# AIR QUALITY, ENERGY, AND GREENHOUSE GAS EMISSIONS IMPACT ANALYSIS

# WHITEWOOD APARTMENTS RESIDENTIAL PROJECT

# CITY OF MURRIETA

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# ACRONYMS AND ABBREVIATIONS

| | |
|---|---|
| AB | Assembly Bill |
| 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 |
| City | City of Murrieta |
| CO | Carbon monoxide |
| $CO_2$ | Carbon dioxide |
| $CO_2e$ | Carbon dioxide equivalent |
| 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 |
| RSP | Renaissance Specific Plan |
| RTIP | Regional Transportation Improvement Plan |
| RTP/SCS | Regional Transportation Plan/Sustainable Communities Strategy |
| SB | Senate Bill |
| SBCOG | San Bernardino Council of Governments |
| 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 Whitewood Apartments 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;
- An analysis of the conformity of the proposed project with all applicable energy and GHG emissions reduction plans and policies; and
- The City of Murrieta Climate Action Plan Checklist for the proposed project has been completed and included in Appendix A of this analysis.

## *1.2 Site Locations and Study Area*

The project site is located in the City of Murrieta (City), on the east side of Whitewood Road, between Lee Lane and Greenberg Place. The 18.7 gross acre project site is currently vacant and is bounded by Lee Lane and vacant land to the north, rural residential uses to the east, Greenberg Place and rural residential uses to the south, and Whitewood Road and single-family residential uses to the west. The project local study area is shown in Figure 1.

### Sensitive Receptors in Project Vicinity

The nearest sensitive receptor to the project site is a home located as near as 18 feet east of the project site. The nearest K-12 school is Vista Murrieta High School, which is located as near as 0.3 mile southwest of the project site.

## *1.3 Proposed Project Description*

The proposed project would consist of development of a residential apartment complex with 324 residential apartment units, two recreational buildings with associated pool areas, and a leasing office. The proposed project would provide 677 parking spaces, of which 326 would be garage spaces. The onsite

driveways and open parking lots would cover 5.33 acres of the project site. The proposed project is segmented into a north area and south area that are separated by a 2.76 acre natural open space/mitigation area that will not be disturbed as part of the proposed project. In addition the proposed project would include approximately 1.6 acres of public roadway improvements to the portions of Whitewood Road, Greenberg Place and Lee Lane that are adjacent to 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 Wood Burning Devices – Controls the emissions from fire places and fire pits;
- 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 features that the project applicant has committed to implementing and have been incorporated into the plans for the proposed project. It should be noted that the proposed project was found to create less than significant emissions without implementation of the following Project Design Features and the following project design features would further reduce the emissions created from the proposed project.

**Project Design Feature 1**
The project applicant shall require that all interior paint that is applied to the proposed structures to utilize Super-Compliant VOC paints, which are defined by SCAQMD as meeting the "super-compliant" VOC standard of 10 grams per liter.

**Project Design Feature 2**
The project applicant shall require that a minimum of 80 percent of the nonhazardous construction waste to be either reused or recycled.

**Project Design Feature 3**
The project applicant shall require that a minimum of 6 percent of all parking spaces are equipped with electric vehicle service equipment (EVSE) to allow for electric vehicle charging.

**Project Design Feature 4**

The project applicant shall prepare and implement a Landscape Plan that meets the tree planting requirements in Section 16.26 "Landscaping Standards and Water Efficient Landscaping" of the City Municipal Code.

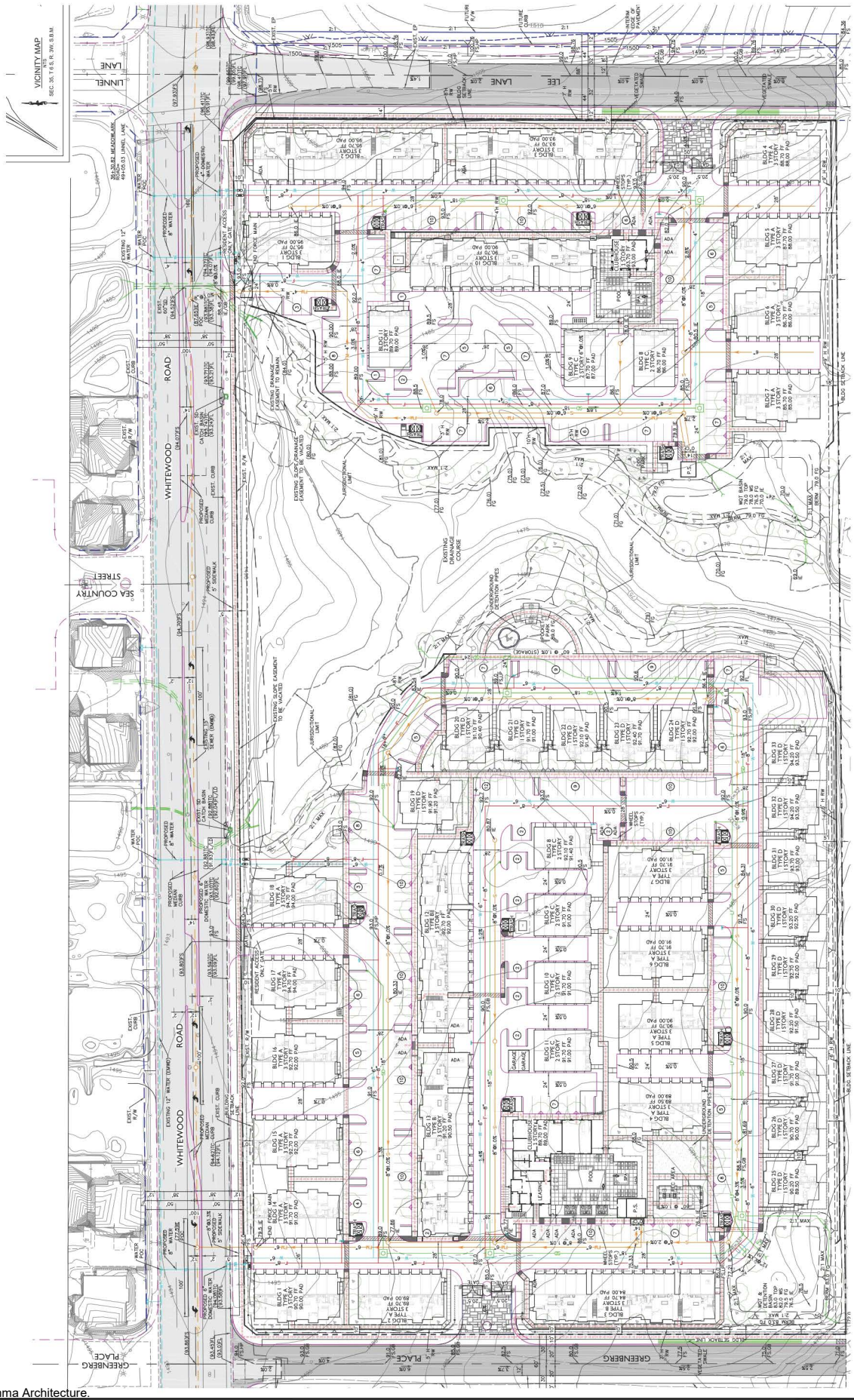
### *1.6 Mitigation Measures for the Proposed Project*

This analysis found that implementation of the State and SCAQMD air quality, energy, and GHG emissions reductions regulations were adequate to limit criteria pollutants, toxic air contaminants, odors, 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.


SOURCE: Google Maps.

VISTA ENVIRONMENTAL

Figure 1
Project Local Study Area




SOURCE: Summa Architecture.

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 $NO_x$ 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 $NO_x$ 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. $NO_x$ and the pollutants formed from $NO_x$ 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 VOC 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

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 diesel particulate matter (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 40 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 20$^{th}$ 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 2020.4.0 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 2020.4.0), that is used in this report (CalEEMod User Guide, May 2021).
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[1], 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[2].

According to *Inventory of U.S. Greenhouse Gas Emissions and Sinks 1990-2019,* prepared by EPA, in 2019 total U.S. GHG emissions were 6,558 million metric tons (MMT) of $CO_2e$ emissions. Total U.S. emissions have increased by 4 percent between 1990 and 2016 and GHG emissions decreased by 13 percent between 2005 and 2019. The recent decrease in GHG emissions was a result of multiple factors, including population, economic growth, energy markets, and technological changes the include energy efficiency and energy fuel choices. Between 2018 and 2019, GHG emissions decreased by almost 2 percent due to multiple factors, including a one percent decrease in total energy use.

According to CARB, the State of California created 425 million metric tons of carbon dioxide equivalent ($MMTCO_2e$) in 2018. The breakdown of California GHG emissions by sector consists of: 39.9 percent from transportation; 21.0 percent from industrial; 14.8 percent from electricity generation; 7.7 percent from agriculture; 9.7 percent from residential and commercial buildings; 4.8 percent from high global warming potential sources, and 2.1 percent from waste. In 2018, GHG emissions were 0.8 $MMTCO_2e$ higher than 2017 levels and 6 $MMTCO_2e$ below the 2020 GHG limit of 431 $MMTCO_2e$.[3]

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

# 4.0 AIR QUALITY MANAGEMENT

The project site is located within the South Coast Air Basin (Air Basin). The air quality at the project site is addressed through the efforts of various international, 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 | 0.09 ppm / 1-hour<br>0.07 ppm / 8-hour | 0.070 ppm, / 8-hour | (a) Pulmonary function decrements and localized lung edema in humans and animals; (b) Risk to public health implied by alterations in pulmonary morphology and host defense in animals; (c) Increased mortality risk; (d) Risk to public health implied by altered connective tissue metabolism and altered pulmonary morphology in animals after long-term exposures and pulmonary function decrements in chronically exposed humans; (e) Vegetation damage; and (f) Property damage. |
| Carbon Monoxide (CO) | 20.0 ppm / 1-hour<br>9.0 ppm / 8-hour | 35.0 ppm / 1-hour<br>9.0 ppm / 8-hour | (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) Impairment of central nervous system functions; and (d) Possible increased risk to fetuses. |
| Nitrogen Dioxide ($NO_2$) | 0.18 ppm / 1-hour<br>0.030 ppm / annual | 100 ppb / 1-hour<br>0.053 ppm / annual | (a) Potential to aggravate chronic respiratory disease and respiratory symptoms in sensitive groups; (b) Risk to public health implied by pulmonary and extra-pulmonary biochemical and cellular changes and pulmonary structural changes; and (c) Contribution to atmospheric discoloration. |
| Sulfur Dioxide ($SO_2$) | 0.25 ppm / 1-hour<br>0.04 ppm / 24-hour | 75 ppb / 1-hour<br>0.14 ppm/annual | (a) Bronchoconstriction accompanied by symptoms which may include wheezing, shortness of breath and chest tightness, during exercise or physical activity in persons with asthma. |
| Suspended Particulate | 50 µg/$m^3$ / 24-hour<br>20 µg/$m^3$ / annual | 150 µg/$m^3$ / 24-hour | (a) Exacerbation of symptoms in sensitive patients with respiratory or cardiovascular disease; (b) Declines in |

| Air Pollutant | Concentration / Averaging Time | | Most Relevant Effects |
|---|---|---|---|
| | California Standards | Federal Primary Standards | |
| Matter ($PM_{10}$) | | | pulmonary function growth in children; and (c) Increased risk of premature death from heart or lung diseases in elderly. |
| Suspended Particulate Matter ($PM_{2.5}$) | 12 µg/$m^3$ / annual | 35 µg/$m^3$ / 24-hour<br>12 µg/$m^3$ / annual | |
| Sulfates | 25 µg/$m^3$ / 24-hour | No Federal Standards | (a) Decrease in ventilatory function; (b) Aggravation of asthmatic symptoms; (c ) Aggravation of cardio-pulmonary disease; (d) Vegetation damage; (e) Degradation of visibility; and (f) Property damage. |
| Lead | 1.5 µg/$m^3$ / 30-day | 0.15 µg/$m^3$ /3-month rolling | (a) Learning disabilities; and (b) Impairment of blood formation and nerve conduction. |
| Visibility Reducing Particles | Extinction coefficient of 0.23 per kilometer - visibility of ten miles or more due to particles when relative humidity is less than 70 percent. | No Federal Standards | Visibility impairment on days when relative humidity is less than 70 percent. |

Source: http://www.arb.ca.gov/research/aaqs/aaqs2.pdf .

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 – South Coast Air Basin Attainment Status**

| Criteria Pollutant | Standard | Averaging Time | Designation[a)] | Attainment Date[b)] |
|---|---|---|---|---|
| 1-Hour Ozone[c)] | NAAQS | 1979 1-Hour (0.12 ppm) | Nonattainment (Extreme) | 2/6/2023 (revised deadline) |
| | CAAQS | 1-Hour (0.09 ppm) | Nonattainment | N/A |
| 8-Hour Ozone[d)] | NAAQS | 1997 8-Hour (0.08 ppm) | Nonattainment (Extreme) | 6/15/2024 |
| | NAAQS | 2008 8-Hour (0.075 ppm) | Nonattainment (Extreme) | 8/3/2038 |
| | NAAQS | 2015 8-Hour (0.070 ppm) | Pending – Expect Nonattainment (Extreme) | Pending (beyond 2032) |
| | CAAQS | 8-Hour (0.070 ppm) | Nonattainment | Beyond 2032 |

| Criteria Pollutant | Standard | Averaging Time | Designation[a)] | Attainment Date[b)] |
|---|---|---|---|---|
| CO | NAAQS | 1-Hour (35 ppm)<br>8-Hour (9 ppm) | Attainment (Maintenance) | 6/11/2007 (attained) |
| | CAAQS | 1-Hour (20 ppm)<br>8-Hour (9 ppm) | Attainment | 6/11/2007 (attained) |
| $NO_2$[e)] | NAAQS | 2010 1-Hour (0.10 ppm) | Unclassifiable/ Attainment | N/A (attained) |
| | NAAQS | 1971 Annual (0.053 ppm) | Attainment (Maintenance) | 9/22/1998 (attained) |
| | CAAQS | 1-Hour (0.18 ppm)<br>Annual (0.030 ppm) | Attainment | --- |
| $SO_2$[f)] | NAAQS | 2010 1-Hour (75 ppb) | Designations Pending (expect Unclassifiable/ Attainment) | N/A (attained) |
| | NAAQS | 1971 24-Hour (0.14 ppm)<br>1971 Annual (0.03 ppm) | Unclassifiable/ Attainment | 3/19/1979 (attained) |
| PM10 | NAAQS | 1987 24-hour (150 µg/$m^3$) | Attainment (Maintenance)[g)] | 7/26/2013 (attained) |
| | CAAQS | 24-hour (50 µg/$m^3$)<br>Annual (20 µg/$m^3$) | Nonattainment | N/A |
| PM2.5[h)] | NAAQS | 2006 24-Hour (35 µg/$m^3$) | Nonattainment (Serious) | 12/31/2019 |
| | NAAQS | 1997 Annual (15.0 µg/$m^3$) | Attainment (final determination pending) | 8/24/2016 (attained 2013) |
| | NAAQS | 2012 Annual (12.0 µg/$m^3$) | Nonattainment (Moderate) | 12/31/2025 |
| | CAAQS | Annual (12.0 µg/$m^3$) | Nonattainment | N/A |
| Lead[i)] | NAAQS | 2008 3-Months Rolling (0.15 µg/$m^3$) | Nonattainment (Partial) (Attainment determination requested) | 12/31/2015 |

Source: SCAQMD, February 2016

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 standard (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

d) The 2008 8-hour ozone NAAQS (0.075 ppm) was revised to 0.070 ppm. Effective 12/28/15 with classifications and implementation goals to be finalized by 10/1/17; the 1997 8-hour ozone NAAQS (0.08 ppm) was revoked in the 2008 ozone implementation rule, effective 4/6/15;there are continuing obligations under the revoked 1997 and revised 2008 ozone until they are attained.

e) New $NO_2$ 1-hour standard, effective August 2, 2010; attainment designations January 20, 2012; annual $NO_2$ standard retained

f) The 1971 annual and 24-hour $SO_2$ standards were revoked, effective August 23, 2010; however, these 1971 standards will remain in effect until one year after U.S. EPA promulgates area designations for the 2010 $SO_2$ 1-hour standard. Area designations are still pending, with Basin expected to be designated Unclassifiable /Attainment.

g) Annual PM10 standard was revoked, effective December 18, 2006; 24-hour PM10 NAAQS deadline was 12/31/2006; SCAQMD request for attainment redesignation and PM10 maintenance plan was approved by U.S. EPA on June 26, 2013, effective July 26, 2013.

h) The attainment deadline for the 2006 24-Hour PM2.5 NAAQS was 12/31/15 for the former "moderate" classification; EPA approved reclassification to "serious", effective 2/12/16 with an attainment deadline of 12/31/19; the 2012 (proposal year) annual PM2.5 NAAQS was revised on 1/15/13, effective 3/18/13, from 15 to 12 µg/$m^3$; new annual designations were final 1/15/15, effective 4/15/15; on July 25, 2016 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 August 24, 2016

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

In 2015, one or more stations in the Air Basin exceeded the most current federal standards on a total of 146 days (40 percent of the year), including: 8-hour ozone (113 days over 2015 ozone NAAQS), 24-hour PM2.5 (30 days, including near-road sites; 25 days for ambient sites only), PM10 (2 days), and $NO_2$ (1 day).

Despite substantial improvement in air quality over the past few decades, some air monitoring stations in the Air Basin still exceed the NAAQS for ozone more frequently than any other area in the United States. Seven of the top 10 stations in the nation most frequently exceeding the 2015 8-hour ozone NAAQS in 2015 were located within the Air Basin, including stations in San Bernardino, Riverside, and Los Angeles Counties (SCAQMD, 2016).

PM2.5 levels in the Air Basin have improved significantly in recent years. By 2013 and again in 2014 and 2015, there were no stations measuring PM2.5 in the Air Basin that violated the former 1997 annual PM2.5 NAAQS (15.0 $\mu g/m^3$) for the 3-year design value period. On July 25, 2016 the EPA finalized a determination that the Basin attained the 1997 annual (15.0 $\mu g/m^3$) and 24-hour PM2.5 (65 $\mu g/m^3$) NAAQS, effective August 24, 2016. Of the 17 federal PM2.5 monitors at ambient stations in the Air Basin for the 2013-2015 period, five stations had design values over the current 2012 annual PM2.5 NAAQS (12.0 $\mu g/m^3$), including: Mira Loma (Air Basin maximum at 14.1 $\mu g/m^3$), Rubidoux, Fontana, Ontario, Central Los Angeles, and Compton. For the 24-hour PM2.5 NAAQS (35.0 $\mu g/m^3$) there were 14 stations in the Air Basin in 2015 that had one or more daily exceedances of the standard, with a combined total of 25 days over that standard in the Air Basin. While it was previously anticipated that the Air Basin's 24-hour PM2.5 NAAQS would be attained by 2015, this did not occur based on the data for 2013 through 2015. The higher number of days exceeding the 24-hour PM2.5 NAAQS over what was expected is largely attributed to the severe drought conditions over this period that allowed for more stagnant conditions in the Air Basin with multi-day buildups of higher PM2.5 concentrations. This was caused by the lack of storm-related dispersion and rain-out of PM and its precursors (SCAQMD, 2016).

The Air Basin is currently in attainment for the federal standards for $SO_2$, CO, $NO_2$, and PM10 and the Riverside County portion of the Air Basin is currently in attainment for the federal standards for lead. While the concentration level of the 1-hour $NO_2$ federal standard (100 ppb) was exceeded in the Air Basin for one day in 2015 (Long Beach- Hudson Station), the NAAQS $NO_2$ design value has not been exceeded. Therefore, the Air Basin remains in attainment of the $NO_2$ NAAQS (SCAQMD, 2016).

### *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 are shown above in Table B. 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.

The Air Basin has been designated by the CARB as a non-attainment area for ozone, PM10 and PM2.5. Currently, the Air Basin is in attainment with the ambient air quality standards for CO, $NO_2$, $SO_2$, lead, and sulfates and is unclassified for visibility reducing particles and Hydrogen Sulfide.

The following lists the State of California Code of Regulations (CCR) air quality emission rules that are applicable, but not limited to all warehouse 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 or Tier 1 engine. By January 1, 2018 medium and large fleets will be restricted from adding Tier 2 engines to their fleets and by January 2023, no commercial operation will be allowed to add Tier 2 engines to their fleets. It should be noted that commercial fleets may continue to use their existing Tier 0 and 1 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. In the interim period, this regulation provides annual interim targets for fleet owners to meet. By January 1, 2014, 50 percent of a truck fleet is required to have installed Best Available Control Technology (BACT) for NOx emissions and 100 percent of a truck fleet installed BACT for PM10 emissions. 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 2016 Air Quality Management Plan* (2016 AQMP) was adopted by the SCAQMD Board on March 3, 2016 and was adopted by CARB on March 23, 2017 for inclusion into the SIP. The 2016 AQMP was prepared in order to meet the following standards:

- 8-hour Ozone (75 ppb) by 2032
- Annual PM2.5 (12 µg/m3) by 2021-2025
- 8-hour Ozone (80 ppb) by 2024 (updated from the 2007 and 2012 AQMPs)
- 1-hour Ozone (120 ppb) by 2023 (updated from the 2012 AQMP)
- 24-hour PM2.5 (35 µg/$m^3$) by 2019 (updated from the 2012 AQMP)

In addition to meeting the above standards, the 2016 AQMP also includes revisions to the attainment demonstrations for the 1997 8-hour ozone NAAQS and the 1979 1-hour ozone NAAQS. The prior 2012 AQMP was prepared in order to demonstrate attainment with the 24-hour PM2.5 standard by 2014 through adoption of all feasible measures. The prior 2007 AQMP demonstrated attainment with the 1997 8-hour ozone (80 ppb) standard by 2023, through implementation of future improvements in control techniques and technologies. These "black box" emissions reductions represent 65 percent of the remaining NOx emission reductions by 2023 in order to show attainment with the 1997 8-hour ozone NAAQS. Given the magnitude of these needed emissions reductions, additional NOx control measures have been provided in the 2012 AQMP even though the primary purpose was to show compliance with 24-hour PM2.5 emissions standards.

The 2016 AQMP provides a new approach that focuses on available, proven and cost effective alternatives to traditional strategies, while seeking to achieve multiple goals in partnership with other entities to promote reductions in GHG emissions and TAC emissions as well as efficiencies in energy use, transportation, and goods movement. The 2016 AQMP recognizes the critical importance of working with other agencies to develop funding and other incentives that encourage the accelerated transition of vehicles, buildings and industrial facilities to cleaner technologies in a manner that benefits not only air quality, but also local businesses and the regional economy.

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 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 dedicated gaseous-fueled 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 *2020-2045 Regional Transportation Plan/Sustainable Communities Strategy* (Connect SoCal), adopted September 3, 2020and the *2019 Federal Transportation Improvement* Program (2019 FTIP), adopted September 2018, which addresses regional development and growth forecasts. Although the Connect SoCal and 2019 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 AQMP, which are utilized in the preparation of air quality forecasts and in the consistency analysis included in the AQMP. The Connect SoCal, 2019 FTIP, and AQMP are based on projections originating within the City and County General Plans.

## *4.4 Local – City of Murrieta*

Local jurisdictions, such as the City of Murrieta, have the authority and responsibility to reduce air pollution through its police power and decision-making authority. Specifically, the City is responsible for the assessment and mitigation of air emissions resulting from its land use decisions. The City 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 City 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 City 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 City 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.

The City of Murrieta General Plan contains the following air quality-related goals and policies that are applicable to the proposed project:

**Goal AQ-2** **The relationship between land use and air quality is considered in policy decisions in order to protect public health and improve air quality.**

**Policy AQ-2.1** Locate sensitive receptors (i.e., residences, schools, playgrounds, childcare centers, athletic facilities, churches, long-term health care facilities, rehabilitation centers, convalescent centers, and retirement homes) away from significant pollution sources to the maximum extent feasible.

**Policy AQ-2.2** Avoid locating new homes, schools, childcare and elder care facilities, and health care facilities within 500 feet of freeways.

**Goal AQ-3** **Reduced emissions during construction activities.**

**Policy AQ-3.1** Ensure that construction activities follow current South Coast Air Quality Management District (SCAQMD) rules, regulations, and thresholds.

**Policy AQ-3.2** Ensure all applicable best management practices are used in accordance with the South Coast Air Quality Management District (SCAQMD) to reduce emitting criteria pollutants during construction.

**Policy AQ-3.3** Require all construction equipment for public and private projects comply with California Air Resources Board's (CARB) vehicle standards. For projects that may exceed daily construction emissions established by the South Coast Air Quality Management District (SCAQMD), Best Available Control Measures will be incorporated to reduce construction emissions to below daily emission standards established by the SCAQMD.

**Policy AQ-3.4** Require project proponents to prepare and implement a Construction Management Plan, which will include Best Available Control Measures among others. Appropriate control measures will be determined on a project by project basis, and should be specific to the pollutant for which the daily threshold is exceeded. Such control measures may include but not be limited to:

- Minimizing simultaneous operation of multiple construction equipment units.
- Implementation of South Coast Air Quality Management District (SCAQMD) Rule 403, Fugitive Dust Control Measures.
- Watering the construction area to minimize fugitive dust.
- Require that off-road diesel powered vehicles used for construction shall be new low emission vehicles, or use retrofit emission control devices, such as diesel oxidation

catalysts and diesel particulate filters verified by California Air Resources Board (CARB).

- Minimizing idling time by construction vehicles.

**Goal AQ-4** **Mobile source emissions are reduced by providing a balance of jobs and housing that serve the needs of the community.**

**Policy AQ-4.4** Encourage a mix of housing types that are affordable to all segments of the population and are near job opportunities to further reduce vehicle trips.

**Goal AQ-6** **Stationary source pollution (point source and area source) are minimized through existing and future regulations and new technology.**

**Policy AQ-6.5** New multi-family residential buildings and other sensitive land uses in areas with high levels of localized air pollution should be designed to achieve good indoor air quality through landscaping, ventilation systems, or other measures.

**Policy AQ-6.6** Encourage green building techniques that improve indoor air quality, energy efficiency and conservation in buildings, and utilization of renewable energy sources.

**Policy AQ-6.7** During the design review process, encourage the use of measures to reduce indoor air quality impacts (i.e., air filtration systems, kitchen range top exhaust fans, and low-VOC paint and carpet for new developments busy roadways with significant volumes of heavy truck traffic).

**Goal AQ-7** **Particulate matter and fugitive dust emissions are reduced throughout the City.**

**Policy AQ-7.2** Collaborate with transportation agencies, utilities, and developers to minimize fugitive dust and emissions from construction and maintenance activities.

**Policy AQ-7.4** Consider the suspension of all grading operations, not including dust control actions, at construction projects when the source represents a public nuisance or potential safety hazard due to reduced visibility on streets surrounding the property.

# 5.0 ENERGY CONSERVATION MANAGEMENT

The regulatory setting related to energy conservation is primarily addressed through State and City 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 Commission 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 California Code of Regulations (CCR), Title 20, Division 2, Chapter 4, Article 4, Sections 1601-1609.

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

The CEC is also responsible for implementing the CCR Title 24, Part 6: *California's Energy Efficiency Standards for Residential and Nonresidential Buildings* (Title 24 Part 6) that were first established in 1978 in response to a legislative mandate to reduce California's energy consumption. 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. On January 1, 2020 the 2019 standards went into effect, that have been designed so that the average new home built in California will now use zero-net-energy and that non-residential buildings will use about 30 percent less energy than the 2016 standards due mainly to lighting upgrades. The 2019 standards also encourage the use of battery storage and heat pump water heaters, require the more widespread use of LED lighting, as well as improve the building's thermal envelope through high performance attics, walls and windows. The 2019 standards also require improvements to ventilation systems by requiring highly efficient air filters to trap hazardous air particulates as well as improvements to kitchen ventilation systems.

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

CCR Title 24, Part 11: *California Green Building Standards* (CalGreen) was developed in response to continued efforts to reduce GHG emissions associated with energy consumption. The CalGreen Building

Standards are also updated every three years and the current version is the 2019 California Green Building Standard Code that become effective on January 1, 2020.

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 2019 CALGreen Code over the prior 2016 CALGreen Code include: an alignment of building code engineering requirements with the national standards that include anchorage requirements for solar panels, provides design requirements for buildings in tsunami zones, increases Minimum Efficiency Reporting Value (MERV) for air filters from 8 to 13, increased electric vehicle charging requirements in parking areas, and sets minimum requirements for use of shade trees.

**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.

**Senate Bill 100**

Senate Bill 100 (SB 100) was adopted September 2018 and 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. SB 100 supersedes the renewable energy requirements set by SB 350, SB 1078, SB 107, and SB X1-2. SB 100 codified the interim renewable energy thresholds from the prior Bills of: 33 percent by 2020, 40 percent by December 31, 2024, 45 percent by December 31, 2027, and 50 percent by December 31, 2030.

**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 California Energy Commission working with the State Air Resources Board 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. However, 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 EPA's proposed amendments do not include any extension of the legal waiver granted to California by the 1970 Clean Air Act and which has allowed the State to set tighter standards for vehicle pipe emissions than the EPA standards. On September 20, 2019, California filed suit over the EPA decision to revoke California's legal waiver that has been joined by 22 other states.

### *5.2 Local – City of Murrieta*

The applicable energy plan for the proposed project is the *Murrieta General Plan 2035*, July 19, 2011. The applicable energy-related goals and policies in the General Plan for the proposed project are shown below.

**Goal CSV-12: Energy conservation and the generation of energy from renewable sources is prioritized as part of an overall strategy to reduce greenhouse gas emissions.**

Policies

CSV-12.1: Ensure that all developments comply with energy efficiency requirements as mandated by the applicable Building Code.

CSV-12.3: Support the on-site installation and use of renewable energy generation systems for residential, commercial, institutional, and industrial uses.

CSV-12.5: Consider non-commercial solar power generation in residential areas.

CSV-12.6: Encourage new development projects and significant rehabilitation or expansion projects to incorporate innovative energy conservation or generation amenities such as electric vehicle charging stations, solar canopies, and carports.

# 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. In addition, the State has passed the following laws directing CARB to develop actions to reduce GHG emissions, which are listed below in chronological order, with the most current first.

**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 as detailed above in Section 3.3 Greenhouse Gas Emissions Inventory, energy use for residential and commercial buildings creates 9.7 percent of the GHG emissions in the State.

**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 as detailed above under Title 24, Part 6, energy usage from buildings creates 9.7 percent of GHG emissions in the State.

**Senate Bill 100**

SB 100 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-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 set 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 from transportation sources 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 (SCAG, 2020) provides a 2035 GHG emission reduction target of 19 percent reduction over the 2005 per capita emissions levels. The Connect SoCal 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. Early measures CARB took to lower GHG emissions included requiring operators of the largest industrial facilities that emit 25,000 metric tons of $CO_2$ in a calendar year to submit verification of GHG emissions by December 1, 2010. The CARB Board also approved nine discrete early action measures that include regulations affecting landfills, motor vehicle fuels, refrigerants in cars, port operations and other sources, all of which became enforceable on or before January 1, 2010.

CARB's Scoping Plan that was adopted in 2009, proposes a variety of measures including: strengthening energy efficiency and building standards; targeted fees on water and energy use; a market-based cap-and-trade system; achieving a 33 percent renewable energy mix; and a fee regulation to fund the program. The 2014 update to the Scoping Plan identifies strategies moving beyond the 2020 targets to the year 2050.

The Cap-and-Trade Program established under the Scoping Plan sets a statewide limit on sources responsible for 85 percent of California's GHG emissions, and has established a market for long-term investment in energy efficiency and cleaner fuels since 2012.

**Executive Order S-3-05**

In 2005 the California Governor issued Executive Order S 3-05, GHG Emission, which established the following reduction targets:

- 2010: Reduce greenhouse gas emissions to 2000 levels;
- 2020: Reduce greenhouse gas emissions to 1990 levels;
- 2050: Reduce greenhouse gas emissions to 80 percent below 1990 levels.

The Executive Order directed the secretary of the California Environmental Protection Agency (CalEPA) to coordinate a multi-agency effort to reduce GHG emissions to the target levels. To comply with the Executive Order, the secretary of CalEPA created the California Climate Action Team (CAT), made up of members from various state agencies and commissions. The team released its first report in March 2006. The report proposed to achieve the targets by building on the voluntary actions of businesses, local governments, and communities and through State incentive and regulatory programs. The State achieved its first goal of reducing GHG emissions to 2000 levels by 2010.

**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.

<u>SCAQMD Working Group</u>

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, 3,000 $MTCO_2e$ for mixed uses, and 10,000 $MTCO_2e$ for industrial uses.

**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 Connect SoCal and 2019 FTIP addresses regional development and growth forecasts. Although the Connect SoCal and 2019 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 AQMP, which are utilized in the preparation of air quality forecasts and in the consistency analysis included in the AQMP. The Connect SoCal, 2019FTIP, and AQMP are based on projections originating within the City and County General Plans.

### *6.5 Local – City of Murrieta*

On January 2011, the City of Murrieta adopted the *General Plan Update Climate Action Plan* (Murrieta CAP) that was prepared to assist the City in conforming to the GHG emissions reductions as mandated under AB 32. The Murrieta CAP was based on the CARB Scoping Plan's reduction target of reducing GHG emissions to 1990 levels by 2020 means cutting approximately 30 percent from business-as-usual (BAU) emissions levels, or about 15 percent from year 2009 levels, which is the baseline year for the Climate Action Plan. Consistent with the CARB Scoping Plan, the Murrieta CAP provides a reduction target of 15 percent below 2009 GHG emissions levels by 2020.

On July 7, 2020, the City of Murrieta adopted the *Draft Supplemental Environmental Impact Report Murrieta General Plan 2035* (General Plan Update EIR), that included an updated GHG emissions analysis to address the updated State reduction targets provided in Executive Order B-30-15 on April 29, 2015 that provided a reduction goal of 40 percent below 1990 levels by 2030. That was codified into statute through passage of AB 197 and SB 32 in September 2016.

# 7.0 ATMOSPHERIC SETTING

## *7.1 South Coast Air Basin*

The project site is located within the western portion of 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 Elsinore Monitoring Station, which is the nearest weather station to the project site with historical data are shown below in Table D. Table D 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 D – Monthly Climate Data**

| Month | Average Maximum Temperature (°F) | Average Minimum Temperature (°F) | Average Total Precipitation (inches) |
|---|---|---|---|
| January | 65.4 | 36.4 | 2.47 |
| February | 67.5 | 38.7 | 2.54 |
| March | 71.0 | 41.2 | 2.03 |
| April | 76.3 | 44.7 | 0.75 |
| May | 81.8 | 49.8 | 0.23 |
| June | 90.5 | 54.1 | 0.02 |
| July | 98.1 | 59.4 | 0.08 |
| August | 98.1 | 59.8 | 0.12 |
| September | 93.5 | 55.8 | 0.26 |
| October | 83.7 | 48.8 | 0.51 |
| November | 74.1 | 41.1 | 0.99 |
| December | 66.9 | 36.5 | 2.01 |
| **Annual** | **80.6** | **47.2** | **12.01** |

Source: https://wrcc.dri.edu/cgi-bin/cliMAIN.pl?ca2805

### *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. Estimates of the existing emissions in the Air Basin provided in the 2012 AQMP, indicate that collectively, mobile sources account for 59 percent of the VOC, 88 percent of the NOx emissions and 40 percent of directly emitted PM2.5, with another 10 percent of PM2.5 from road dust. The 2016 AQMP found that since 2012 AQMP projections were made stationary source VOC emissions have decreased by approximately 12 percent, but mobile VOC emissions have increased by 5 percent. The percentage of NOx emissions remain unchanged between the 2012 and 2016 projections.

SCAQMD has divided the Air Basin into 38 air-monitoring areas. The project site is located in Air Monitoring Area 26, which covers the Temecula Valley. Since not all air monitoring stations measure all of the tracked pollutants, the data from the following two monitoring stations, listed in the order of proximity to the project site have been used: Winchester-33700 Borel Road Monitoring Station (Borel Station) and Lake Elsinore-West Flint Street Monitoring Station (Lake Elsinore Station).

The Borel Station is located approximately 3.1 miles southeast of the project site at 33700 Borel Road, Murrieta and the Lake Elsinore Station is located approximately 10.8 miles northwest of the project site at 506 West Flint Street, Lake Elsinore. Table E presents the monitored pollutant levels from these Monitoring Stations. Ozone and PM2.5 were measured at the Borel Station, and $NO_2$ and PM10 were measured at the Lake Elsinore Station. CO measurements have not been provided, since CO is currently

in attainment in the Air Basin and monitoring of CO within the Air Basin ended on March 31, 2013. It should also be noted that due to the air monitoring stations distances from the project site, recorded air pollution levels at the air monitoring stations reflect with varying degrees of accuracy, local air quality conditions at the project site.

**Table E – Local Area Air Quality Monitoring Summary**

| Pollutant (Standard) | Year 2018 | 2019 | 2020 |
|---|---|---|---|
| **Ozone:** [1] | | | |
| Maximum 1-Hour Concentration (ppm) | 0.107 | 0.091 | 0.108 |
| Days > CAAQS (0.09 ppm) | **2** | 0 | **5** |
| Maximum 8-Hour Concentration (ppm) | 0.085 | 0.079 | 0.091 |
| Days > NAAQS (0.070 ppm) | **15** | **6** | **37** |
| Days > CAAQs (0.070 ppm) | **18** | **7** | **39** |
| **Nitrogen Dioxide:**[2] | | | |
| Maximum 1-Hour Concentration (ppb) | 41.3 | 38.0 | 43.6 |
| Days > NAAQS (100 ppb) | 0 | 0 | 0 |
| Days > CAAQS (180 ppb) | 0 | 0 | 0 |
| **Inhalable Particulates (PM10) :**[2] | | | |
| Maximum 24-Hour National Measurement (ug/m$^3$) | 105.3 | 93.8 | 192.4 |
| Days > NAAQS (150 ug/m$^3$) | 0 | 0 | **1** |
| Days > CAAQS (50 ug/m$^3$) | ND | ND | ND |
| Annual Arithmetic Mean (AAM) (ug/m$^3$) | 23.3 | 19.7 | 23.7 |
| Annual > NAAQS (50 ug/m$^3$) | No | No | No |
| Annual > CAAQS (20 ug/m$^3$) | **Yes** | No | **Yes** |
| **Ultra-Fine Particulates (PM2.5):**[1] | | | |
| Maximum 24-Hour National Measurement (ug/m$^3$) | 26.5 | 17.0 | 37.1 |
| Days > NAAQS (35 ug/m$^3$) | 0 | 0 | 1 |
| Annual Arithmetic Mean (AAM) (ug/m$^3$) | 7.1 | 7.6 | 9.5 |
| Annual > NAAQS and CAAQS (12 ug/m$^3$) | No | 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 Borel Station.

[2] Data obtained from the Lake Elsinore Station.

Source: http://www.arb.ca.gov/adam/

## Ozone

During the last three years, the State 1-hour concentration standard for ozone has been exceeded between 0 and 5 days each year over the last three years at the Borel Station. The State 8-hour concentration standard for ozone has been exceeded between 7 and 39 days each year over the last three

years at the Borel Station. The federal 8-hour concentration standard for ozone has been exceeded between 6 and 37 days each year over the last three years at the Borel 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 Lake Elsinore Station did not record an exceedance of either the Federal or State 1-hour $NO_2$ standards for the last three years.

**Particulate Matter**

It is not clear whether the State 24-hour concentration standard for PM10 has been exceeded as there is no data for the last three years at the Lake Elsinore Station. Over the past three years the Federal 24-hour standard for PM10 has been exceeded for only one day in the year 2020 at the Lake Elsinore Station. The annual PM10 concentration at the Lake Elsinore Station has exceeded the State standard for two of the past three years and has not exceeded the Federal standard for the past three years.

Over the past three years the federal 24-hour concentration standard for PM2.5 has only been exceeded for one day in year 2020 at the Borel Station. The annual PM2.5 concentration at the Borel Station has not exceeded either the State or exceeded the Federal standard for the past three years. There does not appear to be a noticeable trend for PM10 or PM2.5 in either maximum particulate concentrations or days of exceedances in the area. 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 SCAQMD's MATES-IV study, the project site has an estimated cancer risk of 374 per million persons chance of cancer. In comparison, the average cancer risk for the Air Basin is 991 per million persons, which is based on the use of age-sensitivity factors detailed in the OEHHA Guidelines (OEHHA, 2015).

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 between 1 in 3 to 4 and 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 year 2030 GHG emissions impacts created by the proposed project have been analyzed through use of CalEEMod Version 2020.4.0. CalEEMod is a computer model published by the SCAQMD for estimating air pollutant emissions. The CalEEMod program uses the EMFAC2017 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 OFFROAD2011 computer program to calculate emission rates for heavy equipment operations. EMFAC2017 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, a Climate Zone of 10, and utility company of Southern California Edison. The criteria pollution calculations were analyzed based on the project opening year 2023.

### Land Use Parameters

The proposed project consists of development of a residential apartment complex with 324 residential apartment units, two recreational buildings with associated pool areas, and a leasing office. The proposed project would provide 677 parking spaces, of which 326 would be garage spaces and 351 would be outdoor parking spaces. The onsite driveways and open parking lots would cover 5.33 acres of the project site. The proposed project is segmented into a north area and south area that are separated by a 2.76 acre natural open space/mitigation area that will not be disturbed as part of the proposed project. In addition the proposed project would include approximately 1.6 acres of public roadway improvements to the portions of Whitewood Road, Greenberg Place and Lee Lane that are adjacent to the project site. The proposed project's land use parameters that were entered into the CalEEMod model are shown in Table F.

**Table F – CalEEMod Land Use Parameters**

| Proposed Land Use | Land Use Subtype in CalEEMod | Land Use Size[1] | Lot Acreage[2] | Building/Paving (square feet) |
|---|---|---|---|---|
| Residential Apartments | Apartments Low Rise | 324 Unit | 15.25 | 400,060 |
| Onsite Driveways and Outdoor Parking Spaces[3] | Parking Lot | 351 PS | 5.33 | 128,800 |
| Public Road Improvements | Other Asphalt Surfaces | 1.6 AC | 1.6 | 174,240 |
| Natural Open Space | Not Analyzed in CalEEMod | -- | 2.76 | -- |

Notes:
[1] TSF = Thousand Square Feet; PS = Parking Space; AC = Acre
[2] Lot acreage calculated based on a total project site of 18.7 gross acres.
[3] Only the outdoor parking spaces were analyzed, since the garage spaces were analyzed as part of the Apartments Low Rise land use in CalEEMod.

### Construction Parameters

Construction of the proposed project is anticipated to start around April 2022 and would be completed in 16 months. 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.

The CalEEMod model 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.

Site Preparation

The site preparation phase would consist of removing any vegetation, tree stumps, and stones onsite prior to grading. The site preparation phase is anticipated to start April 2022 and was modeled as occurring over two weeks, which is based on the CalEEMod default timing. The site preparation activities would require 18 worker trips per day. In order to account for water truck emissions, six vendor truck emissions were added to the site preparation phase. The onsite equipment would consist of three rubber-tired dozers and four crawler tractors. The mitigation of water all exposed areas three times per day was chosen in order to account for the fugitive dust reduction that would occur through adhering to SCAQMD Rule 403, which requires that the Best Available Control Measures be utilized to reduce fugitive dust emissions.

Grading

The grading phase would occur after completion of the site preparation phase and was modeled as occurring over six weeks, which is based on the CalEEMod default timing. It is anticipated that the grading would likely be balanced, which would result in no dirt being imported or exported from the project site. The onsite grading equipment would consist of two excavators, one grader, one rubber-tired dozer, two scrapers, and two crawler tractors. The grading activities would generate 20 worker trips per day. In order to account for water truck emissions, six daily vendor truck trips were added to the grading phase. The mitigation of water all exposed areas three times per day was chosen in order to account for the fugitive dust reduction that would occur through adhering to SCAQMD Rule 403, which requires that the Best Available Control Measures be utilized to reduce fugitive dust emissions.

Building Construction

The building construction would occur after the completion of the grading phase and was modeled as occurring over 14 months, which is based on the CalEEMod default timing. The building construction phase would generate 322 worker trips and 69 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 roads and parking spaces and road improvements to the portions of Whitewood Road, Lee Lane, and Greenberg Place that are adjacent to the project site. The paving phase was modeled as occurring concurrently with the final four months of the building construction phase. The paving phase would generate 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 was modeled as occurring concurrently with the paving phase and final four months of the building construction phase. The architectural coating phase was modeled based on covering 656,100 square feet of residential interior area, 218,700 square feet of residential exterior area, and 12,606 square feet of parking area. The architectural coating phase would generate 64 worker trips per day. The onsite equipment would consist of one air compressor, which is based on the CalEEMod default equipment mix. It should be noted that the project applicant has committed to utilizing Super-Compliant VOC paints on the interior of the proposed structures (see Project Design Feature 1), however in order to provide a conservative analysis, no credit was taken for Project Design Feature 1 in the CalEEMod model.

**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 emission source is described below.

Mobile Sources

Mobile sources include emissions the additional vehicle miles generated from the proposed project. The daily vehicle trip rates associated with the proposed project have utilized the default CalEEMod daily trip generation rates of: 7.32 per residential unit on weekdays; 8.14 per unit on Saturdays; and 6.28 per unit on Sundays. It should be noted that the weekday rate of 7.32 is the same rate utilized in the Traffic Screening Memo (Linscott Law & Greenspan, 2021).

The mobile source emissions analysis for the project included the CalEEMod "mitigation" of improved pedestrian network on project site in order to account for the proposed sidewalks on the project site adjacent to Whitewood Road, Lee Lane, and Greenberg Place.

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 proposed project plans, no fireplaces or wood stoves would be installed into the proposed residential apartment units. However, there would be a communal natural gas only fire place in the two recreational buildings next to both pools. Since SCAQMD Rule 445 restricts the installation of wood-burning devices into new developments, the two fireplaces were modeled as natural gas only fireplaces 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 (excluding hearths). The energy usage was based on the ongoing use of the proposed 324 residential apartment units in the CalEEMod Model. No changes were made to the default energy usage parameters in the CalEEMod model.

The 2019 Title 24, Part 6 building energy efficiency standards went into effect January 1, 2020 and have been developed so that the average new home built in California will have zero-net-energy use. In order

to account for the new 2019 Title 24, Part 6 standards, this analysis included the CalEEMod mitigation of exceed the 2016 Title 24 standards by 7 percent, since according to *2019 Building Energy Efficiency Standards Frequently Asked Questions,* prepared by CEC, 2018, the 2019 building standards have been calculated to result in new homes using about 7 percent less energy than homes built with the 2016 building standards.

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 149 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.

The CalEEMod mitigation of a 50 percent reduction in landfill waste was selected to account for implementation of AB 341 that provides strategies to reduce, recycle or compost solid waste by 75 percent by 2020. Only 50 percent was selected, since AB 341 builds upon the waste reduction measures of SB 939 and 1374 and therefore, it was assumed approximately 25 percent of the waste reduction target has already been accounted for 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 rate of 21,109,904 gallons per year of indoor water use and 13,308,418 gallons per year of outdoor water use. No changes were made to the default water and wastewater parameters in the CalEEMod model.

The CalEEMod mitigation of the use of low flow faucets, showers, and toilets and use of smart irrigation system controllers were selected to account for the implementation of the 2016 CCR Title 24 Part 11 (CalGreen) requirements.

## *8.2 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 G shows the off-road construction equipment fuel calculations based on the above formula. Table G shows that the off-road equipment utilized during construction of the proposed project would consume 63,038 gallons of fuel.

**Table G – 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 | 247 | 0.4 | 8 | 240 | 1,224 |
| Crawler Tractors | 4 | 212 | 0.43 | 8 | 320 | 1,506 |
| **Grading** | | | | | | |
| Excavators | 2 | 158 | 0.38 | 8 | 480 | 1,488 |
| Grader | 1 | 187 | 0.41 | 8 | 240 | 950 |
| Rubber Tired Dozers | 1 | 247 | 0.4 | 8 | 240 | 1,224 |
| Scrapers | 2 | 367 | 0.48 | 8 | 480 | 4,365 |
| Crawler Tractors | 2 | 212 | 0.43 | 8 | 480 | 2,259 |
| **Building Construction** | | | | | | |
| Cranes | 1 | 231 | 0.29 | 7 | 2,100 | 7,263 |
| Forklifts | 3 | 89 | 0.2 | 8 | 7,200 | 7,355 |
| Generator Sets | 1 | 84 | 0.74 | 8 | 2,400 | 8,562 |
| Tractors/Loaders/Backhoes | 3 | 97 | 0.37 | 7 | 6,300 | 12,977 |
| Welders | 1 | 46 | 0.45 | 8 | 2,400 | 2,851 |
| **Paving** | | | | | | |
| Pavers | 2 | 130 | 0.42 | 8 | 1,408 | 3,969 |
| Paving Equipment | 2 | 132 | 0.36 | 8 | 1,408 | 3,454 |
| Rollers | 2 | 80 | 0.38 | 8 | 1,408 | 2,457 |
| **Architectural Coating** | | | | | | |
| Air Compressor | 1 | 78 | 0.48 | 6 | 528 | 1,135 |
| | **Total Off-Road Equipment Fuel Used during Construction (gallons)** | | | | | **63,038** |

Notes:

[1] Based on: 10 days for Site Preparation, 30 days for Grading; 300 days for Building Construction; 88 days for Paving; and 88 days for Architectural Coating.

Source: CalEEMod Version 2020.4.0 (see Appendix B); 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 were then divided by the fleet average for the South Coast Air Basin miles per gallon rates for the year 2022 calculated through use of the EMFAC2017 model (https://www.arb.ca.gov/emfac/2017/) and the EMFAC2017 model printouts are shown in Appendix C. Table H shows the on-road construction vehicle trips modeled in CalEEMod and the fuel usage calculations.

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

| Vehicle Trip Types | 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 Trips | 18 | 11 | 198 | 1,980 | 26.0 | 76 |
| Vendor Truck Trips | 6 | 5.4 | 32 | 324 | 8.2 | 39 |
| **Grading** | | | | | | |
| Worker Trips | 20 | 11 | 220 | 6,600 | 26.0 | 254 |
| Vendor Truck Trips | 6 | 5.4 | 32 | 972 | 8.2 | 118 |
| **Building Construction** | | | | | | |
| Worker Trips | 322 | 11 | 3,542 | 1,062,600 | 26.0 | 40,887 |
| Vendor Truck Trips | 69 | 5.4 | 373 | 111.780 | 8.2 | 13,590 |
| **Paving** | | | | | | |
| Worker Trips | 15 | 11 | 165 | 14,520 | 26.0 | 559 |
| **Architectural Coating** | | | | | | |
| Worker Trips | 64 | 11 | 704 | 61.952 | 26.0 | 2,384 |
| | | **Total Fuel Used from On-Road Construction Vehicles (gallons)** | | | | **57,908** |

Notes:
[1] Based on: 10 days for Site Preparation, 30 days for Grading; 300 days for Building Construction; 88 days for Paving; and 88 days for Architectural Coating
[2] From EMFAC 2017 model (see Appendix C). Worker Trips based on entire fleet of gasoline vehicles and Vendor Trips based on only truck fleet of diesel vehicles.
Source: CalEEMod Version 2020.4.0; CARB, 2018.

Table H shows that the on-road construction-related vehicle trips would consume 57,908 gallons of fuel and as detailed above, Table G shows that the off-road construction equipment would consume 63,038 gallons of fuel. This would result in the total consumption of 120,946 gallons of petroleum 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, electricity, and natural gas, and the calculations for each source are described below.

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 7,988,899 vehicle miles traveled per year.

The calculated total operational miles were then divided by the South Coast Air Basin fleet average rate of 26.0 miles per gallon, which was calculated through use of the EMFAC2017 model and based on year 2022. The EMFAC2017 model printouts are shown in Appendix C. Based on the above calculation methodology, the operation of the proposed project would consume 307,403 gallons 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 the proposed project will use 1,346,830 kilowatt hours (kWh) per year with implementation of Title 24 Part 6 requirements that require the implementation of building energy efficiency standards.

Operational Natural Gas Use

The operations-related natural gas usage was calculated in the CalEEMod model run that is detailed above in Section 8.1 that found the proposed project will use 4,694,500 kilo British Thermal Units (kBTU) per year, which is equivalent to 2,192 mega-British Thermal units (MBTU) per year of natural gas.

# 9.0 THRESHOLDS OF SIGNIFICANCE

## *9.1 Regional Air Quality*

Many air quality impacts that derive from dispersed mobile sources, which are the dominate 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 I.

**Table I – 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 Monitoring Area 26, which covers the Temecula Valley.

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 J 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 J, the maximum disturbed per day would occur during the grading phase when 4-acres would be disturbed. As such, the 2-acre and 5-acre project sites shown in the Look-Up Tables were interpolated in order to calculate the 4-acre threshold that has been utilized in this analysis.

**Table J – 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 |
| | Crawler Tractors | 4 | 0.5 | 8 | 2.0 |
| | Total Acres Disturbed per Day During Site Preparation | | | | 3.5 |
| Grading | Excavators | 2 | 0 | 8 | 0 |
| | Graders | 1 | 0.5 | 8 | 0.5 |
| | Rubber Tired Dozers | 1 | 0.5 | 8 | 0.5 |
| | Scrapers | 2 | 1.0 | 8 | 2.0 |
| | Crawler Tractors | 2 | 0.5 | 8 | 1.0 |
| | Total Acres Disturbed per Day During Grading | | | | 4.0 |
| 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** | | | | **4.0** |

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 disturb 0 acres per 8-hour day.
Source: CalEEMod Version 2020.4.0; SCAQMD, 2015.

The nearest sensitive receptor to the project site is a home located as near as 18 feet (5.5 meters) east of the project site. According to LST Methodology, any receptor located closer than 25 meters (82 feet) shall be based on the 25 meter thresholds. Table K below shows the LSTs for $NO_2$, PM10 and PM2.5 for both construction and operational activities.

**Table K – SCAQMD Local Air Quality Thresholds of Significance**

| Activity | Allowable Emissions (pounds/day)[1] | | | |
|---|---|---|---|---|
| | NOx | CO | PM10 | PM2.5 |
| **Construction** | 325 | 1,677 | 11 | 7 |
| **Operation** | 325 | 1,677 | 3 | 2 |

Notes:

[1] The nearest sensitive receptor to the project site is a home located as near as 18 feet (5.5 meters) east of the project site. According to SCAQMD methodology, all receptors closer than 25 meters are based on the 25 meter threshold.

Source: Calculated from SCAQMD's Mass Rate Look-up Tables for two and five acres in Air Monitoring Area 26, Temecula Valley.

### *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 toxic air contaminants (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).

The comprehensive HRA for both construction and operation of the proposed project can be found below in Section 10.4.

### *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 2018 amendments and additions to the CEQA Checklist now 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 2020 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, the 2018 *Guidelines for the Implementation of the California Environmental Quality Act,* provide the following direction on how to analyze a project's energy consumption:

> "If analysis of the project's energy use reveals that the project may result in significant environmental effects due to wasteful, inefficient, or unnecessary use of energy, or wasteful use of energy resources, the EIR shall mitigate that energy use. This analysis should include the project's energy use for all project phases and components, including transportation-related energy, during construction and operation. In addition to building code compliance, other relevant considerations may include, among others, the project's size, location, orientation, equipment use and any renewable energy features that could be incorporated into the project. (Guidance on information that may be included in such an analysis is presented in Appendix F.) This analysis is subject to the rule of reason and shall focus on energy use that is caused by the project. This analysis may be included in related analyses of air quality, greenhouse gas emissions, transportation or utilities in the discretion of the lead agency."

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*

On January 2011, the City of Murrieta adopted the *General Plan Update Climate Action Plan* (Murrieta CAP) that was prepared to assist the City in conforming to the GHG emissions reductions as mandated under AB 32. The Murrieta CAP was based on the CARB Scoping Plan's reduction target of reducing GHG emissions to 1990 levels by 2020 means cutting approximately 30 percent from business-as-usual (BAU) emissions levels, or about 15 percent from year 2009 levels, which is the baseline year for the Climate Action Plan. Consistent with the CARB Scoping Plan, the Murrieta CAP provides a reduction target of 15 percent below 2009 GHG emissions levels by 2020.

On July 7, 2020, the City of Murrieta adopted the *Draft Supplemental Environmental Impact Report Murrieta General Plan 2035* (General Plan Update EIR), that included an updated GHG emissions analysis to address the updated State reduction targets provided in Executive Order B-30-15 on April 29, 2015 that

provided a reduction goal of 40 percent below 1990 levels by 2030. That was codified into statute through passage of AB 197 and SB 32 in September 2016.

In conjunction with adoption of the General Plan Update EIR, the City also adopted the *Climate Action Plan Consistency Checklist* (CAP Checklist) that was prepared in order to provide a streamlined review process for proposed new development projects that are subject to discretionary review pursuant to CEQA. The CAP Checklist contains measures that are required to be implemented on a project-by-project basis to ensure that the specified emissions targets identified in the CAP are achieved. Therefore, the proposed project would be considered to create a significant cumulative GHG impact if the proposed project does not implement the required measures provided in the CAP Checklist.

# 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.

As detailed in the following analysis (see Section 10.2 below), the proposed project was found to be consistent with the General Plan, which analyzed the indirect and cumulative impacts of future development in the City, including the proposed project. As such, the indirect and cumulative impacts created from the proposed project were addressed at the General Plan level. The following analysis is limited to the direct impacts created by the proposed project.

## *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 exceed the air quality standards. Therefore, a less than significant long-term impact would occur and no mitigation would be required. It should also be noted that the project applicant has committed to implementing Project Design Feature 1 that requires the use of Super-Compliant VOC paint for the interior of the proposed structures, Project Design Feature 2 that requires 80 percent of construction waste to be recycled, Project Design Feature 3 that requires a minimum of 6 percent of all parking spaces to be equipped with EVSE for electric vehicle charging, Project Design Feature 4 that requires the implementation of water-efficient landscaping, which would further reduce emission created by the proposed project.

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 ensure 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 Connect SoCal and 2019 FTIP. The Connect SoCal is a major planning document for the regional transportation and land use network within Southern California. The Connect SoCal is a long-range plan that is required by federal and state requirements placed on SCAG and is updated every four years. The 2019 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 City of Murrieta General Plan's Land Use Plan defines the assumptions that are represented in AQMP.

The project site is currently designated as Multiple-Family Residential in the General Plan and is zoned Multiple Family 2 Residential (MF-2). The proposed residential apartment project is an allowed use within the existing land use designation and zoning. As such, the proposed project is consistent with the current land use designation and zoning and 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 the 15.94 acres that would be disturbed, building construction of the proposed residential apartment complex, paving of the onsite roads and parking spaces and road improvements to the portions of Whitewood Road, Lee Lane, and Greenberg Place, and application of architectural coatings. The construction emissions have been analyzed for both regional and local air quality impacts.

Construction-Related Regional Impacts

The CalEEMod model has been utilized to calculate the construction-related regional emissions from the proposed project and the input parameters utilized in this analysis have been detailed in Section 8.1. The worst-case summer or winter daily construction-related criteria pollutant emissions from the proposed project for each phase of construction activities are shown below in Table L and the CalEEMod daily printouts are shown in Appendix B. Since it is possible that building construction, paving, and architectural coating activities may occur concurrently towards the end of the building construction phase (year 2023), Table L also shows the combined regional criteria pollutant emissions from building construction, paving and architectural coating phases of construction.

**Table L – Construction-Related Regional Criteria Pollutant Emissions**

| Activity | Pollutant Emissions (pounds/day) | | | | | |
|---|---|---|---|---|---|---|
| | VOC | NOx | CO | $SO_2$ | PM10 | PM2.5 |
| **Site Preparation (Year 2022)[1]** | | | | | | |
| Onsite[2] | 4.47 | 50.41 | 20.01 | 0.06 | 9.83 | 5.93 |
| Offsite[3] | 0.08 | 0.32 | 0.81 | 0.00 | 0.24 | 0.07 |
| **Total** | **4.55** | **50.73** | **20.81** | **0.06** | **10.07** | **5.99** |
| **Grading (Year 2022)[1]** | | | | | | |
| Onsite[2] | 4.28 | 47.51 | 29.20 | 0.07 | 5.50 | 3.18 |
| Offsite[3] | 0.09 | 0.32 | 0.89 | 0.00 | 0.27 | 0.07 |
| **Total** | **4.37** | **47.83** | **30.08** | **0.07** | **5.76** | **3.25** |
| **Building Construction (Year 2022)** | | | | | | |
| Onsite | 1.71 | 15.62 | 16.36 | 0.03 | 0.81 | 0.76 |
| Offsite | 1.38 | 3.93 | 13.85 | 0.05 | 4.10 | 1.14 |
| **Total** | **3.09** | **19.54** | **30.21** | **0.07** | **4.91** | **1.90** |
| **Combined Year 2023 Building Construction, Paving, and Architectural Coatings** | | | | | | |
| Onsite | 26.70 | 25.88 | 32.64 | 0.05 | 1.28 | 1.20 |
| Offsite | 1.54 | 3.33 | 15.64 | 0.05 | 4.96 | 1.35 |
| **Total** | **28.25** | **29.21** | **48.28** | **0.10** | **6.24** | **2.55** |
| **Maximum Daily Construction Emissions** | **28.25** | **50.73** | **48.28** | **0.10** | **10.07** | **5.99** |
| **SCQAMD Thresholds** | **75** | **100** | **550** | **150** | **150** | **55** |
| Exceeds Threshold? | No | No | No | No | No | No |

Notes:
[1] Site Preparation and Grading based on adherence to fugitive dust suppression requirements from SCAQMD Rule 403.
[2] Onsite emissions from equipment not operated on public roads.
[3] Offsite emissions from vehicles operating on public roads.
Source: CalEEMod Version 2020.4.0.

Table L shows that none of the analyzed criteria pollutants would exceed the regional emissions thresholds during either site preparation, grading, or the combined building construction, paving and architectural coatings phases. In order to further reduce criteria pollutant emissions from construction activities, the project applicant has committed to Project Design Feature 1 that requires the use of Super-Compliant VOC paint for the interior paint applied to the proposed structures and Project Design Feature 2 that requires 80 percent of construction waste to be recycled. Therefore, a less than significant regional air quality impact would occur from construction of the proposed project.

Construction-Related Local Impacts

Construction-related 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.

The local air quality emissions from construction were analyzed through utilizing the methodology described in *Localized Significance Threshold Methodology* (LST Methodology), prepared by SCAQMD, revised October 2009. The LST Methodology found the primary criteria pollutant emissions of concern are NOx, CO, PM10, and PM2.5. In order to determine if any of these pollutants require a detailed analysis of the local air quality impacts, each phase of construction was screened using the SCAQMD's Mass Rate LST Look-up Tables. The Look-up Tables were developed by the SCAQMD in order to readily determine if the daily onsite emissions of CO, NOx, PM10, and PM2.5 from the proposed project could result in a significant impact to the local air quality.

Table M shows the onsite emissions from the CalEEMod model for the different construction phases and the calculated localized emissions thresholds that have been detailed above in Section 9.2. Since it is possible that building construction, paving, and architectural coating activities may occur concurrently towards the end of the building construction phase, Table M also shows the combined local criteria pollutant emissions from building construction, paving and architectural coating phases of construction.

**Table M – Construction-Related Local Criteria Pollutant Emissions**

| Construction Phase | Pollutant Emissions (pounds/day) | | | |
|---|---|---|---|---|
| | NOx | CO | PM10 | PM2.5 |
| Site Preparation[1] | 50.45 | 20.11 | 9.86 | 5.93 |
| Grading[1] | 47.55 | 29.31 | 5.53 | 3.19 |
| Building Construction (Year 2022) | 16.11 | 18.09 | 1.32 | 0.90 |
| Combined Building Construction (Year 2023), Paving and Architectural Coatings | 25.90 | 33.00 | 1.39 | 1.23 |
| **Maximum Daily Construction Emissions** | **50.45** | **33.00** | **9.86** | **5.93** |
| **SCAQMD Local Construction Thresholds[3]** | **325** | **1,677** | **11** | **7** |
| Exceeds Threshold? | No | No | No | No |

Notes:
[1] Site Preparation and Grading phases based on adherence to fugitive dust suppression requirements from SCAQMD Rule 403.
[3] The nearest sensitive receptor to the project site is a home located as near as 18 feet (5.5 meters) east of the project site. According to SCAQMD methodology, all receptors closer than 25 meters are based on the 25 meter threshold.
Source: Calculated from SCAQMD's Mass Rate Look-up Tables for two and five acres in Air Monitoring Area 26, Temecula Valley.

The data provided in Table M shows that none of the analyzed criteria pollutants would exceed the local emissions thresholds during either site preparation, grading, or the combined building construction,

paving, and architectural coatings phases. Therefore, a less than significant 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, and off-road equipment created from the on-going use of the proposed project. The following section provides an analysis of potential long-term air quality impacts due to regional air quality and local air quality impacts with the on-going operations of the proposed project.

Operations-Related Regional Criteria Pollutant Analysis

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 N and the CalEEMod daily emissions printouts are shown in Appendix B.

**Table N – Operational Regional Criteria Pollutant Emissions**

| | Pollutant Emissions (pounds/day) | | | | | |
|---|---|---|---|---|---|---|
| **Activity** | **VOC** | **NOx** | **CO** | **$SO_2$** | **PM10** | **PM2.5** |
| Area Sources[1] | 7.87 | 0.34 | 26.77 | <0.00 | 0.15 | 0.15 |
| Energy Usage[2] | 0.14 | 1.24 | 0.53 | 0.01 | 0.10 | 0.10 |
| Mobile Sources[3] | 8.57 | 12.11 | 84.67 | 0.19 | 19.19 | 5.22 |
| **Total Emissions** | **16.59** | **13.69** | **111.96** | **0.20** | **19.44** | **5.47** |
| **SCQAMD Operational Thresholds** | **55** | **55** | **550** | **150** | **150** | **55** |
| Exceeds Threshold? | No | No | No | No | No | No |

Notes:
[1] Area sources consist of emissions from consumer products, architectural coatings, hearths, and landscaping equipment.
[2] Energy usage consist of emissions from natural gas usage (non-hearth).
[3] Mobile sources consist of emissions from vehicles and road dust.
Source: Calculated from CalEEMod Version 2020.4.0.

The data provided in Table N shows that none of the analyzed criteria pollutants would exceed the regional emissions thresholds. In order to further reduce criteria pollutant emissions from operation of the proposed project, the project applicant has committed to Project Design Feature 3 that requires a minimum of 6 percent of all parking spaces to be equipped with EVSE for electric vehicle charging, Project Design Feature 4 that requires the implementation of water-efficient landscaping, which would further reduce emission created by the proposed project. Therefore, a less than significant regional air quality impact would occur from operation of the proposed project.

Friant Ranch Case

The operations-related regional criteria air quality impacts 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 L, project-related construction activities would generate a maximum of 28.25 pounds per day of VOC and 50.73 pounds per day of NOx and as shown above in Table N, operation of the proposed project would generate 16.59 pounds per day of VOC and 13.69 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.

Operations-Related Local Air Quality Impacts

Project-related 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. The proposed project has been analyzed for the potential local CO emission impacts from the project-generated vehicular trips and from the potential local air quality impacts from on-site operations. The following analyzes the vehicular CO emissions and local impacts from on-site operations.

*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[4]. 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.

*Local Criteria Pollutant Impacts from Onsite Operations*

Project-related air emissions from onsite sources such as architectural coatings, landscaping equipment, and onsite usage of natural gas appliances may have the potential to create emissions areas that exceed

[4] 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.

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.

The local air quality emissions from onsite operations were analyzed using the SCAQMD's Mass Rate LST Look-up Tables and the methodology described in LST Methodology. The Look-up Tables were developed by the SCAQMD in order to readily determine if the daily emissions of CO, NOx, PM10, and PM2.5 from the proposed project could result in a significant impact to the local air quality. Table N shows the onsite emissions from the CalEEMod model that includes area sources, energy usage, onsite off-road equipment, and vehicles operating in the immediate vicinity of the project site and the calculated emissions thresholds.

**Table O – Operations-Related Local Criteria Pollutant Emissions**

| Onsite Emission Source | Pollutant Emissions (pounds/day) | | | |
|---|---|---|---|---|
| | **NOx** | **CO** | **PM10** | **PM2.5** |
| Area Sources | 0.34 | 26.77 | 0.15 | 0.15 |
| Energy Usage | 1.24 | 0.53 | 0.10 | 0.10 |
| Mobile Sources[1] | 0.30 | 2.12 | 0.48 | 0.13 |
| **Total Emissions** | **1.88** | **29.41** | **0.73** | **0.38** |
| **SCAQMD Local Operational Thresholds[3]** | **325** | **1,677** | **4** | **2** |
| Exceeds Threshold? | No | No | No | No |

Notes:
[3] Mobile sources based on 1/8 of the gross vehicular emissions, which is the estimated portion of vehicle emissions occurring within a quarter mile of the project site.
[3] The nearest sensitive receptor to the project site is a home located as near as 18 feet (5.5 meters) east of the project site. According to SCAQMD methodology, all receptors closer than 25 meters are based on the 25 meter threshold.
Source: Calculated from SCAQMD's Mass Rate Look-up Tables for two and five acres in Air Monitoring Area 26, Temecula Valley.

The data provided in Table N shows that the on-going operations 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 onsite emissions and no mitigation would be required.

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 local criteria pollutant and toxic air contaminant emissions. The nearest sensitive receptor to the project site is a home located as near as 18 feet east of the project site. The nearest K-12 school is Vista Murrieta High School, which is located as near as 0.3 mile southwest of the project site.

### Construction-Related Sensitive Receptor Impacts

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 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 or Tier 1 equipment and by January 2023 no commercial operator is allowed to purchase 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 adherence to Section 2448 requirements, a less than significant short-term toxic air contaminant impacts would occur during construction of the proposed project. 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, landscaping equipment, hearths, and onsite usage of natural gas appliances. 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 residential project, a less than significant TAC impact would occur during the on-going operations of the proposed project and no mitigation would be required.

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

**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 a residential development. Potential sources that may emit odors during the on-going operations of the proposed project would primarily occur from the trash storage areas. Pursuant to City regulations, permanent trash enclosures that protect trash bins from rain as well as limit air circulation would be required for the trash storage areas. Due to the distance of the nearest receptors from the project site and through compliance with SCAQMD's Rule 402 and City trash storage regulations, no significant impact related to odors would occur during the on-going operations of the proposed project. Therefore, a less than significant odor impact would occur and no mitigation would be required.

**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, natural gas, and petroleum based fuel supplies and distribution systems. 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 2019, Southern California Edison, who provides electricity to the project vicinity provided 80,913 Gigawatt-hours per year of electricity[5].

Natural gas is a combustible mixture of simple hydrocarbon compounds (primarily methane) that is used as a fuel source. Natural gas consumed in California is obtained from naturally occurring reservoirs, mainly located outside the State, and delivered through high-pressure transmission pipelines. The natural gas transportation system is a nationwide network and, therefore, resource availability is typically not an issue. Natural gas satisfies almost one-third of the State's total energy requirements and is used in electricity generation, space heating, cooking, water heating, industrial processes, and as a transportation fuel. Natural gas is measured in terms of cubic feet. In 2019, Riverside County consumed 452.99 Million Therms of natural gas[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 2017, 1,052 million gallons of gasoline and 148 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 the 15.94 acres that would be disturbed, building construction of the proposed residential apartment complex, paving of the onsite roads and parking spaces and road improvements to the portions of Whitewood Road, Lee Lane, and Greenberg Place, 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 material to disposal facilities);
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.

5 Obtained from: http://www.ecdms.energy.ca.gov/elecbyutil.aspx
6 Obtained from: http://www.ecdms.energy.ca.gov/gasbycounty.aspx
7 Obtained from: https://ww2.energy.ca.gov/almanac/transportation_data/gasoline/

Construction-Related Electricity

During construction the proposed project would consume electricity to construct the proposed warehouse and infrastructure. 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 distribution lines and equipment with development of the proposed project. Compliance with City'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 Natural Gas

Construction of the proposed project typically would not involve the consumption of natural gas. Natural gas would not be supplied to support construction activities, thus there would be no demand generated by construction. Since there is currently natural gas service in the vicinity of the project site, construction of the proposed project would be limited to installation of new natural gas connections within the project site. Development of the proposed project would likely not require extensive infrastructure improvements to serve the project site. Construction-related energy usage impacts associated with the installation of natural gas connections are expected to be confined to trenching in order to place the lines below surface. In addition, prior to ground disturbance, the proposed project would notify and coordinate with SoCalGas to identify the locations and depth of all existing gas lines and avoid disruption of gas service. Therefore, construction-related impacts to natural gas supply and infrastructure would be less than significant.

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 the off-road equipment utilized during construction of the proposed project would consume 63,038 gallons of fuel.

The on-road construction trips fuel usage was calculated through use of the construction vehicle trip assumptions and fuel use assumptions shown above in Section 8.2, which found that the on-road trips generated from construction of the proposed project would consume 57,908 gallons of fuel. As such, the combined fuel used from off-road construction equipment and on-road construction trips for the proposed project would result in the consumption of 120,946 gallons of petroleum fuel. This equates to 0.01 percent of the gasoline and 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 1,346,830 kilowatt-hours per year of electricity. This equates to 0.0016 percent of the electricity consumed annually by Southern California Edison. As such, the operations-related electricity use would be nominal, when compared to current electricity usage rates in the Southern California Edison service area.

It should be noted that, the proposed project would comply with all Federal, State, and City requirements related to the consumption of electricity, that includes CCR Title 24, Part 6 *Building Energy Efficiency Standards* and CCR Title 24, Part 11: *California Green Building Standards.* The CCR Title 24, Part 6 and Part 11 standards require numerous energy efficiency measures to be incorporated into the proposed warehouse, including enhanced insulation, use of energy efficient lighting and appliances as well as requiring a variety of other energy-efficiency measures to be incorporated into the proposed structures. 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, the project would not result in the wasteful or inefficient use of electricity and no mitigation measures would be required.

Operations-Related Natural Gas

Operation of the proposed project would result in increased consumption of natural gas at the project site. As detailed above in Section 8.2 the proposed project would consume 4,695 MBTU per year of natural gas. This equates to 0.01 percent of the natural gas consumed annually in Riverside County. As

such, the operations-related natural gas use would be nominal, when compared to current natural gas usage rates in the County.

It should be noted that, the proposed project would comply with all Federal, State, and City requirements related to the consumption of natural gas, that includes CCR Title 24, Part 6 *Building Energy Efficiency Standards* and CCR Title 24, Part 11: *California Green Building Standards.* The CCR Title 24, Part 6 and Part 11 standards require numerous energy efficiency measures to be incorporated into the proposed warehouse, including enhanced insulation as well as use of efficient natural gas appliances and HVAC units. Therefore, it is anticipated the proposed project will be designed and built to minimize natural gas use and that existing and planned natural gas capacity and natural gas supplies would be sufficient to support the proposed project's natural gas demand. Thus, impacts with regard to natural gas 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 307,403 gallons of petroleum fuel per year from vehicle travel. This equates to 0.025 percent of the gasoline and diesel consumed annually in Riverside County. As such, the operations-related petroleum use would be nominal, when compared to current county-wide petroleum usage rates. Therefore, it is anticipated the proposed project will be designed and built to minimize transportation energy 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 Emissions, Transportation/Circulation, and Water Supply. Additionally, the proposed project would be constructed in accordance with all applicable City 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 *Murrieta General Plan 2035*, adopted July 19, 2011. 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 |
|---|---|---|
| INF-1.5 | Continue to require new development and redevelopment to provide verification that energy utilities are able to accommodate the additional demand for service. | **Consistent.** The project applicant has received "Will Serve" letters from Southern California Edison and SoCal Gas verifying that the energy utilities are able to accommodate the additional demand for service. |
| INF-1.6 | Provide information to water districts, Riverside County Flood Control and Water Conservation District (RCFCWCD), and energy utilities in their planning efforts to ensure adequate infrastructure is available for anticipated development. | **Consistent.** The project applicant has informed Western Municipal Water District, RCFCWCD, Southern California Edison and SoCal Gas of the proposed project. In addition, the proposed project is designated as multi-family residential in the General Plan and is zoned Multi-Family 2 Residential (MF-2) in an area of the City that is currently being developed. As such, the agencies and companies responsible for infrastructure development have anticipated development of the project site. |
| CSV-12.1 | Ensure that all developments comply with energy efficiency requirements as mandated by the applicable Building Code. | **Consistent.** The proposed project is required to be design to meet the Title 24 Part 6 Building Energy Efficiency Standards that require the incorporation of energy-efficient building features. The City requires a Title 24 report to be completed that shows compliance with the current Title 24 requirements, prior to issuance of a building permit. |
| CSV-12.3 | Support the on-site installation and use of renewable energy generation systems for residential, commercial, institutional, and industrial uses. | **Consistent.** The proposed project is required to meet the Title 24 Energy Efficiency Standards that require the roofs of the proposed structures to be "solar-ready", which consists of structurally designing the roofs to be able to handle the additional weight associated with solar panels as well as providing electrical conduit between the roof and main panel of adequate size to support the installation of solar panels in the future. |
| CSV-12.6 | Encourage new development projects and significant rehabilitation or expansion projects to incorporate innovative energy conservation or generation amenities such as electric vehicle charging stations, solar canopies, and carports. | **Consistent.** The proposed project is required to meet the 2019 Title 24 Part 11, standards that the installation of raceway installations for electric vehicle (EV) charging stalls on a minimum of 10 percent of all parking spaces as well as providing bicycle parking spaces, preferred parking spaces for clean air vehicles, use of efficient lighting, use of low flow plumbing fixtures and water-efficient landscaping as well as requiring a minimum of 65% of construction waste to be diverted from landfills. |
| CSV-14.1 | Ensure all applicable construction projects comply with the California State Green Building Standards Code. | **Consistent.** The City requires all projects to show proof that they meet the 2019 Title 24 Part 11, standards prior to any building permits being issued for the project. |

Source: City of Murrieta, 2011.

As shown in Table P, the proposed project would be consistent with all applicable energy-related policies from the General Plan. In addition, the completed City of Murrieta Climate Action Plan Checklist that incorporates all of the findings from Table P, is included in Appendix A of this Report. 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. The proposed project would result in the development of residential apartment complex that is anticipated to generate GHG emissions from area sources, energy usage, mobile sources, waste disposal, water usage, and construction equipment.

The City has adopted the CAP Checklist, that was prepared in order to provide a streamlined review process for proposed new development projects that are subject to discretionary review pursuant to CEQA. The CAP Checklist contains measures that are required to be implemented on a project-by-project basis to ensure that the specified emissions targets identified in the CAP are achieved. In order to show consistency with the CAP Checklist, quantification of the proposed project's GHG emissions are not required. As such, the proposed project's GHG emissions have been provided for informational purposes only. The project's GHG emissions have been calculated with the CalEEMod model (see Appendix D) and the results is shown below in Table Q.

**Table Q – Proposed Project Annual Greenhouse Gas Emissions**

| | Greenhouse Gas Emissions (Metric Tons per Year) | | | |
|---|---|---|---|---|
| **Category** | **$CO_2$** | **$CH_4$** | **$N_2O$** | **$CO_2e$** |
| **Area Sources[1]** | 5.95 | 0.01 | <0.00 | 6.08 |
| **Energy Usage[2]** | 498.08 | 0.03 | 0.01 | 500.85 |
| **Mobile Sources[3]** | 2,739.68 | 0.14 | 0.14 | 2,738.85 |
| **Solid Waste[4]** | 15.13 | 0.89 | <0.00 | 37.48 |
| **Water and Wastewate[5]** | 68.98 | 0.56 | 0.01 | 86.94 |
| **Construction[6]** | 39.74 | 0.01 | <0.00 | 40.26 |
| **Total Emissions** | 3,367.55 | 1.63 | 0.16 | 3,455.45 |
| **SCAQMD Draft Threshold of Significance for Residential Projects** | | | | 3,500.00 |

Notes:
[1] Area sources consist of GHG emissions from consumer products, architectural coatings, hearths, and landscaping equipment.
[2] Energy usage consists of GHG emissions from electricity and natural gas usage (non-hearth).
[3] Mobile sources consist of GHG emissions from vehicles.
[4] Waste includes the $CO_2$ and $CH_4$ emissions created from the solid waste placed in landfills.
[5] Water includes GHG emissions from electricity used for transport of water and processing of wastewater.
[6] Construction emissions amortized over 30 years as recommended in the SCAQMD GHG Working Group on November 19, 2009.
Source: CalEEMod Version 2020.4.0.

The data provided in Table Q above shows that the proposed project would create 3,455.45 $MTCO_2e$ per year. For reference purposes Table Q also shows the SCAQMD's draft threshold for residential projects of 3,500 $MTCO_2e$, which the proposed project would be within this threshold. Therefore, a less than significant generation of greenhouse gas emissions would occur from development of the proposed project. Impacts would be less than significant.

**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 City of Murrieta adopted the Murrieta CAP (City of Murrieta, 2011) and subsequently adopted the General Plan Update EIR (City of Murrieta, 2020) that included an updated GHG emissions analysis to address the updated State reduction targets provided in Executive Order B-30-15 on April 29, 2015 that provided a reduction goal of 40 percent below 1990 levels by 2030. That was codified into statute through passage of AB 197 and SB 32 in September 2016.

In conjunction with adoption of the General Plan Update EIR, the City also adopted the CAP Checklist that was prepared in order to provide a streamlined review process for proposed new development projects that are subject to discretionary review pursuant to CEQA. The CAP Checklist contains measures that are required to be implemented on a project-by-project basis to ensure that the specified emissions targets identified in the CAP are achieved. Table R provides a list of the Checklist Items from the CAP Checklist and also provides a project consistency analysis of each measure.

**Table R – Climate Action Plan Consistency Checklist and Project Consistency**

| Checklist Item | Project Consistency |
|---|---|
| **Step 1: Land Use Consistency** | |
| 1. Are the proposed land uses in the project consistent with the existing General Plan land use and zoning designations? | **Yes.** The project site is currently designated as Multiple-Family Residential in the General Plan and is zoned Multiple Family 2 Residential (MF-2). The project is consistent with the existing land use designation and zoning. |
| **Step 2: CAP Strategies Consistency** | |
| 1. Zero Net Energy Standards (Measure BE-3)<br>a) For residential projects would the project or portion of the project be subject to building permitting (i.e., building permits issued) on or after January 1, 2023? | **No.** The project would be constructed prior to January 1, 2023. |
| 2. Construction Waste Diversion (Measure SW-2)<br>a) For residential projects, recycle and/or salvage for reuse a minimum of 80 percent of the nonhazardous construction and demolition waste in accordance with either Section 4.408.2, 4.408.3 or 4.408.4 of the California Code of Regulations, Title 24? | **Yes.** Project Design Feature 1 is included that requires the project applicant to recycle or reuse a minimum of 80 percent of the nonhazardous construction waste. |
| 4. Electric Vehicle Service Equipment (EVSE) (Measure T-2)<br>b) Multi-Family Residential Projects: Would 6% of the total parking spaces required, or a minimum of two spaces, whichever is greater, include Electric Vehicle Service Equipment (EVSE) to allow for electric vehicle charging by the resident(s)? | **Yes.** Project Design Feature 2 is provided that requires the project applicant to include EVSE on a minimum of 6% of the total parking spaces. |
| 5. Tree Planting (Measure LU-2)<br>a) For residential and non-residential projects, would the project include the planting of new trees where required by Section 16.26 "Landscaping Standards and Water Efficient Landscaping" of the City's Municipal Code? | **Yes.** Project Design Feature 3 is provided that requires the project applicant to develop a Landscape Plan that meets the tree planting requirements in Section 16.26 |

Source: City of Murrieta, 2020.

As shown above in Table R, with implementation of Project Design Features 1, 2, and 3, the proposed project is consistent with the CAP Checklist. Therefore, the proposed project would comply with the Murrieta CAP reduction targets and would not conflict with the applicable plan for reducing GHG emissions. Impacts would be less than significant.

**Level of Significance**

Less than significant impact.

# 11.0 RECOMMENDATIONS

The impact analysis provided above in Section 10 found that implementation of the State and SCAQMD air quality, energy, and GHG emissions reductions regulations were adequate to limit criteria pollutants, toxic air contaminants, odors, 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. However, in order to further reduce emissions created from the proposed project, the project applicant has committed to implementing the following Project Design Features.

**Project Design Feature 1**
The project applicant shall require that all interior paint that is applied to the proposed structures to utilize Super-Compliant VOC paints, which are defined by SCAQMD as meeting the "super-compliant" VOC standard of 10 grams per liter.

**Project Design Feature 2**
The project applicant shall require that a minimum of 80 percent of the nonhazardous construction waste to be either reused or recycled.

**Project Design Feature 3**
The project applicant shall require that a minimum of 6 percent of all parking spaces are equipped with electric vehicle service equipment (EVSE) to allow for electric vehicle charging.

**Project Design Feature 4**
The project applicant shall prepare and implement a Landscape Plan that meets the tree planting requirements in Section 16.26 "Landscaping Standards and Water Efficient Landscaping" of the City Municipal Code.

# 12.0 REFERENCES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**APPENDIX A**

City of Murrieta Climate Action Plan Checklist

*Development Services*
Planning Division
1 Town Square
Murrieta, CA 92562
951-461-6061
www.murrietaca.gov

# CLIMATE ACTION PLAN CONSISTENCY CHECKLIST INTRODUCTION

The City of Murrieta has prepared a Climate Action Plan (CAP) that outlines actions that the City will undertake to achieve its proportional share of State greenhouse gas (GHG) emissions reductions. The purpose of the CAP Consistency Checklist (Checklist) is to, in conjunction with the CAP, provide a streamlined review process for proposed new development projects that are subject to discretionary review and trigger environmental review pursuant to the California Environmental Quality Act (CEQA).

Analysis of GHG emissions and potential climate change impacts from new development is required under CEQA. The CAP is a plan for the reduction of GHG emissions in accordance with CEQA Guidelines Section 15183.5. Pursuant to CEQA Guidelines Sections 15064(h)(3), 15130(d), and 15183(b), a project's incremental contribution to a cumulative GHG emissions effect may be determined not to be cumulatively considerable if it complies with the requirements of the CAP.

This Checklist contains measures that are required to be implemented on a project-by-project basis to ensure that the specified emissions targets identified in the CAP are achieved. Implementation of these measures would ensure that new development is consistent with the CAP's assumptions for relevant CAP strategies toward achieving the identified GHG reduction targets. Projects that are consistent with the CAP as determined through the use of this Checklist may rely on the CAP for the cumulative impacts analysis of GHG emissions. Projects that are not consistent with the CAP must prepare a project-specific analysis of GHG emissions, including quantification of existing and projected GHG emissions and incorporation of the measures in this Checklist to the extent feasible.

The Checklist may be periodically updated to incorporate new GHG reduction techniques, to comply with later amendments to the CAP, or to reflect changes in local, State, or federal laws, regulations, ordinances, and programs.

## APPLICATION SUBMITTAL REQUIREMENTS

- The Checklist is required only for projects subject to CEQA review. The diagram below shows the context for the CAP Consistency Checklist within the planning review process framework.
- If required, the Checklist must be included in the project submittal package. Application materials and submittal procedures can be found on the City of Murrieta website here. This checklist is designed to assist the applicant in identifying the minimum CAP-related requirements specific to their project. However, it may be necessary to supplement the completed checklist with supporting materials, calculations or certifications, to demonstrate compliance with CAP requirements.
- The requirements in the Checklist will be included in the project's conditions of approval.
- The applicant must provide an explanation of how the proposed project will implement the requirements described herein to the satisfaction of the Planning Division.
- If a question in the Checklist is deemed not applicable to a project, an explanation must be provided to the satisfaction of the Planning Division.

## Application Information

### Contact Information

Project No./Name: Whitewood Apartment Project

Property Address/APN: Whitewood Road and Lee Lane/392-320-01

Applicant Name/Co.: Jereme Snyder/ Murrieta Whitewood Multifamily, LLC

Contact Phone: 714.335.5818 Contact Email: js@tripeakco.com

Was a consultant retained to complete this checklist? ☐ Yes ☐ No If Yes, complete the following

Consultant Name: Sarah Halterman Contact Phone: 619.591.1373

Company Name: Dudek Contact Email: shalterman@dudek.com

### Project Information

1. What is the size of the project (acres)? 18.7 acres

2. Identify all applicable proposed land uses:
   - ☐ Residential (indicate # of one- and two-family units):
   - ☒ Residential (indicate # of multi-family units): 324 units
   - ☐ Commercial (indicate total square footage):
   - ☐ Hotel (indicate # of rooms):
   - ☐ Industrial (indicate total square footage):
   - ☐ Other (describe):

4. Provide a brief description of the project proposed: The project would consist of the construction of 324 apartments and associated improvements including vehicle circulation, parking, water quality basins, and landscape areas. The Project Design Features (PDFs) relevant to consistency with the CAP checklist include the following:

**PDF-2** The project applicant shall require that a minimum of 80 percent of the non-hazardous construction waste to be either reused or recycled.
**PDF-3** The project applicant shall require that a minimum of 6 percent of all parking spaces are equipped with electric vehicle service equipment (EVSE) to allow for electric vehicle charging.
**PDF-4** The project applicant shall prepare and implement a Landscape Plan that meets the tree planting requirements in Section 16.26 “Landscaping Standards and Water Efficient Landscaping” of the City Municipal Code.

# CAP CONSISTENCY CHECKLIST QUESTIONS

## STEP 1: LAND USE CONSISTENCY

The first step in determining CAP consistency for discretionary development is to assess the project's consistency with the growth projections used in the development of the CAP. This section allows the City to determine a project's consistency with the land use assumptions used in the CAP. Projects found not to be consistent with the CAP's land use assumptions will be subject to a project-specific analysis of GHG emissions' impact on the environment in accordance with the requirements of the CEQA. This may result in GHG-reducing mitigation measures applied as a condition of project approval, including where feasible the measures listed in Step 2 of this checklist.

| Step 1: Land Use Consistency | | |
|---|---|---|
| **Checklist Item**<br>**(Check the appropriate box and provide explanation and supporting documentation for your answer)** | **Yes** | **No** |
| 1. Are the proposed land uses in the project consistent with the existing General Plan land use and zoning designations?<br><br>If "Yes", questions 2 below is not applicable and the project shall proceed to Step 2 of the checklist.<br><br>If "No", proceed to Question 2 below. | ☒ | ☐ |
| 2. If the proposed project is not consistent with the General Plan land use or zoning designations, does the project include a land use plan and/or zoning designation amendment that would result in an equivalent or less GHG-intensive project when compared to the existing designations?<br><br>If "Yes", attach to this checklist the estimated project emissions under both existing and proposed designation(s) for comparison. Compare the maximum buildout of the existing designation and the maximum buildout of the proposed designation. If the proposed project is determined to result in an equivalent or less GHG-intensive project when compared to the existing designations, proceed to Step 2 of the checklist.<br><br>If "No", the applicant must conduct a full GHG impact analysis for the project as part of the CEQA process. The project shall incorporate each of the applicable measures identified in Step 2 to mitigate cumulative GHG emissions impacts. | ☐ | ☐ |

## STEP 2: CAP MEASURES CONSISTENCY

The second step of the CAP consistency review is to review and evaluate a project's consistency with the applicable strategies and actions of the CAP. Step 2 only applies to development projects that involve permits that may require a certificate of occupancy from the Building Official.[1] All applicable Checklist questions must be answered "Yes", and documentation provided, where necessary, that substantiates how compliance would be achieved. For measures for which a "Yes" is indicated, the features must be demonstrated as part of the project's design and described. All applicable requirements in the Checklist will be included in the conditions of approval.

If any questions are marked with a "No", the project cannot be determined to be consistent with the CAP, and project specific GHG analysis would be required as part of the CEQA process. If any questions are marked "N/A" (meaning "not applicable"), a statement describing why the question is not applicable shall be provided to the satisfaction of the Planning Division or building official.

| **Step 2: CAP Strategies Consistency** | | | |
|---|---|---|---|
| **Checklist Item**<br>**(Check the appropriate box and provide explanation for your answer)** | **Yes** | **No** | **N/A** |
| **1. Zero Net Energy Standards (Measure BE-3)** | | | |
| a) For residential projects, would the project or a portion of the project be subject to building permitting (i.e., building permits issued) on or after January 1, 2023?<br><br>b) For commercial projects or commercial portions of mixed-use projects, would the project or a portion of the project be subject to building permitting (i.e., building permits issued) on or after January 1, 2025?<br><br>c) For industrial projects, would the project or a portion of the project be subject to building permitting (i.e., building permits issued) on or after January 1, 2025?<br><br>If "Yes" to either a, b, or c, proceed to question d of this checklist requirement. | ☐ | ☒ | ☐ |
| d) Would the project or portions of the project permitted after January 1, 2023 for residential projects and after January 1, 2025 for nonresidential projects be designed and constructed to comply with the Zero Net Energy standard[2]? | ☐ | ☐ | ☒ |
| **2. Construction Waste Diversion (Measure SW-2)** | | | |
| a) For residential projects, recycle and/or salvage for reuse a minimum of 80 percent of the nonhazardous construction and demolition waste in accordance with either Section 4.408.2, 4.408.3 or 4.408.4 of the California Code of Regulations, Title 24?<br><br>b) For nonresidential projects, recycle and/or salvage for reuse a minimum of 80 percent of the nonhazardous construction and demolition waste in accordance with either Section 5.408.1.1, 5.408.1.2 or 5.408.1.3 of the California Code of Regulations, Title 24? | ☒ | ☐ | ☐ |

[1] Actions that are not subject to Step 2 would include, for example: 1) discretionary map actions that do not propose specific development; 2) permits allowing wireless communication facilities; 3) special events permits; 4) conditional use permits that do not result in the use intensification or expansion of an existing building; and 5) non-building infrastructure projects such as roads and pipelines. Because such actions would not result in new occupancy buildings from which GHG emissions reductions could be achieved, the items contained in Step 2 would not be applicable.

[2] Although the City has not yet developed a Zero Net Energy standard, the City will develop such a standard prior to January 1, 2023, pursuant to Measure BE-3 in the CAP. For purposes of CAP compliance, all new residential projects that include phases for which building permitting would begin after January 1, 2023, compliance with zero net energy standard as stated herein must be included as a condition of approval and included as a mitigation measure in the project's environmental document (as applicable). For all new commercial projects, commercial portions of mixed-used projects, and industrial projects that include phases for which building permitting would begin after January 1, 2025, projects must demonstrate compliance with zero net energy standard. Such projects or phases thereof, to meet the zero net energy standard, must achieve a Total Energy Design Rating (Total EDR) and Energy Efficiency Design Rating (Efficiency EDR) of zero, consistent with the standards in Title 24, Part 6 of the California Code of Regulations, by the date established above for each land use type.

| Step 2: CAP Strategies Consistency | | | |
|---|---|---|---|
| **Checklist Item**<br>**(Check the appropriate box and provide explanation for your answer)** | **Yes** | **No** | **N/A** |
| **3. Transportation Demand Management Program (Measure T-7)** | | | |
| a) For the construction of nonresidential projects that would include 50 or more employees, would the project include a transportation demand management plan that meets requirements of Section 16.40 "Transportation Demand Management" of the City's Municipal Code and has been reviewed and approved by the City of Murrieta Public Works Department?<br><br>Check "N/A" if the project is a residential project or if it would include 49 or fewer employees. | ☐ | ☐ | ☒ |
| **4. Electric Vehicle Service Equipment (EVSE) (Measure T-2)[3]** | | | |
| Checklist Requirement by Project Type:<br><br>a) <u>One- and two-family dwellings and townhouses with attached private garages:</u> Would the required parking serving each new dwelling include Electric Vehicle Service Equipment (EVSE) to allow for electric vehicle charging by the resident(s)?<br><br>b) <u>Multi-Family Residential Projects:</u> Would 6% of the total parking spaces required, or a minimum of two spaces, whichever is greater, include Electric Vehicle Service Equipment (EVSE) to allow for electric vehicle charging by the resident(s)?<br><br>c) <u>Non-residential projects</u>: Would 3% of the total parking spaces required, or a minimum of two spaces, whichever is greater, include Electric Vehicle Service Equipment (EVSE) to allow for electric vehicle charging by the occupant(s)? | ☒ | ☐ | ☐ |
| **5. Tree Planting (Measure LU-2)** | | | |
| a) For residential and non-residential projects, would the project include the planting of new trees where required by Section 16.26 "Landscaping Standards and Water Efficient Landscaping" of the City's Municipal Code? | ☒ | ☐ | ☐ |

[3] For the purpose of this Checklist, EVSE is defined by Article 625 of the California Electrical Code.

**APPENDIX B**

CalEEMod Model Daily Printouts

Whitewood Apartment Residential - Riverside-South Coast County, Summer

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

# Whitewood Apartment Residential

**Riverside-South Coast County, Summer**

## 1.0 Project Characteristics

### 1.1 Land Usage

| Land Uses | Size | Metric | Lot Acreage | Floor Surface Area | Population |
|---|---|---|---|---|---|
| Other Asphalt Surfaces | 1.60 | Acre | 1.60 | 69,696.00 | 0 |
| Parking Lot | 351.00 | Space | 5.33 | 140,400.00 | 0 |
| Apartments Low Rise | 324.00 | Dwelling Unit | 9.00 | 324,000.00 | 927 |

### 1.2 Other Project Characteristics

| | | | | | |
|---|---|---|---|---|---|
| **Urbanization** | Urban | **Wind Speed (m/s)** | 2.4 | **Precipitation Freq (Days)** | 28 |
| **Climate Zone** | 10 | | | **Operational Year** | 2023 |
| **Utility Company** | Southern California Edison | | | | |
| **CO2 Intensity (lb/MWhr)** | 390.98 | **CH4 Intensity (lb/MWhr)** | 0.033 | **N2O Intensity (lb/MWhr)** | 0.004 |

### 1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Project Site = 18.7 gross acres - 2.76 acres of Natural Open Space = 15.94 acres analyzed in CalEEMod

Construction Phase - Construction schedule provided by applicant

Off-road Equipment - Grading - 2 Excavators, 1 Grader, 1 Rubber Tired Dozer, 2 Scrapers, 2 Crawler Tractors

Off-road Equipment - Site Preparation - 3 Rubber Tired Dozers and 4 Crawler Tractors

Trips and VMT - 6 Vendor trucks added to Site Preparation and Grading Phases to account for water truck emissions

Vehicle Trips - CalEEMod default weekday trip rate matches Traffic Memo trip rate.

Woodstoves - No woodstoves or wood fireplaces. 2 natural gas only fireplaces analyzed to account for the fire pit at both pools

Construction Off-road Equipment Mitigation - Per SCAQMD Rule 403 minimum requirements, water exposure 3x per day selected

Mobile Land Use Mitigation - Improve Pedestrian Network Onsite

Whitewood Apartment Residential - Riverside-South Coast County, Summer

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

Energy Mitigation - Exceed Title 24 by 7% selected to account for the 2019 Title 24 Part 6 standards

Water Mitigation - Install low flow fixtures and water-efficient irrigation selected to account for Title 24 Part 11 requirements

Waste Mitigation - 50% reduction in waste selected to account for AB 341.

| Table Name | Column Name | Default Value | New Value |
|---|---|---|---|
| tblConstructionPhase | NumDays | 20.00 | 88.00 |
| tblConstructionPhase | NumDays | 20.00 | 88.00 |
| tblFireplaces | NumberGas | 275.40 | 2.00 |
| tblFireplaces | NumberNoFireplace | 32.40 | 322.00 |
| tblFireplaces | NumberWood | 16.20 | 0.00 |
| tblGrading | AcresOfGrading | 120.00 | 90.00 |
| tblGrading | AcresOfGrading | 35.00 | 15.00 |
| tblLandUse | LotAcreage | 3.16 | 5.33 |
| tblLandUse | LotAcreage | 20.25 | 9.00 |
| tblTripsAndVMT | VendorTripNumber | 0.00 | 6.00 |
| tblTripsAndVMT | VendorTripNumber | 0.00 | 6.00 |
| tblWoodstoves | NumberCatalytic | 16.20 | 0.00 |
| tblWoodstoves | NumberNoncatalytic | 16.20 | 0.00 |

## 2.0 Emissions Summary

Whitewood Apartment Residential - Riverside-South Coast County, Summer

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

## 2.1 Overall Construction (Maximum Daily Emission)

### Unmitigated Construction

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Year | lb/day | | | | | | | | | | lb/day | | | | | |
| 2022 | 4.5597 | 50.7121 | 30.2147 | 0.0747 | 19.8966 | 2.1636 | 22.0603 | 10.1669 | 1.9907 | 12.1575 | 0.0000 | 7,249.4724 | 7,249.4724 | 2.2467 | 0.2793 | 7,314.5902 |
| 2023 | 28.2483 | 29.0391 | 48.2786 | 0.1042 | 4.9242 | 1.3214 | 6.2456 | 1.3160 | 1.2368 | 2.5527 | 0.0000 | 10,357.4861 | 10,357.4861 | 1.4438 | 0.2830 | 10,477.9094 |
| **Maximum** | **28.2483** | **50.7121** | **48.2786** | **0.1042** | **19.8966** | **2.1636** | **22.0603** | **10.1669** | **1.9907** | **12.1575** | **0.0000** | **10,357.4861** | **10,357.4861** | **2.2467** | **0.2830** | **10,477.9094** |

### Mitigated Construction

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Year | lb/day | | | | | | | | | | lb/day | | | | | |
| 2022 | 4.5597 | 50.7121 | 30.2147 | 0.0747 | 7.9059 | 2.1636 | 10.0695 | 4.0044 | 1.9907 | 5.9950 | 0.0000 | 7,249.4724 | 7,249.4724 | 2.2467 | 0.2793 | 7,314.5902 |
| 2023 | 28.2483 | 29.0391 | 48.2786 | 0.1042 | 4.9242 | 1.3214 | 6.2456 | 1.3160 | 1.2368 | 2.5527 | 0.0000 | 10,357.4861 | 10,357.4861 | 1.4438 | 0.2830 | 10,477.9094 |
| **Maximum** | **28.2483** | **50.7121** | **48.2786** | **0.1042** | **7.9059** | **2.1636** | **10.0695** | **4.0044** | **1.9907** | **5.9950** | **0.0000** | **10,357.4861** | **10,357.4861** | **2.2467** | **0.2830** | **10,477.9094** |

Whitewood Apartment Residential - Riverside-South Coast County, Summer

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

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio-CO2 | Total CO2 | CH4 | N20 | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Percent Reduction | 0.00 | 0.00 | 0.00 | 0.00 | 48.31 | 0.00 | 42.36 | 53.67 | 0.00 | 41.89 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

Whitewood Apartment Residential - Riverside-South Coast County, Summer

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

## 2.2 Overall Operational

### Unmitigated Operational

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Area | 7.8738 | 0.3417 | 26.7865 | 1.6300e-003 | | 0.1508 | 0.1508 | | 0.1508 | 0.1508 | 0.0000 | 90.5611 | 90.5611 | 0.0473 | 7.8000e-004 | 91.9749 |
| Energy | 0.1448 | 1.2374 | 0.5265 | 7.9000e-003 | | 0.1000 | 0.1000 | | 0.1000 | 0.1000 | | 1,579.6277 | 1,579.6277 | 0.0303 | 0.0290 | 1,589.0146 |
| Mobile | 8.5730 | 11.4275 | 84.6667 | 0.1929 | 19.0441 | 0.1481 | 19.1922 | 5.0811 | 0.1389 | 5.2199 | | 19,842.0165 | 19,842.0165 | 0.9480 | 0.9053 | 20,135.4984 |
| **Total** | **16.5916** | **13.0066** | **111.9798** | **0.2025** | **19.0441** | **0.3990** | **19.4430** | **5.0811** | **0.3897** | **5.4707** | **0.0000** | **21,512.2052** | **21,512.2052** | **1.0255** | **0.9351** | **21,816.4879** |

### Mitigated Operational

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Area | 7.8738 | 0.3417 | 26.7865 | 1.6300e-003 | | 0.1508 | 0.1508 | | 0.1508 | 0.1508 | 0.0000 | 90.5611 | 90.5611 | 0.0473 | 7.8000e-004 | 91.9749 |
| Energy | 0.1387 | 1.1853 | 0.5044 | 7.5700e-003 | | 0.0958 | 0.0958 | | 0.0958 | 0.0958 | | 1,513.1344 | 1,513.1344 | 0.0290 | 0.0277 | 1,522.1262 |
| Mobile | 8.5378 | 11.3365 | 83.9494 | 0.1910 | 18.8536 | 0.1468 | 19.0004 | 5.0302 | 0.1376 | 5.1678 | | 19,648.4406 | 19,648.4406 | 0.9414 | 0.8980 | 19,939.5687 |
| **Total** | **16.5502** | **12.8635** | **111.2403** | **0.2002** | **18.8536** | **0.3934** | **19.2470** | **5.0302** | **0.3842** | **5.4144** | **0.0000** | **21,252.1361** | **21,252.1361** | **1.0177** | **0.9265** | **21,553.6698** |

Whitewood Apartment Residential - Riverside-South Coast County, Summer

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

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio-CO2 | Total CO2 | CH4 | N20 | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Percent Reduction | 0.25 | 1.10 | 0.66 | 1.10 | 1.00 | 1.40 | 1.01 | 1.00 | 1.41 | 1.03 | 0.00 | 1.21 | 1.21 | 0.77 | 0.92 | 1.20 |

## 3.0 Construction Detail

### Construction Phase

| Phase Number | Phase Name | Phase Type | Start Date | End Date | Num Days Week | Num Days | Phase Description |
|---|---|---|---|---|---|---|---|
| 1 | Site Preparation | Site Preparation | 4/29/2022 | 5/12/2022 | 5 | 10 | |
| 2 | Grading | Grading | 5/13/2022 | 6/23/2022 | 5 | 30 | |
| 3 | Building Construction | Building Construction | 6/24/2022 | 8/17/2023 | 5 | 300 | |
| 4 | Paving | Paving | 4/18/2023 | 8/17/2023 | 5 | 88 | |
| 5 | Architectural Coating | Architectural Coating | 4/18/2023 | 8/17/2023 | 5 | 88 | |

**Acres of Grading (Site Preparation Phase): 15**

**Acres of Grading (Grading Phase): 90**

**Acres of Paving: 6.93**

**Residential Indoor: 656,100; Residential Outdoor: 218,700; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 12,606 (Architectural Coating – sqft)**

### OffRoad Equipment

| Phase Name | Offroad Equipment Type | Amount | Usage Hours | Horse Power | Load Factor |
|---|---|---|---|---|---|
| Site Preparation | Crawler Tractors | 4 | 8.00 | 212 | 0.43 |
| Site Preparation | Rubber Tired Dozers | 3 | 8.00 | 247 | 0.40 |
| Grading | Crawler Tractors | 2 | 8.00 | 212 | 0.43 |
| Grading | Excavators | 2 | 8.00 | 158 | 0.38 |
| Grading | Graders | 1 | 8.00 | 187 | 0.41 |
| Grading | Rubber Tired Dozers | 1 | 8.00 | 247 | 0.40 |

Whitewood Apartment Residential - Riverside-South Coast County, Summer

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

| | | | | | |
|---|---|---|---|---|---|
| Grading | Scrapers | 2 | 8.00 | 367 | 0.48 |
| Building Construction | Cranes | 1 | 7.00 | 231 | 0.29 |
| Building Construction | Forklifts | 3 | 8.00 | 89 | 0.20 |
| Building Construction | Generator Sets | 1 | 8.00 | 84 | 0.74 |
| Building Construction | Tractors/Loaders/Backhoes | 3 | 7.00 | 97 | 0.37 |
| Building Construction | Welders | 1 | 8.00 | 46 | 0.45 |
| Paving | Pavers | 2 | 8.00 | 130 | 0.42 |
| Paving | Paving Equipment | 2 | 8.00 | 132 | 0.36 |
| Paving | Rollers | 2 | 8.00 | 80 | 0.38 |
| Architectural Coating | Air Compressors | 1 | 6.00 | 78 | 0.48 |

**Trips and VMT**

| Phase Name | Offroad Equipment Count | Worker Trip Number | Vendor Trip Number | Hauling Trip Number | Worker Trip Length | Vendor Trip Length | Hauling Trip Length | Worker Vehicle Class | Vendor Vehicle Class | Hauling Vehicle Class |
|---|---|---|---|---|---|---|---|---|---|---|
| Site Preparation | 7 | 18.00 | 6.00 | 0.00 | 14.70 | 6.90 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Grading | 8 | 20.00 | 6.00 | 0.00 | 14.70 | 6.90 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Building Construction | 9 | 322.00 | 69.00 | 0.00 | 14.70 | 6.90 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Paving | 6 | 15.00 | 0.00 | 0.00 | 14.70 | 6.90 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Architectural Coating | 1 | 64.00 | 0.00 | 0.00 | 14.70 | 6.90 | 20.00 | LD_Mix | HDT_Mix | HHDT |

## 3.1 Mitigation Measures Construction

Water Exposed Area

Whitewood Apartment Residential - Riverside-South Coast County, Summer

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

## 3.2 Site Preparation - 2022

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Fugitive Dust | | | | | 19.6570 | 0.0000 | 19.6570 | 10.1025 | 0.0000 | 10.1025 | | | 0.0000 | | | 0.0000 |
| Off-Road | 4.4790 | 50.4124 | 20.0053 | 0.0570 | | 2.1590 | 2.1590 | | 1.9862 | 1.9862 | | 5,517.2355 | 5,517.2355 | 1.7844 | | 5,561.8451 |
| **Total** | **4.4790** | **50.4124** | **20.0053** | **0.0570** | **19.6570** | **2.1590** | **21.8160** | **10.1025** | **1.9862** | **12.0887** | | **5,517.2355** | **5,517.2355** | **1.7844** | | **5,561.8451** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 9.7600e-003 | 0.2537 | 0.0882 | 1.0900e-003 | 0.0384 | 3.6600e-003 | 0.0421 | 0.0111 | 3.5000e-003 | 0.0146 | | 115.7672 | 115.7672 | 1.2300e-003 | 0.0172 | 120.9138 |
| Worker | 0.0709 | 0.0460 | 0.7176 | 1.8300e-003 | 0.2012 | 1.0000e-003 | 0.2022 | 0.0534 | 9.2000e-004 | 0.0543 | | 186.0370 | 186.0370 | 4.6100e-003 | 4.5800e-003 | 187.5158 |
| **Total** | **0.0807** | **0.2997** | **0.8058** | **2.9200e-003** | **0.2396** | **4.6600e-003** | **0.2443** | **0.0644** | **4.4200e-003** | **0.0689** | | **301.8042** | **301.8042** | **5.8400e-003** | **0.0218** | **308.4296** |

Whitewood Apartment Residential - Riverside-South Coast County, Summer

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

## 3.2 Site Preparation - 2022

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Fugitive Dust | | | | | 7.6662 | 0.0000 | 7.6662 | 3.9400 | 0.0000 | 3.9400 | | | 0.0000 | | | 0.0000 |
| Off-Road | 4.4790 | 50.4124 | 20.0053 | 0.0570 | | 2.1590 | 2.1590 | | 1.9862 | 1.9862 | 0.0000 | 5,517.2355 | 5,517.2355 | 1.7844 | | 5,561.8451 |
| **Total** | **4.4790** | **50.4124** | **20.0053** | **0.0570** | **7.6662** | **2.1590** | **9.8252** | **3.9400** | **1.9862** | **5.9262** | **0.0000** | **5,517.2355** | **5,517.2355** | **1.7844** | | **5,561.8451** |

### Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 9.7600e-003 | 0.2537 | 0.0882 | 1.0900e-003 | 0.0384 | 3.6600e-003 | 0.0421 | 0.0111 | 3.5000e-003 | 0.0146 | | 115.7672 | 115.7672 | 1.2300e-003 | 0.0172 | 120.9138 |
| Worker | 0.0709 | 0.0460 | 0.7176 | 1.8300e-003 | 0.2012 | 1.0000e-003 | 0.2022 | 0.0534 | 9.2000e-004 | 0.0543 | | 186.0370 | 186.0370 | 4.6100e-003 | 4.5800e-003 | 187.5158 |
| **Total** | **0.0807** | **0.2997** | **0.8058** | **2.9200e-003** | **0.2396** | **4.6600e-003** | **0.2443** | **0.0644** | **4.4200e-003** | **0.0689** | | **301.8042** | **301.8042** | **5.8400e-003** | **0.0218** | **308.4296** |

Whitewood Apartment Residential - Riverside-South Coast County, Summer

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

## 3.3 Grading - 2022

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Fugitive Dust | | | | | 9.2036 | 0.0000 | 9.2036 | 3.6538 | 0.0000 | 3.6538 | | | 0.0000 | | | 0.0000 |
| Off-Road | 4.2792 | 47.5079 | 29.1953 | 0.0715 | | 1.9081 | 1.9081 | | 1.7554 | 1.7554 | | 6,926.9974 | 6,926.9974 | 2.2403 | | 6,983.0056 |
| **Total** | **4.2792** | **47.5079** | **29.1953** | **0.0715** | **9.2036** | **1.9081** | **11.1117** | **3.6538** | **1.7554** | **5.4092** | | **6,926.9974** | **6,926.9974** | **2.2403** | | **6,983.0056** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 9.7600e-003 | 0.2537 | 0.0882 | 1.0900e-003 | 0.0384 | 3.6600e-003 | 0.0421 | 0.0111 | 3.5000e-003 | 0.0146 | | 115.7672 | 115.7672 | 1.2300e-003 | 0.0172 | 120.9138 |
| Worker | 0.0788 | 0.0511 | 0.7973 | 2.0300e-003 | 0.2236 | 1.1100e-003 | 0.2247 | 0.0593 | 1.0300e-003 | 0.0603 | | 206.7078 | 206.7078 | 5.1200e-003 | 5.0800e-003 | 208.3509 |
| **Total** | **0.0886** | **0.3048** | **0.8855** | **3.1200e-003** | **0.2620** | **4.7700e-003** | **0.2668** | **0.0704** | **4.5300e-003** | **0.0749** | | **322.4750** | **322.4750** | **6.3500e-003** | **0.0223** | **329.2647** |

Whitewood Apartment Residential - Riverside-South Coast County, Summer

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

## 3.3 Grading - 2022

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Fugitive Dust | | | | | 3.5894 | 0.0000 | 3.5894 | 1.4250 | 0.0000 | 1.4250 | | | 0.0000 | | | 0.0000 |
| Off-Road | 4.2792 | 47.5079 | 29.1953 | 0.0715 | | 1.9081 | 1.9081 | | 1.7554 | 1.7554 | 0.0000 | 6,926.9974 | 6,926.9974 | 2.2403 | | 6,983.0056 |
| **Total** | **4.2792** | **47.5079** | **29.1953** | **0.0715** | **3.5894** | **1.9081** | **5.4975** | **1.4250** | **1.7554** | **3.1804** | **0.0000** | **6,926.9974** | **6,926.9974** | **2.2403** | | **6,983.0056** |

### Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 9.7600e-003 | 0.2537 | 0.0882 | 1.0900e-003 | 0.0384 | 3.6600e-003 | 0.0421 | 0.0111 | 3.5000e-003 | 0.0146 | | 115.7672 | 115.7672 | 1.2300e-003 | 0.0172 | 120.9138 |
| Worker | 0.0788 | 0.0511 | 0.7973 | 2.0300e-003 | 0.2236 | 1.1100e-003 | 0.2247 | 0.0593 | 1.0300e-003 | 0.0603 | | 206.7078 | 206.7078 | 5.1200e-003 | 5.0800e-003 | 208.3509 |
| **Total** | **0.0886** | **0.3048** | **0.8855** | **3.1200e-003** | **0.2620** | **4.7700e-003** | **0.2668** | **0.0704** | **4.5300e-003** | **0.0749** | | **322.4750** | **322.4750** | **6.3500e-003** | **0.0223** | **329.2647** |

Whitewood Apartment Residential - Riverside-South Coast County, Summer

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

## 3.4 Building Construction - 2022

### Unmitigated Construction On-Site

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

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.1123 | 2.9177 | 1.0145 | 0.0126 | 0.4420 | 0.0421 | 0.4840 | 0.1273 | 0.0402 | 0.1675 | | 1,331.3228 | 1,331.3228 | 0.0141 | 0.1974 | 1,390.5090 |
| Worker | 1.2690 | 0.8224 | 12.8368 | 0.0327 | 3.5992 | 0.0179 | 3.6171 | 0.9545 | 0.0165 | 0.9710 | | 3,327.9960 | 3,327.9960 | 0.0824 | 0.0819 | 3,354.4490 |
| **Total** | **1.3812** | **3.7401** | **13.8513** | **0.0453** | **4.0412** | **0.0600** | **4.1012** | **1.0818** | **0.0568** | **1.1385** | | **4,659.3188** | **4,659.3188** | **0.0965** | **0.2793** | **4,744.9580** |

Whitewood Apartment Residential - Riverside-South Coast County, Summer

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

## 3.4 Building Construction - 2022

**Mitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.7062 | 15.6156 | 16.3634 | 0.0269 | | 0.8090 | 0.8090 | | 0.7612 | 0.7612 | 0.0000 | 2,554.3336 | 2,554.3336 | 0.6120 | | 2,569.6322 |
| **Total** | **1.7062** | **15.6156** | **16.3634** | **0.0269** | | **0.8090** | **0.8090** | | **0.7612** | **0.7612** | **0.0000** | **2,554.3336** | **2,554.3336** | **0.6120** | | **2,569.6322** |

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.1123 | 2.9177 | 1.0145 | 0.0126 | 0.4420 | 0.0421 | 0.4840 | 0.1273 | 0.0402 | 0.1675 | | 1,331.3228 | 1,331.3228 | 0.0141 | 0.1974 | 1,390.5090 |
| Worker | 1.2690 | 0.8224 | 12.8368 | 0.0327 | 3.5992 | 0.0179 | 3.6171 | 0.9545 | 0.0165 | 0.9710 | | 3,327.9960 | 3,327.9960 | 0.0824 | 0.0819 | 3,354.4490 |
| **Total** | **1.3812** | **3.7401** | **13.8513** | **0.0453** | **4.0412** | **0.0600** | **4.1012** | **1.0818** | **0.0568** | **1.1385** | | **4,659.3188** | **4,659.3188** | **0.0965** | **0.2793** | **4,744.9580** |

Whitewood Apartment Residential - Riverside-South Coast County, Summer

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

## 3.4 Building Construction - 2023

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.5728 | 14.3849 | 16.2440 | 0.0269 | | 0.6997 | 0.6997 | | 0.6584 | 0.6584 | | 2,555.2099 | 2,555.2099 | 0.6079 | | 2,570.4061 |
| **Total** | **1.5728** | **14.3849** | **16.2440** | **0.0269** | | **0.6997** | **0.6997** | | **0.6584** | **0.6584** | | **2,555.2099** | **2,555.2099** | **0.6079** | | **2,570.4061** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0778 | 2.2543 | 0.9282 | 0.0121 | 0.4420 | 0.0196 | 0.4616 | 0.1273 | 0.0188 | 0.1460 | | 1,278.3699 | 1,278.3699 | 0.0130 | 0.1889 | 1,334.9894 |
| Worker | 1.1764 | 0.7269 | 11.8128 | 0.0317 | 3.5992 | 0.0169 | 3.6161 | 0.9545 | 0.0155 | 0.9701 | | 3,239.9737 | 3,239.9737 | 0.0740 | 0.0755 | 3,264.3343 |
| **Total** | **1.2542** | **2.9812** | **12.7410** | **0.0437** | **4.0412** | **0.0365** | **4.0777** | **1.0818** | **0.0343** | **1.1161** | | **4,518.3436** | **4,518.3436** | **0.0870** | **0.2644** | **4,599.3237** |

Whitewood Apartment Residential - Riverside-South Coast County, Summer

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

## 3.4 Building Construction - 2023

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.5728 | 14.3849 | 16.2440 | 0.0269 | | 0.6997 | 0.6997 | | 0.6584 | 0.6584 | 0.0000 | 2,555.2099 | 2,555.2099 | 0.6079 | | 2,570.4061 |
| **Total** | **1.5728** | **14.3849** | **16.2440** | **0.0269** | | **0.6997** | **0.6997** | | **0.6584** | **0.6584** | **0.0000** | **2,555.2099** | **2,555.2099** | **0.6079** | | **2,570.4061** |

### Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0778 | 2.2543 | 0.9282 | 0.0121 | 0.4420 | 0.0196 | 0.4616 | 0.1273 | 0.0188 | 0.1460 | | 1,278.3699 | 1,278.3699 | 0.0130 | 0.1889 | 1,334.9894 |
| Worker | 1.1764 | 0.7269 | 11.8128 | 0.0317 | 3.5992 | 0.0169 | 3.6161 | 0.9545 | 0.0155 | 0.9701 | | 3,239.9737 | 3,239.9737 | 0.0740 | 0.0755 | 3,264.3343 |
| **Total** | **1.2542** | **2.9812** | **12.7410** | **0.0437** | **4.0412** | **0.0365** | **4.0777** | **1.0818** | **0.0343** | **1.1161** | | **4,518.3436** | **4,518.3436** | **0.0870** | **0.2644** | **4,599.3237** |

Whitewood Apartment Residential - Riverside-South Coast County, Summer

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

## 3.5 Paving - 2023

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.0327 | 10.1917 | 14.5842 | 0.0228 | | 0.5102 | 0.5102 | | 0.4694 | 0.4694 | | 2,207.5841 | 2,207.5841 | 0.7140 | | 2,225.4336 |
| Paving | 0.2063 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| **Total** | **1.2391** | **10.1917** | **14.5842** | **0.0228** | | **0.5102** | **0.5102** | | **0.4694** | **0.4694** | | **2,207.5841** | **2,207.5841** | **0.7140** | | **2,225.4336** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.0548 | 0.0339 | 0.5503 | 1.4700e-003 | 0.1677 | 7.9000e-004 | 0.1685 | 0.0445 | 7.2000e-004 | 0.0452 | | 150.9305 | 150.9305 | 3.4500e-003 | 3.5200e-003 | 152.0653 |
| **Total** | **0.0548** | **0.0339** | **0.5503** | **1.4700e-003** | **0.1677** | **7.9000e-004** | **0.1685** | **0.0445** | **7.2000e-004** | **0.0452** | | **150.9305** | **150.9305** | **3.4500e-003** | **3.5200e-003** | **152.0653** |

Whitewood Apartment Residential - Riverside-South Coast County, Summer

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

## 3.5 Paving - 2023

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.0327 | 10.1917 | 14.5842 | 0.0228 | | 0.5102 | 0.5102 | | 0.4694 | 0.4694 | 0.0000 | 2,207.5841 | 2,207.5841 | 0.7140 | | 2,225.4336 |
| Paving | 0.2063 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| **Total** | **1.2391** | **10.1917** | **14.5842** | **0.0228** | | **0.5102** | **0.5102** | | **0.4694** | **0.4694** | **0.0000** | **2,207.5841** | **2,207.5841** | **0.7140** | | **2,225.4336** |

### Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.0548 | 0.0339 | 0.5503 | 1.4700e-003 | 0.1677 | 7.9000e-004 | 0.1685 | 0.0445 | 7.2000e-004 | 0.0452 | | 150.9305 | 150.9305 | 3.4500e-003 | 3.5200e-003 | 152.0653 |
| **Total** | **0.0548** | **0.0339** | **0.5503** | **1.4700e-003** | **0.1677** | **7.9000e-004** | **0.1685** | **0.0445** | **7.2000e-004** | **0.0452** | | **150.9305** | **150.9305** | **3.4500e-003** | **3.5200e-003** | **152.0653** |

Whitewood Apartment Residential - Riverside-South Coast County, Summer

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

## 3.6 Architectural Coating - 2023

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Archit. Coating | 23.7020 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.1917 | 1.3030 | 1.8111 | 2.9700e-003 | | 0.0708 | 0.0708 | | 0.0708 | 0.0708 | | 281.4481 | 281.4481 | 0.0168 | | 281.8690 |
| **Total** | **23.8937** | **1.3030** | **1.8111** | **2.9700e-003** | | **0.0708** | **0.0708** | | **0.0708** | **0.0708** | | **281.4481** | **281.4481** | **0.0168** | | **281.8690** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.2338 | 0.1445 | 2.3479 | 6.2900e-003 | 0.7154 | 3.3600e-003 | 0.7187 | 0.1897 | 3.0900e-003 | 0.1928 | | 643.9699 | 643.9699 | 0.0147 | 0.0150 | 648.8118 |
| **Total** | **0.2338** | **0.1445** | **2.3479** | **6.2900e-003** | **0.7154** | **3.3600e-003** | **0.7187** | **0.1897** | **3.0900e-003** | **0.1928** | | **643.9699** | **643.9699** | **0.0147** | **0.0150** | **648.8118** |

Whitewood Apartment Residential - Riverside-South Coast County, Summer

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

## 3.6 Architectural Coating - 2023

**Mitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Archit. Coating | 23.7020 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.1917 | 1.3030 | 1.8111 | 2.9700e-003 | | 0.0708 | 0.0708 | | 0.0708 | 0.0708 | 0.0000 | 281.4481 | 281.4481 | 0.0168 | | 281.8690 |
| **Total** | **23.8937** | **1.3030** | **1.8111** | **2.9700e-003** | | **0.0708** | **0.0708** | | **0.0708** | **0.0708** | **0.0000** | **281.4481** | **281.4481** | **0.0168** | | **281.8690** |

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.2338 | 0.1445 | 2.3479 | 6.2900e-003 | 0.7154 | 3.3600e-003 | 0.7187 | 0.1897 | 3.0900e-003 | 0.1928 | | 643.9699 | 643.9699 | 0.0147 | 0.0150 | 648.8118 |
| **Total** | **0.2338** | **0.1445** | **2.3479** | **6.2900e-003** | **0.7154** | **3.3600e-003** | **0.7187** | **0.1897** | **3.0900e-003** | **0.1928** | | **643.9699** | **643.9699** | **0.0147** | **0.0150** | **648.8118** |

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

# 4.0 Operational Detail - Mobile

## 4.1 Mitigation Measures Mobile

Improve Pedestrian Network

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Mitigated | 8.5378 | 11.3365 | 83.9494 | 0.1910 | 18.8536 | 0.1468 | 19.0004 | 5.0302 | 0.1376 | 5.1678 | | 19,648.4406 | 19,648.4406 | 0.9414 | 0.8980 | 19,939.5687 |
| Unmitigated | 8.5730 | 11.4275 | 84.6667 | 0.1929 | 19.0441 | 0.1481 | 19.1922 | 5.0811 | 0.1389 | 5.2199 | | 19,842.0165 | 19,842.0165 | 0.9480 | 0.9053 | 20,135.4984 |

## 4.2 Trip Summary Information

| | Average Daily Trip Rate | | | Unmitigated | Mitigated |
|---|---|---|---|---|---|
| Land Use | Weekday | Saturday | Sunday | Annual VMT | Annual VMT |
| Apartments Low Rise | 2,371.68 | 2,637.36 | 2034.72 | 8,069,594 | 7,988,899 |
| Other Asphalt Surfaces | 0.00 | 0.00 | 0.00 | | |
| Parking Lot | 0.00 | 0.00 | 0.00 | | |
| Total | 2,371.68 | 2,637.36 | 2,034.72 | 8,069,594 | 7,988,899 |

## 4.3 Trip Type Information

| | Miles | | | Trip % | | | Trip Purpose % | | |
|---|---|---|---|---|---|---|---|---|---|
| Land Use | H-W or C-W | H-S or C-C | H-O or C-NW | H-W or C-W | H-S or C-C | H-O or C-NW | Primary | Diverted | Pass-by |
| Apartments Low Rise | 14.70 | 5.90 | 8.70 | 40.20 | 19.20 | 40.60 | 86 | 11 | 3 |
| Other Asphalt Surfaces | 16.60 | 8.40 | 6.90 | 0.00 | 0.00 | 0.00 | 0 | 0 | 0 |
| Parking Lot | 16.60 | 8.40 | 6.90 | 0.00 | 0.00 | 0.00 | 0 | 0 | 0 |

Whitewood Apartment Residential - Riverside-South Coast County, Summer

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

### 4.4 Fleet Mix

| Land Use | LDA | LDT1 | LDT2 | MDV | LHD1 | LHD2 | MHD | HHD | OBUS | UBUS | MCY | SBUS | MH |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Apartments Low Rise | 0.534849 | 0.056022 | 0.172639 | 0.141007 | 0.026597 | 0.007310 | 0.011327 | 0.018693 | 0.000616 | 0.000315 | 0.024057 | 0.001100 | 0.005468 |
| Other Asphalt Surfaces | 0.534849 | 0.056022 | 0.172639 | 0.141007 | 0.026597 | 0.007310 | 0.011327 | 0.018693 | 0.000616 | 0.000315 | 0.024057 | 0.001100 | 0.005468 |
| Parking Lot | 0.534849 | 0.056022 | 0.172639 | 0.141007 | 0.026597 | 0.007310 | 0.011327 | 0.018693 | 0.000616 | 0.000315 | 0.024057 | 0.001100 | 0.005468 |

## 5.0 Energy Detail

Historical Energy Use: N

### 5.1 Mitigation Measures Energy

Exceed Title 24

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| NaturalGas Mitigated | 0.1387 | 1.1853 | 0.5044 | 7.5700e-003 | | 0.0958 | 0.0958 | | 0.0958 | 0.0958 | | 1,513.1344 | 1,513.1344 | 0.0290 | 0.0277 | 1,522.1262 |
| NaturalGas Unmitigated | 0.1448 | 1.2374 | 0.5265 | 7.9000e-003 | | 0.1000 | 0.1000 | | 0.1000 | 0.1000 | | 1,579.6277 | 1,579.6277 | 0.0303 | 0.0290 | 1,589.0146 |

Whitewood Apartment Residential - Riverside-South Coast County, Summer

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

## 5.2 Energy by Land Use - NaturalGas

**Unmitigated**

| | NaturalGas Use | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Land Use | kBTU/yr | lb/day | | | | | | | | | | lb/day | | | | | |
| Apartments Low Rise | 13426.8 | 0.1448 | 1.2374 | 0.5265 | 7.9000e-003 | | 0.1000 | 0.1000 | | 0.1000 | 0.1000 | | 1,579.6277 | 1,579.6277 | 0.0303 | 0.0290 | 1,589.0146 |
| Other Asphalt Surfaces | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Parking Lot | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | | **0.1448** | **1.2374** | **0.5265** | **7.9000e-003** | | **0.1000** | **0.1000** | | **0.1000** | **0.1000** | | **1,579.6277** | **1,579.6277** | **0.0303** | **0.0290** | **1,589.0146** |

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

## 5.2 Energy by Land Use - NaturalGas

**Mitigated**

| | NaturalGas Use | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Land Use | kBTU/yr | lb/day | | | | | | | | | | lb/day | | | | | |
| Apartments Low Rise | 12.8616 | 0.1387 | 1.1853 | 0.5044 | 7.5700e-003 | | 0.0958 | 0.0958 | | 0.0958 | 0.0958 | | 1,513.1344 | 1,513.1344 | 0.0290 | 0.0277 | 1,522.1262 |
| Other Asphalt Surfaces | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Parking Lot | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | | **0.1387** | **1.1853** | **0.5044** | **7.5700e-003** | | **0.0958** | **0.0958** | | **0.0958** | **0.0958** | | **1,513.1344** | **1,513.1344** | **0.0290** | **0.0277** | **1,522.1262** |

## 6.0 Area Detail

## 6.1 Mitigation Measures Area

Whitewood Apartment Residential - Riverside-South Coast County, Summer

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

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Mitigated | 7.8738 | 0.3417 | 26.7865 | 1.6300e-003 | | 0.1508 | 0.1508 | | 0.1508 | 0.1508 | 0.0000 | 90.5611 | 90.5611 | 0.0473 | 7.8000e-004 | 91.9749 |
| Unmitigated | 7.8738 | 0.3417 | 26.7865 | 1.6300e-003 | | 0.1508 | 0.1508 | | 0.1508 | 0.1508 | 0.0000 | 90.5611 | 90.5611 | 0.0473 | 7.8000e-004 | 91.9749 |

## 6.2 Area by SubCategory

**Unmitigated**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SubCategory | lb/day | | | | | | | | | | lb/day | | | | | |
| Architectural Coating | 0.5715 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Consumer Products | 6.4896 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Hearth | 3.8800e-003 | 0.0332 | 0.0141 | 2.1000e-004 | | 2.6800e-003 | 2.6800e-003 | | 2.6800e-003 | 2.6800e-003 | 0.0000 | 42.3529 | 42.3529 | 8.1000e-004 | 7.8000e-004 | 42.6046 |
| Landscaping | 0.8088 | 0.3085 | 26.7724 | 1.4100e-003 | | 0.1481 | 0.1481 | | 0.1481 | 0.1481 | | 48.2081 | 48.2081 | 0.0465 | | 49.3703 |
| **Total** | **7.8738** | **0.3417** | **26.7865** | **1.6200e-003** | | **0.1508** | **0.1508** | | **0.1508** | **0.1508** | **0.0000** | **90.5611** | **90.5611** | **0.0473** | **7.8000e-004** | **91.9749** |

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

## 6.2 Area by SubCategory

**Mitigated**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SubCategory | lb/day | | | | | | | | | | lb/day | | | | | |
| Architectural Coating | 0.5715 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Consumer Products | 6.4896 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Hearth | 3.8800e-003 | 0.0332 | 0.0141 | 2.1000e-004 | | 2.6800e-003 | 2.6800e-003 | | 2.6800e-003 | 2.6800e-003 | 0.0000 | 42.3529 | 42.3529 | 8.1000e-004 | 7.8000e-004 | 42.6046 |
| Landscaping | 0.8088 | 0.3085 | 26.7724 | 1.4100e-003 | | 0.1481 | 0.1481 | | 0.1481 | 0.1481 | | 48.2081 | 48.2081 | 0.0465 | | 49.3703 |
| **Total** | **7.8738** | **0.3417** | **26.7865** | **1.6200e-003** | | **0.1508** | **0.1508** | | **0.1508** | **0.1508** | **0.0000** | **90.5611** | **90.5611** | **0.0473** | **7.8000e-004** | **91.9749** |

# 7.0 Water Detail

## 7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

Use Water Efficient Irrigation System

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

## 8.0 Waste Detail

### 8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

## 9.0 Operational Offroad

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

## 10.0 Stationary Equipment

**Fire Pumps and Emergency Generators**

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

**Boilers**

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

**User Defined Equipment**

| Equipment Type | Number |
|---|---|

## 11.0 Vegetation

Whitewood Apartment Residential - Riverside-South Coast County, Winter

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

# Whitewood Apartment Residential

**Riverside-South Coast County, Winter**

## 1.0 Project Characteristics

### 1.1 Land Usage

| Land Uses | Size | Metric | Lot Acreage | Floor Surface Area | Population |
|---|---|---|---|---|---|
| Other Asphalt Surfaces | 1.60 | Acre | 1.60 | 69,696.00 | 0 |
| Parking Lot | 351.00 | Space | 5.33 | 140,400.00 | 0 |
| Apartments Low Rise | 324.00 | Dwelling Unit | 9.00 | 324,000.00 | 927 |

### 1.2 Other Project Characteristics

| | | | | | |
|---|---|---|---|---|---|
| **Urbanization** | Urban | **Wind Speed (m/s)** | 2.4 | **Precipitation Freq (Days)** | 28 |
| **Climate Zone** | 10 | | | **Operational Year** | 2023 |
| **Utility Company** | Southern California Edison | | | | |
| **CO2 Intensity (lb/MWhr)** | 390.98 | **CH4 Intensity (lb/MWhr)** | 0.033 | **N2O Intensity (lb/MWhr)** | 0.004 |

### 1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Project Site = 18.7 gross acres - 2.76 acres of Natural Open Space = 15.94 acres analyzed in CalEEMod

Construction Phase - Construction schedule provided by applicant

Off-road Equipment - Grading - 2 Excavators, 1 Grader, 1 Rubber Tired Dozer, 2 Scrapers, 2 Crawler Tractors

Off-road Equipment - Site Preparation - 3 Rubber Tired Dozers and 4 Crawler Tractors

Trips and VMT - 6 Vendor trucks added to Site Preparation and Grading Phases to account for water truck emissions

Vehicle Trips - CalEEMod default weekday trip rate matches Traffic Memo trip rate.

Woodstoves - No woodstoves or wood fireplaces. 2 natural gas only fireplaces analyzed to account for the fire pit at both pools

Construction Off-road Equipment Mitigation - Per SCAQMD Rule 403 minimum requirements, water exposure 3x per day selected

Mobile Land Use Mitigation - Improve Pedestrian Network Onsite

Whitewood Apartment Residential - Riverside-South Coast County, Winter

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

Energy Mitigation - Exceed Title 24 by 7% selected to account for the 2019 Title 24 Part 6 standards

Water Mitigation - Install low flow fixtures and water-efficient irrigation selected to account for Title 24 Part 11 requirements

Waste Mitigation - 50% reduction in waste selected to account for AB 341.

| Table Name | Column Name | Default Value | New Value |
|---|---|---|---|
| tblConstructionPhase | NumDays | 20.00 | 88.00 |
| tblConstructionPhase | NumDays | 20.00 | 88.00 |
| tblFireplaces | NumberGas | 275.40 | 2.00 |
| tblFireplaces | NumberNoFireplace | 32.40 | 322.00 |
| tblFireplaces | NumberWood | 16.20 | 0.00 |
| tblGrading | AcresOfGrading | 120.00 | 90.00 |
| tblGrading | AcresOfGrading | 35.00 | 15.00 |
| tblLandUse | LotAcreage | 3.16 | 5.33 |
| tblLandUse | LotAcreage | 20.25 | 9.00 |
| tblTripsAndVMT | VendorTripNumber | 0.00 | 6.00 |
| tblTripsAndVMT | VendorTripNumber | 0.00 | 6.00 |
| tblWoodstoves | NumberCatalytic | 16.20 | 0.00 |
| tblWoodstoves | NumberNoncatalytic | 16.20 | 0.00 |

## 2.0 Emissions Summary

Whitewood Apartment Residential - Riverside-South Coast County, Winter

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

## 2.1 Overall Construction (Maximum Daily Emission)

### Unmitigated Construction

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Year | lb/day | | | | | | | | | | lb/day | | | | | |
| 2022 | 4.5546 | 50.7274 | 29.9330 | 0.0745 | 19.8966 | 2.1636 | 22.0603 | 10.1669 | 1.9907 | 12.1575 | 0.0000 | 7,230.1256 | 7,230.1256 | 2.2466 | 0.2816 | 7,292.9677 |
| 2023 | 28.1507 | 29.2096 | 45.5444 | 0.1005 | 4.9242 | 1.3215 | 6.2457 | 1.3160 | 1.2368 | 2.5528 | 0.0000 | 9,981.7430 | 9,981.7430 | 1.4433 | 0.2858 | 10,102.9971 |
| **Maximum** | **28.1507** | **50.7274** | **45.5444** | **0.1005** | **19.8966** | **2.1636** | **22.0603** | **10.1669** | **1.9907** | **12.1575** | **0.0000** | **9,981.7430** | **9,981.7430** | **2.2466** | **0.2858** | **10,102.9971** |

### Mitigated Construction

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Year | lb/day | | | | | | | | | | lb/day | | | | | |
| 2022 | 4.5546 | 50.7274 | 29.9330 | 0.0745 | 7.9059 | 2.1636 | 10.0695 | 4.0044 | 1.9907 | 5.9950 | 0.0000 | 7,230.1256 | 7,230.1256 | 2.2466 | 0.2816 | 7,292.9677 |
| 2023 | 28.1507 | 29.2096 | 45.5444 | 0.1005 | 4.9242 | 1.3215 | 6.2457 | 1.3160 | 1.2368 | 2.5528 | 0.0000 | 9,981.7430 | 9,981.7430 | 1.4433 | 0.2858 | 10,102.9971 |
| **Maximum** | **28.1507** | **50.7274** | **45.5444** | **0.1005** | **7.9059** | **2.1636** | **10.0695** | **4.0044** | **1.9907** | **5.9950** | **0.0000** | **9,981.7430** | **9,981.7430** | **2.2466** | **0.2858** | **10,102.9971** |

Whitewood Apartment Residential - Riverside-South Coast County, Winter

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

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio-CO2 | Total CO2 | CH4 | N20 | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Percent Reduction | 0.00 | 0.00 | 0.00 | 0.00 | 48.31 | 0.00 | 42.36 | 53.67 | 0.00 | 41.89 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

Whitewood Apartment Residential - Riverside-South Coast County, Winter

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

## 2.2 Overall Operational

### Unmitigated Operational

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Area | 7.8738 | 0.3417 | 26.7865 | 1.6300e-003 | | 0.1508 | 0.1508 | | 0.1508 | 0.1508 | 0.0000 | 90.5611 | 90.5611 | 0.0473 | 7.8000e-004 | 91.9749 |
| Energy | 0.1448 | 1.2374 | 0.5265 | 7.9000e-003 | | 0.1000 | 0.1000 | | 0.1000 | 0.1000 | | 1,579.6277 | 1,579.6277 | 0.0303 | 0.0290 | 1,589.0146 |
| Mobile | 7.3116 | 12.1102 | 74.6722 | 0.1790 | 19.0441 | 0.1482 | 19.1923 | 5.0811 | 0.1390 | 5.2200 | | 18,420.8731 | 18,420.8731 | 0.9691 | 0.9244 | 18,720.5707 |
| **Total** | **15.3302** | **13.6893** | **101.9852** | **0.1886** | **19.0441** | **0.3991** | **19.4431** | **5.0811** | **0.3898** | **5.4708** | **0.0000** | **20,091.0619** | **20,091.0619** | **1.0467** | **0.9541** | **20,401.5602** |

### Mitigated Operational

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Area | 7.8738 | 0.3417 | 26.7865 | 1.6300e-003 | | 0.1508 | 0.1508 | | 0.1508 | 0.1508 | 0.0000 | 90.5611 | 90.5611 | 0.0473 | 7.8000e-004 | 91.9749 |
| Energy | 0.1387 | 1.1853 | 0.5044 | 7.5700e-003 | | 0.0958 | 0.0958 | | 0.0958 | 0.0958 | | 1,513.1344 | 1,513.1344 | 0.0290 | 0.0277 | 1,522.1262 |
| Mobile | 7.2771 | 12.0137 | 74.0727 | 0.1773 | 18.8536 | 0.1469 | 19.0005 | 5.0302 | 0.1377 | 5.1679 | | 18,241.5883 | 18,241.5883 | 0.9628 | 0.9169 | 18,538.8960 |
| **Total** | **15.2896** | **13.5407** | **101.3636** | **0.1865** | **18.8536** | **0.3935** | **19.2471** | **5.0302** | **0.3843** | **5.4145** | **0.0000** | **19,845.2838** | **19,845.2838** | **1.0391** | **0.9454** | **20,152.9972** |

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

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio-CO2 | Total CO2 | CH4 | N20 | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Percent Reduction | 0.26 | 1.09 | 0.61 | 1.10 | 1.00 | 1.40 | 1.01 | 1.00 | 1.41 | 1.03 | 0.00 | 1.22 | 1.22 | 0.73 | 0.91 | 1.22 |

## 3.0 Construction Detail

### Construction Phase

| Phase Number | Phase Name | Phase Type | Start Date | End Date | Num Days Week | Num Days | Phase Description |
|---|---|---|---|---|---|---|---|
| 1 | Site Preparation | Site Preparation | 4/29/2022 | 5/12/2022 | 5 | 10 | |
| 2 | Grading | Grading | 5/13/2022 | 6/23/2022 | 5 | 30 | |
| 3 | Building Construction | Building Construction | 6/24/2022 | 8/17/2023 | 5 | 300 | |
| 4 | Paving | Paving | 4/18/2023 | 8/17/2023 | 5 | 88 | |
| 5 | Architectural Coating | Architectural Coating | 4/18/2023 | 8/17/2023 | 5 | 88 | |

**Acres of Grading (Site Preparation Phase): 15**

**Acres of Grading (Grading Phase): 90**

**Acres of Paving: 6.93**

**Residential Indoor: 656,100; Residential Outdoor: 218,700; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 12,606 (Architectural Coating – sqft)**

### OffRoad Equipment

| Phase Name | Offroad Equipment Type | Amount | Usage Hours | Horse Power | Load Factor |
|---|---|---|---|---|---|
| Site Preparation | Crawler Tractors | 4 | 8.00 | 212 | 0.43 |
| Site Preparation | Rubber Tired Dozers | 3 | 8.00 | 247 | 0.40 |
| Grading | Crawler Tractors | 2 | 8.00 | 212 | 0.43 |
| Grading | Excavators | 2 | 8.00 | 158 | 0.38 |
| Grading | Graders | 1 | 8.00 | 187 | 0.41 |
| Grading | Rubber Tired Dozers | 1 | 8.00 | 247 | 0.40 |

Whitewood Apartment Residential - Riverside-South Coast County, Winter

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

| | | | | | |
|---|---|---|---|---|---|
| Grading | Scrapers | 2 | 8.00 | 367 | 0.48 |
| Building Construction | Cranes | 1 | 7.00 | 231 | 0.29 |
| Building Construction | Forklifts | 3 | 8.00 | 89 | 0.20 |
| Building Construction | Generator Sets | 1 | 8.00 | 84 | 0.74 |
| Building Construction | Tractors/Loaders/Backhoes | 3 | 7.00 | 97 | 0.37 |
| Building Construction | Welders | 1 | 8.00 | 46 | 0.45 |
| Paving | Pavers | 2 | 8.00 | 130 | 0.42 |
| Paving | Paving Equipment | 2 | 8.00 | 132 | 0.36 |
| Paving | Rollers | 2 | 8.00 | 80 | 0.38 |
| Architectural Coating | Air Compressors | 1 | 6.00 | 78 | 0.48 |

**Trips and VMT**

| Phase Name | Offroad Equipment Count | Worker Trip Number | Vendor Trip Number | Hauling Trip Number | Worker Trip Length | Vendor Trip Length | Hauling Trip Length | Worker Vehicle Class | Vendor Vehicle Class | Hauling Vehicle Class |
|---|---|---|---|---|---|---|---|---|---|---|
| Site Preparation | 7 | 18.00 | 6.00 | 0.00 | 14.70 | 6.90 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Grading | 8 | 20.00 | 6.00 | 0.00 | 14.70 | 6.90 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Building Construction | 9 | 322.00 | 69.00 | 0.00 | 14.70 | 6.90 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Paving | 6 | 15.00 | 0.00 | 0.00 | 14.70 | 6.90 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Architectural Coating | 1 | 64.00 | 0.00 | 0.00 | 14.70 | 6.90 | 20.00 | LD_Mix | HDT_Mix | HHDT |

## 3.1 Mitigation Measures Construction

Water Exposed Area

Whitewood Apartment Residential - Riverside-South Coast County, Winter

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

## 3.2 Site Preparation - 2022

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Fugitive Dust | | | | | 19.6570 | 0.0000 | 19.6570 | 10.1025 | 0.0000 | 10.1025 | | | 0.0000 | | | 0.0000 |
| Off-Road | 4.4790 | 50.4124 | 20.0053 | 0.0570 | | 2.1590 | 2.1590 | | 1.9862 | 1.9862 | | 5,517.2355 | 5,517.2355 | 1.7844 | | 5,561.8451 |
| **Total** | **4.4790** | **50.4124** | **20.0053** | **0.0570** | **19.6570** | **2.1590** | **21.8160** | **10.1025** | **1.9862** | **12.0887** | | **5,517.2355** | **5,517.2355** | **1.7844** | | **5,561.8451** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 9.3500e-003 | 0.2673 | 0.0916 | 1.0900e-003 | 0.0384 | 3.6700e-003 | 0.0421 | 0.0111 | 3.5100e-003 | 0.0146 | | 115.8935 | 115.8935 | 1.2100e-003 | 0.0172 | 121.0492 |
| Worker | 0.0663 | 0.0477 | 0.5816 | 1.6600e-003 | 0.2012 | 1.0000e-003 | 0.2022 | 0.0534 | 9.2000e-004 | 0.0543 | | 168.5113 | 168.5113 | 4.5800e-003 | 4.6800e-003 | 170.0216 |
| **Total** | **0.0756** | **0.3150** | **0.6732** | **2.7500e-003** | **0.2396** | **4.6700e-003** | **0.2443** | **0.0644** | **4.4300e-003** | **0.0689** | | **284.4048** | **284.4048** | **5.7900e-003** | **0.0219** | **291.0708** |

Whitewood Apartment Residential - Riverside-South Coast County, Winter

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

## 3.2 Site Preparation - 2022

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Fugitive Dust | | | | | 7.6662 | 0.0000 | 7.6662 | 3.9400 | 0.0000 | 3.9400 | | | 0.0000 | | | 0.0000 |
| Off-Road | 4.4790 | 50.4124 | 20.0053 | 0.0570 | | 2.1590 | 2.1590 | | 1.9862 | 1.9862 | 0.0000 | 5,517.2355 | 5,517.2355 | 1.7844 | | 5,561.8451 |
| **Total** | **4.4790** | **50.4124** | **20.0053** | **0.0570** | **7.6662** | **2.1590** | **9.8252** | **3.9400** | **1.9862** | **5.9262** | **0.0000** | **5,517.2355** | **5,517.2355** | **1.7844** | | **5,561.8451** |

### Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 9.3500e-003 | 0.2673 | 0.0916 | 1.0900e-003 | 0.0384 | 3.6700e-003 | 0.0421 | 0.0111 | 3.5100e-003 | 0.0146 | | 115.8935 | 115.8935 | 1.2100e-003 | 0.0172 | 121.0492 |
| Worker | 0.0663 | 0.0477 | 0.5816 | 1.6600e-003 | 0.2012 | 1.0000e-003 | 0.2022 | 0.0534 | 9.2000e-004 | 0.0543 | | 168.5113 | 168.5113 | 4.5800e-003 | 4.6800e-003 | 170.0216 |
| **Total** | **0.0756** | **0.3150** | **0.6732** | **2.7500e-003** | **0.2396** | **4.6700e-003** | **0.2443** | **0.0644** | **4.4300e-003** | **0.0689** | | **284.4048** | **284.4048** | **5.7900e-003** | **0.0219** | **291.0708** |

Whitewood Apartment Residential - Riverside-South Coast County, Winter

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

## 3.3 Grading - 2022

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Fugitive Dust | | | | | 9.2036 | 0.0000 | 9.2036 | 3.6538 | 0.0000 | 3.6538 | | | 0.0000 | | | 0.0000 |
| Off-Road | 4.2792 | 47.5079 | 29.1953 | 0.0715 | | 1.9081 | 1.9081 | | 1.7554 | 1.7554 | | 6,926.9974 | 6,926.9974 | 2.2403 | | 6,983.0056 |
| **Total** | **4.2792** | **47.5079** | **29.1953** | **0.0715** | **9.2036** | **1.9081** | **11.1117** | **3.6538** | **1.7554** | **5.4092** | | **6,926.9974** | **6,926.9974** | **2.2403** | | **6,983.0056** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 9.3500e-003 | 0.2673 | 0.0916 | 1.0900e-003 | 0.0384 | 3.6700e-003 | 0.0421 | 0.0111 | 3.5100e-003 | 0.0146 | | 115.8935 | 115.8935 | 1.2100e-003 | 0.0172 | 121.0492 |
| Worker | 0.0736 | 0.0530 | 0.6462 | 1.8400e-003 | 0.2236 | 1.1100e-003 | 0.2247 | 0.0593 | 1.0300e-003 | 0.0603 | | 187.2348 | 187.2348 | 5.0800e-003 | 5.2000e-003 | 188.9129 |
| **Total** | **0.0830** | **0.3203** | **0.7378** | **2.9300e-003** | **0.2620** | **4.7800e-003** | **0.2668** | **0.0704** | **4.5400e-003** | **0.0749** | | **303.1282** | **303.1282** | **6.2900e-003** | **0.0224** | **309.9621** |

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

## 3.3 Grading - 2022

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Fugitive Dust | | | | | 3.5894 | 0.0000 | 3.5894 | 1.4250 | 0.0000 | 1.4250 | | | 0.0000 | | | 0.0000 |
| Off-Road | 4.2792 | 47.5079 | 29.1953 | 0.0715 | | 1.9081 | 1.9081 | | 1.7554 | 1.7554 | 0.0000 | 6,926.9974 | 6,926.9974 | 2.2403 | | 6,983.0056 |
| **Total** | **4.2792** | **47.5079** | **29.1953** | **0.0715** | **3.5894** | **1.9081** | **5.4975** | **1.4250** | **1.7554** | **3.1804** | **0.0000** | **6,926.9974** | **6,926.9974** | **2.2403** | | **6,983.0056** |

### Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 9.3500e-003 | 0.2673 | 0.0916 | 1.0900e-003 | 0.0384 | 3.6700e-003 | 0.0421 | 0.0111 | 3.5100e-003 | 0.0146 | | 115.8935 | 115.8935 | 1.2100e-003 | 0.0172 | 121.0492 |
| Worker | 0.0736 | 0.0530 | 0.6462 | 1.8400e-003 | 0.2236 | 1.1100e-003 | 0.2247 | 0.0593 | 1.0300e-003 | 0.0603 | | 187.2348 | 187.2348 | 5.0800e-003 | 5.2000e-003 | 188.9129 |
| **Total** | **0.0830** | **0.3203** | **0.7378** | **2.9300e-003** | **0.2620** | **4.7800e-003** | **0.2668** | **0.0704** | **4.5400e-003** | **0.0749** | | **303.1282** | **303.1282** | **6.2900e-003** | **0.0224** | **309.9621** |

Whitewood Apartment Residential - Riverside-South Coast County, Winter

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

## 3.4 Building Construction - 2022

### Unmitigated Construction On-Site

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

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.1075 | 3.0739 | 1.0535 | 0.0126 | 0.4420 | 0.0422 | 0.4841 | 0.1273 | 0.0404 | 0.1676 | | 1,332.7748 | 1,332.7748 | 0.0139 | 0.1978 | 1,392.0660 |
| Worker | 1.1854 | 0.8536 | 10.4033 | 0.0296 | 3.5992 | 0.0179 | 3.6171 | 0.9545 | 0.0165 | 0.9710 | | 3,014.4797 | 3,014.4797 | 0.0819 | 0.0838 | 3,041.4971 |
| **Total** | **1.2929** | **3.9275** | **11.4568** | **0.0422** | **4.0412** | **0.0601** | **4.1013** | **1.0818** | **0.0569** | **1.1386** | | **4,347.2545** | **4,347.2545** | **0.0957** | **0.2816** | **4,433.5631** |

Whitewood Apartment Residential - Riverside-South Coast County, Winter

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

## 3.4 Building Construction - 2022

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.7062 | 15.6156 | 16.3634 | 0.0269 | | 0.8090 | 0.8090 | | 0.7612 | 0.7612 | 0.0000 | 2,554.3336 | 2,554.3336 | 0.6120 | | 2,569.6322 |
| **Total** | **1.7062** | **15.6156** | **16.3634** | **0.0269** | | **0.8090** | **0.8090** | | **0.7612** | **0.7612** | **0.0000** | **2,554.3336** | **2,554.3336** | **0.6120** | | **2,569.6322** |

### Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.1075 | 3.0739 | 1.0535 | 0.0126 | 0.4420 | 0.0422 | 0.4841 | 0.1273 | 0.0404 | 0.1676 | | 1,332.7748 | 1,332.7748 | 0.0139 | 0.1978 | 1,392.0660 |
| Worker | 1.1854 | 0.8536 | 10.4033 | 0.0296 | 3.5992 | 0.0179 | 3.6171 | 0.9545 | 0.0165 | 0.9710 | | 3,014.4797 | 3,014.4797 | 0.0819 | 0.0838 | 3,041.4971 |
| **Total** | **1.2929** | **3.9275** | **11.4568** | **0.0422** | **4.0412** | **0.0601** | **4.1013** | **1.0818** | **0.0569** | **1.1386** | | **4,347.2545** | **4,347.2545** | **0.0957** | **0.2816** | **4,433.5631** |

Whitewood Apartment Residential - Riverside-South Coast County, Winter

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

## 3.4 Building Construction - 2023

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.5728 | 14.3849 | 16.2440 | 0.0269 | | 0.6997 | 0.6997 | | 0.6584 | 0.6584 | | 2,555.2099 | 2,555.2099 | 0.6079 | | 2,570.4061 |
| **Total** | **1.5728** | **14.3849** | **16.2440** | **0.0269** | | **0.6997** | **0.6997** | | **0.6584** | **0.6584** | | **2,555.2099** | **2,555.2099** | **0.6079** | | **2,570.4061** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0720 | 2.3907 | 0.9595 | 0.0121 | 0.4420 | 0.0197 | 0.4617 | 0.1273 | 0.0189 | 0.1461 | | 1,281.5425 | 1,281.5425 | 0.0128 | 0.1895 | 1,338.3431 |
| Worker | 1.1027 | 0.7543 | 9.5922 | 0.0287 | 3.5992 | 0.0169 | 3.6161 | 0.9545 | 0.0155 | 0.9701 | | 2,935.7073 | 2,935.7073 | 0.0737 | 0.0773 | 2,960.5896 |
| **Total** | **1.1747** | **3.1450** | **10.5517** | **0.0408** | **4.0412** | **0.0366** | **4.0777** | **1.0818** | **0.0344** | **1.1162** | | **4,217.2498** | **4,217.2498** | **0.0865** | **0.2668** | **4,298.9327** |

Whitewood Apartment Residential - Riverside-South Coast County, Winter

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

## 3.4 Building Construction - 2023

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.5728 | 14.3849 | 16.2440 | 0.0269 | | 0.6997 | 0.6997 | | 0.6584 | 0.6584 | 0.0000 | 2,555.2099 | 2,555.2099 | 0.6079 | | 2,570.4061 |
| **Total** | **1.5728** | **14.3849** | **16.2440** | **0.0269** | | **0.6997** | **0.6997** | | **0.6584** | **0.6584** | **0.0000** | **2,555.2099** | **2,555.2099** | **0.6079** | | **2,570.4061** |

### Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0720 | 2.3907 | 0.9595 | 0.0121 | 0.4420 | 0.0197 | 0.4617 | 0.1273 | 0.0189 | 0.1461 | | 1,281.5425 | 1,281.5425 | 0.0128 | 0.1895 | 1,338.3431 |
| Worker | 1.1027 | 0.7543 | 9.5922 | 0.0287 | 3.5992 | 0.0169 | 3.6161 | 0.9545 | 0.0155 | 0.9701 | | 2,935.7073 | 2,935.7073 | 0.0737 | 0.0773 | 2,960.5896 |
| **Total** | **1.1747** | **3.1450** | **10.5517** | **0.0408** | **4.0412** | **0.0366** | **4.0777** | **1.0818** | **0.0344** | **1.1162** | | **4,217.2498** | **4,217.2498** | **0.0865** | **0.2668** | **4,298.9327** |

Whitewood Apartment Residential - Riverside-South Coast County, Winter

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

## 3.5 Paving - 2023

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.0327 | 10.1917 | 14.5842 | 0.0228 | | 0.5102 | 0.5102 | | 0.4694 | 0.4694 | | 2,207.5841 | 2,207.5841 | 0.7140 | | 2,225.4336 |
| Paving | 0.2063 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| **Total** | **1.2391** | **10.1917** | **14.5842** | **0.0228** | | **0.5102** | **0.5102** | | **0.4694** | **0.4694** | | **2,207.5841** | **2,207.5841** | **0.7140** | | **2,225.4336** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.0514 | 0.0351 | 0.4468 | 1.3400e-003 | 0.1677 | 7.9000e-004 | 0.1685 | 0.0445 | 7.2000e-004 | 0.0452 | | 136.7566 | 136.7566 | 3.4300e-003 | 3.6000e-003 | 137.9157 |
| **Total** | **0.0514** | **0.0351** | **0.4468** | **1.3400e-003** | **0.1677** | **7.9000e-004** | **0.1685** | **0.0445** | **7.2000e-004** | **0.0452** | | **136.7566** | **136.7566** | **3.4300e-003** | **3.6000e-003** | **137.9157** |

Whitewood Apartment Residential - Riverside-South Coast County, Winter

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

## 3.5 Paving - 2023

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.0327 | 10.1917 | 14.5842 | 0.0228 | | 0.5102 | 0.5102 | | 0.4694 | 0.4694 | 0.0000 | 2,207.5841 | 2,207.5841 | 0.7140 | | 2,225.4336 |
| Paving | 0.2063 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| **Total** | **1.2391** | **10.1917** | **14.5842** | **0.0228** | | **0.5102** | **0.5102** | | **0.4694** | **0.4694** | **0.0000** | **2,207.5841** | **2,207.5841** | **0.7140** | | **2,225.4336** |

### Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.0514 | 0.0351 | 0.4468 | 1.3400e-003 | 0.1677 | 7.9000e-004 | 0.1685 | 0.0445 | 7.2000e-004 | 0.0452 | | 136.7566 | 136.7566 | 3.4300e-003 | 3.6000e-003 | 137.9157 |
| **Total** | **0.0514** | **0.0351** | **0.4468** | **1.3400e-003** | **0.1677** | **7.9000e-004** | **0.1685** | **0.0445** | **7.2000e-004** | **0.0452** | | **136.7566** | **136.7566** | **3.4300e-003** | **3.6000e-003** | **137.9157** |

Whitewood Apartment Residential - Riverside-South Coast County, Winter

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

## 3.6 Architectural Coating - 2023

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Archit. Coating | 23.7020 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.1917 | 1.3030 | 1.8111 | 2.9700e-003 | | 0.0708 | 0.0708 | | 0.0708 | 0.0708 | | 281.4481 | 281.4481 | 0.0168 | | 281.8690 |
| **Total** | **23.8937** | **1.3030** | **1.8111** | **2.9700e-003** | | **0.0708** | **0.0708** | | **0.0708** | **0.0708** | | **281.4481** | **281.4481** | **0.0168** | | **281.8690** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.2192 | 0.1499 | 1.9065 | 5.7000e-003 | 0.7154 | 3.3600e-003 | 0.7187 | 0.1897 | 3.0900e-003 | 0.1928 | | 583.4946 | 583.4946 | 0.0147 | 0.0154 | 588.4402 |
| **Total** | **0.2192** | **0.1499** | **1.9065** | **5.7000e-003** | **0.7154** | **3.3600e-003** | **0.7187** | **0.1897** | **3.0900e-003** | **0.1928** | | **583.4946** | **583.4946** | **0.0147** | **0.0154** | **588.4402** |

Whitewood Apartment Residential - Riverside-South Coast County, Winter

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

## 3.6 Architectural Coating - 2023

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Archit. Coating | 23.7020 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.1917 | 1.3030 | 1.8111 | 2.9700e-003 | | 0.0708 | 0.0708 | | 0.0708 | 0.0708 | 0.0000 | 281.4481 | 281.4481 | 0.0168 | | 281.8690 |
| **Total** | **23.8937** | **1.3030** | **1.8111** | **2.9700e-003** | | **0.0708** | **0.0708** | | **0.0708** | **0.0708** | **0.0000** | **281.4481** | **281.4481** | **0.0168** | | **281.8690** |

### Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.2192 | 0.1499 | 1.9065 | 5.7000e-003 | 0.7154 | 3.3600e-003 | 0.7187 | 0.1897 | 3.0900e-003 | 0.1928 | | 583.4946 | 583.4946 | 0.0147 | 0.0154 | 588.4402 |
| **Total** | **0.2192** | **0.1499** | **1.9065** | **5.7000e-003** | **0.7154** | **3.3600e-003** | **0.7187** | **0.1897** | **3.0900e-003** | **0.1928** | | **583.4946** | **583.4946** | **0.0147** | **0.0154** | **588.4402** |

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

# 4.0 Operational Detail - Mobile

## 4.1 Mitigation Measures Mobile

Improve Pedestrian Network

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Mitigated | 7.2771 | 12.0137 | 74.0727 | 0.1773 | 18.8536 | 0.1469 | 19.0005 | 5.0302 | 0.1377 | 5.1679 | | 18,241.5883 | 18,241.5883 | 0.9628 | 0.9169 | 18,538.8960 |
| Unmitigated | 7.3116 | 12.1102 | 74.6722 | 0.1790 | 19.0441 | 0.1482 | 19.1923 | 5.0811 | 0.1390 | 5.2200 | | 18,420.8731 | 18,420.8731 | 0.9691 | 0.9244 | 18,720.5707 |

## 4.2 Trip Summary Information

| | Average Daily Trip Rate | | | Unmitigated | Mitigated |
|---|---|---|---|---|---|
| Land Use | Weekday | Saturday | Sunday | Annual VMT | Annual VMT |
| Apartments Low Rise | 2,371.68 | 2,637.36 | 2034.72 | 8,069,594 | 7,988,899 |
| Other Asphalt Surfaces | 0.00 | 0.00 | 0.00 | | |
| Parking Lot | 0.00 | 0.00 | 0.00 | | |
| Total | 2,371.68 | 2,637.36 | 2,034.72 | 8,069,594 | 7,988,899 |

## 4.3 Trip Type Information

| | Miles | | | Trip % | | | Trip Purpose % | | |
|---|---|---|---|---|---|---|---|---|---|
| Land Use | H-W or C-W | H-S or C-C | H-O or C-NW | H-W or C-W | H-S or C-C | H-O or C-NW | Primary | Diverted | Pass-by |
| Apartments Low Rise | 14.70 | 5.90 | 8.70 | 40.20 | 19.20 | 40.60 | 86 | 11 | 3 |
| Other Asphalt Surfaces | 16.60 | 8.40 | 6.90 | 0.00 | 0.00 | 0.00 | 0 | 0 | 0 |
| Parking Lot | 16.60 | 8.40 | 6.90 | 0.00 | 0.00 | 0.00 | 0 | 0 | 0 |

Whitewood Apartment Residential - Riverside-South Coast County, Winter

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

### 4.4 Fleet Mix

| Land Use | LDA | LDT1 | LDT2 | MDV | LHD1 | LHD2 | MHD | HHD | OBUS | UBUS | MCY | SBUS | MH |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Apartments Low Rise | 0.534849 | 0.056022 | 0.172639 | 0.141007 | 0.026597 | 0.007310 | 0.011327 | 0.018693 | 0.000616 | 0.000315 | 0.024057 | 0.001100 | 0.005468 |
| Other Asphalt Surfaces | 0.534849 | 0.056022 | 0.172639 | 0.141007 | 0.026597 | 0.007310 | 0.011327 | 0.018693 | 0.000616 | 0.000315 | 0.024057 | 0.001100 | 0.005468 |
| Parking Lot | 0.534849 | 0.056022 | 0.172639 | 0.141007 | 0.026597 | 0.007310 | 0.011327 | 0.018693 | 0.000616 | 0.000315 | 0.024057 | 0.001100 | 0.005468 |

## 5.0 Energy Detail

Historical Energy Use: N

### 5.1 Mitigation Measures Energy

Exceed Title 24

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| NaturalGas Mitigated | 0.1387 | 1.1853 | 0.5044 | 7.5700e-003 | | 0.0958 | 0.0958 | | 0.0958 | 0.0958 | | 1,513.1344 | 1,513.1344 | 0.0290 | 0.0277 | 1,522.1262 |
| NaturalGas Unmitigated | 0.1448 | 1.2374 | 0.5265 | 7.9000e-003 | | 0.1000 | 0.1000 | | 0.1000 | 0.1000 | | 1,579.6277 | 1,579.6277 | 0.0303 | 0.0290 | 1,589.0146 |

Whitewood Apartment Residential - Riverside-South Coast County, Winter

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

## 5.2 Energy by Land Use - NaturalGas

**Unmitigated**

| | NaturalGas Use | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Land Use | kBTU/yr | lb/day | | | | | | | | | | lb/day | | | | | |
| Apartments Low Rise | 13426.8 | 0.1448 | 1.2374 | 0.5265 | 7.9000e-003 | | 0.1000 | 0.1000 | | 0.1000 | 0.1000 | | 1,579.6277 | 1,579.6277 | 0.0303 | 0.0290 | 1,589.0146 |
| Other Asphalt Surfaces | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Parking Lot | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | | **0.1448** | **1.2374** | **0.5265** | **7.9000e-003** | | **0.1000** | **0.1000** | | **0.1000** | **0.1000** | | **1,579.6277** | **1,579.6277** | **0.0303** | **0.0290** | **1,589.0146** |

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

## 5.2 Energy by Land Use - NaturalGas

**Mitigated**

| | NaturalGas Use | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Land Use | kBTU/yr | lb/day | | | | | | | | | | lb/day | | | | | |
| Apartments Low Rise | 12.8616 | 0.1387 | 1.1853 | 0.5044 | 7.5700e-003 | | 0.0958 | 0.0958 | | 0.0958 | 0.0958 | | 1,513.1344 | 1,513.1344 | 0.0290 | 0.0277 | 1,522.1262 |
| Other Asphalt Surfaces | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Parking Lot | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | | **0.1387** | **1.1853** | **0.5044** | **7.5700e-003** | | **0.0958** | **0.0958** | | **0.0958** | **0.0958** | | **1,513.1344** | **1,513.1344** | **0.0290** | **0.0277** | **1,522.1262** |

## 6.0 Area Detail

## 6.1 Mitigation Measures Area

Whitewood Apartment Residential - Riverside-South Coast County, Winter

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

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Mitigated | 7.8738 | 0.3417 | 26.7865 | 1.6300e-003 | | 0.1508 | 0.1508 | | 0.1508 | 0.1508 | 0.0000 | 90.5611 | 90.5611 | 0.0473 | 7.8000e-004 | 91.9749 |
| Unmitigated | 7.8738 | 0.3417 | 26.7865 | 1.6300e-003 | | 0.1508 | 0.1508 | | 0.1508 | 0.1508 | 0.0000 | 90.5611 | 90.5611 | 0.0473 | 7.8000e-004 | 91.9749 |

## 6.2 Area by SubCategory

**Unmitigated**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SubCategory | lb/day | | | | | | | | | | lb/day | | | | | |
| Architectural Coating | 0.5715 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Consumer Products | 6.4896 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Hearth | 3.8800e-003 | 0.0332 | 0.0141 | 2.1000e-004 | | 2.6800e-003 | 2.6800e-003 | | 2.6800e-003 | 2.6800e-003 | 0.0000 | 42.3529 | 42.3529 | 8.1000e-004 | 7.8000e-004 | 42.6046 |
| Landscaping | 0.8088 | 0.3085 | 26.7724 | 1.4100e-003 | | 0.1481 | 0.1481 | | 0.1481 | 0.1481 | | 48.2081 | 48.2081 | 0.0465 | | 49.3703 |
| **Total** | **7.8738** | **0.3417** | **26.7865** | **1.6200e-003** | | **0.1508** | **0.1508** | | **0.1508** | **0.1508** | **0.0000** | **90.5611** | **90.5611** | **0.0473** | **7.8000e-004** | **91.9749** |

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

## 6.2 Area by SubCategory

**Mitigated**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SubCategory | lb/day | | | | | | | | | | lb/day | | | | | |
| Architectural Coating | 0.5715 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Consumer Products | 6.4896 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Hearth | 3.8800e-003 | 0.0332 | 0.0141 | 2.1000e-004 | | 2.6800e-003 | 2.6800e-003 | | 2.6800e-003 | 2.6800e-003 | 0.0000 | 42.3529 | 42.3529 | 8.1000e-004 | 7.8000e-004 | 42.6046 |
| Landscaping | 0.8088 | 0.3085 | 26.7724 | 1.4100e-003 | | 0.1481 | 0.1481 | | 0.1481 | 0.1481 | | 48.2081 | 48.2081 | 0.0465 | | 49.3703 |
| **Total** | **7.8738** | **0.3417** | **26.7865** | **1.6200e-003** | | **0.1508** | **0.1508** | | **0.1508** | **0.1508** | **0.0000** | **90.5611** | **90.5611** | **0.0473** | **7.8000e-004** | **91.9749** |

# 7.0 Water Detail

## 7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

Use Water Efficient Irrigation System

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

## 8.0 Waste Detail

### 8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

## 9.0 Operational Offroad

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

## 10.0 Stationary Equipment

**Fire Pumps and Emergency Generators**

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

**Boilers**

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

**User Defined Equipment**

| Equipment Type | Number |
|---|---|

## 11.0 Vegetation

**APPENDIX C**

EMFAC2017 Model Printouts

**EMFAC2017 (v1.0.2) Emissions Inventory**
Region Type: Air Basin
Region: SOUTH COAST
Calendar Year: 2022
Season: Annual
Vehicle Classification: EMFAC2007 Categories
Units: miles/day for VMT, trips/day for Trips, tons/day for Emissions, 1000 gallons/day for Fuel Consumption. Note 'day' in the unit is operation day.

| Region | Calendar Y | Vehicle Cat | Model Yea | Speed | Fuel | Population | VMT | Trips | Fuel Consumption |
|---|---|---|---|---|---|---|---|---|---|
| SOUTH CO | 2022 | HHDT | Aggregatec | Aggregatec | GAS | 77.19581 | 7790.40352 | 1544.534 | 1.875688287 |
| SOUTH CO | 2022 | LDA | Aggregatec | Aggregatec | GAS | 6370883 | 246404319.3 | 30101253 | 7989.700531 |
| SOUTH CO | 2022 | LDT1 | Aggregatec | Aggregatec | GAS | 716397.4 | 26563674.69 | 3305301 | 1003.18171 |
| SOUTH CO | 2022 | LDT2 | Aggregatec | Aggregatec | GAS | 2182002 | 82381240.23 | 10234301 | 3339.886942 |
| SOUTH CO | 2022 | LHDT1 | Aggregatec | Aggregatec | GAS | 171358.6 | 6138928.512 | 2552988 | 583.2281345 |
| SOUTH CO | 2022 | LHDT2 | Aggregatec | Aggregatec | GAS | 29049.29 | 1009215.767 | 432791.1 | 110.1260053 |
| SOUTH CO | 2022 | MCY | Aggregatec | Aggregatec | GAS | 288756.3 | 1994249.265 | 577512.7 | 54.92216124 |
| SOUTH CO | 2022 | MDV | Aggregatec | Aggregatec | GAS | 1530646 | 54105469.86 | 7077024 | 2704.447563 |
| SOUTH CO | 2022 | MH | Aggregatec | Aggregatec | GAS | 34090.76 | 324253.0827 | 3410.439 | 62.96118679 |
| SOUTH CO | 2022 | MHDT | Aggregatec | Aggregatec | GAS | 24783.34 | 1316472.619 | 495865 | 259.391887 |
| SOUTH CO | 2022 | OBUS | Aggregatec | Aggregatec | GAS | 5832.051 | 240794.901 | 116687.7 | 47.77312679 |
| SOUTH CO | 2022 | SBUS | Aggregatec | Aggregatec | GAS | 2563.073 | 102707.6059 | 10252.29 | 11.26572543 |
| SOUTH CO | 2022 | UBUS | Aggregatec | Aggregatec | GAS | 952.146 | 89255.99818 | 3808.584 | 18.40085629 |

| | | | |
|---|---|---|---|
| vehicle miles per day (All Categories) | 420678372 | 16,187 | 1,000 gall per day |
| | | 16,187,162 | gallons per day |
| Fleet Avg Miles per gallon | 26.0 | | |

**EMFAC2017 (v1.0.2) Emissions Inventory**
Region Type: Air Basin
Region: SOUTH COAST
Calendar Year: 2022
Season: Annual
Vehicle Classification: EMFAC2007 Categories
Units: miles/day for VMT, trips/day for Trips, tons/day for Emissions, 1000 gallons/day for Fuel Consumption. Note 'day' in the unit is operation day.

| Region | Calendar Y | Vehicle Cat | Model Yea | Speed | Fuel | Population | VMT | Trips | Fuel Consumption |
|---|---|---|---|---|---|---|---|---|---|
| SOUTH CO | 2022 | HHDT | Aggregatec | Aggregatec | DSL | 98507.93 | 11795119.18 | 994224.5278 | 1762.986535 |
| SOUTH CO | 2022 | LDA | Aggregatec | Aggregatec | DSL | 57443 | 2304136.238 | 272823.0302 | 47.39159146 |
| SOUTH CO | 2022 | LDT1 | Aggregatec | Aggregatec | DSL | 378.1209 | 8809.098622 | 1319.110799 | 0.391172549 |
| SOUTH CO | 2022 | LDT2 | Aggregatec | Aggregatec | DSL | 13854.2 | 592642.9638 | 68308.95137 | 16.65070839 |
| SOUTH CO | 2022 | LHDT1 | Aggregatec | Aggregatec | DSL | 115788.9 | 4681447.455 | 1456478.318 | 217.1134019 |
| SOUTH CO | 2022 | LHDT2 | Aggregatec | Aggregatec | DSL | 45909.32 | 1809192.293 | 577481.5034 | 92.8866097 |
| SOUTH CO | 2022 | MDV | Aggregatec | Aggregatec | DSL | 32417.61 | 1305872.927 | 158948.6889 | 47.80332863 |
| SOUTH CO | 2022 | MH | Aggregatec | Aggregatec | DSL | 12198.84 | 117488.268 | 1219.883938 | 11.12023591 |
| SOUTH CO | 2022 | MHDT | Aggregatec | Aggregatec | DSL | 119796 | 7716034.126 | 1201941.571 | 720.1602731 |
| SOUTH CO | 2022 | OBUS | Aggregatec | Aggregatec | DSL | 4149.674 | 316404.315 | 40441.57981 | 37.45917989 |
| SOUTH CO | 2022 | SBUS | Aggregatec | Aggregatec | DSL | 6354.465 | 200786.3158 | 73329.64442 | 26.4174734 |
| SOUTH CO | 2022 | UBUS | Aggregatec | Aggregatec | DSL | 14.14142 | 1478.085683 | 56.56567323 | 0.246796198 |

| | | | |
|---|---|---|---|
| Diesel Truck (HHDT, MDV, MHDT) vehicle miles per day | 20,817,026 | 2,531 | 1,000 gall per day |
| | | 2,530,950 | gallons per day |
| Diesel Truck Fleet Avg Miles per gallon | 8.2 | | |

**APPENDIX D**

CalEEMod Model Annual Printouts

Whitewood Apartment Residential - Riverside-South Coast County, Annual

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

# Whitewood Apartment Residential

**Riverside-South Coast County, Annual**

## 1.0 Project Characteristics

### 1.1 Land Usage

| Land Uses | Size | Metric | Lot Acreage | Floor Surface Area | Population |
|---|---|---|---|---|---|
| Other Asphalt Surfaces | 1.60 | Acre | 1.60 | 69,696.00 | 0 |
| Parking Lot | 351.00 | Space | 5.33 | 140,400.00 | 0 |
| Apartments Low Rise | 324.00 | Dwelling Unit | 9.00 | 324,000.00 | 927 |

### 1.2 Other Project Characteristics

| | | | | | |
|---|---|---|---|---|---|
| **Urbanization** | Urban | **Wind Speed (m/s)** | 2.4 | **Precipitation Freq (Days)** | 28 |
| **Climate Zone** | 10 | | | **Operational Year** | 2023 |
| **Utility Company** | Southern California Edison | | | | |
| **CO2 Intensity (lb/MWhr)** | 390.98 | **CH4 Intensity (lb/MWhr)** | 0.033 | **N2O Intensity (lb/MWhr)** | 0.004 |

### 1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Project Site = 18.7 gross acres - 2.76 acres of Natural Open Space = 15.94 acres analyzed in CalEEMod

Construction Phase - Construction schedule provided by applicant

Off-road Equipment - Grading - 2 Excavators, 1 Grader, 1 Rubber Tired Dozer, 2 Scrapers, 2 Crawler Tractors

Off-road Equipment - Site Preparation - 3 Rubber Tired Dozers and 4 Crawler Tractors

Trips and VMT - 6 Vendor trucks added to Site Preparation and Grading Phases to account for water truck emissions

Vehicle Trips - CalEEMod default weekday trip rate matches Traffic Memo trip rate.

Woodstoves - No woodstoves or wood fireplaces. 2 natural gas only fireplaces analyzed to account for the fire pit at both pools

Construction Off-road Equipment Mitigation - Per SCAQMD Rule 403 minimum requirements, water exposure 3x per day selected

Mobile Land Use Mitigation - Improve Pedestrian Network Onsite

Whitewood Apartment Residential - Riverside-South Coast County, Annual

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

Energy Mitigation - Exceed Title 24 by 7% selected to account for the 2019 Title 24 Part 6 standards

Water Mitigation - Install low flow fixtures and water-efficient irrigation selected to account for Title 24 Part 11 requirements

Waste Mitigation - 50% reduction in waste selected to account for AB 341.

| Table Name | Column Name | Default Value | New Value |
|---|---|---|---|
| tblConstructionPhase | NumDays | 20.00 | 88.00 |
| tblConstructionPhase | NumDays | 20.00 | 88.00 |
| tblFireplaces | NumberGas | 275.40 | 2.00 |
| tblFireplaces | NumberNoFireplace | 32.40 | 322.00 |
| tblFireplaces | NumberWood | 16.20 | 0.00 |
| tblGrading | AcresOfGrading | 120.00 | 90.00 |
| tblGrading | AcresOfGrading | 35.00 | 15.00 |
| tblLandUse | LotAcreage | 3.16 | 5.33 |
| tblLandUse | LotAcreage | 20.25 | 9.00 |
| tblTripsAndVMT | VendorTripNumber | 0.00 | 6.00 |
| tblTripsAndVMT | VendorTripNumber | 0.00 | 6.00 |
| tblWoodstoves | NumberCatalytic | 16.20 | 0.00 |
| tblWoodstoves | NumberNoncatalytic | 16.20 | 0.00 |

## 2.0 Emissions Summary

Whitewood Apartment Residential - Riverside-South Coast County, Annual

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

## 2.1 Overall Construction

### Unmitigated Construction

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Year | tons/yr | | | | | | | | | | MT/yr | | | | | |
| 2022 | 0.2882 | 2.3008 | 2.4818 | 6.1600e-003 | 0.5117 | 0.0986 | 0.6103 | 0.1791 | 0.0920 | 0.2711 | 0.0000 | 554.8181 | 554.8181 | 0.0824 | 0.0179 | 562.2018 |
| 2023 | 1.3379 | 1.9512 | 3.0687 | 7.0600e-003 | 0.3642 | 0.0861 | 0.4503 | 0.0975 | 0.0807 | 0.1783 | 0.0000 | 637.5124 | 637.5124 | 0.0816 | 0.0207 | 645.7230 |
| **Maximum** | **1.3379** | **2.3008** | **3.0687** | **7.0600e-003** | **0.5117** | **0.0986** | **0.6103** | **0.1791** | **0.0920** | **0.2711** | **0.0000** | **637.5124** | **637.5124** | **0.0824** | **0.0207** | **645.7230** |

### Mitigated Construction

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Year | tons/yr | | | | | | | | | | MT/yr | | | | | |
| 2022 | 0.2882 | 2.3008 | 2.4818 | 6.1600e-003 | 0.3675 | 0.0986 | 0.4661 | 0.1149 | 0.0920 | 0.2069 | 0.0000 | 554.8178 | 554.8178 | 0.0824 | 0.0179 | 562.2014 |
| 2023 | 1.3379 | 1.9512 | 3.0687 | 7.0600e-003 | 0.3642 | 0.0861 | 0.4503 | 0.0975 | 0.0807 | 0.1783 | 0.0000 | 637.5121 | 637.5121 | 0.0816 | 0.0207 | 645.7227 |
| **Maximum** | **1.3379** | **2.3008** | **3.0687** | **7.0600e-003** | **0.3675** | **0.0986** | **0.4661** | **0.1149** | **0.0920** | **0.2069** | **0.0000** | **637.5121** | **637.5121** | **0.0824** | **0.0207** | **645.7227** |

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

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio-CO2 | Total CO2 | CH4 | N20 | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Percent Reduction | 0.00 | 0.00 | 0.00 | 0.00 | 16.46 | 0.00 | 13.59 | 23.22 | 0.00 | 14.30 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

| Quarter | Start Date | End Date | Maximum Unmitigated ROG + NOX (tons/quarter) | Maximum Mitigated ROG + NOX (tons/quarter) |
|---|---|---|---|---|
| 1 | 4-1-2022 | 6-30-2022 | 1.1152 | 1.1152 |
| 2 | 7-1-2022 | 9-30-2022 | 0.7374 | 0.7374 |
| 3 | 10-1-2022 | 12-31-2022 | 0.7407 | 0.7407 |
| 4 | 1-1-2023 | 3-31-2023 | 0.6518 | 0.6518 |
| 5 | 4-1-2023 | 6-30-2023 | 1.6366 | 1.6366 |
| 6 | 7-1-2023 | 9-30-2023 | 0.9821 | 0.9821 |
| | | Highest | 1.6366 | 1.6366 |

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

## 2.2 Overall Operational

**Unmitigated Operational**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Area | 1.3898 | 0.0390 | 3.3467 | 1.8000e-004 | | 0.0186 | 0.0186 | | 0.0186 | 0.0186 | 0.0000 | 5.9470 | 5.9470 | 5.2800e-003 | 1.0000e-005 | 6.0816 |
| Energy | 0.0264 | 0.2258 | 0.0961 | 1.4400e-003 | | 0.0183 | 0.0183 | | 0.0183 | 0.0183 | 0.0000 | 509.8450 | 509.8450 | 0.0260 | 7.3400e-003 | 512.6801 |
| Mobile | 1.2047 | 1.9868 | 12.5815 | 0.0296 | 3.0523 | 0.0241 | 3.0765 | 0.8155 | 0.0226 | 0.8381 | 0.0000 | 2,766.6199 | 2,766.6199 | 0.1430 | 0.1374 | 2,811.1477 |
| Waste | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 30.2538 | 0.0000 | 30.2538 | 1.7880 | 0.0000 | 74.9524 |
| Water | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 6.6972 | 74.9690 | 81.6662 | 0.6942 | 0.0170 | 104.0898 |
| **Total** | **2.6209** | **2.2516** | **16.0243** | **0.0313** | **3.0523** | **0.0609** | **3.1133** | **0.8155** | **0.0594** | **0.8749** | **36.9510** | **3,357.3809** | **3,394.3318** | **2.6564** | **0.1618** | **3,508.9517** |

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

## 2.2 Overall Operational

**Mitigated Operational**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Area | 1.3898 | 0.0390 | 3.3467 | 1.8000e-004 | | 0.0186 | 0.0186 | | 0.0186 | 0.0186 | 0.0000 | 5.9470 | 5.9470 | 5.2800e-003 | 1.0000e-005 | 6.0816 |
| Energy | 0.0253 | 0.2163 | 0.0921 | 1.3800e-003 | | 0.0175 | 0.0175 | | 0.0175 | 0.0175 | 0.0000 | 498.0848 | 498.0848 | 0.0257 | 7.1300e-003 | 500.8507 |
| Mobile | 1.1990 | 1.9708 | 12.4792 | 0.0294 | 3.0218 | 0.0239 | 3.0457 | 0.8073 | 0.0224 | 0.8297 | 0.0000 | 2,739.6762 | 2,739.6762 | 0.1420 | 0.1363 | 2,783.8475 |
| Waste | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 15.1269 | 0.0000 | 15.1269 | 0.8940 | 0.0000 | 37.4762 |
| Water | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 5.3578 | 63.6200 | 68.9778 | 0.5557 | 0.0136 | 86.9354 |
| **Total** | **2.6141** | **2.2261** | **15.9180** | **0.0309** | **3.0218** | **0.0599** | **3.0817** | **0.8073** | **0.0584** | **0.8658** | **20.4847** | **3,307.3281** | **3,327.8127** | **1.6227** | **0.1571** | **3,415.1914** |

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio-CO2 | Total CO2 | CH4 | N20 | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Percent Reduction** | **0.26** | **1.13** | **0.66** | **1.12** | **1.00** | **1.62** | **1.01** | **1.00** | **1.65** | **1.04** | **44.56** | **1.49** | **1.96** | **38.91** | **2.91** | **2.67** |

## 3.0 Construction Detail

**Construction Phase**

| Phase Number | Phase Name | Phase Type | Start Date | End Date | Num Days Week | Num Days | Phase Description |
|---|---|---|---|---|---|---|---|
| 1 | Site Preparation | Site Preparation | 4/29/2022 | 5/12/2022 | 5 | 10 | |
| 2 | Grading | Grading | 5/13/2022 | 6/23/2022 | 5 | 30 | |
| 3 | Building Construction | Building Construction | 6/24/2022 | 8/17/2023 | 5 | 300 | |

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

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 4 | Paving | Paving | 4/18/2023 | 8/17/2023 | 5 | 88 | |
| 5 | Architectural Coating | Architectural Coating | 4/18/2023 | 8/17/2023 | 5 | 88 | |

**Acres of Grading (Site Preparation Phase): 15**

**Acres of Grading (Grading Phase): 90**

**Acres of Paving: 6.93**

**Residential Indoor: 656,100; Residential Outdoor: 218,700; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 12,606 (Architectural Coating – sqft)**

## OffRoad Equipment

| Phase Name | Offroad Equipment Type | Amount | Usage Hours | Horse Power | Load Factor |
|---|---|---|---|---|---|
| Site Preparation | Crawler Tractors | 4 | 8.00 | 212 | 0.43 |
| Site Preparation | Rubber Tired Dozers | 3 | 8.00 | 247 | 0.40 |
| Grading | Crawler Tractors | 2 | 8.00 | 212 | 0.43 |
| Grading | Excavators | 2 | 8.00 | 158 | 0.38 |
| Grading | Graders | 1 | 8.00 | 187 | 0.41 |
| Grading | Rubber Tired Dozers | 1 | 8.00 | 247 | 0.40 |
| Grading | Scrapers | 2 | 8.00 | 367 | 0.48 |
| Building Construction | Cranes | 1 | 7.00 | 231 | 0.29 |
| Building Construction | Forklifts | 3 | 8.00 | 89 | 0.20 |
| Building Construction | Generator Sets | 1 | 8.00 | 84 | 0.74 |
| Building Construction | Tractors/Loaders/Backhoes | 3 | 7.00 | 97 | 0.37 |
| Building Construction | Welders | 1 | 8.00 | 46 | 0.45 |
| Paving | Pavers | 2 | 8.00 | 130 | 0.42 |
| Paving | Paving Equipment | 2 | 8.00 | 132 | 0.36 |
| Paving | Rollers | 2 | 8.00 | 80 | 0.38 |
| Architectural Coating | Air Compressors | 1 | 6.00 | 78 | 0.48 |

## Trips and VMT

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

| Phase Name | Offroad Equipment Count | Worker Trip Number | Vendor Trip Number | Hauling Trip Number | Worker Trip Length | Vendor Trip Length | Hauling Trip Length | Worker Vehicle Class | Vendor Vehicle Class | Hauling Vehicle Class |
|---|---|---|---|---|---|---|---|---|---|---|
| Site Preparation | 7 | 18.00 | 6.00 | 0.00 | 14.70 | 6.90 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Grading | 8 | 20.00 | 6.00 | 0.00 | 14.70 | 6.90 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Building Construction | 9 | 322.00 | 69.00 | 0.00 | 14.70 | 6.90 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Paving | 6 | 15.00 | 0.00 | 0.00 | 14.70 | 6.90 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Architectural Coating | 1 | 64.00 | 0.00 | 0.00 | 14.70 | 6.90 | 20.00 | LD_Mix | HDT_Mix | HHDT |

## 3.1 Mitigation Measures Construction

Water Exposed Area

## 3.2 Site Preparation - 2022

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Fugitive Dust | | | | | 0.0983 | 0.0000 | 0.0983 | 0.0505 | 0.0000 | 0.0505 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.0224 | 0.2521 | 0.1000 | 2.8000e-004 | | 0.0108 | 0.0108 | | 9.9300e-003 | 9.9300e-003 | 0.0000 | 25.0258 | 25.0258 | 8.0900e-003 | 0.0000 | 25.2281 |
| **Total** | **0.0224** | **0.2521** | **0.1000** | **2.8000e-004** | **0.0983** | **0.0108** | **0.1091** | **0.0505** | **9.9300e-003** | **0.0604** | **0.0000** | **25.0258** | **25.0258** | **8.0900e-003** | **0.0000** | **25.2281** |

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

## 3.2 Site Preparation - 2022

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 5.0000e-005 | 1.3300e-003 | 4.5000e-004 | 1.0000e-005 | 1.9000e-004 | 2.0000e-005 | 2.1000e-004 | 5.0000e-005 | 2.0000e-005 | 7.0000e-005 | 0.0000 | 0.5254 | 0.5254 | 1.0000e-005 | 8.0000e-005 | 0.5487 |
| Worker | 3.1000e-004 | 2.4000e-004 | 3.0700e-003 | 1.0000e-005 | 9.9000e-004 | 1.0000e-005 | 9.9000e-004 | 2.6000e-004 | 0.0000 | 2.7000e-004 | 0.0000 | 0.7822 | 0.7822 | 2.0000e-005 | 2.0000e-005 | 0.7892 |
| **Total** | **3.6000e-004** | **1.5700e-003** | **3.5200e-003** | **2.0000e-005** | **1.1800e-003** | **3.0000e-005** | **1.2000e-003** | **3.1000e-004** | **2.0000e-005** | **3.4000e-004** | **0.0000** | **1.3076** | **1.3076** | **3.0000e-005** | **1.0000e-004** | **1.3379** |

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Fugitive Dust | | | | | 0.0383 | 0.0000 | 0.0383 | 0.0197 | 0.0000 | 0.0197 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.0224 | 0.2521 | 0.1000 | 2.8000e-004 | | 0.0108 | 0.0108 | | 9.9300e-003 | 9.9300e-003 | 0.0000 | 25.0257 | 25.0257 | 8.0900e-003 | 0.0000 | 25.2281 |
| **Total** | **0.0224** | **0.2521** | **0.1000** | **2.8000e-004** | **0.0383** | **0.0108** | **0.0491** | **0.0197** | **9.9300e-003** | **0.0296** | **0.0000** | **25.0257** | **25.0257** | **8.0900e-003** | **0.0000** | **25.2281** |

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

## 3.2 Site Preparation - 2022

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 5.0000e-005 | 1.3300e-003 | 4.5000e-004 | 1.0000e-005 | 1.9000e-004 | 2.0000e-005 | 2.1000e-004 | 5.0000e-005 | 2.0000e-005 | 7.0000e-005 | 0.0000 | 0.5254 | 0.5254 | 1.0000e-005 | 8.0000e-005 | 0.5487 |
| Worker | 3.1000e-004 | 2.4000e-004 | 3.0700e-003 | 1.0000e-005 | 9.9000e-004 | 1.0000e-005 | 9.9000e-004 | 2.6000e-004 | 0.0000 | 2.7000e-004 | 0.0000 | 0.7822 | 0.7822 | 2.0000e-005 | 2.0000e-005 | 0.7892 |
| **Total** | **3.6000e-004** | **1.5700e-003** | **3.5200e-003** | **2.0000e-005** | **1.1800e-003** | **3.0000e-005** | **1.2000e-003** | **3.1000e-004** | **2.0000e-005** | **3.4000e-004** | **0.0000** | **1.3076** | **1.3076** | **3.0000e-005** | **1.0000e-004** | **1.3379** |

## 3.3 Grading - 2022

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Fugitive Dust | | | | | 0.1381 | 0.0000 | 0.1381 | 0.0548 | 0.0000 | 0.0548 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.0642 | 0.7126 | 0.4379 | 1.0700e-003 | | 0.0286 | 0.0286 | | 0.0263 | 0.0263 | 0.0000 | 94.2610 | 94.2610 | 0.0305 | 0.0000 | 95.0231 |
| **Total** | **0.0642** | **0.7126** | **0.4379** | **1.0700e-003** | **0.1381** | **0.0286** | **0.1667** | **0.0548** | **0.0263** | **0.0811** | **0.0000** | **94.2610** | **94.2610** | **0.0305** | **0.0000** | **95.0231** |

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

## 3.3 Grading - 2022

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 1.4000e-004 | 3.9900e-003 | 1.3500e-003 | 2.0000e-005 | 5.7000e-004 | 5.0000e-005 | 6.2000e-004 | 1.6000e-004 | 5.0000e-005 | 2.2000e-004 | 0.0000 | 1.5761 | 1.5761 | 2.0000e-005 | 2.3000e-004 | 1.6462 |
| Worker | 1.0500e-003 | 8.2000e-004 | 0.0102 | 3.0000e-005 | 3.3000e-003 | 2.0000e-005 | 3.3100e-003 | 8.8000e-004 | 2.0000e-005 | 8.9000e-004 | 0.0000 | 2.6074 | 2.6074 | 7.0000e-005 | 7.0000e-005 | 2.6306 |
| **Total** | **1.1900e-003** | **4.8100e-003** | **0.0116** | **5.0000e-005** | **3.8700e-003** | **7.0000e-005** | **3.9300e-003** | **1.0400e-003** | **7.0000e-005** | **1.1100e-003** | **0.0000** | **4.1834** | **4.1834** | **9.0000e-005** | **3.0000e-004** | **4.2768** |

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Fugitive Dust | | | | | 0.0538 | 0.0000 | 0.0538 | 0.0214 | 0.0000 | 0.0214 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.0642 | 0.7126 | 0.4379 | 1.0700e-003 | | 0.0286 | 0.0286 | | 0.0263 | 0.0263 | 0.0000 | 94.2609 | 94.2609 | 0.0305 | 0.0000 | 95.0230 |
| **Total** | **0.0642** | **0.7126** | **0.4379** | **1.0700e-003** | **0.0538** | **0.0286** | **0.0825** | **0.0214** | **0.0263** | **0.0477** | **0.0000** | **94.2609** | **94.2609** | **0.0305** | **0.0000** | **95.0230** |

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

## 3.3 Grading - 2022

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 1.4000e-004 | 3.9900e-003 | 1.3500e-003 | 2.0000e-005 | 5.7000e-004 | 5.0000e-005 | 6.2000e-004 | 1.6000e-004 | 5.0000e-005 | 2.2000e-004 | 0.0000 | 1.5761 | 1.5761 | 2.0000e-005 | 2.3000e-004 | 1.6462 |
| Worker | 1.0500e-003 | 8.2000e-004 | 0.0102 | 3.0000e-005 | 3.3000e-003 | 2.0000e-005 | 3.3100e-003 | 8.8000e-004 | 2.0000e-005 | 8.9000e-004 | 0.0000 | 2.6074 | 2.6074 | 7.0000e-005 | 7.0000e-005 | 2.6306 |
| **Total** | **1.1900e-003** | **4.8100e-003** | **0.0116** | **5.0000e-005** | **3.8700e-003** | **7.0000e-005** | **3.9300e-003** | **1.0400e-003** | **7.0000e-005** | **1.1100e-003** | **0.0000** | **4.1834** | **4.1834** | **9.0000e-005** | **3.0000e-004** | **4.2768** |

## 3.4 Building Construction - 2022

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.1160 | 1.0619 | 1.1127 | 1.8300e-003 | | 0.0550 | 0.0550 | | 0.0518 | 0.0518 | 0.0000 | 157.5732 | 157.5732 | 0.0378 | 0.0000 | 158.5169 |
| **Total** | **0.1160** | **1.0619** | **1.1127** | **1.8300e-003** | | **0.0550** | **0.0550** | | **0.0518** | **0.0518** | **0.0000** | **157.5732** | **157.5732** | **0.0378** | **0.0000** | **158.5169** |

Whitewood Apartment Residential - Riverside-South Coast County, Annual

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

## 3.4 Building Construction - 2022

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 7.4600e-003 | 0.2083 | 0.0702 | 8.5000e-004 | 0.0296 | 2.8600e-003 | 0.0325 | 8.5500e-003 | 2.7400e-003 | 0.0113 | 0.0000 | 82.1651 | 82.1651 | 8.6000e-004 | 0.0122 | 85.8201 |
| Worker | 0.0765 | 0.0596 | 0.7459 | 2.0600e-003 | 0.2407 | 1.2200e-003 | 0.2419 | 0.0639 | 1.1200e-003 | 0.0650 | 0.0000 | 190.3021 | 190.3021 | 5.0700e-003 | 5.2700e-003 | 191.9988 |
| **Total** | **0.0840** | **0.2679** | **0.8161** | **2.9100e-003** | **0.2703** | **4.0800e-003** | **0.2744** | **0.0725** | **3.8600e-003** | **0.0763** | **0.0000** | **272.4672** | **272.4672** | **5.9300e-003** | **0.0175** | **277.8189** |

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.1160 | 1.0619 | 1.1127 | 1.8300e-003 | | 0.0550 | 0.0550 | | 0.0518 | 0.0518 | 0.0000 | 157.5730 | 157.5730 | 0.0378 | 0.0000 | 158.5167 |
| **Total** | **0.1160** | **1.0619** | **1.1127** | **1.8300e-003** | | **0.0550** | **0.0550** | | **0.0518** | **0.0518** | **0.0000** | **157.5730** | **157.5730** | **0.0378** | **0.0000** | **158.5167** |

Whitewood Apartment Residential - Riverside-South Coast County, Annual

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

## 3.4 Building Construction - 2022

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 7.4600e-003 | 0.2083 | 0.0702 | 8.5000e-004 | 0.0296 | 2.8600e-003 | 0.0325 | 8.5500e-003 | 2.7400e-003 | 0.0113 | 0.0000 | 82.1651 | 82.1651 | 8.6000e-004 | 0.0122 | 85.8201 |
| Worker | 0.0765 | 0.0596 | 0.7459 | 2.0600e-003 | 0.2407 | 1.2200e-003 | 0.2419 | 0.0639 | 1.1200e-003 | 0.0650 | 0.0000 | 190.3021 | 190.3021 | 5.0700e-003 | 5.2700e-003 | 191.9988 |
| **Total** | **0.0840** | **0.2679** | **0.8161** | **2.9100e-003** | **0.2703** | **4.0800e-003** | **0.2744** | **0.0725** | **3.8600e-003** | **0.0763** | **0.0000** | **272.4672** | **272.4672** | **5.9300e-003** | **0.0175** | **277.8189** |

## 3.4 Building Construction - 2023

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.1290 | 1.1796 | 1.3320 | 2.2100e-003 | | 0.0574 | 0.0574 | | 0.0540 | 0.0540 | 0.0000 | 190.0799 | 190.0799 | 0.0452 | 0.0000 | 191.2103 |
| **Total** | **0.1290** | **1.1796** | **1.3320** | **2.2100e-003** | | **0.0574** | **0.0574** | | **0.0540** | **0.0540** | **0.0000** | **190.0799** | **190.0799** | **0.0452** | **0.0000** | **191.2103** |

Whitewood Apartment Residential - Riverside-South Coast County, Annual

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

## 3.4 Building Construction - 2023

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 6.1300e-003 | 0.1940 | 0.0773 | 9.9000e-004 | 0.0357 | 1.6100e-003 | 0.0374 | 0.0103 | 1.5400e-003 | 0.0119 | 0.0000 | 95.1961 | 95.1961 | 9.6000e-004 | 0.0141 | 99.4149 |
| Worker | 0.0857 | 0.0635 | 0.8289 | 2.4100e-003 | 0.2902 | 1.3800e-003 | 0.2916 | 0.0771 | 1.2700e-003 | 0.0783 | 0.0000 | 223.4654 | 223.4654 | 5.5100e-003 | 5.8600e-003 | 225.3495 |
| **Total** | **0.0918** | **0.2575** | **0.9062** | **3.4000e-003** | **0.3260** | **2.9900e-003** | **0.3290** | **0.0874** | **2.8100e-003** | **0.0902** | **0.0000** | **318.6615** | **318.6615** | **6.4700e-003** | **0.0199** | **324.7644** |

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.1290 | 1.1796 | 1.3320 | 2.2100e-003 | | 0.0574 | 0.0574 | | 0.0540 | 0.0540 | 0.0000 | 190.0797 | 190.0797 | 0.0452 | 0.0000 | 191.2101 |
| **Total** | **0.1290** | **1.1796** | **1.3320** | **2.2100e-003** | | **0.0574** | **0.0574** | | **0.0540** | **0.0540** | **0.0000** | **190.0797** | **190.0797** | **0.0452** | **0.0000** | **191.2101** |

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

## 3.4 Building Construction - 2023

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 6.1300e-003 | 0.1940 | 0.0773 | 9.9000e-004 | 0.0357 | 1.6100e-003 | 0.0374 | 0.0103 | 1.5400e-003 | 0.0119 | 0.0000 | 95.1961 | 95.1961 | 9.6000e-004 | 0.0141 | 99.4149 |
| Worker | 0.0857 | 0.0635 | 0.8289 | 2.4100e-003 | 0.2902 | 1.3800e-003 | 0.2916 | 0.0771 | 1.2700e-003 | 0.0783 | 0.0000 | 223.4654 | 223.4654 | 5.5100e-003 | 5.8600e-003 | 225.3495 |
| **Total** | **0.0918** | **0.2575** | **0.9062** | **3.4000e-003** | **0.3260** | **2.9900e-003** | **0.3290** | **0.0874** | **2.8100e-003** | **0.0902** | **0.0000** | **318.6615** | **318.6615** | **6.4700e-003** | **0.0199** | **324.7644** |

## 3.5 Paving - 2023

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.0454 | 0.4484 | 0.6417 | 1.0000e-003 | | 0.0225 | 0.0225 | | 0.0207 | 0.0207 | 0.0000 | 88.1182 | 88.1182 | 0.0285 | 0.0000 | 88.8307 |
| Paving | 9.0800e-003 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | **0.0545** | **0.4484** | **0.6417** | **1.0000e-003** | | **0.0225** | **0.0225** | | **0.0207** | **0.0207** | **0.0000** | **88.1182** | **88.1182** | **0.0285** | **0.0000** | **88.8307** |

Whitewood Apartment Residential - Riverside-South Coast County, Annual

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

## 3.5 Paving - 2023

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 2.1400e-003 | 1.5900e-003 | 0.0207 | 6.0000e-005 | 7.2500e-003 | 3.0000e-005 | 7.2900e-003 | 1.9300e-003 | 3.0000e-005 | 1.9600e-003 | 0.0000 | 5.5858 | 5.5858 | 1.4000e-004 | 1.5000e-004 | 5.6329 |
| **Total** | **2.1400e-003** | **1.5900e-003** | **0.0207** | **6.0000e-005** | **7.2500e-003** | **3.0000e-005** | **7.2900e-003** | **1.9300e-003** | **3.0000e-005** | **1.9600e-003** | **0.0000** | **5.5858** | **5.5858** | **1.4000e-004** | **1.5000e-004** | **5.6329** |

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.0454 | 0.4484 | 0.6417 | 1.0000e-003 | | 0.0225 | 0.0225 | | 0.0207 | 0.0207 | 0.0000 | 88.1181 | 88.1181 | 0.0285 | 0.0000 | 88.8306 |
| Paving | 9.0800e-003 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | **0.0545** | **0.4484** | **0.6417** | **1.0000e-003** | | **0.0225** | **0.0225** | | **0.0207** | **0.0207** | **0.0000** | **88.1181** | **88.1181** | **0.0285** | **0.0000** | **88.8306** |

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

## 3.5 Paving - 2023

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 2.1400e-003 | 1.5900e-003 | 0.0207 | 6.0000e-005 | 7.2500e-003 | 3.0000e-005 | 7.2900e-003 | 1.9300e-003 | 3.0000e-005 | 1.9600e-003 | 0.0000 | 5.5858 | 5.5858 | 1.4000e-004 | 1.5000e-004 | 5.6329 |
| **Total** | **2.1400e-003** | **1.5900e-003** | **0.0207** | **6.0000e-005** | **7.2500e-003** | **3.0000e-005** | **7.2900e-003** | **1.9300e-003** | **3.0000e-005** | **1.9600e-003** | **0.0000** | **5.5858** | **5.5858** | **1.4000e-004** | **1.5000e-004** | **5.6329** |

## 3.6 Architectural Coating - 2023

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Archit. Coating | 1.0429 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 8.4300e-003 | 0.0573 | 0.0797 | 1.3000e-004 | | 3.1200e-003 | 3.1200e-003 | | 3.1200e-003 | 3.1200e-003 | 0.0000 | 11.2343 | 11.2343 | 6.7000e-004 | 0.0000 | 11.2511 |
| **Total** | **1.0513** | **0.0573** | **0.0797** | **1.3000e-004** | | **3.1200e-003** | **3.1200e-003** | | **3.1200e-003** | **3.1200e-003** | **0.0000** | **11.2343** | **11.2343** | **6.7000e-004** | **0.0000** | **11.2511** |

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

## 3.6 Architectural Coating - 2023

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 9.1400e-003 | 6.7700e-003 | 0.0884 | 2.6000e-004 | 0.0310 | 1.5000e-004 | 0.0311 | 8.2200e-003 | 1.4000e-004 | 8.3500e-003 | 0.0000 | 23.8327 | 23.8327 | 5.9000e-004 | 6.2000e-004 | 24.0336 |
| **Total** | **9.1400e-003** | **6.7700e-003** | **0.0884** | **2.6000e-004** | **0.0310** | **1.5000e-004** | **0.0311** | **8.2200e-003** | **1.4000e-004** | **8.3500e-003** | **0.0000** | **23.8327** | **23.8327** | **5.9000e-004** | **6.2000e-004** | **24.0336** |

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Archit. Coating | 1.0429 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 8.4300e-003 | 0.0573 | 0.0797 | 1.3000e-004 | | 3.1200e-003 | 3.1200e-003 | | 3.1200e-003 | 3.1200e-003 | 0.0000 | 11.2343 | 11.2343 | 6.7000e-004 | 0.0000 | 11.2511 |
| **Total** | **1.0513** | **0.0573** | **0.0797** | **1.3000e-004** | | **3.1200e-003** | **3.1200e-003** | | **3.1200e-003** | **3.1200e-003** | **0.0000** | **11.2343** | **11.2343** | **6.7000e-004** | **0.0000** | **11.2511** |

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

### 3.6 Architectural Coating - 2023

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 9.1400e-003 | 6.7700e-003 | 0.0884 | 2.6000e-004 | 0.0310 | 1.5000e-004 | 0.0311 | 8.2200e-003 | 1.4000e-004 | 8.3500e-003 | 0.0000 | 23.8327 | 23.8327 | 5.9000e-004 | 6.2000e-004 | 24.0336 |
| **Total** | **9.1400e-003** | **6.7700e-003** | **0.0884** | **2.6000e-004** | **0.0310** | **1.5000e-004** | **0.0311** | **8.2200e-003** | **1.4000e-004** | **8.3500e-003** | **0.0000** | **23.8327** | **23.8327** | **5.9000e-004** | **6.2000e-004** | **24.0336** |

## 4.0 Operational Detail - Mobile

### 4.1 Mitigation Measures Mobile

Improve Pedestrian Network

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

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Mitigated | 1.1990 | 1.9708 | 12.4792 | 0.0294 | 3.0218 | 0.0239 | 3.0457 | 0.8073 | 0.0224 | 0.8297 | 0.0000 | 2,739.6762 | 2,739.6762 | 0.1420 | 0.1363 | 2,783.8475 |
| Unmitigated | 1.2047 | 1.9868 | 12.5815 | 0.0296 | 3.0523 | 0.0241 | 3.0765 | 0.8155 | 0.0226 | 0.8381 | 0.0000 | 2,766.6199 | 2,766.6199 | 0.1430 | 0.1374 | 2,811.1477 |

## 4.2 Trip Summary Information

| | Average Daily Trip Rate | | | Unmitigated | Mitigated |
|---|---|---|---|---|---|
| Land Use | Weekday | Saturday | Sunday | Annual VMT | Annual VMT |
| Apartments Low Rise | 2,371.68 | 2,637.36 | 2034.72 | 8,069,594 | 7,988,899 |
| Other Asphalt Surfaces | 0.00 | 0.00 | 0.00 | | |
| Parking Lot | 0.00 | 0.00 | 0.00 | | |
| Total | 2,371.68 | 2,637.36 | 2,034.72 | 8,069,594 | 7,988,899 |

## 4.3 Trip Type Information

| | Miles | | | Trip % | | | Trip Purpose % | | |
|---|---|---|---|---|---|---|---|---|---|
| Land Use | H-W or C-W | H-S or C-C | H-O or C-NW | H-W or C-W | H-S or C-C | H-O or C-NW | Primary | Diverted | Pass-by |
| Apartments Low Rise | 14.70 | 5.90 | 8.70 | 40.20 | 19.20 | 40.60 | 86 | 11 | 3 |
| Other Asphalt Surfaces | 16.60 | 8.40 | 6.90 | 0.00 | 0.00 | 0.00 | 0 | 0 | 0 |
| Parking Lot | 16.60 | 8.40 | 6.90 | 0.00 | 0.00 | 0.00 | 0 | 0 | 0 |

## 4.4 Fleet Mix

| Land Use | LDA | LDT1 | LDT2 | MDV | LHD1 | LHD2 | MHD | HHD | OBUS | UBUS | MCY | SBUS | MH |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Apartments Low Rise | 0.534849 | 0.056022 | 0.172639 | 0.141007 | 0.026597 | 0.007310 | 0.011327 | 0.018693 | 0.000616 | 0.000315 | 0.024057 | 0.001100 | 0.005468 |
| Other Asphalt Surfaces | 0.534849 | 0.056022 | 0.172639 | 0.141007 | 0.026597 | 0.007310 | 0.011327 | 0.018693 | 0.000616 | 0.000315 | 0.024057 | 0.001100 | 0.005468 |

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

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Parking Lot | 0.534849 | 0.056022 | 0.172639 | 0.141007 | 0.026597 | 0.007310 | 0.011327 | 0.018693 | 0.000616 | 0.000315 | 0.024057 | 0.001100 | 0.005468 |

## 5.0 Energy Detail

Historical Energy Use: N

### 5.1 Mitigation Measures Energy

Exceed Title 24

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Electricity Mitigated | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 247.5684 | 247.5684 | 0.0209 | 2.5300e-003 | 248.8456 |
| Electricity Unmitigated | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 248.3199 | 248.3199 | 0.0210 | 2.5400e-003 | 249.6010 |
| NaturalGas Mitigated | 0.0253 | 0.2163 | 0.0921 | 1.3800e-003 | | 0.0175 | 0.0175 | | 0.0175 | 0.0175 | 0.0000 | 250.5164 | 250.5164 | 4.8000e-003 | 4.5900e-003 | 252.0051 |
| NaturalGas Unmitigated | 0.0264 | 0.2258 | 0.0961 | 1.4400e-003 | | 0.0183 | 0.0183 | | 0.0183 | 0.0183 | 0.0000 | 261.5251 | 261.5251 | 5.0100e-003 | 4.7900e-003 | 263.0792 |

Whitewood Apartment Residential - Riverside-South Coast County, Annual

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

## 5.2 Energy by Land Use - NaturalGas

**Unmitigated**

| | NaturalGas Use | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Land Use | kBTU/yr | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Apartments Low Rise | 4.90079e+006 | 0.0264 | 0.2258 | 0.0961 | 1.4400e-003 | | 0.0183 | 0.0183 | | 0.0183 | 0.0183 | 0.0000 | 261.5251 | 261.5251 | 5.0100e-003 | 4.7900e-003 | 263.0792 |
| Other Asphalt Surfaces | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Parking Lot | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | | **0.0264** | **0.2258** | **0.0961** | **1.4400e-003** | | **0.0183** | **0.0183** | | **0.0183** | **0.0183** | **0.0000** | **261.5251** | **261.5251** | **5.0100e-003** | **4.7900e-003** | **263.0792** |

Whitewood Apartment Residential - Riverside-South Coast County, Annual

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

## 5.2 Energy by Land Use - NaturalGas

**Mitigated**

| | NaturalGas Use | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Land Use | kBTU/yr | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Apartments Low Rise | 4.6945e+006 | 0.0253 | 0.2163 | 0.0921 | 1.3800e-003 | | 0.0175 | 0.0175 | | 0.0175 | 0.0175 | 0.0000 | 250.5164 | 250.5164 | 4.8000e-003 | 4.5900e-003 | 252.0051 |
| Other Asphalt Surfaces | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Parking Lot | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | | **0.0253** | **0.2163** | **0.0921** | **1.3800e-003** | | **0.0175** | **0.0175** | | **0.0175** | **0.0175** | **0.0000** | **250.5164** | **250.5164** | **4.8000e-003** | **4.5900e-003** | **252.0051** |

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

## 5.3 Energy by Land Use - Electricity

**Unmitigated**

| | Electricity Use | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | kWh/yr | MT/yr | | | |
| Apartments Low Rise | 1.35106e+006 | 239.6052 | 0.0202 | 2.4500e-003 | 240.8412 |
| Other Asphalt Surfaces | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Parking Lot | 49140 | 8.7148 | 7.4000e-004 | 9.0000e-005 | 8.7597 |
| **Total** | | **248.3199** | **0.0210** | **2.5400e-003** | **249.6010** |

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

## 5.3 Energy by Land Use - Electricity

**Mitigated**

| | Electricity Use | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | kWh/yr | MT/yr | | | |
| Apartments Low Rise | 1.34683e+006 | 238.8537 | 0.0202 | 2.4400e-003 | 240.0859 |
| Other Asphalt Surfaces | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Parking Lot | 49140 | 8.7148 | 7.4000e-004 | 9.0000e-005 | 8.7597 |
| **Total** | | **247.5684** | **0.0209** | **2.5300e-003** | **248.8456** |

## 6.0 Area Detail

## 6.1 Mitigation Measures Area

Whitewood Apartment Residential - Riverside-South Coast County, Annual

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

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Mitigated | 1.3898 | 0.0390 | 3.3467 | 1.8000e-004 | | 0.0186 | 0.0186 | | 0.0186 | 0.0186 | 0.0000 | 5.9470 | 5.9470 | 5.2800e-003 | 1.0000e-005 | 6.0816 |
| Unmitigated | 1.3898 | 0.0390 | 3.3467 | 1.8000e-004 | | 0.0186 | 0.0186 | | 0.0186 | 0.0186 | 0.0000 | 5.9470 | 5.9470 | 5.2800e-003 | 1.0000e-005 | 6.0816 |

## 6.2 Area by SubCategory

**Unmitigated**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SubCategory | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Architectural Coating | 0.1043 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Consumer Products | 1.1844 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Hearth | 5.0000e-005 | 4.1000e-004 | 1.8000e-004 | 0.0000 | | 3.0000e-005 | 3.0000e-005 | | 3.0000e-005 | 3.0000e-005 | 0.0000 | 0.4803 | 0.4803 | 1.0000e-005 | 1.0000e-005 | 0.4831 |
| Landscaping | 0.1011 | 0.0386 | 3.3466 | 1.8000e-004 | | 0.0185 | 0.0185 | | 0.0185 | 0.0185 | 0.0000 | 5.4667 | 5.4667 | 5.2700e-003 | 0.0000 | 5.5985 |
| **Total** | **1.3898** | **0.0390** | **3.3467** | **1.8000e-004** | | **0.0185** | **0.0185** | | **0.0185** | **0.0185** | **0.0000** | **5.9470** | **5.9470** | **5.2800e-003** | **1.0000e-005** | **6.0816** |

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

## 6.2 Area by SubCategory

**Mitigated**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SubCategory | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Architectural Coating | 0.1043 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Consumer Products | 1.1844 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Hearth | 5.0000e-005 | 4.1000e-004 | 1.8000e-004 | 0.0000 | | 3.0000e-005 | 3.0000e-005 | | 3.0000e-005 | 3.0000e-005 | 0.0000 | 0.4803 | 0.4803 | 1.0000e-005 | 1.0000e-005 | 0.4831 |
| Landscaping | 0.1011 | 0.0386 | 3.3466 | 1.8000e-004 | | 0.0185 | 0.0185 | | 0.0185 | 0.0185 | 0.0000 | 5.4667 | 5.4667 | 5.2700e-003 | 0.0000 | 5.5985 |
| **Total** | **1.3898** | **0.0390** | **3.3467** | **1.8000e-004** | | **0.0185** | **0.0185** | | **0.0185** | **0.0185** | **0.0000** | **5.9470** | **5.9470** | **5.2800e-003** | **1.0000e-005** | **6.0816** |

# 7.0 Water Detail

## 7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

Use Water Efficient Irrigation System

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

| | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|
| Category | MT/yr | | | |
| Mitigated | 68.9778 | 0.5557 | 0.0136 | 86.9354 |
| Unmitigated | 81.6662 | 0.6942 | 0.0170 | 104.0898 |

## 7.2 Water by Land Use

**Unmitigated**

| | Indoor/Outdoor Use | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | Mgal | MT/yr | | | |
| Apartments Low Rise | 21.1099 / 13.3084 | 81.6662 | 0.6942 | 0.0170 | 104.0898 |
| Other Asphalt Surfaces | 0 / 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Parking Lot | 0 / 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | | **81.6662** | **0.6942** | **0.0170** | **104.0898** |

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

### 7.2 Water by Land Use

**Mitigated**

| | Indoor/Outdoor Use | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | Mgal | MT/yr | | | |
| Apartments Low Rise | 16.8879 / 12.4966 | 68.9778 | 0.5557 | 0.0136 | 86.9354 |
| Other Asphalt Surfaces | 0 / 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Parking Lot | 0 / 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | | **68.9778** | **0.5557** | **0.0136** | **86.9354** |

## 8.0 Waste Detail

### 8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

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

**Category/Year**

| | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|
| | MT/yr | | | |
| Mitigated | 15.1269 | 0.8940 | 0.0000 | 37.4762 |
| Unmitigated | 30.2538 | 1.7880 | 0.0000 | 74.9524 |

## 8.2 Waste by Land Use

**Unmitigated**

| | Waste Disposed | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | tons | MT/yr | | | |
| Apartments Low Rise | 149.04 | 30.2538 | 1.7880 | 0.0000 | 74.9524 |
| Other Asphalt Surfaces | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Parking Lot | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | | **30.2538** | **1.7880** | **0.0000** | **74.9524** |

Whitewood Apartment Residential - Riverside-South Coast County, Annual

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

## 8.2 Waste by Land Use

**Mitigated**

| | Waste Disposed | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | tons | MT/yr | | | |
| Apartments Low Rise | 74.52 | 15.1269 | 0.8940 | 0.0000 | 37.4762 |
| Other Asphalt Surfaces | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Parking Lot | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | | **15.1269** | **0.8940** | **0.0000** | **37.4762** |

## 9.0 Operational Offroad

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

## 10.0 Stationary Equipment

**Fire Pumps and Emergency Generators**

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

**Boilers**

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

**User Defined Equipment**

| Equipment Type | Number |
|---|---|

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

## 11.0 Vegetation