and the calculations for each source are described below. Per PDF-1, the project applicant has committed to an All-Electric Development, as such there would be no natural gas use from operation of the proposed project.

Operational Petroleum Fuel

The on-road operations-related vehicle trips fuel usage was calculated through use of the total annual vehicle miles traveled assumptions from the CalEEMod model run as detailed above in Section 8.1, which found that operation of the proposed project would generate 3,032,946 vehicle miles traveled per year. The calculated total operational miles were then divided by the combined fleet average miles per gallon rates for gasoline powered automobiles, SUVs and pickup trucks for the South Coast Air Basin portion of Riverside County fleet average rate of 28.0 miles per gallon, which was calculated through use of the EMFAC2021 model and based on the project opening year of 2028. The EMFAC2021 model printouts are shown in Appendix B. Based on the above calculation methodology, operational vehicle trips generated from the proposed project would consume 108,171 gallons of gasoline per year.

Operational Electricity Use

The operations-related electricity usage was calculated in the CalEEMod model run that is detailed above in Section 8.1 that found operation of the proposed project would use 685,845 kilowatt hours (kWh) per year with implementation of PDF-1 that requires the project to be an All-Electric Development, which results in higher electricity use than what is shown for the unmitigated condition in CalEEMod. It should be noted that the proposed project will be required to install a rooftop PV system onto each home, however the CalEEMod model does not allow the selection of mitigation measures for both an All-Electric Development and onsite solar PV system, so the above electric usage rate represents a worst-case condition.

9.0 THRESHOLDS OF SIGNIFICANCE

9.1 Regional Air Quality

Many air quality impacts that derive from dispersed mobile sources, which are the dominant pollution generators in the Air Basin, often occurs hours later and miles away after photochemical processes have converted primary exhaust pollutants into secondary contaminants such as ozone. The incremental regional air quality impact of an individual project is generally very small and difficult to measure. Therefore, SCAQMD has developed significance thresholds based on the volume of pollution emitted rather than on actual ambient air quality because the direct air quality impact of a project is not quantifiable on a regional scale. The SCAQMD CEQA Handbook states that any project in the Air Basin with daily emissions that exceed any of the identified significance thresholds should be considered as having an individually and cumulatively significant air quality impact. For the purposes to this air quality impact analysis, a regional air quality impact would be considered significant if emissions exceed the SCAQMD significance thresholds identified in Table K.

Table K – SCAQMD Regional Criteria Pollutant Emission Thresholds of Significance

	Pollutant Emissions (pounds/day)						
	VOC	**NOx**	**CO**	**SOx**	**PM10**	**PM2.5**	**Lead**
Construction	75	100	550	150	150	55	3
Operation	55	55	550	150	150	55	3

Source: http://www.aqmd.gov/docs/default-source/ceqa/handbook/scaqmd-air-quality-significance-thresholds.pdf?sfvrsn=2

9.2 Local Air Quality

Project-related construction air emissions may have the potential to exceed the State and Federal air quality standards in the project vicinity, even though these pollutant emissions may not be significant enough to create a regional impact to the Air Basin. In order to assess local air quality impacts the SCAQMD has developed Localized Significant Thresholds (LSTs) to assess the project-related air emissions in the project vicinity. SCAQMD has also provided *Final Localized Significance Threshold Methodology* (LST Methodology), July 2008, which details the methodology to analyze local air emission impacts. The LST Methodology found that the primary emissions of concern are NO_2, CO, PM10, and PM2.5.

The LST Methodology provides Look-Up Tables with different thresholds based on the location and size of the project site and distance to the nearest sensitive receptors. As detailed above in Section 7.3, the project site is located in Air Monitoring Area 23, which covers Metropolitan Riverside County, with the southern boundary aligned with El Sobrante Road.

The Look-Up Tables include site acreage sizes of 1-acre, 2-acres and 5-acres. The *Fact Sheet for Applying CalEEMod to Localized Significance Thresholds*, prepared by SCAQMD, 2015, provides guidance on how to determine the appropriate site acreage size to utilize for a project. The Fact Sheet details the site acreage should be based on the maximum number of acres disturbed on the peak day of construction that is calculated on the construction equipment list utilized in the CalEEMod model, where crawler tractors, graders, and rubber-tired dozers are all assumed to disturb 0.5-acre in an 8-hour day and scrapers are assumed to disturb 1.0-acre in an 8-hour day. It should be noted that the methodology in the Fact Sheet was developed from the CalEEMod User Guide Appendix A, page 9, where the same acres disturbed per

equipment type is detailed and is utilized in the CalEEMod model in order to determine the acres per day disturbed during site preparation and grading phases.

Table L lists all of the construction equipment modeled in CalEEMod and utilizes the methodology in the Fact Sheet to calculate the acres disturbed per day. As shown in Table L, the maximum disturbed per day would occur during the grading phase when 3.0-acres would be disturbed. Since the Look-Up Tables do not provide a 3-acre option, the 2-acre project site shown in the Look-Up Tables have been utilized in this analysis, in order to provide a conservative analysis.

Table L – Construction Equipment Modeled in CalEEMod and Acres Disturbed per Day

Construction Activity	Equipment Type	Equipment Quantity	Acres Disturbed per piece of Equipment per Day[1]	Operating Hours per Day	Acres Disturbed per Day
Site Preparation	Rubber Tired Dozers	3	0.5	8	1.5
	Tractors/Loaders/Backhoes	4	0	8	0
	Total Acres Disturbed per Day During Site Preparation				1.5
Grading	Graders	1	0.5	8	0.5
	Excavators	2	0	8	0
	Rubber Tired Dozers	1	0.5	8	0.5
	Scrapers	2	1.0	8	2.0
	Tractors/Loaders/Backhoes	2	0	8	0
	Total Acres Disturbed per Day During Grading				3.0
Building Construction	Cranes	1	0	7	0
	Forklifts	3	0	8	0
	Generator Sets	1	0	8	0
	Tractors/Loaders/Backhoes	3	0	7	0
	Welders	1	0	8	0
	Total Acres Disturbed per Day During Building Construction				0
Paving	Pavers	2	0	8	0
	Paving Equipment	2	0	8	0
	Rollers	2	0	8	0
	Total Acres Disturbed per Day During Paving				0
Architectural Coating	Air Compressor	1	0	6	0
	Total Acres Disturbed per Day During Architectural Coating				0
	Maximum Acres Disturbed during All Construction Activities				**3.0**

Notes:
[1] Based on the Fact Sheet for Applying CalEEMod to Localized Significance Thresholds where crawler tractors, graders, and rubber-tired dozers disturb 0.5-acre in an 8-hour day and scrapers disturb 1.0-acre in an 8-hour day. All other equipment disturbs 0 acres per 8-hour day.
Source: CalEEMod Version 2022.1; SCAQMD, 2015.

The nearest sensitive receptors to the project site are the ranch homes located as near as 440 feet (134 meters) south of the project site and at the single-family homes located as near as 500 feet (152 meters) northeast of the project site. As such, the 100 meter and 200 meter thresholds provided in the Look-up Tables were interpolated to find the 134 meter thresholds. Table M below shows the LSTs for NO_2, PM10 and PM2.5 for both construction and operational activities.

Table M – SCAQMD Local Air Quality Thresholds of Significance

Activity	Allowable Emissions (pounds/day)[1]			
	NOx	CO	PM10	PM2.5
Construction	303	3,223	51	14
Operation	303	3,223	13	4

Notes:

[1] The nearest sensitive receptor is a ranch home located as near as 440 feet (134 meters) south of the project site. As such, the 100 meter and 200 meter thresholds were interpolated to find the 134 meter thresholds.

Source: Calculated from SCAQMD's Mass Rate Look-up Tables for two acres in Air Monitoring Area 23, Metropolitan Riverside County.

9.3 Toxic Air Contaminants

According to the SCAQMD CEQA Handbook, any project that has the potential to expose the public to toxic air contaminants in excess of the following thresholds would be considered to have a significant air quality impact:

- If the Maximum Incremental Cancer Risk is 10 in one million or greater; or
- Toxic air contaminants from the proposed project would result in a Hazard Index increase of 1 or greater.

In order to determine if the proposed project may have a significant impact related to TACs, the *Health Risk Assessment Guidance for analyzing Cancer Risks from Mobile Source Diesel Idling Emissions for CEQA Air Quality Analysis*, (Diesel Analysis) prepared by SCAQMD, August 2003, recommends that if the proposed project is anticipated to create TACs through stationary sources or regular operations of diesel trucks on the project site, then the proximity of the nearest receptors to the source of the TAC and the toxicity of the HAP should be analyzed through a comprehensive facility-wide health risk assessment (HRA).

9.4 Odor Impacts

The SCAQMD CEQA Handbook states that an odor impact would occur if the proposed project creates an odor nuisance pursuant to SCAQMD Rule 402, which states:

> "A person shall not discharge from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance, or annoyance to any considerable number of persons to the public, or which endanger the comfort, repose, health or safety of any such persons or the public, or which cause, or have a natural tendency to cause, injury or damage to business or property.
>
> The provisions of this rule shall not apply to odors emanating from agricultural operations necessary for the growing of crops or the raising of fowl or animals."

If the proposed project results in a violation of Rule 402 with regards to odor impacts, then the proposed project would create a significant odor impact.

9.5 Energy Conservation

The *2022 CEQA California Environmental Quality Act Statutes & Guidelines* (2022 CEQA Guidelines) include an Energy Section that analyzes the proposed project's energy consumption in order to avoid or reduce

inefficient, wasteful or unnecessary consumption of energy. Appendix F of the 2022 CEQA Statute and Guidelines, states the following:

> The goal of conserving energy implies the wise and efficient use of energy. The means of achieving this goal include:
>
> (1) Decreasing overall per capita energy consumption,
>
> (2) Decreasing reliance on fossil fuels such as coal, natural gas and oil, and
>
> (3) Increasing reliance on renewable energy sources.

Since the Energy Section was recently added, no state or local agencies have adopted specific criteria or thresholds to be utilized in an energy impact analysis. However, Appendix F, Subsection II.C of the 2022 CEQA Guidelines provides the following criteria for determining significance.

1. The project's energy requirements and its energy use efficiencies by amount and fuel type for each stage of the project life cycle including construction, operation, maintenance and/or removal. If appropriate, the energy intensiveness of materials may be discussed.
2. The effects of the project on local and regional energy supplies and on requirement for additional capacity.
3. The effects of the project on peak and base period demands for electricity and other forms of energy.
4. The degree to which the project complies with existing energy standards.
5. The effects of the project on energy resources.
6. The project's projected transportation energy use requirements and its overall use of efficient transportation alternatives.

If the proposed project creates inefficient, wasteful or unnecessary consumption of energy during construction or operation activities or conflicts with a state or local plan for renewable energy or energy efficiency, then the proposed project would create a significant energy impact.

9.6 Greenhouse Gas Emissions

The *County of Riverside Climate Action Plan* (CAP) was adopted on December 2015 and revised on November 2019. The 2015 CAP utilized a GHG emissions reduction target of a 15 percent decrease from 2008 levels by the year 2020, in order to meet the requirements of AB 32 and SB 375. The County's 2008 GHG emissions were calculated at 7,012,938 $MTCO_2e$ and in order to reach the reduction target, the County of Riverside will need to reduce community-wide emissions to 5,960,998 $MTCO_2e$ by the year 2020. The CAP was updated in 2019 in order to address a 2017 Settlement Agreement with the Sierra Club and other groups as well as to bring the CAP in conformance with SB 32 and AB 197 that set a statewide 2030 goal of reducing GHG emissions to 40 percent below 1990 levels by 2030. The 2030 target is an interim year goal set to make it possible to reach the ultimate goal of reducing GHG emissions 80 percent below 1990 levels by 2050. The 2019 CAP provides several new measures to meet the 2030 target that include promoting energy efficiency, renewable energy and development and promotion of zero-emission vehicles, water conservation and increased waste diversion.

The CAP has developed a process for determining significance of GHG impacts from new development projects that includes (1) applying an emissions level that is determined to be less than significant for

small projects, and (2) utilizing Screening Tables to mitigate project GHG emissions that exceed the threshold level. The CAP has provided a threshold of 3,000 $MTCO_2e$ per year to be used to identify projects that require the use of Screening Tables. If the 3,000 $MTCO_2e$ per year threshold is exceeded, than specific mitigation from the CAP's Screening Tables will be selected to garner a total of 100 points or greater. According to the CAP, such projects that implement 100 points of mitigation measures from the Screening Tables would be determined to have a less than significant individual impact for greenhouse gas emissions.

The GHG emissions analysis for both construction and operation of the proposed project can be found below in Sections 10.8 and 10.9.

10.0 IMPACT ANALYSIS

10.1 CEQA Thresholds of Significance

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

- Conflict with or obstruct implementation of the applicable air quality plan;
- Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in non-attainment under an applicable federal or state ambient air quality standard;
- Expose sensitive receptors to substantial pollutant concentrations;
- Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people;
- Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation;
- Conflict with or obstruct a state or local plan for renewable energy;
- Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment; or
- Conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of GHGs.

10.2 Air Quality Compliance

The proposed project would not conflict with or obstruct implementation of the SCAQMD Air Quality Management Plan (AQMP). The following section discusses the proposed project's consistency with the SCAQMD AQMP.

SCAQMD Air Quality Management Plan

The California Environmental Quality Act (CEQA) requires a discussion of any inconsistencies between a proposed project and applicable General Plans and regional plans (CEQA Guidelines Section 15125). The regional plan that applies to the proposed project includes the SCAQMD AQMP. Therefore, this section discusses any potential inconsistencies of the proposed project with the AQMP.

The purpose of this discussion is to set forth the issues regarding consistency with the assumptions and objectives of the AQMP and discuss whether the proposed project would interfere with the region's ability to comply with Federal and State air quality standards. If the decision-makers determine that the proposed project is inconsistent, the lead agency may consider project modifications or inclusion of mitigation to eliminate the inconsistency.

The SCAQMD CEQA Handbook states that "New or amended GP Elements (including land use zoning and density amendments), Specific Plans, and significant projects must be analyzed for consistency with the AQMP." Strict consistency with all aspects of the plan is usually not required. A proposed project should be considered to be consistent with the AQMP if it furthers one or more policies and does not obstruct other policies. The SCAQMD CEQA Handbook identifies two key indicators of consistency:

(1) Whether the project will result in an increase in the frequency or severity of existing air quality violations or cause or contribute to new violations, or delay timely attainment of air quality standards or the interim emission reductions specified in the AQMP.

(2) Whether the project will exceed the assumptions in the AQMP or increments based on the year of project buildout and phase.

Both of these criteria are evaluated in the following sections.

Criterion 1 - Increase in the Frequency or Severity of Violations?

Based on the air quality modeling analysis contained in this report, short-term regional construction air emissions would not result in significant impacts based on SCAQMD regional thresholds of significance discussed above in Section 9.1 or local thresholds of significance discussed above in Section 9.2. The ongoing operation of the proposed project would generate air pollutant emissions that are inconsequential on a regional basis and would not result in significant impacts based on SCAQMD thresholds of significance discussed above in Section 9.1. The analysis for long-term local air quality impacts showed that local pollutant concentrations would not be projected to exceed the air quality standards. Therefore, a less than significant long-term impact would occur and no mitigation would be required.

Therefore, based on the information provided above, the proposed project would be consistent with the first criterion.

Criterion 2 - Exceed Assumptions in the AQMP?

Consistency with the AQMP assumptions is determined by performing an analysis of the proposed project with the assumptions in the AQMP. The emphasis of this criterion is to insure that the analyses conducted for the proposed project are based on the same forecasts as the AQMP. The AQMP is developed through use of the planning forecasts provided in the RTP/SCS (Connect SoCal) and FTIP (2019 FTIP). The RTP/SCS is a major planning document for the regional transportation and land use network within Southern California. The RTP/SCS is a long-range plan that is required by federal and state requirements placed on SCAG and is updated every four years. The FTIP provides long-range planning for future transportation improvement projects that are constructed with state and/or federal funds within Southern California. Local governments are required to use these plans as the basis of their plans for the purpose of consistency with applicable regional plans under CEQA. For this project, the County of Riverside's Lake Matthews/Woodcrest Area Plan Land Use Plan defines the assumptions that are represented in AQMP.

The 36.55-acre project site is currently designated as Rural Community – Low Density Residential (RC-LDR) with a 0.5 acre minimum lot size. The proposed project with 73 homes has been designed to meet the allowed number of residential units under the existing land use designation and would not require a General Plan Amendment. As such, the proposed project is not anticipated to exceed the AQMP assumptions for the project site and is found to be consistent with the AQMP for the second criterion.

Based on the above, the proposed project will not result in an inconsistency with the SCAQMD AQMP. Therefore, a less than significant impact will occur in relation to implementation of the AQMP.

Level of Significance

Less than significant impact.

10.3 Cumulative Net Increase in Non-Attainment Pollution

The proposed project would not result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable Federal or State ambient air quality standard.

The SCAQMD has published a report on how to address cumulative impacts from air pollution: White Paper on Potential Control Strategies to Address Cumulative Impacts from Air Pollution (http://www.aqmd.gov/docs/default-source/Agendas/Environmental-Justice/cumulative-impacts-working-group/cumulative-impacts-white-paper.pdf). In this report the AQMD clearly states (Page D-3):

> *"…the AQMD uses the same significance thresholds for project specific and cumulative impacts for all environmental topics analyzed in an Environmental Assessment or Environmental Impact Report (EIR). The only case where the significance thresholds for project specific and cumulative impacts differ is the Hazard Index (HI) significance threshold for TAC emissions. The project specific (project increment) significance threshold is HI > 1.0 while the cumulative (facility- wide) is HI > 3.0. It should be noted that the HI is only one of three TAC emission significance thresholds considered (when applicable) in a CEQA analysis. The other two are the maximum individual cancer risk (MICR) and the cancer burden, both of which use the same significance thresholds (MICR of 10 in 1 million and cancer burden of 0.5) for project specific and cumulative impacts. Projects that exceed the project-specific significance thresholds are considered by the SCAQMD to be cumulatively considerable. This is the reason project-specific and cumulative significance thresholds are the same. Conversely, projects that do not exceed the project-specific thresholds are generally not considered to be cumulatively significant."*

Therefore, this analysis assumes that individual projects that do not generate operational or construction emissions that exceed the SCAQMD's recommended daily thresholds for project-specific impacts would also not cause a cumulatively considerable increase in emissions for those pollutants for which the Basin is in nonattainment, and, therefore, would not be considered to have a significant, adverse air quality impact. Alternatively, individual project-related construction and operational emissions that exceed SCAQMD thresholds for project-specific impacts would be considered cumulatively considerable. The following section calculates the potential air emissions associated with the construction and operations of the proposed project and compares the emissions to the SCAQMD standards.

Construction Emissions

The construction activities for the proposed project are anticipated to include site preparation and grading of 29 acres of the 36.55-acre project site, building construction of 73 single-family homes, paving of the onsite roads and driveways, sidewalks and hardscapes, and application of architectural coatings.

The CalEEMod model has been utilized to calculate the construction-related emissions from the proposed project and the input parameters utilized in this analysis have been detailed in Section 8.1. The daily construction-related criteria pollutant emissions from the proposed project by season and year of construction activities are shown below in Table N and the CalEEMod daily printouts are shown in Appendix A.

Table N – Construction-Related Criteria Pollutant Emissions

Season and Year of Construction	Pollutant Emissions (pounds/day)					
	VOC	NOx	CO	SO_2	PM10	PM2.5
Daily Winter Maximum						
Winter 2025[1]	3.47	78.3	111	0.85	16.1	4.92
Winter 2026	3.21	33.5	30.2	0.10	5.87	2.61
Winter 2027	1.39	9.75	14.3	0.03	0.75	0.41
Winter 2028	28.4	0.83	1.36	<0.01	0.08	0.03
Daily Summer Maximum						
Summer 2026	1.19	10.2	14.9	0.03	0.79	0.45
Summer 2027	1.14	9.72	14.8	0.03	0.75	0.41
Maximum Daily Construction Emissions	**28.4**	**78.3**	**111**	**0.85**	**16.1**	**4.92**
SCQAMD Regional Thresholds	**75**	**100**	**550**	**150**	**150**	**55**
SCAQMD Local Thresholds[2]	**--**	**277**	**1,709**	**--**	**19**	**8**
Exceeds Threshold?	No	No	No	No	No	No

Notes:
[1] Includes emissions from blasting. Based on 2,000 cubic yards of rock over a 10,000 square foot area (see Section 8.2, above).
[2] The nearest sensitive receptor is a ranch home located as near as 440 feet (134 meters) south of the project site. As such, the 100 meter and 200 meter thresholds were interpolated to find the 134 meter thresholds. Calculated from SCAQMD's Mass Rate Look-up Tables for two acres in Air Monitoring Area 23, Metropolitan Riverside County.
Source: CalEEMod Version 2022.1.

Table N shows that none of the analyzed criteria pollutants would exceed either the regional or local emissions thresholds during construction of the proposed project. It should be noted that SCAQMD Local thresholds only applies to emissions created on the project site and Table N shows the combined onsite and offsite emissions, which results in an overestimation of emissions that occur onsite and as such provides for a more conservative local thresholds analysis. Therefore, a less than significant regional or local air quality impact would occur from construction of the proposed project.

Operational Emissions

The on-going operation of the proposed project would result in a long-term increase in air quality emissions. This increase would be due to emissions from the project-generated vehicle trips, emissions from energy usage, onsite area source emissions created from the on-going use of the proposed project. The operations-related regional criteria air quality impacts created by the proposed project have been analyzed through use of the CalEEMod model and the input parameters utilized in this analysis have been detailed in Section 8.1. The worst-case summer or winter VOC, NOx, CO, SO_2, PM10, and PM2.5 daily emissions created from the proposed project's long-term operations have been calculated and are summarized below in Table O and the CalEEMod daily emissions printouts are shown in Appendix A.

The data provided in Table O shows that none of the analyzed criteria pollutants would exceed either the regional or local emissions thresholds. Therefore, less than significant regional and local air quality impacts would occur from operation of the proposed project.

Table O – Operational Criteria Pollutant Emissions

Activity	Pollutant Emissions (pounds/day)					
	VOC	NOx	CO	SO_2	PM10	PM2.5
Mobile Sources[1]	2.79	2.92	25.8	0.07	6.07	1.57
Area Sources[2]	3.71	0.04	4.14	<0.01	<0.01	<0.01
Energy Usage[3]	0.00	0.00	0.00	0.00	0.00	0.00
Total Emissions	**6.50**	**2.96**	**29.9**	**0.07**	**6.07**	**1.57**
SCQAMD Regional Operational Thresholds	**55**	**55**	**550**	**150**	**150**	**55**
SCAQM Local Operational Thresholds[4]	**--**	**303**	**3,223**	**--**	**13**	**4**
Exceeds Threshold?	No	No	No	No	No	No

Notes:
[1] Mobile sources consist of emissions from vehicles and road dust.
[2] Area sources consist of emissions from consumer products, architectural coatings, and landscaping equipment.
[3] Energy usage consists of emissions from natural gas usage. PDF-1 requires the project to be all-electric, as such no energy usage emissions would be created from the proposed project.
[4] The nearest sensitive receptor is a ranch home located as near as 440 feet (134 meters) south of the project site. As such, the 100 meter and 200 meter thresholds were interpolated to find the 134 meter thresholds. Calculated from SCAQMD's Mass Rate Look-up Tables for two acres in Air Monitoring Area 23, Metropolitan Riverside County.
Source: Calculated from CalEEMod Version 2022.1.

Friant Ranch Case

In *Sierra Club v. County of Fresno* (2018) 6 Cal.5th 502 (also referred to as "*Friant Ranch*"), the California Supreme Court held that when an EIR concluded that when a project would have significant impacts to air quality impacts, an EIR should "make a reasonable effort to substantively connect a project's air quality impacts to likely health consequences." In order to determine compliance with this Case, the Court developed a multi-part test that includes the following:

1) The air quality discussion shall describe the specific health risks created from each criteria pollutant, including diesel particulate matter.

This Analysis details the specific health risks created from each criteria pollutant above in Section 4.1 and specifically in Table B. In addition, the specific health risks created from diesel particulate matter is detailed above in Section 2.2 of this analysis. As such, this analysis meets the part 1 requirements of the Friant Ranch Case.

2) The analysis shall identify the magnitude of the health risks created from the Project. The Ruling details how to identify the magnitude of the health risks. Specifically, on page 24 of the ruling it states "The Court of Appeal identified several ways in which the EIR could have framed the analysis so as to adequately inform the public and decision makers of possible adverse health effects. The County could have, for example, identified the Project's impact on the days of nonattainment per year."

The Friant Ranch Case found that an EIR's air quality analysis must meaningfully connect the identified air quality impacts to the human health consequences of those impacts, or meaningfully explain why that analysis cannot be provided. As noted in the Brief of Amicus Curiae by the SCAQMD in the Friant Ranch case (https://www.courts.ca.gov/documents/9-s219783-ac-south-coast-air-quality-mgt-dist-041315.pdf) (Brief), SCAQMD has among the most sophisticated air quality modeling and health impact evaluation capability of any of the air districts in the State, and thus it is uniquely situated to express an opinion on

how lead agencies should correlate air quality impacts with specific health outcomes. The SCAQMD discusses that it may be infeasible to quantify health risks caused by projects similar to the proposed Project, due to many factors. It is necessary to have data regarding the sources and types of air toxic contaminants, location of emission points, velocity of emissions, the meteorology and topography of the area, and the location of receptors (worker and residence). The Brief states that it may not be feasible to perform a health risk assessment for airborne toxics that will be emitted by a generic industrial building that was built on "speculation" (i.e., without knowing the future tenant(s)). Even where a health risk assessment can be prepared, however, the resulting maximum health risk value is only a calculation of risk, it does not necessarily mean anyone will contract cancer as a result of the Project. The Brief also cites the author of the CARB methodology, which reported that a PM2.5 methodology is not suited for small projects and may yield unreliable results. Similarly, SCAQMD staff does not currently know of a way to accurately quantify ozone-related health impacts caused by NOX or VOC emissions from relatively small projects, due to photochemistry and regional model limitations. The Brief concludes, with respect to the Friant Ranch EIR, that although it may have been technically possible to plug the data into a methodology, the results would not have been reliable or meaningful.

On the other hand, for extremely large regional projects (unlike the proposed project), the SCAQMD states that it has been able to correlate potential health outcomes for very large emissions sources – as part of their rulemaking activity, specifically 6,620 pounds per day of NOx and 89,180 pounds per day of VOC were expected to result in approximately 20 premature deaths per year and 89,947 school absences due to ozone. As shown above in Table N, project-related construction activities would generate a maximum of 28.4 pounds per day of VOC and 78.3 pounds per day of NOx and as shown above in Table O, operation of the proposed project would generate 6.5 pounds per day of VOC and 2.96 pounds per day NOx. The proposed project would not generate anywhere near these levels of 6,620 pounds per day of NOx or 89,190 pounds per day of VOC emissions. Therefore, the proposed project's emissions are not sufficiently high enough to use a regional modeling program to correlate health effects on a basin-wide level.

Notwithstanding, this analysis does evaluate the proposed project's localized impact to air quality for emissions of CO, NOx, PM10, and PM2.5 by comparing the proposed project's onsite emissions to the SCAQMD's applicable LST thresholds. As evaluated in this analysis, the proposed project would not result in emissions that exceeded the SCAQMD's LSTs. Therefore, the proposed project would not be expected to exceed the most stringent applicable federal or state ambient air quality standards for emissions of CO, NOx, PM10, and PM2.5.

Local CO Hotspot Impacts from Project-Generated Vehicular Trips

CO is the pollutant of major concern along roadways because the most notable source of CO is motor vehicles. For this reason, CO concentrations are usually indicative of the local air quality generated by a roadway network and are used as an indicator of potential local air quality impacts. Local air quality impacts can be assessed by comparing future without and with project CO levels to the State and Federal CO standards of 20 ppm over one hour or 9 ppm over eight hours.

At the time of the 1993 Handbook, the Air Basin was designated nonattainment under the CAAQS and NAAQS for CO. With the turnover of older vehicles, introduction of cleaner fuels, and implementation of control technology on industrial facilities, CO concentrations in the Air Basin and in the state have steadily declined. In 2007, the Air Basin was designated in attainment for CO under both the CAAQS and NAAQS. SCAQMD conducted a CO hot spot analysis for attainment at the busiest intersections in Los Angeles

during the peak morning and afternoon periods and did not predict a violation of CO standards[5]. Since the nearby intersections to the proposed project are much smaller with less traffic than what was analyzed by the SCAQMD, no local CO Hotspot are anticipated to be created from the proposed project and no CO Hotspot modeling was performed. Therefore, a less than significant long-term air quality impact is anticipated to local air quality with the on-going use of the proposed project.

Therefore, the proposed project would not result in a cumulatively considerable net increase of any criteria pollutant.

Level of Significance

Less than significant impact.

10.4 Sensitive Receptors

The proposed project would not expose sensitive receptors to substantial pollutant concentrations. The local concentrations of criteria pollutant emissions produced in the nearby vicinity of the proposed project, which may expose sensitive receptors to substantial concentrations have been calculated above in Section 10.3 for both construction and operations, which are discussed separately below. The discussion below also includes an analysis of the potential impacts from toxic air contaminant emissions. The nearest sensitive receptors to the project site are residents at the ranch homes located as near as 440 feet south of the project site and at the single-family homes located as near as 500 feet northeast of the project site.

Construction-Related Sensitive Receptor Impacts

The construction activities for the proposed project are anticipated to include site preparation and grading of 29 acres of the 36.55-acre project site, building construction of 73 single-family homes, paving of the onsite roads and driveways, sidewalks and hardscapes, and application of architectural coatings. Construction activities may expose sensitive receptors to substantial pollutant concentrations of localized criteria pollutant concentrations and from toxic air contaminant emissions created from onsite construction equipment, which are described below.

Local Criteria Pollutant Impacts from Construction

The local air quality impacts from construction of the proposed project have been analyzed above in Section 10.3 and found that the construction of the proposed project would not exceed the local NOx, CO, PM10 and PM2.5 thresholds of significance discussed above in Section 9.2. Therefore, construction of the proposed project would create a less than significant construction-related impact to local air quality and no mitigation would be required.

Toxic Air Contaminants Impacts from Construction

The greatest potential for toxic air contaminant emissions would be related to diesel particulate matter (DPM) emissions associated with heavy equipment operations during construction of the proposed project. According to SCAQMD methodology, health effects from carcinogenic air toxics are usually

[5] The four intersections analyzed by the SCAQMD were: Long Beach Boulevard and Imperial Highway; Wilshire Boulevard and Veteran Avenue; Sunset Boulevard and Highland Avenue; and La Cienega Boulevard and Century Boulevard. The busiest intersection evaluated (Wilshire and Veteran) had a daily traffic volume of approximately 100,000 vehicles per day with LOS E in the morning and LOS F in the evening peak hour.

described in terms of "individual cancer risk". "Individual Cancer Risk" is the likelihood that a person exposed to concentrations of toxic air contaminants over a 70-year lifetime will contract cancer, based on the use of standard risk-assessment methodology. It should be noted that the most current cancer risk assessment methodology recommends analyzing a 30 year exposure period for the nearby sensitive receptors (OEHHA, 2015).

Given the relatively limited number of heavy-duty construction equipment, the varying distances that construction equipment would operate to the nearby sensitive receptors, and the short-term construction schedule, the proposed project would not result in a long-term (i.e., 30 or 70 years) substantial source of toxic air contaminant emissions and corresponding individual cancer risk. In addition, California Code of Regulations Title 13, Article 4.8, Chapter 9, Section 2449 regulates emissions from off-road diesel equipment in California. This regulation limits idling of equipment to no more than five minutes, requires equipment operators to label each piece of equipment and provide annual reports to CARB of their fleet's usage and emissions. This regulation also requires systematic upgrading of the emission Tier level of each fleet, and currently no commercial operator is allowed to purchase Tier 0, Tier 1 or Tier 2 equipment. In addition to the purchase restrictions, equipment operators need to meet fleet average emissions targets that become more stringent each year between years 2014 and 2023. Therefore, due to the limitations in off-road construction equipment DPM emissions from implementation of Section 2448, a less than significant short-term TAC impacts would occur during construction of the proposed project from DPM emissions.

As such, construction of the proposed project would result in a less than significant exposure of sensitive receptors to substantial pollutant concentrations.

Operations-Related Sensitive Receptor Impacts

The on-going operations of the proposed project may expose sensitive receptors to substantial pollutant concentrations of local CO emission impacts from the project-generated vehicular trips and from the potential local air quality impacts from onsite operations. The following analyzes the vehicular CO emissions. Local criteria pollutant impacts from onsite operations, and toxic air contaminant impacts.

Local CO Hotspot Impacts from Project-Generated Vehicle Trips

CO is the pollutant of major concern along roadways because the most notable source of CO is motor vehicles. For this reason, CO concentrations are usually indicative of the local air quality generated by a roadway network and are used as an indicator of potential impacts to sensitive receptors. The analysis provided above in Section 10.3 shows that no local CO Hotspots are anticipated to be created at any nearby intersections from the vehicle traffic generated by the proposed project. Therefore, operation of the proposed project would result in a less than significant exposure of offsite sensitive receptors to substantial pollutant concentrations.

Local Criteria Pollutant Impacts from Onsite Operations

The local air quality impacts from the operation of the proposed project would occur from onsite sources such as architectural coatings and landscaping equipment. The analysis provided above in Section 10.3 found that the operation of the proposed project would not exceed the local NOx, CO, PM10 and PM2.5 thresholds of significance discussed above in Section 9.2. Therefore, the on-going operations of the proposed project would create a less than significant operations-related impact to local air quality due to on-site emissions and no mitigation would be required.

Operations-Related Toxic Air Contaminant Impacts

Particulate matter (PM) from diesel exhaust is the predominant TAC in most areas and according to *The California Almanac of Emissions and Air Quality 2013 Edition*, prepared by CARB, about 80 percent of the outdoor TAC cancer risk is from diesel exhaust. Some chemicals in diesel exhaust, such as benzene and formaldehyde have been listed as carcinogens by State Proposition 65 and the Federal Hazardous Air Pollutants program. Due to the nominal number of diesel truck trips that are anticipated to be generated by the on-going operation of the proposed single-family homes, a less than significant TAC impact would be created from the on-going operations of the proposed project and no mitigation would be required.

Level of Significance

Less than significant impact.

10.5 Odor Emissions

The proposed project would not create objectionable odors affecting a substantial number of people. Individual responses to odors are highly variable and can result in a variety of effects. Generally, the impact of an odor results from a variety of factors such as frequency, duration, offensiveness, location, and sensory perception. The frequency is a measure of how often an individual is exposed to an odor in the ambient environment. The intensity refers to an individual's or group's perception of the odor strength or concentration. The duration of an odor refers to the elapsed time over which an odor is experienced. The offensiveness of the odor is the subjective rating of the pleasantness or unpleasantness of an odor. The location accounts for the type of area in which a potentially affected person lives, works, or visits; the type of activity in which he or she is engaged; and the sensitivity of the impacted receptor.

Sensory perception has four major components: detectability, intensity, character, and hedonic tone. The detection (or threshold) of an odor is based on a panel of responses to the odor. There are two types of thresholds: the odor detection threshold and the recognition threshold. The detection threshold is the lowest concentration of an odor that will elicit a response in a percentage of the people that live and work in the immediate vicinity of the project site and is typically presented as the mean (or 50 percent of the population). The recognition threshold is the minimum concentration that is recognized as having a characteristic odor quality, this is typically represented by recognition by 50 percent of the population. The intensity refers to the perceived strength of the odor. The odor character is what the substance smells like. The hedonic tone is a judgment of the pleasantness or unpleasantness of the odor. The hedonic tone varies in subjective experience, frequency, odor character, odor intensity, and duration. Potential odor impacts have been analyzed separately for construction and operations below.

Construction-Related Odor Impacts

Potential sources that may emit odors during construction activities include the application of coatings such as asphalt pavement, paints and solvents and from emissions from diesel equipment. Standard construction requirements that limit the time of day when construction may occur as well as SCAQMD Rule 1108 that limits VOC content in asphalt and Rule 1113 that limits the VOC content in paints and solvents would minimize odor impacts from construction. As such, the objectionable odors that may be produced during the construction process would be temporary and would not likely be noticeable for extended periods of time beyond the project site's boundaries. Through compliance with the applicable regulations that reduce odors and due to the transitory nature of construction odors, a less than significant odor impact would occur and no mitigation would be required.

Operations-Related Odor Impacts

The proposed project would consist of the development of a single-family residential development. The proposed project would not contain any known sources of odors. Therefore, no significant impact related to odors would occur during the on-going operations of the proposed project.

Level of Significance

Less than significant impact.

10.6 Energy Consumption

The proposed project would impact energy resources during construction and operation. Energy resources that would be potentially impacted include electricity and petroleum based fuel supplies and distribution systems. As detailed in PDF-1, the project will be designed as an All-Electric Development, which requires all appliances that are installed into the proposed homes to be electric powered and as such, no natural gas will be utilized on the project site and no natural gas lines will be run on the project site. This analysis includes a discussion of the potential energy impacts of the proposed projects, with particular emphasis on avoiding or reducing inefficient, wasteful, and unnecessary consumption of energy. A general definition of each of these energy resources are provided below.

Electricity, a consumptive utility, is a man-made resource. The production of electricity requires the consumption or conversion of energy resources, including water, wind, oil, gas, coal, solar, geothermal, and nuclear resources, into energy. The delivery of electricity involves a number of system components, including substations and transformers that lower transmission line power (voltage) to a level appropriate for on-site distribution and use. The electricity generated is distributed through a network of transmission and distribution lines commonly called a power grid. Conveyance of electricity through transmission lines is typically responsive to market demands. In 2022, Riverside County consumed 17,781 Gigawatt-hours per year of electricity[6].

Petroleum-based fuels currently account for a majority of the California's transportation energy sources and primarily consist of diesel and gasoline types of fuels. However, the state has been working on developing strategies to reduce petroleum use. Over the last decade California has implemented several policies, rules, and regulations to improve vehicle efficiency, increase the development and use of alternative fuels, reduce air pollutants and GHG emissions from the transportation sector, and reduce vehicle miles traveled (VMT). Accordingly, petroleum-based fuel consumption in California has declined. In 2022, 981 million gallons of gasoline and 173 million gallons of diesel was sold in Riverside County[7].

The following section calculates the potential energy consumption associated with the construction and operations of the proposed project and provides a determination if any energy utilized by the proposed project is wasteful, inefficient, or unnecessary consumption of energy resources.

Construction Energy

The construction activities for the proposed project are anticipated to include site preparation and grading of 29 acres of the 36.55-acre project site, building construction of 73 single-family homes, paving of the

6 Obtained from: http://www.ecdms.energy.ca.gov/elecbycounty.aspx
7 Obtained from: https://www.energy.ca.gov/media/3874

onsite roads and driveways, sidewalks and hardscapes, and application of architectural coatings. The proposed project would consume energy resources during construction in three (3) general forms:

1. Petroleum-based fuels used to power off-road construction vehicles and equipment on the project site, construction worker travel to and from the project site, as well as delivery and haul truck trips (e.g. hauling of dirt and gravel to and from the project site);
2. Electricity associated with the conveyance of water that would be used during project construction for dust control (supply and conveyance) and electricity to power any necessary lighting during construction, electronic equipment, or other construction activities necessitating electrical power; and,
3. Energy used in the production of construction materials, such as asphalt, steel, concrete, pipes, and manufactured or processed materials such as lumber and glass.

Construction-Related Electricity

During construction the proposed project would consume electricity to construct the proposed residential development. Electricity would be supplied to the project site by Southern California Edison and would be obtained from the existing electrical lines in the vicinity of the project site. The use of electricity from existing power lines rather than temporary diesel or gasoline powered generators would minimize impacts on fuel consumption. Electricity consumed during project construction would vary throughout the construction period based on the construction activities being performed. Various construction activities include electricity associated with the conveyance of water that would be used during project construction for dust control (supply and conveyance) and electricity to power any necessary lighting during construction, electronic equipment, or other construction activities necessitating electrical power. Such electricity demand would be temporary, nominal, and would cease upon the completion of construction. Overall, construction activities associated with the proposed project would require limited electricity consumption that would not be expected to have an adverse impact on available electricity supplies and infrastructure. Therefore, the use of electricity during project construction would not be wasteful, inefficient, or unnecessary.

Since there are currently power lines in the vicinity of the project site, it is anticipated that only nominal improvements would be required to Southern California Edison Utility distribution lines and equipment with development of the proposed project. Compliance with County's guidelines and requirements would ensure that the proposed project fulfills its responsibilities relative to infrastructure installation, coordinates any electrical infrastructure removals or relocations, and limits any impacts associated with construction of the project. Construction of the project's electrical infrastructure is not anticipated to adversely affect the electrical infrastructure serving the surrounding uses or utility system capacity.

Construction-Related Petroleum Fuel Use

Petroleum-based fuel usage represents the highest amount of transportation energy potentially consumed during construction, which would be utilized by both off-road equipment operating on the project site and on-road automobiles transporting workers to and from the project site and on-road trucks transporting equipment and supplies to the project site.

The off-road construction equipment fuel usage was calculated through use of the off-road equipment assumptions and fuel use assumptions shown above in Section 8.2, which found that construction of the proposed project would consume 9,496 gallons of gasoline and 88,226 gallons of diesel fuel. This equates

to 0.001 percent of the gasoline and 0.05 percent of the diesel consumed annually in Riverside County. As such, the construction-related petroleum use would be nominal, when compared to current county-wide petroleum usage rates.

Construction activities associated with the proposed project would be required to adhere to all State and SCAQMD regulations for off-road equipment and on-road trucks, which provide minimum fuel efficiency standards. As such, construction activities for the proposed project would not result in the wasteful, inefficient, and unnecessary consumption of energy resources. Impacts regarding transportation energy would be less than significant. Development of the project would not result in the need to manufacture construction materials or create new building material facilities specifically to supply the proposed project. It is difficult to measure the energy used in the production of construction materials such as asphalt, steel, and concrete, it is reasonable to assume that the production of building materials such as concrete, steel, etc., would employ all reasonable energy conservation practices in the interest of minimizing the cost of doing business.

Operational Energy

The on-going operation of the proposed project would require the use of energy resources for multiple purposes including, but not limited to, heating/ventilating/air conditioning (HVAC), refrigeration, lighting, appliances, and electronics. Energy would also be consumed during operations related to water usage, solid waste disposal, landscape equipment and vehicle trips.

Operations-Related Electricity

Operation of the proposed project would result in consumption of electricity at the project site. As detailed above in Section 8.2 the proposed project would consume 685,845 kilowatt-hours per year of electricity. This equates to 0.004 percent of the electricity consumed annually in the County of Riverside. As such, the operations-related electricity use would be nominal, when compared to current electricity usage rates in the County.

It should be noted that the proposed project will be required to meet the 2022 Title 24, Part 6 building energy efficiency standards that have been developed to meet the State's goal of zero-net-energy use for new homes. The zero net energy use will be achieved through a variety of measures to make new homes more energy efficient and by also requiring installation of photovoltaic systems of adequate size to generate enough electricity to meet the zero-net energy use standard. Although, the proposed project would be designed to be net zero energy use, the CalEEMod model found that the proposed project would continue to utilize a nominal amount of power. Therefore, it is anticipated the proposed project will be designed and built to minimize electricity use and that existing and planned electricity capacity and electricity supplies would be sufficient to support the proposed project's electricity demand. Thus, impacts with regard to electrical supply and infrastructure capacity would be less than significant and no mitigation measures would be required.

Operations-Related Vehicular Petroleum Fuel Usage

Operation of the proposed project would result in increased consumption of petroleum-based fuels related to vehicular travel to and from the project site. As detailed above in Section 8.2 the proposed project would consume 108,171 gallons of gasoline fuel per year from vehicle travel. This equates to 0.011 percent of the gasoline consumed in Riverside County annually. As such, the operations-related petroleum use would be nominal, when compared to current petroleum usage rates.

It should be noted that, the proposed project would comply with all Federal, State, and City requirements related to the consumption of transportation energy that includes California Code of Regulations Title 24, Part 10 California Green Building Standards that require all new garages for the proposed homes to install electrical panels of adequate size to support the installation of electric vehicle charging systems. Therefore, it is anticipated the proposed project will be designed and built to minimize transportation energy through the promotion of the use of electric-powered vehicles and it is anticipated that existing and planned capacity and supplies of transportation fuels would be sufficient to support the proposed project's demand. Thus, impacts with regard transportation energy supply and infrastructure capacity would be less than significant and no mitigation measures would be required.

In conclusion, the proposed project would comply with regulatory compliance measures outlined by the State and County related to Air Quality, GHG, Transportation/Circulation, and Water Supply. Additionally, the proposed project would be constructed in accordance with all applicable County Building and Fire Codes. Therefore, the proposed project would not result in the wasteful, inefficient, or unnecessary consumption of energy resources during project construction or operation. Impacts would be less than significant.

Level of Significance

Less than significant impact.

10.7 Energy Plan Consistency

The proposed project would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency. The applicable energy plan for the proposed project is the *County of Riverside General Plan 2035*, Revised July 17, 2018. The General Plan's energy-related policies incorporates the strategies provided in both the California Energy Commission's Renewables Portfolio Standards as well as California's Clean Energy Transition Plan. The proposed project's consistency with the applicable energy-related policies in the General Plan are shown in Table P.

Table P – Proposed Project Compliance with Applicable General Plan Energy Policies

Policy No.	General Plan Policy	Proposed Project Implementation Actions
AQ 4.1	Require the use of all feasible building materials/ methods which reduce emissions.	**Consistent.** The proposed homes will be designed to meet the most current Title 24 Part 6 building standards that require enhanced insulation in order to reduce energy usage and associated emissions.
AQ 4.2	Require the use of all feasible efficient heating equipment and other appliances, such as water heaters, swimming pool heaters, cooking equipment, refrigerators, furnaces and boiler units.	**Consistent.** The proposed homes will be designed to meet the most current Title 24 Part 11 building standards that require all installed appliances to be energy efficient.
AQ 4.3	Require centrally heated facilities to utilize automated time clocks or occupant sensors to control heating where feasible.	**Consistent.** The proposed homes will be designed to meet the most current Title 24 Part 11 building standards that require the use of occupant sensors.
AQ 4.4	Require residential building construction to comply with energy use guidelines detailed in Part 6 (California Energy Code) and/or Part 11 (California Green Building Standards Code) of Title 24 of the California Code of Regulations.	**Consistent.** The proposed homes will be designed to meet the most current Title 24 Part 6 and Title 24 Part 11 building standards.

Policy No.	General Plan Policy	Proposed Project Implementation Actions
AQ 5.4	Encourage the incorporation of energy-efficient design elements, including appropriate site orientation and the use of shade and windbreak trees to reduce fuel consumption for heating and cooling.	**Consistent.** The proposed project has been designed to incorporate energy-efficient design elements that include site orientation and the use of shade trees to reduce fuel consumption.
AQ 20.7	Reduce VMT through increased densities in urban centers and encouraging emphasis on mixed use to provide residential, commercial and employment opportunities in closer proximity to each other. Such measures will also support achieving the appropriate jobs-housing balance within the communities. (AI 47, 53, 117, 146)	**Consistent.** The proposed project consists of development of single-family homes in an area in close proximity to existing commercial and employment areas. As such, the project will support achieving appropriate jobs-housing balance within the community.
AQ 20.8	Reduce VMT by increasing options for non-vehicular access through urban design principles that promote higher residential densities with easily accessible parks and recreation opportunities nearby. (AI 115, 117, 146)	**Consistent.** The proposed project will include trails to a proposed City Park that will be within walking distance of the proposed homes as well as installation of sidewalks on onsite roads that will connect to the sidewalks on the offsite roads that will reduce VMT.
AQ 20.9	Reduce urban sprawl in order to minimize energy costs associated with infrastructure construction and transmission to distant locations, and to maximize protection of open space. (AI 26)	**Consistent.** The proposed project is an infill development that is bordered by proposed residential uses on two sides. As such the infrastructure in the vicinity of the project site was designed of adequate size to support the proposed project and only minimal offsite improvements to infrastructure will be required as a result of development of the proposed project.
AQ 20.10	Reduce energy consumption of the new developments (residential, commercial and industrial) through efficient site design that takes into consideration solar orientation and shading, as well as passive solar design. (AI 147)	**Consistent.** The proposed project has been designed to incorporate energy-efficient design elements that include solar orientation and shading.
AQ 20.11	Increase energy efficiency of the new developments through efficient use of utilities (water, electricity, natural gas) and infrastructure design. Also, increase energy efficiency through use of energy efficient mechanical systems and equipment. (AI 147)	**Consistent.** The proposed homes will be designed to meet the most current Title 24 Part 6 and Title 24 Part 11 building standards that require the installation of energy efficient lights, appliances and ventilation systems as well as the installation of low-flow fixtures and use of water efficient irrigation systems.
AQ 20.18	Encourage the installation of solar panels and other energy-efficient improvements and facilitate residential and commercial renewable energy facilities (solar array installations, individual wind energy generators, etc.). (AI 147)	**Consistent.** The proposed homes will be designed to meet the most current Title 24 Part 6 building standards that require each home to install a solar PV system of adequate size to meet the net zero electricity usage requirements.

Source: County of Riverside, 2018.

As shown in Table P, the proposed project would be consistent with all applicable energy-related policies from the General Plan. Therefore, the proposed project would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency. Impacts would be less than significant.

Level of Significance

Less than significant impact.

10.8 Generation of Greenhouse Gas Emissions

The proposed project would not generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment and would not conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing GHG emissions. The proposed project would consist of a single-family residential development. The proposed project is anticipated to generate GHG emissions from area sources, energy usage, mobile sources, waste disposal, water usage, and construction equipment. A summary of the results is shown below in Table Q and the CalEEMod model run is provided in Appendix A.

Table Q – Project Related Greenhouse Gas Annual Emissions

	Greenhouse Gas Emissions (Metric Tons per Year)			
Category	**CO_2**	**CH_4**	**N_2O**	**CO_2e**
Mobile Sources[1]	1,062	0.04	0.05	1,079
Area Sources[2]	4.36	<0.01	<0.01	4.38
Energy Usage[3]	108	0.01	<0.01	108
Water and Wastewater[4]	7.99	0.10	0.01	11.1
Solid Waste[5]	5.97	0.60	<0.01	20.9
Refrigeration[6]	--	--	--	0.17
Construction[7]	32.4	<0.01	<0.01	32.8
Total GHG Emissions	1,221	0.75	0.07	**1,256**
County of Riverside CAP Threshold of Significance				**3,000**

Notes:

[1] Mobile sources consist of GHG emissions from vehicles.

[2] Area sources consist of GHG emissions from consumer products, architectural coatings, hearths, and landscaping equipment.

[3] Energy usage consists of GHG emissions from electricity and natural gas usage (non-hearths). PDF-1 requires the project to be all-electric.

[4] Water includes GHG emissions from electricity used for transport of water and processing of wastewater.

[5] Waste includes the CO_2 and CH_4 emissions created from the solid waste placed in landfills.

[6] Refrigeration includes GHG emissions from refrigerants used in air conditioning units.

[7] Construction emissions amortized over 30 years as recommended in the SCAQMD GHG Working Group on November 19, 2009.

Source: CalEEMod Version 2022.1.

The data provided in Table Q shows that the proposed project would create 1,256 $MTCO_2e$ per year. According to the County of Riverside CAP threshold of significance detailed above in Section 9.6, if a project creates less than 3,000 $MTCO_2e$ per year, the GHG emissions from the proposed project is determined to be less than significant. It should also be noted, that the proposed structures will be required to meet the most current Title 24 Part 6 building standards that require all new homes to be designed to use net zero energy, through a combination of energy efficiency measures as well as requiring all new homes to install rooftop photovoltaic systems that are of adequate size to generate enough electricity to meet the net-zero energy requirements. The County also requires that all new residential developments to institute the water conservation measures that are detailed in the California Green Building Code. In addition, the project applicant has committed to implementing PDF-1 that requires the proposed project to be an All-Electric Development, as such there would be no natural gas use from operation of the proposed project that would further reduce GHG emissions above current State and County regulations. For these reasons, a less than significant generation of greenhouse gas emissions would occur from construction and operation of the proposed project.

Level of Significance

Less than significant impact.

10.9 Greenhouse Gas Plan Consistency

The proposed project would not conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing GHG emissions. The applicable plans for the proposed project include the County's CAP, the 2022 CARB Scoping Plan, and the Connect SoCal 2020. The project consistency analysis to each of these Plans is detailed below.

Consistency with the County of Riverside Climate Action Plan

The County of Riverside adopted the *County of Riverside Climate Action Plan* (CAP) on December 2015 and updated November 2019. The 2015 CAP utilized a GHG emissions reduction target of a 15 percent decrease from 2008 levels by the year 2020, in order to meet the requirements of AB 32 and SB 375. The CAP was updated in 2019 in order to address a 2017 Settlement Agreement with the Sierra Club and other groups as well as to bring the CAP in conformance with SB 32 and AB 197 that set a statewide 2030 goal of reducing GHG emissions to 40 percent below 1990 levels by 2030. The 2017 Settlement Agreement updated the CAP to also be in alignment with the goal and policies for new development provided in *California's 2017 Climate Change Scoping Plan,* prepared by CARB, November 2017. Specifically, the 2017 Settlement Agreement now requires all new residential developments to install EV charging stations in the garages of new residential units, requires rooftop solar PV systems to be installed on all new homes and new commercial buildings that total more than 100,000 square feet of building space, and use of high-efficiency bulbs in new traffic signals.

The CAP has developed a process for determining significance of GHG impacts from new development projects that includes (1) applying an emissions level that is determined to be less than significant for small projects, and (2) utilizing Screening Tables to mitigate project GHG emissions that exceed the threshold level. The CAP has provided a threshold of 3,000 $MTCO_2e$ per year, which was based on capturing 90 percent of emission from all projects in the County, to be used to identify projects that require the use of Screening Tables or a project-specific technical analysis to quantify and mitigate project emissions. As detailed above in Section 10.8, the proposed project would generate 1,256 $MTCO_2e$ per year, which is within the 3,000 $MTCO_2e$ per year threshold. It should also be noted, that the proposed homes will be required to meet PDF-1 that requires the proposed project to be an All-Electric Development and the most current Title 24 Part 6 building standards that require all new homes to be designed to use net zero energy, through a combination of energy efficiency measures as well as requiring all new homes to install rooftop photovoltaic systems that are of adequate size to generate enough electricity to meet the net-zero energy requirements. Therefore, the proposed project would be consistent with the CAP and potential impacts would be less than significant in this regard.

Consistency with the 2022 CARB Scoping Plan

The 2022 Scoping Plan identifies additional GHG reduction actions and strategies necessary to achieve the AB 1279 target of 85 percent below 1990 levels by 2045. These actions and strategies build upon those identified in the first update to the Scoping Plan (2013) and in the second update to the Scoping Plan (2017). Although a number of these measures are currently established as statewide regulations, some measures have not yet been formally proposed or adopted. It is expected that these measures or similar actions to reduce GHG emissions will be adopted as required to achieve statewide GHG emissions targets. Provided in Table R, Consistency with the 2022 Scoping Plan, is an evaluation of applicable reduction

actions/strategies by emissions source category to determine how the proposed project would be consistent with or exceed reduction actions/strategies outlined in the 2022 Scoping Plan.

Table R – Consistency with the 2022 Scoping Plan

AB 32 GHG Inventory Sector (shown in Bold) and Scoping Plan Action	Proposed Project Consistency with Scoping Plan Actions
GHG Emissions Reductions Relative to the SB 32 Target	
40% below 1990 levels by 2030.	**No Conflict.** Senate Bill 32 and Assembly Bill 197 have codified this emission target into statute that requires emissions reductions for sources covered by the AB 32 inventory, which includes new residential building construction. In order to achieve these emissions reduction targets the CEC has increased the energy-efficiency standards in the most current 2022 Title 24, Part 6 building energy requirements that increases the onsite renewable energy generation requirements and installation of battery storage systems as well as requires the use of greater insulation and more efficient appliances that will reduce GHG emissions.
Smart Growth / Vehicle Miles Traveled (VMT)	
VMT per capita reduced 25% below 2019 levels by 2030, and 22% below 2019 levels by 2045.	**No Conflict.** Senate Bill 375 directs each regional MPO (SCAG is MPO for project area) to adopt a SCS/RTP that meet this reduction target. The Connect SoCal 2020 was prepared to meet these reduction targets. Table S, below details how the proposed project would not conflict with the Connect SoCal 2020. As such, the proposed project would not conflict with this Strategy.
Light-Duty Vehicle (LDV) Zero-Emission Vehicles (ZEVs)	
100% of LDV sales are ZEV by 2035.	**No Conflict.** Executive Order N-79-20 requires all new LDVs sold in California to be zero-emission by the year 2035. The proposed project will be designed to meet the 2022 Title 24, Part 6 and Part 11 requirements that require the new homes garages to include electrical hookups for Type II ZEV charging stations. As such, the proposed project would not conflict with this Strategy.
Truck ZEVs	
100% of medium-duty (MDV)/HDC sales are ZEV by 2040 (AB 74 University of California Institute of Transportation Studies [ITS] report).	**No Conflict.** Executive Order N-79-20 requires all new LDVs sold in California to be zero-emission by the year 2045. Any truck deliveries to the project site during either construction or operations would be operated and maintained by outside companies that would be required to meet the State truck regulations. As such, the proposed Project would not conflict with this Strategy.
Aviation	
10% of aviation fuel demand is met by electricity (batteries) or hydrogen (fuel cells) in 2045.	**Not Applicable.** The proposed project would not utilize any aviation fuel.

AB 32 GHG Inventory Sector (shown in Bold) and Scoping Plan Action	Proposed Project Consistency with Scoping Plan Actions
Sustainable aviation fuel meets most or the rest of the aviation fuel demand that has not already transitioned to hydrogen or batteries.	
Ocean-going Vessels (OGV)	
2020 OGV At-Berth regulation fully implemented, with most OGVs utilizing shore power by 2027. 25% of OGVs utilize hydrogen fuel cell electric technology by 2045.	**Not Applicable.** The proposed project would not utilize any OGVs.
Port Operations	
100% of cargo handling equipment is zero-emission by 2037. 100% of drayage trucks are zero emission by 2035.	**Not Applicable.** The proposed project would not impact any operations at any ports.
Freight and Passenger Rail	
100% of passenger and other locomotive sales are ZEV by 2030. 100% of line haul locomotive sales are ZEV by 2035. Line haul and passenger rail rely primarily on hydrogen fuel cell technology, and others primarily utilize electricity.	**Not Applicable.** The proposed project would not impact any freight or passenger rail operations.
Oil and Gas Extraction	
Phase out oil and gas extraction operations by 2045.	**Not Applicable.** The proposed project would not impact any oil and gas extraction activities.
Petroleum Refining	
CCS on majority of petroleum refining operations by 2030. Production reduced in line with petroleum demand.	**Not Applicable.** The proposed project would not impact any petroleum refining activities.
Electricity Generation	
Electric sector GHG target of 38 $MMTCO_2e$ in 2030 and 31 $MMTCO_2e$ in 2045. Retail sales load coverage	**No Conflict.** Senate Bill 1020 requires that 100 percent of retail sales of electricity be generated by renewable or zero-carbon source of electricity by December 1, 2045. The proposed project would be designed to meet the most current 2022 Title 24, Part 6 building energy requirements that increases the onsite renewable energy generation requirements as well as requires the use of greater insulation and more efficient appliances that will reduce the proposed structures electrical usage.
New Residential and Commercial Buildings	
All electric appliances beginning 2026 (residential) and 2029 (commercial).	**No Conflict.** The project applicant has committed to PDF-1 that requires the proposed project to be an All-Electric development that would not include any natural gas hookups within the proposed project.
Existing Residential Buildings	
80% of appliance sales are electric by 2030 and 100% of appliance sales are electric by 2035. Appliances are replaced at end of life**.**	**Not Applicable.** The proposed project would not include any existing residential buildings.
Existing Commercial Buildings	

AB 32 GHG Inventory Sector (shown in Bold) and Scoping Plan Action	Proposed Project Consistency with Scoping Plan Actions
80% of appliance sales are electric by 2030, and 100% of appliance sales are electric by 2045. Appliances are replaced at end of life.	**Not Applicable.** The proposed project would not include any existing commercial buildings.
Food Products	
7.5% of energy demand electrified directly and/or indirectly by 2030; 75% by 2045.	**Not Applicable.** The proposed project would not include any commercial food production activities.
Construction Equipment	
25% of energy demand electrified by 2030 and 75% electrified by 2045.	**No Conflict.** Executive Order N-79-20 requires all off-road vehicles and equipment to transition to 100 percent zero-emission equipment, where feasible, by 2035. All construction equipment fleets utilized during construction of the proposed project are required to be registered with CARB and meet CARB's current emission reductions regulations, which are anticipated to be updated to meet Executive Order N-79-20 requirements. As such, the proposed project would not conflict with this Strategy.
Chemicals and Allied Products; Pulp and Paper	
Electrify 0% of boilers by 2030 and 100% of boilers by 2045. Hydrogen for 25% of process heat by 2035 and 100% by 2045. Electrify 100% of other energy demand by 2045.	**Not Applicable.** The proposed project would not include any pulp and paper production activities.
Stone, Clay, Glass, and Cement	
CCS on 40% of operations by 2035 and on all facilities by 2045. Process emissions reduced through alternative materials and CCS.	**Not Applicable.** The proposed project would not include any stone, clay, glass and cement production activities.
Other Industrial Manufacturing	
0% energy demand electrified by 2030 and 50% by 2045.	**Not Applicable.** The proposed project would not include any other industrial manufacturing activities.
Combined Heat and Power	
Facilities retire by 2040.	**Not Applicable.** The proposed project would not include any existing combined heat and power facilities.
Agriculture Energy Use	
25% energy demand electrified by 2030 and 75% by 2045.	**Not Applicable.** The proposed project would not include any commercial agriculture activities.
Low Carbon Fuels for Transportation	
Biomass supply is used to produce conventional and advanced biofuels, as well as hydrogen.	**Not Applicable.** The proposed project would not include any production of fuels for transportation.
Low Carbon Fuels for Buildings and Industry	
In 2030s, renewable natural gas (RNG) blended in pipeline. Renewable hydrogen blended in natural gas pipeline at 7% energy (~20% by volume), ramping up between 2030 and 2040. In 2030s, dedicated hydrogen pipelines constructed to serve certain industrial clusters.	**Not Applicable.** The proposed project would not include any production of fuels for buildings and industry.
Non-combustion Methane Emissions	

AB 32 GHG Inventory Sector (shown in Bold) and Scoping Plan Action	Proposed Project Consistency with Scoping Plan Actions
Increase landfill and dairy digester methane capture. Some alternative manure management deployed for smaller dairies. Moderate adoption of enteric strategies by 2030. Divert 75% of organic waste from landfills by 2025. Oil and gas fugitive methane emissions reduced 50% by 2030 and further reductions as infrastructure components retire in line with reduced fossil gas demand.	**Not Applicable.** The proposed project would not include the operation of any landfill or dairy.
High GWP Potential Emissions	
Low GWP refrigerants introduced as building electrification increases, mitigating HFC emissions.	**Not Applicable.** The proposed project would not include the manufacturing of appliances that use low GWP refrigerants.
Compensate for Remaining Emissions	
Carbon Dioxide Removal (CDR) demonstration projects deployed by 2030. CDR scaled to compensate for remaining GHG emissions in 2045	**Not Applicable.** The proposed project would not include any CDR demonstration projects

Source: CARB, 2022.

As shown above in Table R, the proposed project would not conflict with any proposed action or strategy in the 2022 CARB Scoping Plan. Therefore, the proposed project would be consistent with the 2022 CARB Scoping Plan and potential impacts would be less than significant in this regard.

Consistency with Connect SoCal 2020

SCAG adopted the Connect SoCal 2024 on April 4, 2024. However, per SB 375, SCAG and CARB are required to work together until CARB staff conclude that the calculations and quantifications provided would yield accurate estimates of GHG emission reductions. Since CARB staff continue to have significant outstanding concerns about the technical methodology utilized in the Connect SoCal 2024, the current approved RTP/SCS is the Connect SoCal 2020, adopted September 3, 2020. The Connect SoCal 2020 was prepared to meet a 2035 GHG emission reduction target of 19 percent reduction over the 2005 per capita emissions levels through new initiatives of land use, transportation and technology. Provided in Table S, Consistency with the Connect SoCal, is an evaluation of applicable goals and strategies to determine how the proposed project would be consistent with or exceed reduction strategies outlined in the Connect SoCal 2020.

Table S – Consistency with the Connect SoCal 2020

Goals and Strategies	Consistency Assessment
Connect SoCal Goals	
Goal 1: Encourage regional economic prosperity and global competitiveness.	**Not Applicable.** This Goal is directed at SCAG and the City and does not apply to the proposed project. This strategy calls on encouraging regional economic prosperity and global competitiveness. The proposed project would not interfere with such policymaking.

Goals and Strategies	Consistency Assessment
Goal 2: Improve mobility, accessibility, reliability, and travel safety for people and goods.	**Consistent.** The project proposes to construct a new residential development in western Riverside County, that is in close proximity to existing commercial retail, industrial, school and church uses and the proposed project will include an internal trail and sidewalk system that will allow the residents of the proposed homes with improved accessibility to services and is therefore consistent with this Goal.
Goal 3: Enhance the preservation, security, and resilience of the regional transportation system.	**Consistent.** The project would include an internal trail and sidewalk system that connect to existing pathways on both the north and south sides of the project site.
Goal 4: Increase person and goods movement and travel choices within the transportation system.	**Not Applicable.** This strategy calls on SCAG to increase person and goods movement and travel choices across the transportation system. The proposed project would not interfere with this goal.
Goal 5: Reduce greenhouse gas emissions and improve air quality.	**Consistent.** The project would result in criteria air pollutant and GHG emissions during construction and operation. However, emissions would not exceed the SCAQMD significance thresholds.
Goal 6: Support healthy and equitable communities.	**Consistent.** The project would be consistent with this Goal by facilitating the use of alternative modes of transportation, which would aid in reducing car trips and positively impact air quality. The project would encourage pedestrian travel by providing an internal trail and sidewalk system on the project site that connects to existing trails and sidewalks on both the north and south sides of the project site.
Goal 7: Adapt to a changing climate and support an integrated regional development pattern and transportation network.	**Not Applicable.** This goal is directed towards SCAG and does not apply to individual development projects.
Goal 8: Leverage new transportation technologies and data-driven solutions that result in more efficient travel.	**Not Applicable.** This Goal is directed towards SCAG and does not apply to the proposed Project. This strategy calls on SCAG to use new transportation technologies and data-driven solutions to increase efficiency. The proposed Project would not interfere with this goal.
Goal 9: Encourage development of diverse housing types in areas that are supported by multiple transportation options.	**Consistent.** The proposed project would consist of a residential use development in close proximity to existing commercial retail, industrial, school and church uses. The project would provide an internal trail and sidewalk system on the project site that will connect to existing pathways to encourage use of alternative transportation.
Goal 10: Promote conservation of natural and agricultural lands and restoration of habitats.	**Consistent.** The project site is not currently used for any agricultural uses. As such, the Project would not interfere with this goal.
Connect SoCal Strategies	
Strategy 1: Focus growth near destinations and mobility options.	**Consistent**. The proposed project would consist of a residential development in Western Riverside County, in close proximity to major commercial retail centers and industrial areas.
Strategy 2: Promote diverse housing choices.	**Consistent.** The proposed project would consist of development of single-family homes in close proximity to a variety of other housing types.

Goals and Strategies	Consistency Assessment
Strategy 3: Leverage technology innovations.	**Not Applicable**. This strategy is directed to SCAG and jurisdictions and does not apply to the proposed project. This strategy aims to promote low emission technologies, improve access to services through technology, and identify ways to incorporate micro power grids into communities. The proposed project would not interfere with this strategy.
Strategy 4: Support implementation of sustainability policies.	**Consistent.** The proposed project would incorporate Green Building Measures, including water efficient landscaping, efficient lighting, low-flush toilets, and energy efficient appliances.
Strategy 5: Promote a Green Region.	**Consistent.** The proposed project would include open space areas, trails and walkways throughout the project site. Additionally, the development would emphasize sustainability features that promote more resource efficient development.

Source: SCAG, 2020.

As shown above in Table S, the proposed project would not conflict with any proposed goal or strategy in the Connect SoCal 2020. Therefore, the proposed project would be consistent with the Connect SoCal 2020 plan and potential impacts would be less than significant in this regard.

Therefore, the proposed project would not conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases.

Level of Significance

Less than significant impact.

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APPENDIX A

CalEEMod Model Printouts

Highland Grove 5 (TTM No. 39011) Detailed Report

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1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	Highland Grove 5 (TTM No. 39011)
Construction Start Date	11/3/2025
Operational Year	2027
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	2.20
Precipitation (days)	9.00
Location	33.86318455889305, -117.42327280372477
County	Riverside-South Coast
City	Unincorporated
Air District	South Coast AQMD
Air Basin	South Coast
TAZ	5461
EDFZ	11
Electric Utility	Southern California Edison
Gas Utility	Southern California Gas
App Version	2022.1.1.29

1.2. Land Use Types

Land Use Subtype	Size	Unit	Lot Acreage	Building Area (sq ft)	Landscape Area (sq ft)	Special Landscape Area (sq ft)	Population	Description
Single Family Housing	73.0	Dwelling Unit	21.0	142,350	182,952	—	236	—

Other Asphalt Surfaces	8.00	Acre	8.00	0.00	69,696	—	—	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

Sector	#	Measure Title
Energy	E-15	Require All-Electric Development

2. Emissions Summary

2.1. Construction Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	ROG	NOx	CO	SO2	PM10T	PM2.5T	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Unmit.	1.19	10.2	14.9	0.03	0.79	0.45	2,995	0.12	0.07	1.87	3,020
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Unmit.	28.4	38.1	32.7	0.10	8.80	4.50	12,213	0.37	0.92	0.32	12,497
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—
Unmit.	2.72	10.2	12.3	0.03	1.19	0.59	3,261	0.11	0.15	1.11	3,311
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.50	1.86	2.25	< 0.005	0.22	0.11	540	0.02	0.03	0.18	548
Exceeds (Daily Max)	—	—	—	—	—	—	—	—	—	—	—
Threshold	75.0	100	550	150	150	55.0	—	—	—	—	—
Unmit.	No	No	No	No	No	No	—	—	—	—	—
Exceeds (Average Daily)	—	—	—	—	—	—	—	—	—	—	—

Threshold	75.0	100	550	150	150	55.0	—	—	—	—	—
Unmit.	No	No	No	No	No	No	—	—	—	—	—

2.2. Construction Emissions by Year, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Year	ROG	NOx	CO	SO2	PM10T	PM2.5T	CO2T	CH4	N2O	R	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
2026	1.19	10.2	14.9	0.03	0.79	0.45	2,995	0.12	0.07	1.87	3,020
2027	1.14	9.72	14.8	0.03	0.75	0.41	2,983	0.11	0.07	1.69	3,008
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
2025	3.47	38.1	32.7	0.09	8.80	4.50	10,979	0.33	0.91	0.32	11,259
2026	3.21	33.5	30.2	0.10	5.87	2.61	12,213	0.37	0.92	0.31	12,497
2027	1.39	9.75	14.3	0.03	0.75	0.41	2,955	0.11	0.07	0.04	2,978
2028	28.4	0.83	1.36	< 0.005	0.08	0.03	198	0.01	< 0.005	0.01	199
Average Daily	—	—	—	—	—	—	—	—	—	—	—
2025	0.19	2.09	1.80	< 0.005	0.48	0.25	602	0.02	0.05	0.29	617
2026	1.09	10.2	12.3	0.03	1.19	0.59	3,261	0.11	0.15	1.11	3,311
2027	0.83	6.67	9.88	0.02	0.51	0.28	1,981	0.07	0.04	0.47	1,996
2028	2.72	0.08	0.13	< 0.005	0.01	< 0.005	19.0	< 0.005	< 0.005	0.01	19.2
Annual	—	—	—	—	—	—	—	—	—	—	—
2025	0.03	0.38	0.33	< 0.005	0.09	0.04	99.6	< 0.005	0.01	0.05	102
2026	0.20	1.86	2.25	< 0.005	0.22	0.11	540	0.02	0.03	0.18	548
2027	0.15	1.22	1.80	< 0.005	0.09	0.05	328	0.01	0.01	0.08	331
2028	0.50	0.01	0.02	< 0.005	< 0.005	< 0.005	3.15	< 0.005	< 0.005	< 0.005	3.17

2.3. Construction Emissions by Year, Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Year	ROG	NOx	CO	SO2	PM10T	PM2.5T	CO2T	CH4	N2O	R	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
2026	1.19	10.2	14.9	0.03	0.79	0.45	2,995	0.12	0.07	1.87	3,020
2027	1.14	9.72	14.8	0.03	0.75	0.41	2,983	0.11	0.07	1.69	3,008
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
2025	3.47	38.1	32.7	0.09	8.80	4.50	10,979	0.33	0.91	0.32	11,259
2026	3.21	33.5	30.2	0.10	5.87	2.61	12,213	0.37	0.92	0.31	12,497
2027	1.39	9.75	14.3	0.03	0.75	0.41	2,955	0.11	0.07	0.04	2,978
2028	28.4	0.83	1.36	< 0.005	0.08	0.03	198	0.01	< 0.005	0.01	199
Average Daily	—	—	—	—	—	—	—	—	—	—	—
2025	0.19	2.09	1.80	< 0.005	0.48	0.25	602	0.02	0.05	0.29	617
2026	1.09	10.2	12.3	0.03	1.19	0.59	3,261	0.11	0.15	1.11	3,311
2027	0.83	6.67	9.88	0.02	0.51	0.28	1,981	0.07	0.04	0.47	1,996
2028	2.72	0.08	0.13	< 0.005	0.01	< 0.005	19.0	< 0.005	< 0.005	0.01	19.2
Annual	—	—	—	—	—	—	—	—	—	—	—
2025	0.03	0.38	0.33	< 0.005	0.09	0.04	99.6	< 0.005	0.01	0.05	102
2026	0.20	1.86	2.25	< 0.005	0.22	0.11	540	0.02	0.03	0.18	548
2027	0.15	1.22	1.80	< 0.005	0.09	0.05	328	0.01	0.01	0.08	331
2028	0.50	0.01	0.02	< 0.005	< 0.005	< 0.005	3.15	< 0.005	< 0.005	< 0.005	3.17

2.4. Operations Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	ROG	NOx	CO	SO2	PM10T	PM2.5T	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Unmit.	6.54	3.42	30.2	0.07	6.12	1.63	8,768	4.61	0.32	22.9	9,002

Mit.	6.50	2.76	30.0	0.07	6.07	1.57	7,940	4.53	0.32	22.9	8,172
% Reduced	1%	19%	1%	6%	1%	3%	9%	2%	< 0.5%	—	9%
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Unmit.	6.00	3.57	21.8	0.07	6.12	1.63	8,336	4.61	0.33	1.59	8,552
Mit.	5.96	2.92	21.6	0.06	6.07	1.57	7,508	4.54	0.33	1.59	7,722
% Reduced	1%	18%	1%	6%	1%	3%	10%	2%	< 0.5%	—	10%
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—
Unmit.	6.17	3.59	25.0	0.07	5.95	1.58	8,003	4.58	0.33	10.3	8,225
Mit.	6.13	2.93	24.7	0.06	5.90	1.53	7,175	4.51	0.32	10.3	7,395
% Reduced	1%	18%	1%	6%	1%	3%	10%	2%	< 0.5%	—	10%
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—
Unmit.	1.13	0.65	4.56	0.01	1.09	0.29	1,325	0.76	0.05	1.70	1,362
Mit.	1.12	0.54	4.51	0.01	1.08	0.28	1,188	0.75	0.05	1.70	1,224
% Reduced	1%	18%	1%	6%	1%	3%	10%	2%	< 0.5%	—	10%
Exceeds (Daily Max)	—	—	—	—	—	—	—	—	—	—	—
Threshold	55.0	55.0	550	150	150	55.0	—	—	—	—	—
Unmit.	No	No	No	No	No	No	—	—	—	—	—
Mit.	No	No	No	No	No	No	—	—	—	—	—
Exceeds (Average Daily)	—	—	—	—	—	—	—	—	—	—	—
Threshold	55.0	55.0	550	150	150	55.0	—	—	—	—	—
Unmit.	No	No	No	No	No	No	—	—	—	—	—
Mit.	No	No	No	No	No	No	—	—	—	—	—
Exceeds (Annual)	—	—	—	—	—	—	—	—	—	—	—
Threshold	—	—	—	—	—	—	—	—	—	—	3,000
Unmit.	—	—	—	—	—	—	—	—	—	—	No

Mit.	—	—	—	—	—	—	—	—	—	—	No

2.5. Operations Emissions by Sector, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Sector	ROG	NOx	CO	SO2	PM10T	PM2.5T	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Mobile	2.79	2.72	25.8	0.07	6.07	1.57	6,920	0.25	0.30	21.9	7,036
Area	3.71	0.04	4.14	< 0.005	< 0.005	< 0.005	285	0.03	< 0.005	—	286
Energy	0.04	0.66	0.28	< 0.005	0.05	0.05	1,479	0.14	0.01	—	1,485
Water	—	—	—	—	—	—	48.3	0.59	0.01	—	67.2
Waste	—	—	—	—	—	—	36.1	3.60	0.00	—	126
Refrig.	—	—	—	—	—	—	—	—	—	1.02	1.02
Total	6.54	3.42	30.2	0.07	6.12	1.63	8,768	4.61	0.32	22.9	9,002
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Mobile	2.62	2.92	21.6	0.06	6.07	1.57	6,500	0.26	0.31	0.57	6,598
Area	3.34	0.00	0.00	0.00	0.00	0.00	274	0.03	< 0.005	—	275
Energy	0.04	0.66	0.28	< 0.005	0.05	0.05	1,479	0.14	0.01	—	1,485
Water	—	—	—	—	—	—	48.3	0.59	0.01	—	67.2
Waste	—	—	—	—	—	—	36.1	3.60	0.00	—	126
Refrig.	—	—	—	—	—	—	—	—	—	1.02	1.02
Total	6.00	3.57	21.8	0.07	6.12	1.63	8,336	4.61	0.33	1.59	8,552
Average Daily	—	—	—	—	—	—	—	—	—	—	—
Mobile	2.54	2.90	21.9	0.06	5.90	1.53	6,414	0.26	0.30	9.25	6,520
Area	3.59	0.03	2.84	< 0.005	< 0.005	< 0.005	26.3	< 0.005	< 0.005	—	26.5
Energy	0.04	0.66	0.28	< 0.005	0.05	0.05	1,479	0.14	0.01	—	1,485
Water	—	—	—	—	—	—	48.3	0.59	0.01	—	67.2
Waste	—	—	—	—	—	—	36.1	3.60	0.00	—	126

Refrig.	—	—	—	—	—	—	—	—	—	1.02	1.02
Total	6.17	3.59	25.0	0.07	5.95	1.58	8,003	4.58	0.33	10.3	8,225
Annual	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.46	0.53	3.99	0.01	1.08	0.28	1,062	0.04	0.05	1.53	1,079
Area	0.66	< 0.005	0.52	< 0.005	< 0.005	< 0.005	4.36	< 0.005	< 0.005	—	4.38
Energy	0.01	0.12	0.05	< 0.005	0.01	0.01	245	0.02	< 0.005	—	246
Water	—	—	—	—	—	—	7.99	0.10	< 0.005	—	11.1
Waste	—	—	—	—	—	—	5.97	0.60	0.00	—	20.9
Refrig.	—	—	—	—	—	—	—	—	—	0.17	0.17
Total	1.13	0.65	4.56	0.01	1.09	0.29	1,325	0.76	0.05	1.70	1,362

2.6. Operations Emissions by Sector, Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Sector	ROG	NOx	CO	SO2	PM10T	PM2.5T	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Mobile	2.79	2.72	25.8	0.07	6.07	1.57	6,920	0.25	0.30	21.9	7,036
Area	3.71	0.04	4.14	< 0.005	< 0.005	< 0.005	285	0.03	< 0.005	—	286
Energy	0.00	0.00	0.00	0.00	0.00	0.00	651	0.06	0.01	—	654
Water	—	—	—	—	—	—	48.3	0.59	0.01	—	67.2
Waste	—	—	—	—	—	—	36.1	3.60	0.00	—	126
Refrig.	—	—	—	—	—	—	—	—	—	1.02	1.02
Total	6.50	2.76	30.0	0.07	6.07	1.57	7,940	4.53	0.32	22.9	8,172
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Mobile	2.62	2.92	21.6	0.06	6.07	1.57	6,500	0.26	0.31	0.57	6,598
Area	3.34	0.00	0.00	0.00	0.00	0.00	274	0.03	< 0.005	—	275
Energy	0.00	0.00	0.00	0.00	0.00	0.00	651	0.06	0.01	—	654
Water	—	—	—	—	—	—	48.3	0.59	0.01	—	67.2

Waste	—	—	—	—	—	—	36.1	3.60	0.00	—	126
Refrig.	—	—	—	—	—	—	—	—	—	1.02	1.02
Total	5.96	2.92	21.6	0.06	6.07	1.57	7,508	4.54	0.33	1.59	7,722
Average Daily	—	—	—	—	—	—	—	—	—	—	—
Mobile	2.54	2.90	21.9	0.06	5.90	1.53	6,414	0.26	0.30	9.25	6,520
Area	3.59	0.03	2.84	< 0.005	< 0.005	< 0.005	26.3	< 0.005	< 0.005	—	26.5
Energy	0.00	0.00	0.00	0.00	0.00	0.00	651	0.06	0.01	—	654
Water	—	—	—	—	—	—	48.3	0.59	0.01	—	67.2
Waste	—	—	—	—	—	—	36.1	3.60	0.00	—	126
Refrig.	—	—	—	—	—	—	—	—	—	1.02	1.02
Total	6.13	2.93	24.7	0.06	5.90	1.53	7,175	4.51	0.32	10.3	7,395
Annual	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.46	0.53	3.99	0.01	1.08	0.28	1,062	0.04	0.05	1.53	1,079
Area	0.66	< 0.005	0.52	< 0.005	< 0.005	< 0.005	4.36	< 0.005	< 0.005	—	4.38
Energy	0.00	0.00	0.00	0.00	0.00	0.00	108	0.01	< 0.005	—	108
Water	—	—	—	—	—	—	7.99	0.10	< 0.005	—	11.1
Waste	—	—	—	—	—	—	5.97	0.60	0.00	—	20.9
Refrig.	—	—	—	—	—	—	—	—	—	0.17	0.17
Total	1.12	0.54	4.51	0.01	1.08	0.28	1,188	0.75	0.05	1.70	1,224

3. Construction Emissions Details

3.1. Site Preparation (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	ROG	NOx	CO	SO2	PM10T	PM2.5T	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	3.31	31.6	30.2	0.05	1.37	1.26	5,295	0.21	0.04	—	5,314
Dust From Material Movement	—	—	—	—	5.12	2.63	—	—	—	—	—
Onsite truck	< 0.005	0.05	0.03	< 0.005	0.56	0.06	9.90	< 0.005	< 0.005	< 0.005	10.4
Average Daily	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.18	1.73	1.65	< 0.005	0.07	0.07	290	0.01	< 0.005	—	291
Dust From Material Movement	—	—	—	—	0.28	0.14	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	0.03	< 0.005	0.54	< 0.005	< 0.005	< 0.005	0.57
Annual	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.32	0.30	< 0.005	0.01	0.01	48.0	< 0.005	< 0.005	—	48.2
Dust From Material Movement	—	—	—	—	0.05	0.03	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	0.01	< 0.005	0.09	< 0.005	< 0.005	< 0.005	0.09
Offsite	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Worker	0.07	0.08	1.02	0.00	0.23	0.05	227	0.01	0.01	0.02	230
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.08	6.31	1.50	0.04	1.53	0.51	5,447	0.10	0.86	0.30	5,705
Average Daily	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	0.01	0.06	0.00	0.01	< 0.005	12.6	< 0.005	< 0.005	0.02	12.8
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Hauling	< 0.005	0.35	0.08	< 0.005	0.08	0.03	298	0.01	0.05	0.27	313
Annual	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.01	0.00	< 0.005	< 0.005	2.08	< 0.005	< 0.005	< 0.005	2.11
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	0.06	0.01	< 0.005	0.02	0.01	49.4	< 0.005	0.01	0.05	51.8

3.2. Site Preparation (2025) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	ROG	NOx	CO	SO2	PM10T	PM2.5T	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	3.31	31.6	30.2	0.05	1.37	1.26	5,295	0.21	0.04	—	5,314
Dust From Material Movement	—	—	—	—	5.12	2.63	—	—	—	—	—
Onsite truck	< 0.005	0.05	0.03	< 0.005	0.56	0.06	9.90	< 0.005	< 0.005	< 0.005	10.4
Average Daily	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.18	1.73	1.65	< 0.005	0.07	0.07	290	0.01	< 0.005	—	291
Dust From Material Movement	—	—	—	—	0.28	0.14	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	0.03	< 0.005	0.54	< 0.005	< 0.005	< 0.005	0.57
Annual	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.32	0.30	< 0.005	0.01	0.01	48.0	< 0.005	< 0.005	—	48.2

Dust From Material Movement	—	—	—	—	0.05	0.03	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	0.01	< 0.005	0.09	< 0.005	< 0.005	< 0.005	0.09
Offsite	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Worker	0.07	0.08	1.02	0.00	0.23	0.05	227	0.01	0.01	0.02	230
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.08	6.31	1.50	0.04	1.53	0.51	5,447	0.10	0.86	0.30	5,705
Average Daily	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	0.01	0.06	0.00	0.01	< 0.005	12.6	< 0.005	< 0.005	0.02	12.8
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	0.35	0.08	< 0.005	0.08	0.03	298	0.01	0.05	0.27	313
Annual	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.01	0.00	< 0.005	< 0.005	2.08	< 0.005	< 0.005	< 0.005	2.11
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	0.06	0.01	< 0.005	0.02	0.01	49.4	< 0.005	0.01	0.05	51.8

3.3. Grading (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	ROG	NOx	CO	SO2	PM10T	PM2.5T	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	3.04	27.2	27.6	0.06	1.12	1.03	6,599	0.27	0.05	—	6,621

Dust From Material Movement	—	—	—	—	2.40	0.95	—	—	—	—	—
Onsite truck	< 0.005	0.05	0.03	< 0.005	0.56	0.06	9.74	< 0.005	< 0.005	< 0.005	10.2
Average Daily	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.38	3.36	3.40	0.01	0.14	0.13	814	0.03	0.01	—	816
Dust From Material Movement	—	—	—	—	0.30	0.12	—	—	—	—	—
Onsite truck	< 0.005	0.01	< 0.005	< 0.005	0.07	0.01	1.19	< 0.005	< 0.005	< 0.005	1.26
Annual	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.07	0.61	0.62	< 0.005	0.03	0.02	135	0.01	< 0.005	—	135
Dust From Material Movement	—	—	—	—	0.05	0.02	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	0.01	< 0.005	0.20	< 0.005	< 0.005	< 0.005	0.21
Offsite	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Worker	0.08	0.09	1.09	0.00	0.26	0.06	254	< 0.005	0.01	0.02	257
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.08	6.13	1.47	0.04	1.53	0.51	5,351	0.10	0.86	0.28	5,609
Average Daily	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.14	0.00	0.03	0.01	31.7	< 0.005	< 0.005	0.05	32.1
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.01	0.76	0.18	< 0.005	0.19	0.06	659	0.01	0.11	0.58	692
Annual	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.03	0.00	0.01	< 0.005	5.24	< 0.005	< 0.005	0.01	5.31

Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	0.14	0.03	< 0.005	0.03	0.01	109	< 0.005	0.02	0.10	115

3.4. Grading (2026) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	ROG	NOx	CO	SO2	PM10T	PM2.5T	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	3.04	27.2	27.6	0.06	1.12	1.03	6,599	0.27	0.05	—	6,621
Dust From Material Movement	—	—	—	—	2.40	0.95	—	—	—	—	—
Onsite truck	< 0.005	0.05	0.03	< 0.005	0.56	0.06	9.74	< 0.005	< 0.005	< 0.005	10.2
Average Daily	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.38	3.36	3.40	0.01	0.14	0.13	814	0.03	0.01	—	816
Dust From Material Movement	—	—	—	—	0.30	0.12	—	—	—	—	—
Onsite truck	< 0.005	0.01	< 0.005	< 0.005	0.07	0.01	1.19	< 0.005	< 0.005	< 0.005	1.26
Annual	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.07	0.61	0.62	< 0.005	0.03	0.02	135	0.01	< 0.005	—	135
Dust From Material Movement	—	—	—	—	0.05	0.02	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	0.01	< 0.005	0.20	< 0.005	< 0.005	< 0.005	0.21
Offsite	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Worker	0.08	0.09	1.09	0.00	0.26	0.06	254	< 0.005	0.01	0.02	257
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.08	6.13	1.47	0.04	1.53	0.51	5,351	0.10	0.86	0.28	5,609
Average Daily	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.14	0.00	0.03	0.01	31.7	< 0.005	< 0.005	0.05	32.1
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.01	0.76	0.18	< 0.005	0.19	0.06	659	0.01	0.11	0.58	692
Annual	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.03	0.00	0.01	< 0.005	5.24	< 0.005	< 0.005	0.01	5.31
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	0.14	0.03	< 0.005	0.03	0.01	109	< 0.005	0.02	0.10	115

3.5. Building Construction (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	ROG	NOx	CO	SO2	PM10T	PM2.5T	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.07	9.85	13.0	0.02	0.38	0.35	2,397	0.10	0.02	—	2,405
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.07	9.85	13.0	0.02	0.38	0.35	2,397	0.10	0.02	—	2,405
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Average Daily	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.63	5.82	7.66	0.01	0.22	0.21	1,417	0.06	0.01	—	1,422
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.12	1.06	1.40	< 0.005	0.04	0.04	235	0.01	< 0.005	—	235
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Worker	0.11	0.10	1.89	0.00	0.34	0.08	362	0.02	0.01	1.23	368
Vendor	0.01	0.25	0.08	< 0.005	0.07	0.02	235	0.01	0.04	0.64	246
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Worker	0.10	0.12	1.43	0.00	0.34	0.08	333	0.01	0.01	0.03	337
Vendor	< 0.005	0.26	0.08	< 0.005	0.07	0.02	235	0.01	0.04	0.02	246
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—
Worker	0.06	0.07	0.88	0.00	0.20	0.05	199	< 0.005	0.01	0.31	202
Vendor	< 0.005	0.16	0.05	< 0.005	0.04	0.01	139	< 0.005	0.02	0.16	146
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.16	0.00	0.04	0.01	33.0	< 0.005	< 0.005	0.05	33.5
Vendor	< 0.005	0.03	0.01	< 0.005	0.01	< 0.005	23.0	< 0.005	< 0.005	0.03	24.1
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.6. Building Construction (2026) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	ROG	NOx	CO	SO2	PM10T	PM2.5T	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.07	9.85	13.0	0.02	0.38	0.35	2,397	0.10	0.02	—	2,405
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.07	9.85	13.0	0.02	0.38	0.35	2,397	0.10	0.02	—	2,405
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.63	5.82	7.66	0.01	0.22	0.21	1,417	0.06	0.01	—	1,422
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.12	1.06	1.40	< 0.005	0.04	0.04	235	0.01	< 0.005	—	235
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Worker	0.11	0.10	1.89	0.00	0.34	0.08	362	0.02	0.01	1.23	368
Vendor	0.01	0.25	0.08	< 0.005	0.07	0.02	235	0.01	0.04	0.64	246
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Worker	0.10	0.12	1.43	0.00	0.34	0.08	333	0.01	0.01	0.03	337
Vendor	< 0.005	0.26	0.08	< 0.005	0.07	0.02	235	0.01	0.04	0.02	246

Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—
Worker	0.06	0.07	0.88	0.00	0.20	0.05	199	< 0.005	0.01	0.31	202
Vendor	< 0.005	0.16	0.05	< 0.005	0.04	0.01	139	< 0.005	0.02	0.16	146
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.16	0.00	0.04	0.01	33.0	< 0.005	< 0.005	0.05	33.5
Vendor	< 0.005	0.03	0.01	< 0.005	0.01	< 0.005	23.0	< 0.005	< 0.005	0.03	24.1
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.7. Building Construction (2027) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	ROG	NOx	CO	SO2	PM10T	PM2.5T	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.03	9.39	12.9	0.02	0.34	0.31	2,397	0.10	0.02	—	2,405
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.03	9.39	12.9	0.02	0.34	0.31	2,397	0.10	0.02	—	2,405
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.63	5.77	7.95	0.01	0.21	0.19	1,473	0.06	0.01	—	1,478
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.12	1.05	1.45	< 0.005	0.04	0.03	244	0.01	< 0.005	—	245
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Worker	0.11	0.09	1.75	0.00	0.34	0.08	356	< 0.005	0.01	1.11	361
Vendor	< 0.005	0.24	0.08	< 0.005	0.07	0.02	231	0.01	0.03	0.59	242
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Worker	0.10	0.10	1.32	0.00	0.34	0.08	327	< 0.005	0.01	0.03	331
Vendor	< 0.005	0.25	0.08	< 0.005	0.07	0.02	231	0.01	0.03	0.02	241
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—
Worker	0.06	0.07	0.85	0.00	0.21	0.05	204	< 0.005	0.01	0.29	206
Vendor	< 0.005	0.15	0.05	< 0.005	0.04	0.01	142	< 0.005	0.02	0.16	148
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.16	0.00	0.04	0.01	33.7	< 0.005	< 0.005	0.05	34.1
Vendor	< 0.005	0.03	0.01	< 0.005	0.01	< 0.005	23.5	< 0.005	< 0.005	0.03	24.6
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.8. Building Construction (2027) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	ROG	NOx	CO	SO2	PM10T	PM2.5T	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	1.03	9.39	12.9	0.02	0.34	0.31	2,397	0.10	0.02	—	2,405
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.03	9.39	12.9	0.02	0.34	0.31	2,397	0.10	0.02	—	2,405
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.63	5.77	7.95	0.01	0.21	0.19	1,473	0.06	0.01	—	1,478
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.12	1.05	1.45	< 0.005	0.04	0.03	244	0.01	< 0.005	—	245
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Worker	0.11	0.09	1.75	0.00	0.34	0.08	356	< 0.005	0.01	1.11	361
Vendor	< 0.005	0.24	0.08	< 0.005	0.07	0.02	231	0.01	0.03	0.59	242
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Worker	0.10	0.10	1.32	0.00	0.34	0.08	327	< 0.005	0.01	0.03	331
Vendor	< 0.005	0.25	0.08	< 0.005	0.07	0.02	231	0.01	0.03	0.02	241
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—
Worker	0.06	0.07	0.85	0.00	0.21	0.05	204	< 0.005	0.01	0.29	206
Vendor	< 0.005	0.15	0.05	< 0.005	0.04	0.01	142	< 0.005	0.02	0.16	148
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Annual	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.16	0.00	0.04	0.01	33.7	< 0.005	< 0.005	0.05	34.1
Vendor	< 0.005	0.03	0.01	< 0.005	0.01	< 0.005	23.5	< 0.005	< 0.005	0.03	24.6
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.9. Paving (2027) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	ROG	NOx	CO	SO2	PM10T	PM2.5T	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.74	6.94	9.95	0.01	0.30	0.27	1,511	0.06	0.01	—	1,516
Paving	0.60	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.07	0.67	0.95	< 0.005	0.03	0.03	145	0.01	< 0.005	—	145
Paving	0.06	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.12	0.17	< 0.005	0.01	< 0.005	24.0	< 0.005	< 0.005	—	24.1
Paving	0.01	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Worker	0.06	0.06	0.75	0.00	0.20	0.05	187	< 0.005	0.01	0.02	189
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.08	0.00	0.02	< 0.005	18.1	< 0.005	< 0.005	0.03	18.4
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.01	0.00	< 0.005	< 0.005	3.00	< 0.005	< 0.005	< 0.005	3.04
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.10. Paving (2027) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	ROG	NOx	CO	SO2	PM10T	PM2.5T	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.74	6.94	9.95	0.01	0.30	0.27	1,511	0.06	0.01	—	1,516
Paving	0.60	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.07	0.67	0.95	< 0.005	0.03	0.03	145	0.01	< 0.005	—	145
Paving	0.06	—	—	—	—	—	—	—	—	—	—

Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.12	0.17	< 0.005	0.01	< 0.005	24.0	< 0.005	< 0.005	—	24.1
Paving	0.01	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Worker	0.06	0.06	0.75	0.00	0.20	0.05	187	< 0.005	0.01	0.02	189
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.08	0.00	0.02	< 0.005	18.1	< 0.005	< 0.005	0.03	18.4
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.01	0.00	< 0.005	< 0.005	3.00	< 0.005	< 0.005	< 0.005	3.04
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.11. Architectural Coating (2028) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	ROG	NOx	CO	SO2	PM10T	PM2.5T	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.11	0.81	1.12	< 0.005	0.02	0.01	134	0.01	< 0.005	—	134
Architectural Coatings	28.2	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.08	0.11	< 0.005	< 0.005	< 0.005	12.8	< 0.005	< 0.005	—	12.8
Architectural Coatings	2.71	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.01	0.02	< 0.005	< 0.005	< 0.005	2.12	< 0.005	< 0.005	—	2.13
Architectural Coatings	0.49	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.25	0.00	0.07	0.02	64.2	< 0.005	< 0.005	0.01	65.0
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.02	0.00	0.01	< 0.005	6.24	< 0.005	< 0.005	0.01	6.32
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—

Worker	< 0.005	< 0.005	< 0.005	0.00	< 0.005	< 0.005	1.03	< 0.005	< 0.005	< 0.005	1.05
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.12. Architectural Coating (2028) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	ROG	NOx	CO	SO2	PM10T	PM2.5T	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.11	0.81	1.12	< 0.005	0.02	0.01	134	0.01	< 0.005	—	134
Architectural Coatings	28.2	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.08	0.11	< 0.005	< 0.005	< 0.005	12.8	< 0.005	< 0.005	—	12.8
Architectural Coatings	2.71	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.01	0.02	< 0.005	< 0.005	< 0.005	2.12	< 0.005	< 0.005	—	2.13
Architectural Coatings	0.49	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.25	0.00	0.07	0.02	64.2	< 0.005	< 0.005	0.01	65.0
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.02	0.00	0.01	< 0.005	6.24	< 0.005	< 0.005	0.01	6.32
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.00	< 0.005	< 0.005	1.03	< 0.005	< 0.005	< 0.005	1.05
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

4. Operations Emissions Details

4.1. Mobile Emissions by Land Use

4.1.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	ROG	NOx	CO	SO2	PM10T	PM2.5T	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	2.79	2.72	25.8	0.07	6.07	1.57	6,920	0.25	0.30	21.9	7,036
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	2.79	2.72	25.8	0.07	6.07	1.57	6,920	0.25	0.30	21.9	7,036

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	2.62	2.92	21.6	0.06	6.07	1.57	6,500	0.26	0.31	0.57	6,598
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	2.62	2.92	21.6	0.06	6.07	1.57	6,500	0.26	0.31	0.57	6,598
Annual	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	0.46	0.53	3.99	0.01	1.08	0.28	1,062	0.04	0.05	1.53	1,079
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.46	0.53	3.99	0.01	1.08	0.28	1,062	0.04	0.05	1.53	1,079

4.1.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	ROG	NOx	CO	SO2	PM10T	PM2.5T	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	2.79	2.72	25.8	0.07	6.07	1.57	6,920	0.25	0.30	21.9	7,036
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	2.79	2.72	25.8	0.07	6.07	1.57	6,920	0.25	0.30	21.9	7,036
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	2.62	2.92	21.6	0.06	6.07	1.57	6,500	0.26	0.31	0.57	6,598
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	2.62	2.92	21.6	0.06	6.07	1.57	6,500	0.26	0.31	0.57	6,598
Annual	—	—	—	—	—	—	—	—	—	—	—

Single Family Housing	0.46	0.53	3.99	0.01	1.08	0.28	1,062	0.04	0.05	1.53	1,079
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.46	0.53	3.99	0.01	1.08	0.28	1,062	0.04	0.05	1.53	1,079

4.2. Energy

4.2.1. Electricity Emissions By Land Use - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	ROG	NOx	CO	SO2	PM10T	PM2.5T	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	647	0.06	0.01	—	650
Other Asphalt Surfaces	—	—	—	—	—	—	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	647	0.06	0.01	—	650
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	647	0.06	0.01	—	650
Other Asphalt Surfaces	—	—	—	—	—	—	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	647	0.06	0.01	—	650
Annual	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	107	0.01	< 0.005	—	108
Other Asphalt Surfaces	—	—	—	—	—	—	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	107	0.01	< 0.005	—	108

4.2.2. Electricity Emissions By Land Use - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	ROG	NOx	CO	SO2	PM10T	PM2.5T	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	651	0.06	0.01	—	654
Other Asphalt Surfaces	—	—	—	—	—	—	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	651	0.06	0.01	—	654
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	651	0.06	0.01	—	654
Other Asphalt Surfaces	—	—	—	—	—	—	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	651	0.06	0.01	—	654
Annual	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	108	0.01	< 0.005	—	108
Other Asphalt Surfaces	—	—	—	—	—	—	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	108	0.01	< 0.005	—	108

4.2.3. Natural Gas Emissions By Land Use - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	ROG	NOx	CO	SO2	PM10T	PM2.5T	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	0.04	0.66	0.28	< 0.005	0.05	0.05	832	0.07	< 0.005	—	834

Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	0.04	0.66	0.28	< 0.005	0.05	0.05	832	0.07	< 0.005	—	834
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	0.04	0.66	0.28	< 0.005	0.05	0.05	832	0.07	< 0.005	—	834
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	0.04	0.66	0.28	< 0.005	0.05	0.05	832	0.07	< 0.005	—	834
Annual	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	0.01	0.12	0.05	< 0.005	0.01	0.01	138	0.01	< 0.005	—	138
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	0.01	0.12	0.05	< 0.005	0.01	0.01	138	0.01	< 0.005	—	138

4.2.4. Natural Gas Emissions By Land Use - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	ROG	NOx	CO	SO2	PM10T	PM2.5T	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00

Total	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00

4.3. Area Emissions by Source

4.3.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Source	ROG	NOx	CO	SO2	PM10T	PM2.5T	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Hearths	0.00	0.00	0.00	0.00	0.00	0.00	274	0.03	< 0.005	—	275
Consumer Products	3.07	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	0.27	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.36	0.04	4.14	< 0.005	< 0.005	< 0.005	11.1	< 0.005	< 0.005	—	11.1
Total	3.71	0.04	4.14	< 0.005	< 0.005	< 0.005	285	0.03	< 0.005	—	286
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Hearths	0.00	0.00	0.00	0.00	0.00	0.00	274	0.03	< 0.005	—	275
Consumer Products	3.07	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	0.27	—	—	—	—	—	—	—	—	—	—
Total	3.34	0.00	0.00	0.00	0.00	0.00	274	0.03	< 0.005	—	275
Annual	—	—	—	—	—	—	—	—	—	—	—

Hearths	0.00	0.00	0.00	0.00	0.00	0.00	3.10	< 0.005	< 0.005	—	3.12
Consumer Products	0.56	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	0.05	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.05	< 0.005	0.52	< 0.005	< 0.005	< 0.005	1.26	< 0.005	< 0.005	—	1.26
Total	0.66	< 0.005	0.52	< 0.005	< 0.005	< 0.005	4.36	< 0.005	< 0.005	—	4.38

4.3.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Source	ROG	NOx	CO	SO2	PM10T	PM2.5T	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Hearths	0.00	0.00	0.00	0.00	0.00	0.00	274	0.03	< 0.005	—	275
Consumer Products	3.07	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	0.27	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.36	0.04	4.14	< 0.005	< 0.005	< 0.005	11.1	< 0.005	< 0.005	—	11.1
Total	3.71	0.04	4.14	< 0.005	< 0.005	< 0.005	285	0.03	< 0.005	—	286
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Hearths	0.00	0.00	0.00	0.00	0.00	0.00	274	0.03	< 0.005	—	275
Consumer Products	3.07	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	0.27	—	—	—	—	—	—	—	—	—	—
Total	3.34	0.00	0.00	0.00	0.00	0.00	274	0.03	< 0.005	—	275
Annual	—	—	—	—	—	—	—	—	—	—	—
Hearths	0.00	0.00	0.00	0.00	0.00	0.00	3.10	< 0.005	< 0.005	—	3.12

Consumer Products	0.56	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	0.05	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.05	< 0.005	0.52	< 0.005	< 0.005	< 0.005	1.26	< 0.005	< 0.005	—	1.26
Total	0.66	< 0.005	0.52	< 0.005	< 0.005	< 0.005	4.36	< 0.005	< 0.005	—	4.38

4.4. Water Emissions by Land Use

4.4.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	ROG	NOx	CO	SO2	PM10T	PM2.5T	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	42.7	0.59	0.01	—	61.6
Other Asphalt Surfaces	—	—	—	—	—	—	5.56	< 0.005	< 0.005	—	5.59
Total	—	—	—	—	—	—	48.3	0.59	0.01	—	67.2
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	42.7	0.59	0.01	—	61.6
Other Asphalt Surfaces	—	—	—	—	—	—	5.56	< 0.005	< 0.005	—	5.59
Total	—	—	—	—	—	—	48.3	0.59	0.01	—	67.2
Annual	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	7.07	0.10	< 0.005	—	10.2
Other Asphalt Surfaces	—	—	—	—	—	—	0.92	< 0.005	< 0.005	—	0.93

Total	—	—	—	—	—	—	7.99	0.10	< 0.005	—	11.1

4.4.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	ROG	NOx	CO	SO2	PM10T	PM2.5T	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	42.7	0.59	0.01	—	61.6
Other Asphalt Surfaces	—	—	—	—	—	—	5.56	< 0.005	< 0.005	—	5.59
Total	—	—	—	—	—	—	48.3	0.59	0.01	—	67.2
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	42.7	0.59	0.01	—	61.6
Other Asphalt Surfaces	—	—	—	—	—	—	5.56	< 0.005	< 0.005	—	5.59
Total	—	—	—	—	—	—	48.3	0.59	0.01	—	67.2
Annual	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	7.07	0.10	< 0.005	—	10.2
Other Asphalt Surfaces	—	—	—	—	—	—	0.92	< 0.005	< 0.005	—	0.93
Total	—	—	—	—	—	—	7.99	0.10	< 0.005	—	11.1

4.5. Waste Emissions by Land Use

4.5.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	ROG	NOx	CO	SO2	PM10T	PM2.5T	CO2T	CH4	N2O	R	CO2e

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	36.1	3.60	0.00	—	126
Other Asphalt Surfaces	—	—	—	—	—	—	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	36.1	3.60	0.00	—	126
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	36.1	3.60	0.00	—	126
Other Asphalt Surfaces	—	—	—	—	—	—	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	36.1	3.60	0.00	—	126
Annual	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	5.97	0.60	0.00	—	20.9
Other Asphalt Surfaces	—	—	—	—	—	—	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	5.97	0.60	0.00	—	20.9

4.5.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	ROG	NOx	CO	SO2	PM10T	PM2.5T	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	36.1	3.60	0.00	—	126
Other Asphalt Surfaces	—	—	—	—	—	—	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	36.1	3.60	0.00	—	126
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—

Single Family Housing	—	—	—	—	—	—	36.1	3.60	0.00	—	126
Other Asphalt Surfaces	—	—	—	—	—	—	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	36.1	3.60	0.00	—	126
Annual	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	5.97	0.60	0.00	—	20.9
Other Asphalt Surfaces	—	—	—	—	—	—	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	5.97	0.60	0.00	—	20.9

4.6. Refrigerant Emissions by Land Use

4.6.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	ROG	NOx	CO	SO2	PM10T	PM2.5T	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	1.02	1.02
Total	—	—	—	—	—	—	—	—	—	1.02	1.02
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	1.02	1.02
Total	—	—	—	—	—	—	—	—	—	1.02	1.02
Annual	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	0.17	0.17
Total	—	—	—	—	—	—	—	—	—	0.17	0.17

4.6.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	ROG	NOx	CO	SO2	PM10T	PM2.5T	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	1.02	1.02
Total	—	—	—	—	—	—	—	—	—	1.02	1.02
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	1.02	1.02
Total	—	—	—	—	—	—	—	—	—	1.02	1.02
Annual	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	0.17	0.17
Total	—	—	—	—	—	—	—	—	—	0.17	0.17

4.7. Offroad Emissions By Equipment Type

4.7.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	ROG	NOx	CO	SO2	PM10T	PM2.5T	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—

Total	—	—	—	—	—	—	—	—	—	—	—

4.7.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	ROG	NOx	CO	SO2	PM10T	PM2.5T	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—

4.8. Stationary Emissions By Equipment Type

4.8.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	ROG	NOx	CO	SO2	PM10T	PM2.5T	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—

4.8.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	ROG	NOx	CO	SO2	PM10T	PM2.5T	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—

4.9. User Defined Emissions By Equipment Type

4.9.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	ROG	NOx	CO	SO2	PM10T	PM2.5T	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—

4.9.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	ROG	NOx	CO	SO2	PM10T	PM2.5T	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Vegetation	ROG	NOx	CO	SO2	PM10T	PM2.5T	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—

4.10.2. Above and Belowground Carbon Accumulation by Land Use Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	ROG	NOx	CO	SO2	PM10T	PM2.5T	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—

Total	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Species	ROG	NOx	CO	SO2	PM10T	PM2.5T	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—

Avoided	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—

4.10.4. Soil Carbon Accumulation By Vegetation Type - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Vegetation	ROG	NOx	CO	SO2	PM10T	PM2.5T	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—

4.10.5. Above and Belowground Carbon Accumulation by Land Use Type - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	ROG	NOx	CO	SO2	PM10T	PM2.5T	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—

Annual	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—

4.10.6. Avoided and Sequestered Emissions by Species - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Species	ROG	NOx	CO	SO2	PM10T	PM2.5T	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—

Removed	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—

5. Activity Data

5.1. Construction Schedule

Phase Name	Phase Type	Start Date	End Date	Days Per Week	Work Days per Phase	Phase Description
Site Preparation	Site Preparation	12/4/2025	12/31/2025	5.00	20.0	—
Grading	Grading	1/1/2026	3/4/2026	5.00	45.0	—
Building Construction	Building Construction	3/5/2026	11/10/2027	5.00	440	—
Paving	Paving	11/11/2027	12/29/2027	5.00	35.0	—
Architectural Coating	Architectural Coating	1/1/2028	2/18/2028	5.00	35.0	—

5.2. Off-Road Equipment

5.2.1. Unmitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Site Preparation	Rubber Tired Dozers	Diesel	Average	3.00	8.00	367	0.40
Site Preparation	Tractors/Loaders/Backhoes	Diesel	Average	4.00	8.00	84.0	0.37
Grading	Excavators	Diesel	Average	2.00	8.00	36.0	0.38
Grading	Graders	Diesel	Average	1.00	8.00	148	0.41
Grading	Rubber Tired Dozers	Diesel	Average	1.00	8.00	367	0.40
Grading	Scrapers	Diesel	Average	2.00	8.00	423	0.48
Grading	Tractors/Loaders/Backhoes	Diesel	Average	2.00	8.00	84.0	0.37
Building Construction	Cranes	Diesel	Average	1.00	7.00	367	0.29

Building Construction	Forklifts	Diesel	Average	3.00	8.00	82.0	0.20
Building Construction	Generator Sets	Diesel	Average	1.00	8.00	14.0	0.74
Building Construction	Tractors/Loaders/Backhoes	Diesel	Average	3.00	7.00	84.0	0.37
Building Construction	Welders	Diesel	Average	1.00	8.00	46.0	0.45
Paving	Pavers	Diesel	Average	2.00	8.00	81.0	0.42
Paving	Paving Equipment	Diesel	Average	2.00	8.00	89.0	0.36
Paving	Rollers	Diesel	Average	2.00	8.00	36.0	0.38
Architectural Coating	Air Compressors	Diesel	Average	1.00	6.00	37.0	0.48

5.2.2. Mitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Site Preparation	Rubber Tired Dozers	Diesel	Average	3.00	8.00	367	0.40
Site Preparation	Tractors/Loaders/Backhoes	Diesel	Average	4.00	8.00	84.0	0.37
Grading	Excavators	Diesel	Average	2.00	8.00	36.0	0.38
Grading	Graders	Diesel	Average	1.00	8.00	148	0.41
Grading	Rubber Tired Dozers	Diesel	Average	1.00	8.00	367	0.40
Grading	Scrapers	Diesel	Average	2.00	8.00	423	0.48
Grading	Tractors/Loaders/Backhoes	Diesel	Average	2.00	8.00	84.0	0.37
Building Construction	Cranes	Diesel	Average	1.00	7.00	367	0.29
Building Construction	Forklifts	Diesel	Average	3.00	8.00	82.0	0.20
Building Construction	Generator Sets	Diesel	Average	1.00	8.00	14.0	0.74
Building Construction	Tractors/Loaders/Backhoes	Diesel	Average	3.00	7.00	84.0	0.37
Building Construction	Welders	Diesel	Average	1.00	8.00	46.0	0.45
Paving	Pavers	Diesel	Average	2.00	8.00	81.0	0.42
Paving	Paving Equipment	Diesel	Average	2.00	8.00	89.0	0.36

Paving	Rollers	Diesel	Average	2.00	8.00	36.0	0.38
Architectural Coating	Air Compressors	Diesel	Average	1.00	6.00	37.0	0.48

5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Site Preparation	—	—	—	—
Site Preparation	Worker	17.5	18.5	LDA,LDT1,LDT2
Site Preparation	Vendor	—	10.2	HHDT,MHDT
Site Preparation	Hauling	79.0	20.0	HHDT
Site Preparation	Onsite truck	3.00	0.50	HHDT
Grading	—	—	—	—
Grading	Worker	20.0	18.5	LDA,LDT1,LDT2
Grading	Vendor	—	10.2	HHDT,MHDT
Grading	Hauling	79.0	20.0	HHDT
Grading	Onsite truck	3.00	0.50	HHDT
Building Construction	—	—	—	—
Building Construction	Worker	26.3	18.5	LDA,LDT1,LDT2
Building Construction	Vendor	7.80	10.2	HHDT,MHDT
Building Construction	Hauling	0.00	20.0	HHDT
Building Construction	Onsite truck	—	—	HHDT
Paving	—	—	—	—
Paving	Worker	15.0	18.5	LDA,LDT1,LDT2
Paving	Vendor	—	10.2	HHDT,MHDT
Paving	Hauling	0.00	20.0	HHDT
Paving	Onsite truck	—	—	HHDT
Architectural Coating	—	—	—	—

Architectural Coating	Worker	5.26	18.5	LDA,LDT1,LDT2
Architectural Coating	Vendor	—	10.2	HHDT,MHDT
Architectural Coating	Hauling	0.00	20.0	HHDT
Architectural Coating	Onsite truck	—	—	HHDT

5.3.2. Mitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Site Preparation	—	—	—	—
Site Preparation	Worker	17.5	18.5	LDA,LDT1,LDT2
Site Preparation	Vendor	—	10.2	HHDT,MHDT
Site Preparation	Hauling	79.0	20.0	HHDT
Site Preparation	Onsite truck	3.00	0.50	HHDT
Grading	—	—	—	—
Grading	Worker	20.0	18.5	LDA,LDT1,LDT2
Grading	Vendor	—	10.2	HHDT,MHDT
Grading	Hauling	79.0	20.0	HHDT
Grading	Onsite truck	3.00	0.50	HHDT
Building Construction	—	—	—	—
Building Construction	Worker	26.3	18.5	LDA,LDT1,LDT2
Building Construction	Vendor	7.80	10.2	HHDT,MHDT
Building Construction	Hauling	0.00	20.0	HHDT
Building Construction	Onsite truck	—	—	HHDT
Paving	—	—	—	—
Paving	Worker	15.0	18.5	LDA,LDT1,LDT2
Paving	Vendor	—	10.2	HHDT,MHDT
Paving	Hauling	0.00	20.0	HHDT
Paving	Onsite truck	—	—	HHDT
Architectural Coating	—	—	—	—

Architectural Coating	Worker	5.26	18.5	LDA,LDT1,LDT2
Architectural Coating	Vendor	—	10.2	HHDT,MHDT
Architectural Coating	Hauling	0.00	20.0	HHDT
Architectural Coating	Onsite truck	—	—	HHDT

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

Control Strategies Applied	PM10 Reduction	PM2.5 Reduction
Water unpaved roads twice daily	55%	55%
Limit vehicle speeds on unpaved roads to 25 mph	44%	44%
Sweep paved roads once per month	9%	9%

5.5. Architectural Coatings

Phase Name	Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
Architectural Coating	288,259	96,086	0.00	0.00	20,909

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

Phase Name	Material Imported (Cubic Yards)	Material Exported (Cubic Yards)	Acres Graded (acres)	Material Demolished (sq. ft.)	Acres Paved (acres)
Site Preparation	—	12,635	30.0	0.00	—
Grading	—	28,428	135	0.00	—
Paving	0.00	0.00	0.00	0.00	8.80

5.6.2. Construction Earthmoving Control Strategies

Control Strategies Applied	Frequency (per day)	PM10 Reduction	PM2.5 Reduction
Water Exposed Area	3	74%	74%

5.7. Construction Paving

Land Use	Area Paved (acres)	% Asphalt
Single Family Housing	0.80	0%
Other Asphalt Surfaces	8.00	100%

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O
2025	0.00	532	0.03	< 0.005
2026	0.00	532	0.03	< 0.005
2027	0.00	532	0.03	< 0.005
2028	0.00	532	0.03	< 0.005

5.9. Operational Mobile Sources

5.9.1. Unmitigated

Land Use Type	Trips/Weekday	Trips/Saturday	Trips/Sunday	Trips/Year	VMT/Weekday	VMT/Saturday	VMT/Sunday	VMT/Year
Single Family Housing	689	696	624	248,522	8,410	8,499	7,617	3,032,946
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

5.9.2. Mitigated

Land Use Type	Trips/Weekday	Trips/Saturday	Trips/Sunday	Trips/Year	VMT/Weekday	VMT/Saturday	VMT/Sunday	VMT/Year

Single Family Housing	689	696	624	248,522	8,410	8,499	7,617	3,032,946
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

5.10. Operational Area Sources

5.10.1. Hearths

5.10.1.1. Unmitigated

Hearth Type	Unmitigated (number)
Single Family Housing	—
Wood Fireplaces	0
Gas Fireplaces	0
Propane Fireplaces	0
Electric Fireplaces	73
No Fireplaces	0
Conventional Wood Stoves	0
Catalytic Wood Stoves	0
Non-Catalytic Wood Stoves	0
Pellet Wood Stoves	0

5.10.1.2. Mitigated

Hearth Type	Unmitigated (number)
Single Family Housing	—
Wood Fireplaces	0
Gas Fireplaces	0
Propane Fireplaces	0
Electric Fireplaces	73

No Fireplaces	0
Conventional Wood Stoves	0
Catalytic Wood Stoves	0
Non-Catalytic Wood Stoves	0
Pellet Wood Stoves	0

5.10.2. Architectural Coatings

Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
288258.75	96,086	0.00	0.00	20,909

5.10.3. Landscape Equipment

Season	Unit	Value
Snow Days	day/yr	0.00
Summer Days	day/yr	250

5.10.4. Landscape Equipment - Mitigated

Season	Unit	Value
Snow Days	day/yr	0.00
Summer Days	day/yr	250

5.11. Operational Energy Consumption

5.11.1. Unmitigated

Electricity (kWh/yr) and CO2 and CH4 and N2O and Natural Gas (kBTU/yr)

Land Use	Electricity (kWh/yr)	CO2	CH4	N2O	Natural Gas (kBTU/yr)
Single Family Housing	681,765	346	0.0330	0.0040	2,596,195
Other Asphalt Surfaces	0.00	346	0.0330	0.0040	0.00

5.11.2. Mitigated

Electricity (kWh/yr) and CO2 and CH4 and N2O and Natural Gas (kBTU/yr)

Land Use	Electricity (kWh/yr)	CO2	CH4	N2O	Natural Gas (kBTU/yr)
Single Family Housing	685,845	346	0.0330	0.0040	0.00
Other Asphalt Surfaces	0.00	346	0.0330	0.0040	0.00

5.12. Operational Water and Wastewater Consumption

5.12.1. Unmitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
Single Family Housing	2,969,186	3,545,464
Other Asphalt Surfaces	0.00	1,105,080

5.12.2. Mitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
Single Family Housing	2,969,186	3,545,464
Other Asphalt Surfaces	0.00	1,105,080

5.13. Operational Waste Generation

5.13.1. Unmitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
Single Family Housing	66.9	—
Other Asphalt Surfaces	0.00	—

5.13.2. Mitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)

Single Family Housing	66.9	—
Other Asphalt Surfaces	0.00	—

5.14. Operational Refrigeration and Air Conditioning Equipment

5.14.1. Unmitigated

Land Use Type	Equipment Type	Refrigerant	GWP	Quantity (kg)	Operations Leak Rate	Service Leak Rate	Times Serviced
Single Family Housing	Average room A/C & Other residential A/C and heat pumps	R-410A	2,088	< 0.005	2.50	2.50	10.0
Single Family Housing	Household refrigerators and/or freezers	R-134a	1,430	0.12	0.60	0.00	1.00

5.14.2. Mitigated

Land Use Type	Equipment Type	Refrigerant	GWP	Quantity (kg)	Operations Leak Rate	Service Leak Rate	Times Serviced
Single Family Housing	Average room A/C & Other residential A/C and heat pumps	R-410A	2,088	< 0.005	2.50	2.50	10.0
Single Family Housing	Household refrigerators and/or freezers	R-134a	1,430	0.12	0.60	0.00	1.00

5.15. Operational Off-Road Equipment

5.15.1. Unmitigated

Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor

5.15.2. Mitigated

Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor

5.16. Stationary Sources

5.16.1. Emergency Generators and Fire Pumps

Equipment Type	Fuel Type	Number per Day	Hours per Day	Hours per Year	Horsepower	Load Factor

5.16.2. Process Boilers

Equipment Type	Fuel Type	Number	Boiler Rating (MMBtu/hr)	Daily Heat Input (MMBtu/day)	Annual Heat Input (MMBtu/yr)

5.17. User Defined

Equipment Type	Fuel Type

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1.2. Mitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.1.2. Mitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.2. Sequestration

5.18.2.1. Unmitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)

5.18.2.2. Mitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)

6. Climate Risk Detailed Report

6.1. Climate Risk Summary

Cal-Adapt midcentury 2040–2059 average projections for four hazards are reported below for your project location. These are under Representation Concentration Pathway (RCP) 8.5 which assumes GHG emissions will continue to rise strongly through 2050 and then plateau around 2100.

Climate Hazard	Result for Project Location	Unit
Temperature and Extreme Heat	27.2	annual days of extreme heat
Extreme Precipitation	1.80	annual days with precipitation above 20 mm
Sea Level Rise	—	meters of inundation depth
Wildfire	19.0	annual hectares burned

Temperature and Extreme Heat data are for grid cell in which your project are located. The projection is based on the 98th historical percentile of daily maximum/minimum temperatures from observed historical data (32 climate model ensemble from Cal-Adapt, 2040–2059 average under RCP 8.5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Extreme Precipitation data are for the grid cell in which your project are located. The threshold of 20 mm is equivalent to about ¾ an inch of rain, which would be light to moderate rainfall if received over a full day or heavy rain if received over a period of 2 to 4 hours. Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Sea Level Rise data are for the grid cell in which your project are located. The projections are from Radke et al. (2017), as reported in Cal-Adapt (Radke et al., 2017, CEC-500-2017-008), and consider inundation location and depth for the San Francisco Bay, the Sacramento-San Joaquin River Delta and California coast resulting different increments of sea level rise coupled with extreme storm events. Users may select from four scenarios to view the range in potential inundation depth for the grid cell. The four scenarios are: No rise, 0.5 meter, 1.0 meter, 1.41 meters
Wildfire data are for the grid cell in which your project are located. The projections are from UC Davis, as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider historical data of climate, vegetation, population density, and large (> 400 ha) fire history. Users may select from four model simulations to view the range in potential wildfire probabilities for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

6.2. Initial Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	3	0	0	N/A
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	1	0	0	N/A
Wildfire	1	0	0	N/A
Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	0	0	0	N/A

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores do not include implementation of climate risk reduction measures.

6.3. Adjusted Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	3	1	1	3
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	1	1	1	2
Wildfire	1	1	1	2
Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	1	1	1	2

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.

The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores include implementation of climate risk reduction measures.

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Exposure Indicators	—
AQ-Ozone	91.1
AQ-PM	67.9
AQ-DPM	8.08
Drinking Water	76.1
Lead Risk Housing	2.41
Pesticides	18.2
Toxic Releases	58.2
Traffic	16.6
Effect Indicators	—
CleanUp Sites	37.6
Groundwater	30.9
Haz Waste Facilities/Generators	16.6
Impaired Water Bodies	0.00
Solid Waste	23.0
Sensitive Population	—
Asthma	43.7
Cardio-vascular	52.3
Low Birth Weights	15.5

Socioeconomic Factor Indicators	—
Education	30.0
Housing	14.7
Linguistic	2.81
Poverty	12.2
Unemployment	7.14

7.2. Healthy Places Index Scores

The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Economic	—
Above Poverty	77.55678173
Employed	38.00846914
Median HI	85.12767869
Education	—
Bachelor's or higher	34.23585269
High school enrollment	26.43397921
Preschool enrollment	8.17400231
Transportation	—
Auto Access	73.42486847
Active commuting	15.02630566
Social	—
2-parent households	65.73848325
Voting	49.13383806
Neighborhood	—
Alcohol availability	93.71230592
Park access	9.303220839
Retail density	5.979725395

Supermarket access	2.399589375
Tree canopy	8.225330425
Housing	—
Homeownership	97.06146542
Housing habitability	91.50519697
Low-inc homeowner severe housing cost burden	85.15334274
Low-inc renter severe housing cost burden	50.78916977
Uncrowded housing	87.19363531
Health Outcomes	—
Insured adults	74.51559091
Arthritis	0.0
Asthma ER Admissions	54.9
High Blood Pressure	0.0
Cancer (excluding skin)	0.0
Asthma	0.0
Coronary Heart Disease	0.0
Chronic Obstructive Pulmonary Disease	0.0
Diagnosed Diabetes	0.0
Life Expectancy at Birth	38.4
Cognitively Disabled	4.9
Physically Disabled	41.1
Heart Attack ER Admissions	48.4
Mental Health Not Good	0.0
Chronic Kidney Disease	0.0
Obesity	0.0
Pedestrian Injuries	70.9
Physical Health Not Good	0.0
Stroke	0.0

Health Risk Behaviors	—
Binge Drinking	0.0
Current Smoker	0.0
No Leisure Time for Physical Activity	0.0
Climate Change Exposures	—
Wildfire Risk	33.4
SLR Inundation Area	0.0
Children	72.4
Elderly	47.3
English Speaking	61.7
Foreign-born	17.2
Outdoor Workers	43.1
Climate Change Adaptive Capacity	—
Impervious Surface Cover	93.8
Traffic Density	13.4
Traffic Access	23.0
Other Indices	—
Hardship	33.6
Other Decision Support	—
2016 Voting	64.2

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	16.0
Healthy Places Index Score for Project Location (b)	55.0
Project Located in a Designated Disadvantaged Community (Senate Bill 535)	No
Project Located in a Low-Income Community (Assembly Bill 1550)	No
Project Located in a Community Air Protection Program Community (Assembly Bill 617)	No

a: The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.
b: The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

7.4. Health & Equity Measures

No Health & Equity Measures selected.

7.5. Evaluation Scorecard

Health & Equity Evaluation Scorecard not completed.

7.6. Health & Equity Custom Measures

No Health & Equity Custom Measures created.

8. User Changes to Default Data

Screen	Justification
Land Use	Total Disturbed Area 29 acres. 20% Landscaped.
Construction: Construction Phases	No Demolition
Operations: Hearths	73 Electric Fireplaces. No Woodstoves.

APPENDIX B

EMFAC2021 Model Printouts

Source: EMFAC2021 (v1.0.2) Emissions Inventory
Region Type: Sub-Area
Region: Riverside (SC)
Calendar Year: 2025
Season: Annual
Vehicle Classification: EMFAC202x Categories
Units: miles/day for CVMT and EVMT, trips/day for Trips, kWh/day for Energy Consumption, tons/day for Emissions, 1000 gallons/day for Fuel Consumption

Region	Calendar Y	Vehicle Category	Model Year	Speed	Fuel	Population	Total VMT	Trips	Fuel Consumption
Riverside (SC	2025	LDA	Aggregate	Aggregate	Gasoline	469318.5	20373765.8	2183259.5	673.3
Riverside (SC	2025	LDT1	Aggregate	Aggregate	Gasoline	39844.4	1499609.6	172787.8	59.9
Riverside (SC	2025	LDT2	Aggregate	Aggregate	Gasoline	201900.8	8973974.0	947238.8	360.0
Riverside (SC	2025	MCY	Aggregate	Aggregate	Gasoline	24005.5	138549.8	48010.9	3.3
Riverside (SC	2025	MDV	Aggregate	Aggregate	Gasoline	157992.6	6448292.7	723018.6	323.5
Riverside (SC	2025	MDV	Aggregate	Aggregate	Diesel	2427.3	99526.1	11179.1	4.1
Riverside (SC	2025	T6 Instate Delivery Class 6	Aggregate	Aggregate	Diesel	1272.8	43120.4	18162.6	4.8
Riverside (SC	2025	T6 Instate Delivery Class 7	Aggregate	Aggregate	Diesel	182.4	9851.6	2603.5	1.1
Riverside (SC	2025	T6 Instate Other Class 5	Aggregate	Aggregate	Diesel	3832.9	166777.6	44308.4	18.9
Riverside (SC	2025	T6 Instate Other Class 6	Aggregate	Aggregate	Diesel	2725.5	116482.3	31506.4	13.0
Riverside (SC	2025	T6 Instate Other Class 7	Aggregate	Aggregate	Diesel	1319.9	60644.3	15258.2	6.6
Riverside (SC	2025	T6 Instate Tractor Class 6	Aggregate	Aggregate	Diesel	17.6	872.4	203.9	0.1
Riverside (SC	2025	T6 Instate Tractor Class 7	Aggregate	Aggregate	Diesel	453.3	26565.3	5239.7	2.7
Riverside (SC	2025	T7 Single Concrete/Transit Mix	Aggregate	Aggregate	Diesel	1266.6	87445.4	11931.8	14.3
Riverside (SC	2025	T7 Single Dump Class 8	Aggregate	Aggregate	Diesel	1179.0	68603.4	11106.4	11.5
Riverside (SC	2025	T7 SWCV Class 8	Aggregate	Aggregate	Diesel	47.9	3106.8	220.2	1.2
Riverside (SC	2025	T7 Tractor Class 8	Aggregate	Aggregate	Diesel	4101.0	312988.5	59587.4	50.3

Worker (Autos) vehicle miles per day	37,434,192	1,420	1,000 gall per day
Workers (Autos) Avg Miles per gallon	26.4	1,420,055	gallons per day
Diesel Truck vehicle miles per day	995,984	129	1,000 gall per day
Diesel Truck Fleet Avg Miles per gallon	7.7	128,639	gallons per day

Source: EMFAC2021 (v1.0.2) Emissions Inventory
Region Type: Sub-Area
Region: Riverside (SC)
Calendar Year: 2028
Season: Annual
Vehicle Classification: EMFAC202x Categories
Units: miles/day for CVMT and EVMT, trips/day for Trips, kWh/day for Energy Consumption, tons/day for Emissions, 1000 gallons/day for Fuel Consumption

Region	Calendar Y	Vehicle Category	Model Yea	Speed	Fuel	Population	Total VMT	Trips	Fuel Consumption
Riverside (SC)	2028	LDA	Aggregate	Aggregate	Gasoline	472360.9	20372156.3	2192052.3	635.0
Riverside (SC)	2028	LDT1	Aggregate	Aggregate	Gasoline	37855.9	1440444.9	164735.4	54.4
Riverside (SC)	2028	LDT2	Aggregate	Aggregate	Gasoline	217588.1	9627227.1	1019612.5	361.0
Riverside (SC)	2028	MCY	Aggregate	Aggregate	Gasoline	23825.1	134879.7	47650.2	3.2
Riverside (SC)	2028	MDV	Aggregate	Aggregate	Gasoline	157471.4	6419753.1	719788.8	301.5
Riverside (SC)	2028	T6 Instate Delivery Class 6	Aggregate	Aggregate	Diesel	1317.7	43947.8	18803.6	4.8
Riverside (SC)	2028	T6 Instate Delivery Class 7	Aggregate	Aggregate	Diesel	201.5	10279.6	2875.1	1.1
Riverside (SC)	2028	T6 Instate Other Class 5	Aggregate	Aggregate	Diesel	4068.1	169671.7	47027.2	18.9
Riverside (SC)	2028	T6 Instate Other Class 6	Aggregate	Aggregate	Diesel	2863.0	118421.0	33096.2	13.1
Riverside (SC)	2028	T6 Instate Other Class 7	Aggregate	Aggregate	Diesel	1483.5	62281.8	17149.0	6.8
Riverside (SC)	2028	T6 Instate Tractor Class 6	Aggregate	Aggregate	Diesel	18.3	877.3	211.8	0.1
Riverside (SC)	2028	T6 Instate Tractor Class 7	Aggregate	Aggregate	Diesel	509.6	27631.2	5890.6	2.8
Riverside (SC)	2028	T7 Single Concrete/Transit Mix	Aggregate	Aggregate	Diesel	1235.1	83372.2	11635.0	13.3
Riverside (SC)	2028	T7 Single Dump Class 8	Aggregate	Aggregate	Diesel	1238.7	66832.7	11668.7	11.1
Riverside (SC)	2028	T7 SWCV Class 8	Aggregate	Aggregate	Diesel	33.1	2146.5	152.2	0.8
Riverside (SC)	2028	T7 Tractor Class 8	Aggregate	Aggregate	Diesel	4681.0	329996.9	68014.4	51.7

Worker (Autos) vehicle miles per day	37,994,461	1,355	1,000 gall per day
Workers (Autos) Avg Miles per gallon	28.0	1,355,084	gallons per day
Diesel Truck vehicle miles per day	915,459	124	1,000 gall per day
Diesel Truck Fleet Avg Miles per gallon	7.4	124,444	gallons per day