Appendix A

AIR QUALITY, ENERGY, AND GREENHOUSE GAS EMISSIONS IMPACT ANALYSIS

SAPPHIRE HOTEL & EVENT CENTER PROJECT

CITY OF MURRIETA

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ACRONYMS AND ABBREVIATIONS

AB	Assembly Bill
Air Basin	South Coast Air Basin
AQMP	Air Quality Management Plan
BACT	Best Available Control Technology
BSFC	Brake Specific Fuel Consumption
CAAQS	California Ambient Air Quality Standards
CalEEMod	California Emissions Estimator Model
CalEPA	California Environmental Protection Agency
CAPCOA	California Air Pollution Control Officers Association
CARB	California Air Resources Board
CCAA	California Clean Air Act
CEC	California Energy Commission
CEQA	California Environmental Quality Act
CFCs	chlorofluorocarbons
Cf_4	tetrafluoromethane
C_2F_6	hexafluoroethane
C_2H_6	ethane
CH_4	Methane
City	City of Murrieta
CO	Carbon monoxide
CO_2	Carbon dioxide
CO_2e	Carbon dioxide equivalent
CPUC	California Public Utilities Commission
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
MSAT	Mobile Source Air Toxics
MWh	Megawatt-hour
NAAQS	National Ambient Air Quality Standards
NO_x	Nitrogen oxides
NO_2	Nitrogen dioxide
O_3	Ozone
OPR	Office of Planning and Research
Pb	Lead
Pfc	Perfluorocarbons
PM	Particle matter
PM10	Particles that are less than 10 micrometers in diameter
PM2.5	Particles that are less than 2.5 micrometers in diameter
PPM	Parts per million
PPB	Parts per billion
PPT	Parts per trillion
RTIP	Regional Transportation Improvement Plan
RTP/SCS	Regional Transportation Plan/Sustainable Communities Strategy
SB	Senate Bill
SCAQMD	South Coast Air Quality Management District
SCAG	Southern California Association of Governments
SF_6	Sulfur Hexafluoride
SIP	State Implementation Plan
SO_x	Sulfur oxides
TAC	Toxic air contaminants
UNFCCC	United Nations' Framework Convention on Climate Change
VOC	Volatile organic compounds

1.0 INTRODUCTION

1.1 Purpose of Analysis and Study Objectives

This Air Quality, Energy, and Greenhouse Gas (GHG) Emissions Impact Analysis has been completed to determine the air quality, energy, and GHG emissions impacts associated with the proposed Sapphire Hotel and Event Center 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 GHG emissions regulatory framework;
- A description of the air quality, energy, and GHG emissions thresholds including the California Environmental Quality Act (CEQA) significance thresholds;
- An analysis of the conformity of the proposed project with the South Coast Air Quality Management District (SCAQMD) Air Quality Management Plan (AQMP);
- An analysis of the short-term construction related and long-term operational air quality, energy, and GHG emissions impacts; and
- An analysis of the conformity of the proposed project with all applicable GHG emissions reduction plans and policies.

1.2 Site Location and Study Area

The project site is located in the northern portion of the City of Murrieta (City). The approximately 15.78-acre project site is currently vacant and is bounded by vacant land to the north, Interstate 215 (I-215) and industrial uses to the east, Linnel Lane and commercial retail uses to the south, and McElwain Road and vacant land 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 single-family home located as near as 400 feet to the northwest of the project site. The nearest offsite workers are located as near as 80 feet to the south of the project site at the existing commercial retail center that includes a Target store. The nearest school to the project site is Vista Murrieta High School, which is located as near as 0.5 mile south of the project site.

1.3 Proposed Project Description

The proposed project consists of development of a 120-room hotel with 71,562 square feet of building space and an event center with 15,295 square feet of building space and 254 parking spaces on approximately 6.99-acres of the 15.78-acre project site. The proposed project would also in construction of a 0.63-acre water quality basin in the southeastern portion of the project site and widening and sidewalk improvements to the portions of Linnel Lane and McElwain Road that are adjacent to the project site. The remainder of the project site would be rough graded and would include development of access

roads to the hotel and event center, but would otherwise remain undeveloped. 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;
- 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?

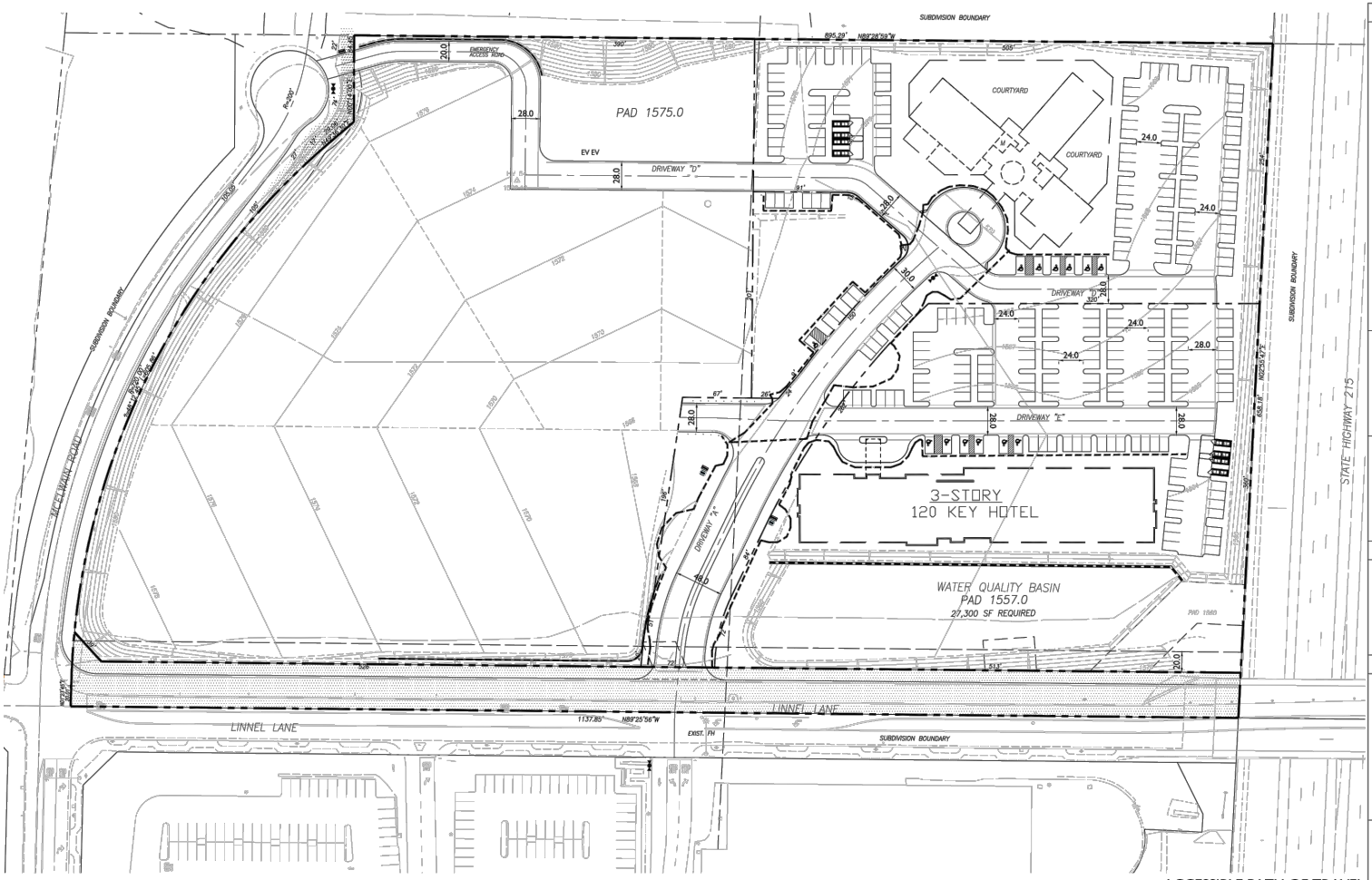
Less than significant impact.

1.5 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.

VISTA ENVIRONMENTAL

Figure 1
Project Local Study Area



PROJECT SUMMARY	
APN	392-280-007
GROSS SITE AREA	15.78 AC
NET SITE AREA	14.62 AC
TOTAL PARKING	254 SPACES
EXISTING ZONING	ORP
PROPOSED ZONING	ORP
ADJACENT ZONING	ORP, COMMERCIAL
LAND USE	HOTEL, AND EVENT CENTER
ADJACENT LAND USE	VACANT, COMMERCIAL

LEGAL DESCRIPTION: A PORTION OF SECTION 34, TOWNSHIP 6 SOUTH, RANGE 3 WEST,SAN BERNARDINO BASE & MERIDIAN

PUBLIC UTILITES	
SEWER	WESTERN MUNICIPAL WATER DISTRICT
WATER	WESTERN MUNICIPAL WATER DISTRICT
TELEPHONE	SOUTHERN CALIFORNIA TELEPHONE
ELECTRIC	SOUTHERN CALIFORNIA EDISON
GAS	SOUTHERN CALIFORNIA GAS COMPANY
CABLE T.V.	TIME WARNER CABLE / FRONTIER COMM.

HOTEL (LOT 4)	
TOTAL KEYS	120 KEYS (71,562 SF)
SITE AREA	3.63 ACRES
FAR	.45
OCCUPANCY	R-1
PARKING PROVIDED	126 SPACES(1:1 KEY+6 EMPLOYEE)

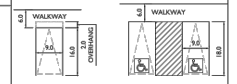
EVENT CENTER (LOT 3)	
TOTAL	15,295 SF
SITE AREA	3.36 ACRES
FAR	.104
OCCUPANCY	A-3
PARKING PROVIDED	128 SPACES (8.4 : 1,000)

LOT COVERAGE

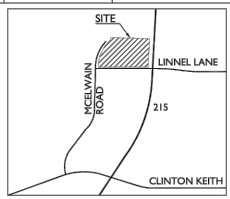
BUILDING	39,145 SF	6%
PARKING	36,810 SF	6%
PAVED	94,870 SF	15%
LANDSCAPE	466,111 SF	73%
TOTAL	636,936 SF	100%

TRASH ENCLOSURES

HOTEL	EVENT
REQUIRED:	REQUIRED:
144 SF RECYCLE	48 SF RECYCLE
144 SF TRASH	48 SF TRASH
PROVIDED:	PROVIDED:
160 SF RECYCLEE	160 SF RECYCLE
160 SF TRASH	160 SF TRASH



TYPICAL PARKING DIMENSIONS
NOT TO SCALE



VICINITY MAP : NOT TO SCALE

N

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, NO_x, CO, SO_x, lead (Pb), 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

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 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 but in the vicinity of ground-level is created by a chemical reaction between NOx and volatile organic compounds (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

Sulfur Oxide (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 Pb 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

Particle 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 O_3 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 O_3 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 toxic air contaminants (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, toxic air contaminants (TACs) are another group of pollutants of concern. TACs is a term that is defined under the California Clean Air Act and consists of the same substances that are defined as Hazardous Air Pollutants (HAPs) in the Federal Clean Air Act. There are over 700 hundred different types of TACs with varying degrees of toxicity. Sources of TACs include industrial processes such as petroleum refining and chrome plating operations, commercial operations such as gasoline stations and dry cleaners, and motor vehicle exhaust. Cars and trucks release at least 40 different toxic air contaminants. The most important of these TACs, in terms of health risk, are diesel particulates, benzene, formaldehyde, 1,3-butadiene, and acetaldehyde. Public exposure to TACs can result from emissions from normal operations as well as from accidental releases. Health effects of TACs include cancer, birth defects, neurological damage, and death.

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

According to *The California Almanac of Emissions and Air Quality 2013 Edition*, the majority of the estimated health risk from TACs can be attributed to relatively few compounds, the most important of which is DPM. DPM is a subset of PM2.5 because the size of diesel particles are typically 2.5 microns and smaller. The identification of DPM as a TAC in 1998 led the 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 greenhouse gases (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 (O_3), water vapor, nitrous oxide (N_2O), and chlorofluorocarbons (CFCs). This phenomenon, known as the Greenhouse Effect, is responsible for maintaining a habitable climate. Anthropogenic (caused or produced by humans) emissions of these greenhouse gases in excess of natural ambient concentrations are responsible for the enhancement of the Greenhouse Effect and have led to a trend of unnatural warming of the Earth's natural climate, known as global warming or climate change. Emissions of gases that induce global warming are attributable to human activities associated with industrial/manufacturing, agriculture, utilities, transportation, and residential land uses. Emissions of CO_2 and N_2O are byproducts of fossil fuel combustion. Methane, a potent greenhouse gas, results from off-gassing associated with agricultural practices and landfills. Sinks of CO_2, where CO_2 is stored outside of the atmosphere, include uptake by vegetation and dissolution into the ocean. The following provides a description of each of the greenhouse gases and their global warming potential.

Water Vapor

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

Carbon Dioxide

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

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

Methane

CH_4 is an extremely effective absorber of radiation, although its atmospheric concentration is less than that of CO_2. Its lifetime in the atmosphere is brief (10 to 12 years), compared to some other GHGs (such as CO_2, N_2O, and Chlorofluorocarbons (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 (C_2H_6) 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

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_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 2016.3.2 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 2016.3.2),that is used in this report (CalEEMod user guide: Appendix A).
Definitions: ppm = parts per million; ppb = parts per billion; ppt = parts per trillion
Source: IPCC 2007, EPA 2015

3.3 Greenhouse Gas Emissions Inventory

According to https://cdiac.ess-dive.lbl.gov/trends/emis/tre_glob_2014.html 9,855 million metric tons (MMT) of CO_2 equivalent (CO_2e) emissions were created globally in the year 2014. According to https://www.epa.gov/ghgemissions/global-greenhouse-gas-emissions-data 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.

According to *Inventory of U.S. Greenhouse Gas Emissions and Sinks 1990-2016,* prepared by EPA, in 2016 total U.S. GHG emissions were 6,511.3 million metric tons (MMT) of CO_2 equivalent (CO_2e) emissions. Total U.S. emissions have increased by 2.4 percent between 1990 and 2016 and GHG emissions decreased by 1.9 percent between 2015 and 2016. The recent decrease in GHG emissions was a result of multiple factors, including substitution from coal to natural gas in the electricity sector and from a warmer winter and a slow-down in the economy in 2016. However, according to https://rhg.com/research/preliminary-us-emissions-estimates-for-2018/ the preliminary estimates for 2018 show that GHG emissions have increased by 3.4 percent, which is primarily a result from a strong economy that required the use of more transportation fuels and power generation.

According to https://www.arb.ca.gov/cc/inventory/data/data.htm the State of California created 429.4 $MMTCO_2e$ in 2016. The breakdown of California GHG emissions by sector consists of: 41 percent from transportation; 23 percent from industrial; 16 percent from electricity generation; 8 percent from agriculture; 7 percent from residential buildings; 5 percent from commercial buildings; and 1 percent from other uses of energy. In 2016, GHG emissions were 12 $MMTCO_2e$ lower than 2015 levels, which represent a 6 percent year-over-year decline.

4.0 AIR QUALITY MANAGEMENT

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 Environmental Protection Agency (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.

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 B – State and Federal Criteria Pollutant Standards

Air Pollutant	Concentration / Averaging Time		Most Relevant Effects
	California Standards	Federal Primary Standards	
Ozone (O_3)	0.09 ppm / 1-hour 0.07 ppm / 8-hour	0.070 ppm, / 8-hour	(a) Pulmonary function decrements and localized lung 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 9.0 ppm / 8-hour	35.0 ppm / 1-hour 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 0.030 ppm / annual	100 ppb / 1-hour 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 0.04 ppm / 24-hour	75 ppb / 1-hour 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 Matter (PM_{10})	50 µg/m^3 / 24-hour 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 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 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 .

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
CO	NAAQS	1-Hour (35 ppm) 8-Hour (9 ppm)	Attainment (Maintenance)	6/11/2007 (attained)
	CAAQS	1-Hour (20 ppm) 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) 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) 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) 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)	12/31/2021
	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 O_3 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 O_3 NAAQS (0.08 ppm) was revoked in the 2008 O_3 implementation rule, effective 4/6/15;there are continuing obligations under the revoked 1997 and revised 2008 O_3 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 $\mu g/m^3$; 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 $\mu g/m^3$) and 24-hour PM2.5 (65 $\mu g/m^3$) 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 California Air Resources Board (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 California Air Resources Board (CARB) adopted California Code of Regulations Title 13, Article 4.8, Chapter 9, Section 2449 to reduce diesel particulate matter (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 California State Implementation Plan (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 the California Environmental Quality Act (CEQA). In order to assist local jurisdictions with air quality compliance issues the *CEQA Air Quality Handbook* (SCAQMD CEQA Handbook), prepared by SCAQMD, 1993, with the most

current updates found at http://www.aqmd.gov/ceqa/hdbk.html, was developed in accordance with the projections and programs detailed in the AQMPs. The purpose of the SCAQMD CEQA Handbook is to assist Lead Agencies, as well as consultants, project proponents, and other interested parties in evaluating a proposed project's potential air quality impacts. Specifically, the SCAQMD CEQA Handbook explains the procedures that SCAQMD recommends be followed for the environmental review process required by CEQA. The SCAQMD CEQA Handbook provides direction on how to evaluate potential air quality impacts, how to determine whether these impacts are significant, and how to mitigate these impacts. The SCAQMD intends that by providing this guidance, the air quality impacts of plans and development proposals will be analyzed accurately and consistently throughout the Air Basin, and adverse impacts will be minimized.

The following lists the SCAQMD rules that are applicable but not limited to all land 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.

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 *2016-2040 Regional Transportation Plan/Sustainable Communities Strategy* (RTP/SCS), adopted April, 2016 and the *2015 Federal Transportation Improvement* Program (FTIP), adopted October 2013, which addresses regional development and growth forecasts. Although the RTP/SCS and 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 RTP/SCS, 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 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.

5.1 International

In 1988, the United Nations established the Intergovernmental Panel on Climate Change (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, however the Paris Agreement is still legally binding by the other remaining nations.

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.

5.2 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 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 February 9, 2016 the Supreme Court stayed implementation of the Clean Power Plan due to a legal challenge from 29 states and in April 2017, the Supreme Court put the case on a 60 day hold and directed both sides to make arguments for whether it should keep the case on hold indefinitely or close it and remand the issue to the EPA. On October 11, 2017, the EPA issued a formal proposal to repeal the Clean Power Plan, however the repeal of the Plan will require following the same rule-making system used to create regulations and will likely result in court challenges.

5.3 State

The California Air Resources Board (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.

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

CCR Title 24, Part 6: *California's Energy Efficiency Standards for Residential and Nonresidential Buildings* (Title 24) were first established in 1978 in response to a legislative mandate to reduce California's energy consumption. The standards are updated periodically to allow consideration and possible incorporation of new energy efficiency technologies and methods. Although it was not originally intended to reduce GHG emissions, electricity production by fossil fuels results in GHG emissions and energy efficient buildings require less electricity. Therefore, increased energy efficiency results in decreased GHG emissions.

Title 24 standards are updated on a three-year schedule and the most current 2016 standards went into effect on January 1, 2017. The Title 24 standards require the installation of insulated hot water pipes, improved window performance, improved wall insulation, and mandatory duct sealing. Title 24 also requires roofs to be constructed to be solar ready, with cool roofing shingles, a minimum 1-inch air space between roof material and roof deck, and a minimum of R-22 roof/ceiling insulation. All lighting is required to be high efficiency and daylight sensors and motion sensors are required for outdoor lighting, bathrooms, utility rooms and other spaces. The forced air systems are required to limit leakage to 5 percent or less and requires all heat pump systems to be equipped with liquid line filter driers. The 2016 Title 24 Part 6 standards are anticipated to reduce electricity consumption by 281 gigawatt-hours per year and natural gas consumption by 16 million therms per year (http://www.energy.ca.gov/2015publications/CEC-400-2015-037/CEC-400-2015-037-CMF.pdf).

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

CCR Title 24, Part 11: *California Green Building Standards* (Title 24) was developed in response to continued efforts to reduce GHG emissions associated with energy consumption. The most current version is the 2016 California Green Building Standards Code (CalGreen), which became effective on January 1, 2017 and replaced the 2013 CalGreen.

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 2016 CALGreen Code over the prior 2013 CALGreen Code include: an increase in amount of bicycle parking requirements; an increase in number of EV charging stations and clean air vehicle parking at non-residential buildings; a reduction in water usage in urinals to 0.125 gallons per flush; an increased rate of diversion for construction and operational waste to 65 percent as well as adding organic waste as waste to be diverted; and a requirement for fireplaces to meet new EPA standards.

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. However, the interim renewable energy thresholds from the prior Bills of 44 percent by December 31, 2024, 52 percent by December 31, 2027, and 60 percent by December 31, 2030, will remain in effect.

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.

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

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

Executive Order B-29-15

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

Assembly Bill 341 and Senate Bills 939 and 1374

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

Senate Bill 375

Senate Bill 375 (SB 375) was adopted September 2008 in order to support the State's climate action goals to reduce GHG emissions through coordinated regional transportation planning efforts, regional GHG emission reduction targets, and land use and housing allocation. SB 375 requires CARB to set regional targets for GHG emissions reductions from passenger vehicle use. In 2010, CARB established targets for 2020 and 2035 for each Metropolitan Planning Organizations (MPO) within the State. It was up to each MPO to adopt a sustainable communities strategy (SCS) that will prescribe land use allocation in that MPOs Regional Transportation Plan (RTP) to meet CARB's 2020 and 2035 GHG emission reduction targets. These reduction targets are required to be updated every eight years and the most current targets are detailed at: https://ww2.arb.ca.gov/our-work/programs/sustainable-communities-program/regional-plan-targets, which provides GHG emissions reduction targets for SCAG of 8 percent by 2020 and 19 percent by 2035.

The *2016-2040 Regional Transportation Plan/Sustainable Communities Strategy* (RTP/SCS), adopted by SCAG April, 2016 provides a 2020 GHG emission reduction target of 8 percent and a 2035 GHG emission reduction target of 18 percent. SCAG will need to develop additional strategies in its next revision of the RTP/SCS in order to meet CARB's new 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

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.

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 million metric tons of CO2e ($MMTCO_2e$). 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

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. The second set of regulations "Pavley II" is currently in development and will be phased in between model years 2017 through 2025 and will reduce emissions by 45 percent by the year 2020 as compared to the 2002 fleet. The Pavley II standards are being 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. In September 2009, the Pavley I regulations were adopted by CARB.

5.3 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. The SCAQMD is also responsible for GHG emissions for projects where it is the lead agency. However, for other projects in the SCAB 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 and adopted Rules 2700, 2701, and 2702, which are described below.

SCAQMD Working Group

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

Southern California Association of Governments

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 2016-2040 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS), adopted April, 2016 and the *2015 Federal Transportation Improvement* Program (FTIP), adopted October 2013, which addresses regional development and growth forecasts. Although the RTP/SCS and 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 RTP/SCS, FTIP, and AQMP are based on projections originating within the City and County General Plans.

5.4 Local – City of Murrieta

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

The City of Murrieta has adopted the *General Plan Update Climate Action Plan* (Murrieta CAP), January 2011 that provides a GHG emissions reduction target of 15 percent below 2009 GHG emissions levels by 2020. The City of Murrieta Climate Action Plan contains the following GHG-related measures that are applicable to the proposed project:

Goal CSV-15 **A community taking a leadership role in resource conservation and reduction of greenhouse gas emissions by implementing programs to improve municipal operations.**

Measure CSV-15.7 Use energy-efficient lighting in parks, streets and other public places. Percentage of energy efficiency improvement through retrofits and conservation measures, with targets of 20 percent improvement by 2020 and 40 percent improvement by 2035.

Goal LU-1 **A complementary balance of land uses throughout the community that meets the needs of existing residents and businesses as well as anticipated growth, and achieves the community's vision.**

Measure LU-1.6 Promote future patterns of development and land use that reduce infrastructure construction costs and make better use of existing and planned public facilities. Amend the City's Development Code to include design standards that:

- Space development areas a minimum of ¼ to ½ mile apart so that 2- and 4-lane roads can be used and the reliance on large arterials can be reduced.
- Have internal connectivity such that there are at least 200 intersections per square mile.
- Requires adequate pedestrian access through all commercial, residential, and mixed-used development.
- Includes a pedestrian or bicycle through-connection in any new cul-de-sacs, except where prohibited by topographical conditions.
- Establish a 0.5-mile walkability standard for residents to access services and recreational facilities.

Goal LU-4 **A housing stock that meets the diverse needs of Murrieta's existing and future residents.**

Measure LU-4.3 Locate multiple-family housing adjacent to jobs, retail, schools, open space, public transportation, and transportation corridors. Ensure new development is located as close to existing development as possible and maximize the density and mix of uses.

Goal CIR-5 **A supported regional transportation system that serves existing and future travel between Murrieta and other population and employment centers within southwest Riverside County and the larger region, and that accommodates the regional travel needs of developing areas outside the City.**

Measure CIR-5.14 Encourage new large residential, commercial, or employment developments to locate on existing and planned transit routes. Work with Riverside Transit Authority to expand transit routes to connect with the potential high speed rail site and other destinations within the City.

Goal CIR-6 **Alternative travel modes and facilities are available to serve residents and employers/employees and reduce vehicle miles traveled.**

Measure CIR-6.1 Encourage alternatives to single-occupancy vehicle transportation such as public transit, paratransit, walking, cycling, and ridesharing. Conduct a travel/commute survey to reduce single occupancy vehicles.

Goal CIR-7 **Residential areas and activity centers are accessible to all pedestrians, including persons with disabilities or having special accessibility needs.**

Measure CIR-7.1 Encourage future development to provide an internal system of sidewalks/pathways linking schools, shopping centers, and other public facilities with residences. Incorporate pedestrian friendly street standards into the Development Code.

Measure CIR-7.2 Require pedestrian access from the interior of new residential areas to public transit stops.

Goal CIR-8 **Development, expansion, and maintenance of a network of bicycle, pedestrian, and multi-use trails that allow residents to travel between parks, schools, neighborhoods, and other major destinations without driving.**

Measure CIR-8.2 Promote bicycle and pedestrian trains along major home to work and other travel routes. Develop a pedestrian and bicycle trail plan.

Goal AQ-5 **Air quality is improved through an efficient circulation system, reduced traffic congestion, and reduced vehicle miles traveled.**

Measure AQ-5.3 Promote use of fuel-efficient and low-emissions vehicles, including Neighborhood Electric Vehicles. Implement Neighborhood Electric Vehicle networks in new developments.

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

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

Measure 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. Incorporate pedestrian friendly street standards into the Development Code.

Goal CSV-14 **A community that encourages and incentivizes the sustainable development of buildings and neighborhoods, particularly with respect to durability, energy and water use, and transportation impacts.**

Measure CSV-14.1 Ensure all applicable construction projects comply with the California State Green Building Standards Code. Amend the City's Development Code to include California Green Building Standards.

Goal CSV-2 **Murrieta promotes compliance with requirements from the State and appropriate agencies regarding comprehensive water conservation measures in buildings and landscaping.**

Measure CSV-2.1 Ensure that all developments comply with water efficiency requirements, as mandated by the applicable Building Code.

Measure CSV-2.2 Work with water districts to encourage and incentivize the retrofitting of building systems, both indoor and outdoor, with water-conserving fixtures and appliances.

Measure CSV-2.3 Promote water efficient landscaping practices through outreach efforts, project review, and enforcement of City, regional, or State code requirements. Adopt a landscape water ordinance for new development that includes the water conservation practices of the California Green Building Standards Code.

Goal CSV-13 **Solid waste is diverted from landfills through waste reduction, re-use and recycling.**

Measure CSV-13.1 Continue to comply with the landfill diversion requirements of the Integrated Waste Management Program.

Measure CSV-13.3 Maximize community reuse and recycling of products and materials through waste management contracts and public education.

6.0 ATMOSPHERIC SETTING

6.1 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.

6.2 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

6.3 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 3.8 miles southeast of the project site at 33700 Borel Road, Murrieta and the Lake Elsinore Station is located approximately 10.1 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 2015	2016	2017
Ozone: [1]			
Maximum 1-Hour Concentration (ppm)	0.100	0.092	0.104
Days > CAAQS (0.09 ppm)	**1**	0	**4**
Maximum 8-Hour Concentration (ppm)	0.087	0.081	0.088
Days > NAAQS (0.070 ppm)	**20**	**19**	**47**
Days > CAAQs (0.070 ppm)	**23**	**20**	**49**
Nitrogen Dioxide: [2]			
Maximum 1-Hour Concentration (ppb)	47.2	51.3	49.0
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)	90.7	99.7	134.1
Days > NAAQS (150 ug/m^3)	0	0	0
Days > CAAQS (50 ug/m^3)	ND	ND	ND
Annual Arithmetic Mean (AAM) (ug/m^3)	20.1	22.4	23.6
Annual > NAAQS (50 ug/m^3)	No	No	No
Annual > CAAQS (20 ug/m^3)	**Yes**	**Yes**	**Yes**
Ultra-Fine Particulates (PM2.5): [1]			
Maximum 24-Hour National Measurement (ug/m^3)	24.5	26.9	21.6
Days > NAAQS (35 ug/m^3)	0	0	0
Annual Arithmetic Mean (AAM) (ug/m^3)	ND	ND	ND
Annual > NAAQS and CAAQS (12 ug/m^3)	ND	ND	ND

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 4 days each year over the last three years at the Borel Station. The State 8-hour concentration standard for ozone has been exceeded between 20 and 49 days each year over the last three years at the Borel Station. The federal 8-hour concentration standard for ozone has been exceeded between 19 and 47 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 not been exceeded at the Lake Elsinore Station, however it should be noted that even though Table E shows an exceedance in 2017, this was due to a weather event, which does not count as an exceedance. The annual PM10 concentration at the Lake Elsinore Station has exceeded the State standard for 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 not been exceeded at the Borel Station. It is not clear whether the annual PM2.5 concentration has been exceeded as there is no data available for the last three years at the Borel Station. 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.

6.4 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 375 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.

7.0 MODELING PARAMETERS AND ASSUMPTIONS

7.1 CalEEMod Model Input Parameters

The criteria air pollution and GHG emissions impacts created by the proposed project have been analyzed through use of CalEEMod Version 2016.3.2. CalEEMod is a computer model published by the SCAQMD for estimating air pollutant emissions. The CalEEMod program uses the EMFAC2014 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. EMFAC2014 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 was utilized in this analysis. The opening year of 2021 was utilized in this analysis for both the criteria pollutant and GHG emissions analyses and the year of 2010 was utilized for the business-as-usual (BAU) GHG emissions analysis.

Land Use Parameters

The proposed project consists of development of a 120-room hotel with 71,562 square feet of building space and an event center with 15,295 square feet of building space and 254 parking spaces on approximately 6.99-acres of the 15.78-acre project site. The proposed project would also in construction of a 0.63-acre water quality basin in the southeastern portion of the project site and widening and sidewalk improvements to the portions of Linnel Lane and McElwain Road that are adjacent to the project site. The remainder of the project site would be rough graded and would include development of access roads to the hotel and event center, but would otherwise remain undeveloped. 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[3] (square feet)
Hotel & Event Center	Hotel	120 RM	6.14	86,857
Parking Lots for Hotel & Event Center	Parking Lot	254 PS	0.85	36,810
Onsite Roads and Linnel Lane and McElwain Road Improvements	Other Asphalt Surfaces	3.34 AC	3.34	145,490
Water Quality Basin and Remainder Parcels	Other Non-Asphalt Surfaces	5.45 AC	3.50	125,600

Notes:
[1] RM = Hotel room; PS = Parking Space; AC = Acre
[2] Lot acreage calculated based on the gross project area of 15.78 acres.
[3] Building/Paving square feet represent area where architectural coatings will be applied.

Electricity Emission Factors

The default CalEEMod emission factors for Southern California Edison (from the CEC's year 2012 data) are as follows:

- Carbon dioxide: 702.44 pounds per megawatt-hour

- Methane: 0.029 pounds per megawatt-hour
- Nitrous oxide: 0.006 pounds per megawatt-hour

According to the *Edison International 2017 Sustainability Report,* in 2017 46 percent of electricity delivered by SCE came from carbon free sources, which is over halfway to 80 percent requirement by 2030 detailed in California's Renewables Portfolio Standard requirements. In 2017 SCE's average GHG emissions intensity factor was 0.25 tons of CO_2e per megawatt-hour. This equates to a 28.8 percent reduction to the CalEEMod default intensity factors and the resultant intensity factors that have been utilized in the opening year 2021 analysis are shown below:

- Carbon dioxide: 500 pounds per megawatt-hour
- Methane: 0.021 pounds per megawatt-hour
- Nitrous oxide: 0.004 pounds per megawatt-hour

It should be noted that the use of the above intensity factors is a conservative estimate as they are based on the year 2017 rates and by opening year 2021 the SCE GHG emissions intensity factors are anticipated to be much lower.

Construction Parameters

Construction activities have been modeled as starting at the end of 2019 and taking 20 months to complete. 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.

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 in the end of 2019 and was modeled as occurring over one month. The proposed grading is anticipated to include the export of up to 30,000 cubic yards of debris and spoils from the project site that would require a total of 3,750 haul truck trips or an average of 170 haul truck trips per day for the duration of site preparation activities. The site preparation activities would also generate 18 automobile trips per day for the workers. 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 of either tractors, loaders, or backhoes, which is based on the CalEEMod default equipment mix.

Grading

The grading phase was modeled as starting after the site preparation phase and occurring over two months. Although the final grading cut and fill numbers have not yet been calculated, and the goal is to have a balanced site, in order to provide a conservative analysis, the grading phase has been modeled based on the import of 10,000 cubic yards of material that would require a total of 1,250 haul truck trips or an average of 29 haul truck trips per day for the duration of grading activities. The onsite equipment would consist of two excavators, one grader, one rubber tired dozer, two scrapers, and two of either tractors, loaders, or backhoes. The grading activities would also require 15 automobile trips per day for the workers. 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 two 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 phase would consist of construction of the 120-room hotel and event center. The building construction would occur after the completion of the grading phase and was modeled as occurring over 14 months. The building construction phase would require up to 249 worker trips and 97 vendor trips per day. The onsite equipment would consist of the simultaneous operation of one crane, , three forklifts, one generator set, 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 parking lots and roadways as well as the improvements to Linnel Lane and McElwain Road. The paving phase was modeled as occurring one month and starting after completion of the building construction phase. The paving phase would require up to 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 over two months and starting after completion of the paving phase. The architectural coating phase was modeled based on covering 261,360 square feet of non-residential interior area, 87,120 square feet of non-residential exterior area, and 25,182 square feet of parking area. The architectural coating phase would require up to 50 worker trips per day. The onsite equipment would consist of one air compressor, which is based on the CalEEMod default equipment mix.

Operational Emissions Modeling

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

Mobile Sources

Mobile sources include emissions the additional vehicle miles generated from the proposed project. The vehicle trips associated with the proposed project have been analyzed through use of the weekday trip rates obtained from the *McElwain and Linnel Traffic Impact Analysis* (Traffic Impact Analysis), prepared by Trames Solutions, Inc., April 26, 2019. This resulted in the proposed project generating 1,003 trips per day, which was entered into the CalEEMod model. No other changes were made to the CalEEMod default mobile source parameters.

The mobile source emissions analysis included the CalEEMod mitigation of improved pedestrian network onsite and connecting offsite, since the proposed project would include construction of sidewalks along Linnel Lane and McElwain Road adjacent to the project site that would connect to existing sidewalks along these roadways.

Area Sources

Area sources include emissions from consumer products, landscape equipment and architectural coatings. The area source emissions were based on the on-going use of the proposed project in the CalEEMod model. No changes were made to the default area source parameters in the CalEEMod model.

Energy Usage

Energy usage includes emissions from electricity and natural gas used onsite. The energy usage was based on the ongoing use of the proposed hotel and event center in the CalEEMod Model. No changes were made to the default energy usage parameters in the CalEEMod model.

The opening year 2021 analysis included the CalEEMod mitigation of exceed the 2016 Title 24 standards by 30 percent to account for the 2019 Title 24 Part 6 standards that will be effective on January 1, 2020 (https://www.energy.ca.gov/title24/2019standards/documents/2018_Title_24_2019_Building_Standards_FAQ.pdf).

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 66 ton 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 opening year 2021 analysis included 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 3,044,012 gallons per year of indoor water use and 338,224 gallons per year of outdoor water use. No changes were made to the default water and wastewater parameters in the CalEEMod model.

The opening year 2021 analysis included the CalEEMod mitigation of the use of low flow faucets, 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.

8.0 THRESHOLDS OF SIGNIFICANCE

8.1 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 G.

Table G – 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

8.2 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 4.1, the project site is located in Air 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 H lists all of the construction equipment

modeled in CalEEMod and utilizes the methodology in the Fact Sheet to calculate the acres disturbed per day per construction phase.

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

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

Notes:
[1] Based on the Fact Sheet for Applying CalEEMod to Localized Significance Thresholds where crawler tractors, graders, and rubber tired dozers disturb 0.5-acre in an 8-hour day and scrapers disturb 1.0-acre in an 8-hour day. All other equipment disturb 0 acres per 8-hour day.
Source: CalEEMod Version 2016.3.2; SCAQMD, 2015.

As shown in Table H, the maximum disturbed per day would occur during the grading phase when 3-acres would be disturbed. As such, the 2-acre project site which is closest acreage to the 3-acres disturbed shown in the Look-Up Tables, has been utilized in this analysis. For PM10 and PM2.5, which are based on a 24-hour standard, the nearest sensitive receptor to the project site is a single-family home located as near as 400 feet (122 meters) to the northwest of the project site. In order to provide a conservative analysis, the PM10 and PM2.5 emissions thresholds were based on the 100 meter threshold provided in the Look-Up Tables. For NOx, which is based on a 1-hour threshold and CO, which is based on an 8-hour threshold, the nearest sensitive receptors are the offsite workers located as near as 80 feet (24 meters) to the south of the project site at the existing commercial retail center that includes a Target store. According to LST Methodology, any receptor located closer than 25 meters (82 feet) shall be based on the 25 meter thresholds. Table I below shows the LSTs for NO_2, PM10 and PM2.5 for both construction and operational activities.

Table I – SCAQMD Local Air Quality Thresholds of Significance

Activity	Allowable Emissions (pounds/day)[1]			
	NOx	CO	PM10	PM2.5
Construction	234	1,100	38	10
Operation	234	1,100	10	3

Notes:
[1] For NOx and CO the thresholds are based on the nearest offsite workers (24 meters) to the south. According to SCAQMD methodology, all receptors closer than 25 meters are based on the 25 meter threshold. For PM10 and PM2.5 the thresholds are based on 100 meters, which is the nearest distance provided in the Look-Up Tables to the nearest home, located 122 meters to the northwest.
Source: Calculated from SCAQMD's Mass Rate Look-up Tables for two acres in Air Monitoring Area 26, Temecula Valley.

8.3 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 hazardous air pollutant (HAP) should be analyzed through a comprehensive facility-wide health risk assessment (HRA).

8.4 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.

8.5 Energy Conservation

The new 2018 amendments and additions to the CEQA Checklist now includes an Energy Section that analyzes the proposed project's energy consumption in order to avoid or reduce inefficient, wasteful or unnecessary consumption of energy. Since the Energy Section was just 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.

8.6 Greenhouse Gas Emissions

The City of Murrieta has adopted a Climate Action Plan (Murrieta CAP) that has been prepared to assist the City in conforming to the GHG emissions reductions as mandated under AB 32. Based on the CARB Scoping Plan, 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 City of Murrieta has chosen a reduction target of 15 percent below 2009 GHG emissions levels by 2020.

It should be noted that the Murrieta CAP was prepared prior to the issuance of Executive Order B-30-15 on April 29, 2015 that provided a reduction goal of 40 percent below 1990 levels by 2030. This target was codified into statute through passage of AB 197 and SB 32 in September 2016. In order to meet the new GHG emission targets provided in AB 197 and SB 32, CARB has provided regional planning targets for the MPOs located with the state 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. In order to provide a conservative analysis that accounts for AB 197 and SB 32, a GHG emission reduction target of 19 percent by 2035 has also been utilized in this analysis.

Therefore, the proposed project would be considered to create a significant cumulative GHG emissions impact is the proposed project's GHG emissions are not 15 percent less in 2020 and 19 percent less in 2035 than GHG emissions from business-as-usual conditions for a similar sized project in year 2009.

9.0 IMPACT ANALYSIS

9.1 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.

9.2 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 8.1 or local thresholds of significance discussed above in Section 8.2. 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 8.1. The analysis for long-term local air quality impacts showed that local pollutant concentrations would not be projected to exceed the air quality standards. Therefore, a less than significant long-term impact would occur and no mitigation would be required.

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

Criterion 2 - Exceed Assumptions in the AQMP?

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

The proposed project is currently designated as Office and Research Park (ORP) in the General Plan and is zoned Office (O). Hotel and event center land uses are allowed uses within the ORP land use designation and the Office 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.

9.3 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 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 15.78-acre project site, building construction of the 120-room hotel and 15,295 square foot event center, paving of the onsite parking lots and roads and improvements to the portions of Linnel Lane and McElwain Road that are adjacent to the project site, 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 7.1. 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 J and the CalEEMod daily printouts are shown in Appendix A. Since it is possible that building construction, paving, and architectural coating activities may occur concurrently, Table J also shows the combined criteria pollutant emissions from building construction, paving, and architectural coating phases of construction.

Table J – Construction-Related Regional Criteria Pollutant Emissions

Activity	Pollutant Emissions (pounds/day)					
	VOC	NOx	CO	SO_2	PM10	PM2.5
Site Preparation[1]						
Onsite[2]	4.34	45.57	22.06	0.04	10.60	6.68
Offsite[3]	1.12	44.73	6.95	0.13	3.39	1.04
Total	**5.46**	**90.30**	**29.01**	**0.17**	**13.99**	**7.72**
Grading[1]						
Onsite	4.45	50.20	31.96	0.06	6.09	3.62
Offsite	0.27	7.62	1.78	0.03	0.80	0.24
Total	**4.72**	**57.82**	**33.74**	**0.09**	**6.89**	**3.86**
Building Construction[4]						
Onsite	2.12	19.19	16.85	0.03	1.12	1.05
Offsite	1.54	10.73	11.87	0.05	3.48	0.99
Total	**3.66**	**29.92**	**28.72**	**0.08**	**4.60**	**2.04**
Paving						
Onsite	1.78	12.92	14.65	0.02	0.68	0.62
Offsite	0.07	0.04	0.55	0.00	0.17	0.05
Total	**1.85**	**12.96**	**15.20**	**0.02**	**0.85**	**0.67**
Architectural Coatings						
Onsite	39.58	1.53	1.82	0.00	0.09	0.09
Offsite	0.24	0.14	1.85	0.01	0.56	0.15
Total	**39.82**	**1.67**	**3.67**	**0.01**	**0.65**	**0.24**

Activity	Pollutant Emissions (pounds/day)					
	VOC	NOx	CO	SO_2	PM10	PM2.5
Combined Building Construction, Paving, and Architectural Coatings						
Onsite	43.48	33.64	33.32	0.05	1.89	1.76
Offsite	1.85	10.91	14.27	0.06	4.21	1.19
Total	**45.33**	**44.55**	**47.59**	**0.11**	**6.10**	**2.95**
Maximum Daily Construction Emissions	**45.33**	**90.30**	**47.59**	**0.17**	**13.99**	**7.72**
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.
[4] The Building Construction phase emissions based on the worst-case year 2020 emissions rates
Source: CalEEMod Version 2016.3.2.

Table J 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. 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 K 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 8.2. Since it is possible that building construction, paving, and architectural coating activities may occur concurrently, Table K also shows the combined local criteria pollutant emissions from building construction, paving and architectural coating phases of construction.

The data provided in Table K shows that none of the analyzed criteria pollutants would exceed the local emissions thresholds during either the 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.

Table K – Construction-Related Local Criteria Pollutant Emissions

Phase	Pollutant Emissions (pounds/day)			
	NOx	CO	PM10	PM2.5
Site Preparation[1]	45.57	22.06	10.60	6.68
Grading[1]	50.20	31.96	6.09	3.62
Combined Building Construction, Paving, and Architectural Coatings	33.64	33.32	1.89	1.76
- Building Construction	*19.19*	*16.85*	*1.12*	*1.05*
- Paving	*12.92*	*14.65*	*0.68*	*0.62*
- Architectural Coatings	*1.53*	*1.82*	*0.09*	*0.09*
Maximum Daily Construction Emissions	**50.20**	**33.32**	**10.60**	**6.68**
SCAQMD Local Construction Thresholds[2]	**234**	**1,100**	**38**	**10**
Exceeds Threshold?	No	No	No	No

Notes:
[1] Site Preparation and Grading based on adherence to fugitive dust suppression requirements from SCAQMD Rule 403.
[2] For NOx and CO the thresholds are based on the nearest offsite workers (24 meters) to the south. According to SCAQMD methodology, all receptors closer than 25 meters are based on the 25 meter threshold. For PM10 and PM2.5 the thresholds are based on 100 meters, which is the nearest distance provided in the Look-Up Tables to the nearest home, located 122 meters to the northwest.
Source: Calculated from SCAQMD's Mass Rate Look-up Tables for five acres in Air Monitoring Area 26, Temecula Valley.

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, and onsite area source emissions 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 7.1. 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 L and the CalEEMod daily emissions printouts are shown in Appendix A.

Table L – Operational Regional Criteria Pollutant Emissions

Activity	Pollutant Emissions (pounds/day)					
	VOC	NOx	CO	SO_2	PM10	PM2.5
Area Sources[1]	4.08	0.00	0.04	0.00	0.00	0.00
Energy Usage[2]	0.22	2.03	1.71	0.01	0.15	0.15
Mobile Sources[3]	1.82	12.50	19.63	0.08	5.21	1.54
Total Emissions	**6.12**	**14.53**	**21.38**	**0.09**	**5.36**	**1.69**
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, and landscaping equipment.
[2] Energy usage consist of emissions from natural gas usage (excluding hearths).
[3] Mobile sources consist of emissions from vehicles and road dust.
Source: Calculated from CalEEMod Version 2016.3.2.

The data provided in Table L shows that none of the analyzed criteria pollutants would exceed the regional emissions thresholds. Therefore, a less than significant regional air quality impact would occur from operation of the proposed project.

Pursuant to the Sierra Club v. Friant Ranch Supreme Court Ruling (Case No. S219783, December 24, 2018), which found on page 6 of the ruling that EIRs need to "makes a reasonable effort to substantively connect a project's air quality impacts to likely health consequences." Also, 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."

Table L above shows that the primary source of operational air emissions would be created from mobile source emissions that would be generated throughout the Air Basin. As such, any adverse health impacts created from the proposed project should be assessed on a basin-wide level. As indicated above in Table B, the Air Basin has been designated by EPA for the national standards as a non-attainment area for ozone, PM2.5, and partial non-attainment for lead. In addition, PM10 has been designated by the State as non-attainment. It should be noted that VOC and NOx are ozone precursors, as such they have been considered as non-attainment pollutants. According to the 2016 AQMP, in 2016 the total emissions of: VOC was 500 tons per year; NOx was 522 tons per year; SOx was 18 tons per year; and PM2.5 was 66 tons per year. Since the 2016 AQMP did not calculate total PM10 emissions, the total PM10 emissions were obtained from *The California Almanac of Emissions and Air Quality 2013 Edition,* prepared by CARB, for the year 2020. The project contribution to each criteria pollutant in the South Coast Air Basin is shown in Table M.

Table M – Project's Contribution to Criteria Pollutants in the South Coast Air Basin

	Pollutant Emissions (pounds/day)					
Emissions Source	**VOC**	**NOx**	**CO**	**SO_2**	**PM10**	**PM2.5**
Project Emissions[1]	6.12	14.53	21.38	0.09	5.36	1.69
Total Emissions in Air Basin[2]	1,000,000	1,044,000	4,246,000	36,000	322,000	132,000
Project's Percent of Air Emissions	**0.0006%**	**0.0014%**	**0.0005%**	**0.00025%**	**0.0017%**	**0.0013%**
SCQAMD Operational Thresholds	**55**	**55**	**550**	**150**	**150**	**55**
Exceeds Threshold?	No	No	No	No	No	No

Notes:
[1] From the project's total operational emissions shown above in Table L.
[2] VOC, NOx, CO, SO_2 and PM2.5 from 2016 AQMP and PM10 from the California Almanac of Emissions and Air Quality 2013 Edition.

As shown in Table M, the project would increase criteria pollutant emissions by as much as 0.0017 percent for PM10 in the South Coast Air Basin. Due to these nominal increases in the Air Basin-wide criteria pollutant emissions, no increases in days of non-attainment are anticipated to occur from operation of the proposed project. As such, operation of the project is not anticipated to result in a quantitative increase in premature deaths, asthma in children, days children will miss school, asthma-related emergency room visits, or an increase in acute bronchitis among children due to the criteria pollutants created by the proposed project. Impacts would be less than significant.

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[1] during the peak morning and afternoon periods and did not predict a violation of CO standards. 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 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, and vehicles operating in the immediate vicinity of the project site and the calculated emissions thresholds.

[1] 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.

Table N – Operations-Related Local Criteria Pollutant Emissions

Onsite Emission Source	Pollutant Emissions (pounds/day)			
	NOx	CO	PM10	PM2.5
Area Sources	0.00	0.04	0.00	0.00
Energy Usage	2.03	1.71	0.15	0.15
Onsite Vehicle Emissions[1]	0.31	0.48	0.13	0.04
Total Emissions	**2.34**	**2.23**	**0.28**	**0.19**
SCAQMD Local Operational Thresholds[2]	**234**	**1,100**	**10**	**3**
Exceeds Threshold?	No	No	No	No

Notes:
[1] Onsite vehicle emissions based on 2.5 percent of the gross vehicular emissions, which is the estimated portion of vehicle emissions occurring within a quarter mile of the project site (0.25 mile / CalEEMod default trip length of 10.16 mile = 2.5%).
[2] For NOx and CO the thresholds are based on the nearest offsite workers (24 meters) to the south. According to SCAQMD methodology, all receptors closer than 25 meters are based on the 25 meter threshold. For PM10 and PM2.5 the thresholds are based on 100 meters, which is the nearest distance provided in the Look-Up Tables to the nearest home, located 122 meters to the northwest.
Source: Calculated from SCAQMD's Mass Rate Look-up Tables for two 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.

9.4 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 9.3 for both construction and operations, which are discussed separately below. The discussion below also includes an analysis of the potential impacts from toxic air contaminant emissions. The nearest sensitive receptor to the project site is a single-family home located as near as 400 feet to the northwest of the project site. The nearest offsite workers are located as near as 80 feet to the south of the project site at the existing commercial retail center.

Construction-Related Sensitive Receptor Impacts

The construction activities for the proposed project are anticipated to include site preparation and grading of the 15.78-acre project site, building construction of the 120-room hotel and 15,295 square foot event center, paving of the onsite parking lots and roads and improvements to the portions of Linnel Lane and McElwain Road that are adjacent to the project site, and application of architectural coatings. Construction activities may expose sensitive receptors to substantial pollutant concentrations of localized criteria pollutant concentrations and from toxic air contaminant emissions created from onsite construction equipment, which are described below.

Local Criteria Pollutant Impacts from Construction

The local air quality impacts from construction of the proposed project has been analyzed above in Section 9.3 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 8.2. 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, no 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 9.3 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, and onsite usage of natural gas appliances. The analysis provided above in Section 9.3 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 8.2. 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. According to *Health Risk Assessments for Proposed Land Use Project*, prepared by CAPCOA, July 2009, recommends that sensitive receptors should not be placed within 1,000 feet of distribution centers that generate more than 100 trucks per day or more than 40 trucks per day with transport refrigeration units (TRUs). The proposed project would consist of the development of a 120-guest room hotel and a 15,295 square foot event center that would generate a nominal number of diesel-powered delivery vehicle trips per day. Since the proposed project would generate less than the 100 trucks per day threshold that would have the potential to create a significant TAC impact at the nearby sensitive receptors as determined by CAPCOA's screening criteria, 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.

9.5 Odor Emissions Adversely Affecting a Substantial Number of People

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. 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. Due to the transitory nature of construction odors, a less than significant odor impact would occur and no mitigation would be required.

Operations-Related Odor Impacts

The proposed project would consist of the development of a 120-room hotel and a 15,295 square foot event center, where the nearest sensitive receptor is a single-family home located as near as 400 feet to the northwest of the project site. Potential sources that may emit odors during the on-going operations of the proposed project would primarily occur from odor emissions 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 sensitive receptor from the project site and through compliance with SCAQMD's odor regulations detailed in Rule 402 and the City's trash storage regulations, a less than significant impact related to odors would occur during the on-going operations of the proposed project. Operational-related odor impacts would be less than significant and no mitigation would be required.

Level of Significance

Less than significant impact.

9.6 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.

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.

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.

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 15.78-acre project site, building construction of the 120-room hotel and 15,295 square foot event center, paving of the onsite parking lots and roads and improvements to the portions of Linnel Lane and McElwain Road that are adjacent to the project site, 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 demolition material to off-site reuse and 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.

Construction-Related Electricity

During construction the proposed project would consume electricity to construct the new building 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 energy use. 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 the project site is located in a developed area, it is anticipated that only nominal improvements would be required to Southern California Edison distribution lines and equipment with development of the proposed project. Where feasible, the new service installations and connections would be scheduled and implemented in a manner that would not result in electrical service interruptions to other properties. 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 grading, construction, and development. 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 the project site is located in a developed community that has natural gas line 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 (if any are required for the project). 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 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 default off-road equipment assumptions from the CalEEMod model run that is detailed above in Section 7.1 and the fuel usage calculations provided in 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 O shows the off-road construction equipment fuel calculations based on the above formula, which shows that the off-road equipment utilized during construction of the proposed project would consume 59,649 gallons of fuel.

Table O – Off-Road Construction Equipment Modeled in CalEEMod and Fuel Used

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	0.40	8	528	2,693
Tractors/Loaders/Backhoes	4	97	0.37	8	704	1,450
Grading						
Excavators	2	158	0.38	8	688	2,132
Graders	1	187	0.41	8	344	1,362
Rubber Tired Dozers	1	247	0.40	8	344	1,755
Scrapers	2	367	0.48	8	688	6,257
Tractors/Loaders/Backhoes	2	97	0.37	8	688	1,417
Building Construction						
Cranes	1	231	0.29	7	2,135	7,384
Forklifts	3	89	0.20	8	7,320	7,478
Generator Sets	1	84	0.74	8	2,440	8,705
Tractors/Loaders/Backhoes	3	97	0.37	7	6,405	13,193
Welders	1	46	0.45	8	2,440	2,899
Paving						
Pavers	2	130	0.42	8	336	947
Paving Equipment	2	132	0.36	8	336	824
Rollers	2	80	0.38	8	336	586
Architectural Coating						
Air Compressor	1	78	0.48	6	264	567
	Total Off-Road Equipment Fuel Used during Construction (gallons)					**59,649**

Notes:
[1] Based on: 22 days for Site Preparation; 43 days for Grading; 305 days for Building Construction; 21 days for Paving; 44 days for Painting.
Source: CalEEMod Version 2016.3.2; CARB, 2018.

The on-road construction-related vehicle trips fuel usage was calculated through use of the default construction vehicle trip assumptions from the CalEEMod model run, plus the 6 daily vendor trips added to the Site Preparation and Grading phases to account for water truck emissions that is detailed above in

Section 7.1 and the fleet average miles per gallon rates calculated through use of the EMFAC2017 model (https://www.arb.ca.gov/emfac/2017/) and the EMFAC2017 model printouts are provided in Appendix B. Table P shows the on-road construction vehicle trips modeled in CalEEMod and the fuel usage calculations, which shows that the on-road construction-related vehicle trips would consume 89,137 gallons of fuel.

Table P – On-Road Construction Vehicle Trips Modeled in CalEEMod and Fuel Used

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	14.7	265	5,821	23.9	243
Vendor Trips	6	6.9	41	911	7.6	119
Haul Trips	170	20	3,409	75,000	7.6	9,818
Grading						
Worker Trips	20	14.7	294	12,642	23.9	528
Vendor Trips	6	6.9	41	1,780	7.6	233
Haul Trips	29	20	581	25,000	7.6	3,273
Building Construction						
Worker Trips	249	14.7	3,660	1,116,392	23.9	46,663
Vendor Trips	97	6.9	669	204,137	7.6	26,723
Paving						
Worker Trips	15	14.7	221	4,410	23.9	184
Architectural Coating						
Worker Trips	50	14.7	735	32,340	23.9	1,352
		Total Fuel Used from On-Road Construction Vehicles (gallons)				**89,137**

Notes:
[1] Based on: 21 days for Site Preparation; 66 days for Grading; 86 days for Building Construction; 86 days for Paving; 22 days for Painting.
[2] From EMFAC 2017 model (see Appendix B). Worker Trips based on entire fleet of gasoline vehicles and Vendor Trips based on only truck fleet of diesel vehicles.
Source: CalEEMod Version 2016.3.2; CARB, 2018.

As shown above in Table O and Table P, construction of the proposed project would result in the consumption of 148,794 gallons of fuel. 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 120-room hotel and 15,295 square foot event center 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. According to the CalEEMod model run for opening year 2021 provided in Appendix D, operation of the proposed project would utilize 3,160,000 kilowatt-hours per year of electricity. 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 buildings, 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 all of 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, impacts with regard to electrical supply and infrastructure capacity would be less than significant 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. According to the CalEEMod model run for opening year 2021 provided in Appendix D, operation of the proposed project would utilize 7,570 million British thermal units (BTU) of natural gas per year. 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 structures, 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 Transportation Energy

Operation of the proposed project would result in increased consumption of petroleum-based fuels related to vehicular travel to and from the project site. According to the CalEEMod model run for opening year 2021 provided in Appendix D, operation of the proposed project would generate 2,345,931 vehicle miles traveled per year. According to the EMFAC2017 model run (see Appendix B), the fleet average miles per gallon rate for all gasoline-powered vehicles in Southern California in the year 2019 is anticipated to be 23.9 miles per gallon and based on adopted regulations the fuel efficiency rates will improve in later years. Based on this rate, operation of the proposed project would use 98,056 gallons of transportation fuel per year. It should be noted that, the proposed project would comply with all Federal, State, and City requirements related to the consumption of transportation energy that includes California Code of Regulations Title 24, Part 10 California Green Building Standards that require all new non-residential parking lots to provide preferred parking for clean air vehicles as well as provide electric vehicle charging spaces. Therefore, it is anticipated the proposed project will be designed and built to minimize

transportation energy through the promotion of the use of electric-powered vehicles and it is anticipated that existing and planned capacity and supplies of transportation fuels would be sufficient to support the proposed project's demand. Thus, impacts with regard transportation energy supply and infrastructure capacity would be less than significant and no mitigation measures would be required.

In conclusion, the proposed project would comply with regulatory compliance measures outlined by the State and City related to Air Quality, Greenhouse Gas Emissions (GHG), 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.

9.7 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, that includes the following applicable policies related to energy for the proposed hotel and event center development:

General Plan Energy-Related Policies

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.

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.

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-12.6 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.

CSV.14.1 Ensure all applicable construction projects comply with the California State Green Building Standards Code.

The proposed project would be required to be designed to meet the above listed energy-related policies in the General Plan. Thus, through implementation of the above energy-related General Plan Policies, the proposed project would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency.

Level of Significance

Less than significant impact.

9.8 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 consist of development of a 120-room hotel and a 15,295 square foot event center. The proposed project is anticipated to generate GHG emissions from area sources, energy usage, mobile sources, waste disposal, water usage, and construction equipment. The City of Murrieta has adopted *the City of Murrieta General Plan Update Climatic Action Plan* (Climate Action Plan), in January, 2011, which provides a reduction target of 15 percent fewer GHG emissions by year 2020 over business-as-usual (BAU) conditions, which are based on the year 2009 conditions. In order to account for AB 197 and SB 32, a reduction target of 19 percent by 2035 has also been utilized in this analysis.

In order to determine if the proposed project meets the 15 percent reduction over BAU GHG emissions by 2020 and the 19 percent reduction over BAU by 2035, the GHG emissions from the proposed project were analyzed for year 2010, which is the nearest year available to the BAU year 2009 in the CalEEMod model, and for the project opening year 2021 conditions. The project's GHG emissions have been calculated with the CalEEMod model based on the parameters detailed in Section 5.1 above. A summary of the results is shown below in Table Q and the CalEEMod model runs for BAU year 2010 is provided in Appendix C and opening year 2021 in Appendix D.

Table Q – Proposed Project Greenhouse Gas Annual Emissions

	Greenhouse Gas Emissions (Metric Tons per Year)			
Category	**CO_2**	**CH_4**	**N_2O**	**CO_2e**
Year 2010 BAU Emissions				
Area Sources[1]	0.01	0.00	0.00	0.01
Energy Usage[2]	1,569.16	0.05	0.02	1,576.09
Mobile Sources[3]	1,216.98	0.15	0.00	1,220.71
Solid Waste[4]	13.34	0.79	0.00	33.04
Water and Wastewater[5]	14.79	0.10	0.00	18.02
Construction[6]	48.26	0.01	0.00	48.42
Total 2010 BAU Emissions	**2,862.54**	**1.10**	**0.02**	**2,896.29**
Opening Year 2021 Project Emissions				
Area Sources[1]	0.01	0.00	0.00	0.01
Energy Usage[2]	1,047.20	0.03	0.01	1,051.81
Mobile Sources[3]	1,154.92	0.07	0.00	1,156.65
Solid Waste[4]	6.67	0.39	0.00	16.52
Water and Wastewater[5]	8.67	0.08	0.00	11.33
Construction[6]	48.26	0.01	0.00	48.42
Total 2021 Emissions	**2,265.82**	**0.58**	**0.01**	**2,284.74**
Percent Reduction between BAU and Opening Year 2021				**21.1%**
Climate Action Plan Year 2020 GHG Reduction Target				**15%**
AB 197 and SB 32 and Year 2035 GHG Reduction Target				**19%**
SCAQMD Draft Threshold of Significance for All Land Use Types				**3,000**

Notes:

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

[2] Energy usage consists of GHG emissions from electricity and natural gas usage.

[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 2016.3.2.

The data provided in Table Q above shows that the proposed project would create 2,896.26 $MTCO_2e$ per year based on the business-as-usual year 2010 conditions. Table M also shows through implementation of approved statewide GHG reduction regulations that would be fully implemented by the proposed project opening year of 2021, the GHG emissions would be 2,284.74 $MTCO_2e$ per year. The proposed project's opening year 2021 GHG emissions would be 21.1 percent less than the BAU emissions and would be within both the Climate Action Plan's target reduction of 15 percent and the 19 percent reduction target discussed above in Section 8.6 to address AB 197 and SB 32. It should also be noted that the GHG emissions generated by proposed project would be below the SCAQMD draft significance threshold of 3,000 $MTCO_2e$ per year for both the BAU year 2010 conditions and opening year 2021 conditions. Therefore, a less than significant generation of GHG emissions would occur from construction and operation of the proposed project.

Level of Significance

Less than significant impact.

9.9 Greenhouse Gas Plan Consistency

The proposed project would not conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing GHG emissions. The applicable plan for the proposed project is the *City of Murrieta General Plan Update Climatic Action Plan* (Climate Action Plan), adopted January, 2011. The City of Murrieta has adopted a Climate Action Plan that has been prepared to assist the City in conforming to the GHG emissions reductions as mandated under AB 32. The Climate Action Plan found that in 2009, which is the baseline year for the Climate Action Plan, the City of Murrieta generated 430,842 metric tons of CO_2e and in 2020 the City is anticipated to generate 833,934 metric tons of CO_2e. The Climate Action Plan developed its GHG emissions reduction targets based on the goals of AB 32 and the CARB Scoping Plan, which requires the reduction of GHG emissions to 1990 levels by 2020. This requires cutting approximately 30 percent from business-as-usual (BAU) emissions levels, or about 15 percent from year 2009 levels. Consistent with the CARB Scoping Plan, the City of Murrieta has chosen a reduction target of 15 percent below 2009 GHG emissions levels by 2020. Therefore, the proposed project would be considered to be inconsistent with the Climate Action Plan if the proposed project's GHG emissions are at least 15 percent less than GHG emissions from business-as-usual conditions for a similar size project in year 2009.

The GHG emissions analysis provided in Section 9.8 found that the opening year 2021 emissions would be 21.1 percent lower than the calculated GHG emissions for a similar sized project operating in year 2010. The proposed project would be consistent with the emissions reduction targets provided in the Climate Action Plan. Furthermore, the proposed project is consistent with the applicable policies in the Climate Action Plan, since it would consist of a hotel and event center development in close proximity to an existing commercial center and an existing transit stop (RTA Bus 61 stop at Super Target, located 520 feet south of project site) that will promote a walkable community and the use of public transit.

However, it should be noted that the Climate Action Plan was prepared prior to the issuance of Executive Order B-30-15 on April 29, 2015 that provided a reduction goal of 40 percent below 1990 levels by 2030. This target was codified into statute through passage of AB 197 and SB 32 in September 2016. In order to meet the new GHG emission targets provided in AB 197 and SB 32, CARB has provided regional planning targets for the MPOs located with the state 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. In order to provide a conservative analysis that accounts for AB 197 and SB 32, a GHG emission reduction target of 19 percent by 2035 has also been utilized in this analysis. The GHG emissions analysis provided in Section 9.8 found that the proposed project's opening year 2021 GHG emissions would be 21.1 percent lower than the calculated GHG emissions for a similar sized project operating in year 2010. The proposed project would be consistent with the emissions reduction targets detailed above to address the reduction targets provided in AB 197 and SB 32. Therefore, the proposed project would not conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases. Impacts would be less than significant.

Level of Significance

Less than significant impact.

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APPENDIX A

CalEEMod Model Daily Printouts

Sapphire Hotel & Event Center

Riverside-South Coast County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Parking Lot	254.00	Space	0.85	36,810.00	0
Hotel	120.00	Room	6.14	174,240.00	0
Other Asphalt Surfaces	3.34	Acre	3.34	145,490.40	0
Other Non-Asphalt Surfaces	5.45	Acre	5.45	237,402.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.4	**Precipitation Freq (Days)**	28
Climate Zone	10			**Operational Year**	2021
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	500	**CH4 Intensity (lb/MWhr)**	0.021	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Sapphire Hotel & Event Center - Riverside-South Coast County, Summer

Project Characteristics - SCE's Intensity factors reduced by 28.8% to account for percentage of carbon-free electricity as detailed in Edison Inter. 2017 Sustainability Report

Land Use - Lot Acreage based on the gross project area of 15.78 acres

Construction Phase - Construction schedule provided by applicant

Grading - Site Preparation - Export 30,000 cu yds of spoils; Grading Import/Export 10,000 cu yds

Trips and VMT - 6 vendor trips added to Site Prep and Grading to account for water truck emissions

Vehicle Trips - Hotel Trip Rate = 8.36 daily trips per room from TIA

Energy Use -

Construction Off-road Equipment Mitigation - Water Exposed Area 2x per day selected to account for SCAQMD Rule 403 Minimum Requirements

Mobile Land Use Mitigation - Improve Ped Network Onsite & Connecting Offsite

Energy Mitigation - Exceed Title 24 - 30% improvement to account for 2019 Title 24 Standards

Water Mitigation - Install low-flow faucets, toilets and showers and use water-efficient irrigation systems

Waste Mitigation - Reduction in Waste selected to account for AB 341.

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	10.00	22.00
tblConstructionPhase	NumDays	30.00	43.00
tblConstructionPhase	NumDays	300.00	305.00
tblConstructionPhase	NumDays	20.00	21.00
tblConstructionPhase	NumDays	20.00	44.00
tblConstructionPhase	PhaseEndDate	12/12/2019	12/31/2019
tblConstructionPhase	PhaseEndDate	1/23/2020	2/28/2020
tblConstructionPhase	PhaseEndDate	3/18/2021	4/30/2021
tblConstructionPhase	PhaseEndDate	4/15/2021	5/31/2021
tblConstructionPhase	PhaseEndDate	5/13/2021	7/31/2021
tblConstructionPhase	PhaseStartDate	11/29/2019	12/1/2019
tblConstructionPhase	PhaseStartDate	12/13/2019	1/1/2020
tblConstructionPhase	PhaseStartDate	1/24/2020	3/1/2020

tblConstructionPhase	PhaseStartDate	3/19/2021	5/1/2021
tblConstructionPhase	PhaseStartDate	4/16/2021	6/1/2021
tblGrading	MaterialExported	0.00	30,000.00
tblGrading	MaterialImported	0.00	10,000.00
tblLandUse	LandUseSquareFeet	101,600.00	36,810.00
tblLandUse	LotAcreage	2.29	0.85
tblLandUse	LotAcreage	4.00	6.14
tblProjectCharacteristics	CH4IntensityFactor	0.029	0.021
tblProjectCharacteristics	CO2IntensityFactor	702.44	500
tblProjectCharacteristics	N2OIntensityFactor	0.006	0.004
tblTripsAndVMT	VendorTripNumber	0.00	6.00
tblTripsAndVMT	VendorTripNumber	0.00	6.00
tblVehicleTrips	ST_TR	8.19	8.36
tblVehicleTrips	SU_TR	5.95	8.36
tblVehicleTrips	WD_TR	8.17	8.36

2.0 Emissions Summary

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					
2019	5.4116	89.8609	28.2270	0.1728	21.4607	2.5542	24.0149	10.8388	2.3558	13.1946	0.0000	18,046.5387	18,046.5387	2.0749	0.0000	18,098.4103
2020	4.7181	57.7584	33.7270	0.0879	9.4733	2.2007	11.6740	3.8107	2.0256	5.8363	0.0000	8,739.5794	8,739.5794	2.1004	0.0000	8,792.0893
2021	39.8178	27.0809	27.3825	0.0787	3.4044	0.9921	4.3965	0.9170	0.9327	1.8497	0.0000	7,855.1286	7,855.1286	0.8689	0.0000	7,876.8499
Maximum	**39.8178**	**89.8609**	**33.7270**	**0.1728**	**21.4607**	**2.5542**	**24.0149**	**10.8388**	**2.3558**	**13.1946**	**0.0000**	**18,046.5387**	**18,046.5387**	**2.1004**	**0.0000**	**18,098.4103**

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					
2019	5.4116	89.8609	28.2270	0.1728	11.4293	2.5542	13.9835	5.3625	2.3558	7.7183	0.0000	18,046.5387	18,046.5387	2.0749	0.0000	18,098.4103
2020	4.7181	57.7584	33.7270	0.0879	4.6868	2.2007	6.8875	1.8302	2.0256	3.8558	0.0000	8,739.5794	8,739.5794	2.1004	0.0000	8,792.0893
2021	39.8178	27.0809	27.3825	0.0787	3.4044	0.9921	4.3965	0.9170	0.9327	1.8497	0.0000	7,855.1286	7,855.1286	0.8689	0.0000	7,876.8499
Maximum	**39.8178**	**89.8609**	**33.7270**	**0.1728**	**11.4293**	**2.5542**	**13.9835**	**5.3625**	**2.3558**	**7.7183**	**0.0000**	**18,046.5387**	**18,046.5387**	**2.1004**	**0.0000**	**18,098.4103**

Sapphire Hotel & Event Center - Riverside-South Coast County, Summer

	ROG	NOx	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	43.15	0.00	36.97	47.90	0.00	35.71	0.00	0.00	0.00	0.00	0.00	0.00

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	4.0768	3.6000e-004	0.0392	0.0000		1.4000e-004	1.4000e-004		1.4000e-004	1.4000e-004		0.0838	0.0838	2.2000e-004		0.0893
Energy	0.3089	2.8085	2.3592	0.0169		0.2135	0.2135		0.2135	0.2135		3,370.2312	3,370.2312	0.0646	0.0618	3,390.2588
Mobile	1.8244	12.5864	18.1727	0.0738	5.1054	0.0505	5.1559	1.3660	0.0474	1.4134		7,531.6735	7,531.6735	0.4162		7,542.0776
Total	**6.2101**	**15.3953**	**20.5711**	**0.0906**	**5.1054**	**0.2641**	**5.3695**	**1.3660**	**0.2610**	**1.6270**		**10,901.9885**	**10,901.9885**	**0.4810**	**0.0618**	**10,932.4258**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	4.0768	3.6000e-004	0.0392	0.0000		1.4000e-004	1.4000e-004		1.4000e-004	1.4000e-004		0.0838	0.0838	2.2000e-004		0.0893
Energy	0.2238	2.0342	1.7087	0.0122		0.1546	0.1546		0.1546	0.1546		2,441.0448	2,441.0448	0.0468	0.0448	2,455.5507
Mobile	1.8151	12.4959	17.8865	0.0725	5.0033	0.0496	5.0529	1.3387	0.0466	1.3853		7,404.9816	7,404.9816	0.4127		7,415.2982
Total	**6.1156**	**14.5305**	**19.6344**	**0.0847**	**5.0033**	**0.2044**	**5.2076**	**1.3387**	**0.2013**	**1.5400**		**9,846.1102**	**9,846.1102**	**0.4597**	**0.0448**	**9,870.9383**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**1.52**	**5.62**	**4.55**	**6.50**	**2.00**	**22.62**	**3.01**	**2.00**	**22.86**	**5.35**	**0.00**	**9.69**	**9.69**	**4.43**	**27.58**	**9.71**

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	12/1/2019	12/31/2019	5	22	
2	Grading	Grading	1/1/2020	2/28/2020	5	43	
3	Building Construction	Building Construction	3/1/2020	4/30/2021	5	305	
4	Paving	Paving	5/1/2021	5/31/2021	5	21	
5	Architectural Coating	Architectural Coating	6/1/2021	7/31/2021	5	44	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 107.5

Acres of Paving: 9.64

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 261,360; Non-Residential Outdoor: 87,120; Striped Parking Area: 25,182 (Architectural Coating – sqft)

OffRoad Equipment

Sapphire Hotel & Event Center - Riverside-South Coast County, Summer

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
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	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Grading	Scrapers	2	8.00	367	0.48
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	3,750.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	6.00	1,250.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	249.00	97.00	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	50.00	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 - 2019

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					18.2389	0.0000	18.2389	9.9568	0.0000	9.9568			0.0000			0.0000
Off-Road	4.3350	45.5727	22.0630	0.0380		2.3904	2.3904		2.1991	2.1991		3,766.4529	3,766.4529	1.1917		3,796.2445
Total	**4.3350**	**45.5727**	**22.0630**	**0.0380**	**18.2389**	**2.3904**	**20.6293**	**9.9568**	**2.1991**	**12.1560**		**3,766.4529**	**3,766.4529**	**1.1917**		**3,796.2445**

3.2 Site Preparation - 2019

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	0.9575	43.5443	5.2364	0.1312	2.9822	0.1574	3.1395	0.8175	0.1506	0.9681		13,908.9502	13,908.9502	0.8642		13,930.5541
Vendor	0.0200	0.6830	0.1280	1.5800e-003	0.0384	5.1900e-003	0.0436	0.0111	4.9600e-003	0.0160		166.3816	166.3816	0.0133		166.7144
Worker	0.0991	0.0608	0.7997	2.0600e-003	0.2012	1.2400e-003	0.2024	0.0534	1.1400e-003	0.0545		204.7540	204.7540	5.7300e-003		204.8973
Total	**1.0766**	**44.2882**	**6.1640**	**0.1348**	**3.2218**	**0.1638**	**3.3856**	**0.8819**	**0.1567**	**1.0386**		**14,280.0858**	**14,280.0858**	**0.8832**		**14,302.1658**

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					8.2075	0.0000	8.2075	4.4806	0.0000	4.4806			0.0000			0.0000
Off-Road	4.3350	45.5727	22.0630	0.0380		2.3904	2.3904		2.1991	2.1991	0.0000	3,766.4529	3,766.4529	1.1917		3,796.2445
Total	**4.3350**	**45.5727**	**22.0630**	**0.0380**	**8.2075**	**2.3904**	**10.5979**	**4.4806**	**2.1991**	**6.6797**	**0.0000**	**3,766.4529**	**3,766.4529**	**1.1917**		**3,796.2445**

3.2 Site Preparation - 2019

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	0.9575	43.5443	5.2364	0.1312	2.9822	0.1574	3.1395	0.8175	0.1506	0.9681		13,908.9502	13,908.9502	0.8642		13,930.5541
Vendor	0.0200	0.6830	0.1280	1.5800e-003	0.0384	5.1900e-003	0.0436	0.0111	4.9600e-003	0.0160		166.3816	166.3816	0.0133		166.7144
Worker	0.0991	0.0608	0.7997	2.0600e-003	0.2012	1.2400e-003	0.2024	0.0534	1.1400e-003	0.0545		204.7540	204.7540	5.7300e-003		204.8973
Total	**1.0766**	**44.2882**	**6.1640**	**0.1348**	**3.2218**	**0.1638**	**3.3856**	**0.8819**	**0.1567**	**1.0386**		**14,280.0858**	**14,280.0858**	**0.8832**		**14,302.1658**

3.3 Grading - 2020

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					8.7028	0.0000	8.7028	3.6010	0.0000	3.6010			0.0000			0.0000
Off-Road	4.4501	50.1975	31.9583	0.0620		2.1739	2.1739		2.0000	2.0000		6,005.8653	6,005.8653	1.9424		6,054.4257
Total	**4.4501**	**50.1975**	**31.9583**	**0.0620**	**8.7028**	**2.1739**	**10.8767**	**3.6010**	**2.0000**	**5.6010**		**6,005.8653**	**6,005.8653**	**1.9424**		**6,054.4257**

3.3 Grading - 2020

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	0.1495	6.8833	0.8493	0.0221	0.5085	0.0219	0.5305	0.1394	0.0210	0.1604		2,348.1607	2,348.1607	0.1399		2,351.6590
Vendor	0.0167	0.6174	0.1129	1.5700e-003	0.0384	3.5100e-003	0.0419	0.0111	3.3600e-003	0.0144		165.2346	165.2346	0.0124		165.5444
Worker	0.1018	0.0602	0.8064	2.2100e-003	0.2236	1.3500e-003	0.2249	0.0593	1.2500e-003	0.0605		220.3189	220.3189	5.6500e-003		220.4601
Total	**0.2680**	**7.5609**	**1.7687**	**0.0259**	**0.7705**	**0.0268**	**0.7973**	**0.2098**	**0.0256**	**0.2353**		**2,733.7141**	**2,733.7141**	**0.1580**		**2,737.6635**

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					3.9163	0.0000	3.9163	1.6204	0.0000	1.6204			0.0000			0.0000
Off-Road	4.4501	50.1975	31.9583	0.0620		2.1739	2.1739		2.0000	2.0000	0.0000	6,005.8653	6,005.8653	1.9424		6,054.4257
Total	**4.4501**	**50.1975**	**31.9583**	**0.0620**	**3.9163**	**2.1739**	**6.0902**	**1.6204**	**2.0000**	**3.6204**	**0.0000**	**6,005.8653**	**6,005.8653**	**1.9424**		**6,054.4257**

3.3 Grading - 2020

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	0.1495	6.8833	0.8493	0.0221	0.5085	0.0219	0.5305	0.1394	0.0210	0.1604		2,348.1607	2,348.1607	0.1399		2,351.6590
Vendor	0.0167	0.6174	0.1129	1.5700e-003	0.0384	3.5100e-003	0.0419	0.0111	3.3600e-003	0.0144		165.2346	165.2346	0.0124		165.5444
Worker	0.1018	0.0602	0.8064	2.2100e-003	0.2236	1.3500e-003	0.2249	0.0593	1.2500e-003	0.0605		220.3189	220.3189	5.6500e-003		220.4601
Total	**0.2680**	**7.5609**	**1.7687**	**0.0259**	**0.7705**	**0.0268**	**0.7973**	**0.2098**	**0.0256**	**0.2353**		**2,733.7141**	**2,733.7141**	**0.1580**		**2,737.6635**

3.4 Building Construction - 2020

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	2.1198	19.1860	16.8485	0.0269		1.1171	1.1171		1.0503	1.0503		2,553.0631	2,553.0631	0.6229		2,568.6345
Total	**2.1198**	**19.1860**	**16.8485**	**0.0269**		**1.1171**	**1.1171**		**1.0503**	**1.0503**		**2,553.0631**	**2,553.0631**	**0.6229**		**2,568.6345**

3.4 Building Construction - 2020

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
Vendor	0.2704	9.9805	1.8259	0.0253	0.6212	0.0568	0.6779	0.1788	0.0543	0.2332		2,671.2920	2,671.2920	0.2004		2,676.3009
Worker	1.2671	0.7494	10.0401	0.0275	2.7832	0.0169	2.8001	0.7381	0.0155	0.7537		2,742.9704	2,742.9704	0.0703		2,744.7281
Total	**1.5375**	**10.7299**	**11.8659**	**0.0529**	**3.4044**	**0.0736**	**3.4780**	**0.9170**	**0.0698**	**0.9868**		**5,414.2624**	**5,414.2624**	**0.2707**		**5,421.0291**

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	2.1198	19.1860	16.8485	0.0269		1.1171	1.1171		1.0503	1.0503	0.0000	2,553.0631	2,553.0631	0.6229		2,568.6345
Total	**2.1198**	**19.1860**	**16.8485**	**0.0269**		**1.1171**	**1.1171**		**1.0503**	**1.0503**	**0.0000**	**2,553.0631**	**2,553.0631**	**0.6229**		**2,568.6345**

3.4 Building Construction - 2020

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
Vendor	0.2704	9.9805	1.8259	0.0253	0.6212	0.0568	0.6779	0.1788	0.0543	0.2332		2,671.2920	2,671.2920	0.2004		2,676.3009
Worker	1.2671	0.7494	10.0401	0.0275	2.7832	0.0169	2.8001	0.7381	0.0155	0.7537		2,742.9704	2,742.9704	0.0703		2,744.7281
Total	**1.5375**	**10.7299**	**11.8659**	**0.0529**	**3.4044**	**0.0736**	**3.4780**	**0.9170**	**0.0698**	**0.9868**		**5,414.2624**	**5,414.2624**	**0.2707**		**5,421.0291**

3.4 Building Construction - 2021

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	1.9009	17.4321	16.5752	0.0269		0.9586	0.9586		0.9013	0.9013		2,553.3639	2,553.3639	0.6160		2,568.7643
Total	**1.9009**	**17.4321**	**16.5752**	**0.0269**		**0.9586**	**0.9586**		**0.9013**	**0.9013**		**2,553.3639**	**2,553.3639**	**0.6160**		**2,568.7643**

3.4 Building Construction - 2021

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
Vendor	0.2265	8.9763	1.6015	0.0251	0.6211	0.0171	0.6382	0.1788	0.0163	0.1952		2,650.5349	2,650.5349	0.1896		2,655.2754
Worker	1.1805	0.6725	9.2058	0.0266	2.7832	0.0164	2.7996	0.7381	0.0151	0.7532		2,651.2298	2,651.2298	0.0632		2,652.8102
Total	**1.4070**	**9.6488**	**10.8073**	**0.0517**	**3.4044**	**0.0335**	**3.4378**	**0.9170**	**0.0314**	**0.9484**		**5,301.7647**	**5,301.7647**	**0.2528**		**5,308.0856**

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	1.9009	17.4321	16.5752	0.0269		0.9586	0.9586		0.9013	0.9013	0.0000	2,553.3639	2,553.3639	0.6160		2,568.7643
Total	**1.9009**	**17.4321**	**16.5752**	**0.0269**		**0.9586**	**0.9586**		**0.9013**	**0.9013**	**0.0000**	**2,553.3639**	**2,553.3639**	**0.6160**		**2,568.7643**

3.4 Building Construction - 2021

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
Vendor	0.2265	8.9763	1.6015	0.0251	0.6211	0.0171	0.6382	0.1788	0.0163	0.1952		2,650.5349	2,650.5349	0.1896		2,655.2754
Worker	1.1805	0.6725	9.2058	0.0266	2.7832	0.0164	2.7996	0.7381	0.0151	0.7532		2,651.2298	2,651.2298	0.0632		2,652.8102
Total	**1.4070**	**9.6488**	**10.8073**	**0.0517**	**3.4044**	**0.0335**	**3.4378**	**0.9170**	**0.0314**	**0.9484**		**5,301.7647**	**5,301.7647**	**0.2528**		**5,308.0856**

3.5 Paving - 2021

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	1.2556	12.9191	14.6532	0.0228		0.6777	0.6777		0.6235	0.6235		2,207.2109	2,207.2109	0.7139		2,225.0573
Paving	0.5228					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.7783**	**12.9191**	**14.6532**	**0.0228**		**0.6777**	**0.6777**		**0.6235**	**0.6235**		**2,207.2109**	**2,207.2109**	**0.7139**		**2,225.0573**

3.5 Paving - 2021

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
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
Worker	0.0711	0.0405	0.5546	1.6000e-003	0.1677	9.9000e-004	0.1687	0.0445	9.1000e-004	0.0454		159.7126	159.7126	3.8100e-003		159.8078
Total	**0.0711**	**0.0405**	**0.5546**	**1.6000e-003**	**0.1677**	**9.9000e-004**	**0.1687**	**0.0445**	**9.1000e-004**	**0.0454**		**159.7126**	**159.7126**	**3.8100e-003**		**159.8078**

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	1.2556	12.9191	14.6532	0.0228		0.6777	0.6777		0.6235	0.6235	0.0000	2,207.2109	2,207.2109	0.7139		2,225.0573
Paving	0.5228					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.7783**	**12.9191**	**14.6532**	**0.0228**		**0.6777**	**0.6777**		**0.6235**	**0.6235**	**0.0000**	**2,207.2109**	**2,207.2109**	**0.7139**		**2,225.0573**

3.5 Paving - 2021

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
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
Worker	0.0711	0.0405	0.5546	1.6000e-003	0.1677	9.9000e-004	0.1687	0.0445	9.1000e-004	0.0454		159.7126	159.7126	3.8100e-003		159.8078
Total	**0.0711**	**0.0405**	**0.5546**	**1.6000e-003**	**0.1677**	**9.9000e-004**	**0.1687**	**0.0445**	**9.1000e-004**	**0.0454**		**159.7126**	**159.7126**	**3.8100e-003**		**159.8078**

3.6 Architectural Coating - 2021

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	39.3619					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2189	1.5268	1.8176	2.9700e-003		0.0941	0.0941		0.0941	0.0941		281.4481	281.4481	0.0193		281.9309
Total	**39.5808**	**1.5268**	**1.8176**	**2.9700e-003**		**0.0941**	**0.0941**		**0.0941**	**0.0941**		**281.4481**	**281.4481**	**0.0193**		**281.9309**

3.6 Architectural Coating - 2021

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
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
Worker	0.2371	0.1350	1.8486	5.3400e-003	0.5589	3.2900e-003	0.5622	0.1482	3.0300e-003	0.1513		532.3755	532.3755	0.0127		532.6928
Total	**0.2371**	**0.1350**	**1.8486**	**5.3400e-003**	**0.5589**	**3.2900e-003**	**0.5622**	**0.1482**	**3.0300e-003**	**0.1513**		**532.3755**	**532.3755**	**0.0127**		**532.6928**

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	39.3619					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2189	1.5268	1.8176	2.9700e-003		0.0941	0.0941		0.0941	0.0941	0.0000	281.4481	281.4481	0.0193		281.9309
Total	**39.5808**	**1.5268**	**1.8176**	**2.9700e-003**		**0.0941**	**0.0941**		**0.0941**	**0.0941**	**0.0000**	**281.4481**	**281.4481**	**0.0193**		**281.9309**

3.6 Architectural Coating - 2021

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
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
Worker	0.2371	0.1350	1.8486	5.3400e-003	0.5589	3.2900e-003	0.5622	0.1482	3.0300e-003	0.1513		532.3755	532.3755	0.0127		532.6928
Total	**0.2371**	**0.1350**	**1.8486**	**5.3400e-003**	**0.5589**	**3.2900e-003**	**0.5622**	**0.1482**	**3.0300e-003**	**0.1513**		**532.3755**	**532.3755**	**0.0127**		**532.6928**

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	1.8151	12.4959	17.8865	0.0725	5.0033	0.0496	5.0529	1.3387	0.0466	1.3853		7,404.9816	7,404.9816	0.4127		7,415.2982
Unmitigated	1.8244	12.5864	18.1727	0.0738	5.1054	0.0505	5.1559	1.3660	0.0474	1.4134		7,531.6735	7,531.6735	0.4162		7,542.0776

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Other Asphalt Surfaces	0.00	0.00	0.00		
Hotel	1,003.20	1,003.20	1003.20	2,393,807	2,345,931
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Total	1,003.20	1,003.20	1,003.20	2,393,807	2,345,931

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
Other Asphalt Surfaces	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
Hotel	16.60	8.40	6.90	19.40	61.60	19.00	58	38	4
Other Non-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
Other Asphalt Surfaces	0.542116	0.037578	0.185203	0.118503	0.016241	0.005141	0.017392	0.068695	0.001383	0.001183	0.004582	0.000945	0.001038
Hotel	0.542116	0.037578	0.185203	0.118503	0.016241	0.005141	0.017392	0.068695	0.001383	0.001183	0.004582	0.000945	0.001038
Other Non-Asphalt Surfaces	0.542116	0.037578	0.185203	0.118503	0.016241	0.005141	0.017392	0.068695	0.001383	0.001183	0.004582	0.000945	0.001038
Parking Lot	0.542116	0.037578	0.185203	0.118503	0.016241	0.005141	0.017392	0.068695	0.001383	0.001183	0.004582	0.000945	0.001038

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	0.2238	2.0342	1.7087	0.0122		0.1546	0.1546		0.1546	0.1546		2,441.0448	2,441.0448	0.0468	0.0448	2,455.5507
NaturalGas Unmitigated	0.3089	2.8085	2.3592	0.0169		0.2135	0.2135		0.2135	0.2135		3,370.2312	3,370.2312	0.0646	0.0618	3,390.2588

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					
Hotel	28647	0.3089	2.8085	2.3592	0.0169		0.2135	0.2135		0.2135	0.2135		3,370.2312	3,370.2312	0.0646	0.0618	3,390.2588
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
Other Non-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		**0.3089**	**2.8085**	**2.3592**	**0.0169**		**0.2135**	**0.2135**		**0.2135**	**0.2135**		**3,370.2312**	**3,370.2312**	**0.0646**	**0.0618**	**3,390.2588**

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					
Hotel	20.7489	0.2238	2.0342	1.7087	0.0122		0.1546	0.1546		0.1546	0.1546		2,441.0448	2,441.0448	0.0468	0.0448	2,455.5507
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
Other Non-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		**0.2238**	**2.0342**	**1.7087**	**0.0122**		**0.1546**	**0.1546**		**0.1546**	**0.1546**		**2,441.0448**	**2,441.0448**	**0.0468**	**0.0448**	**2,455.5507**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	4.0768	3.6000e-004	0.0392	0.0000		1.4000e-004	1.4000e-004		1.4000e-004	1.4000e-004		0.0838	0.0838	2.2000e-004		0.0893
Unmitigated	4.0768	3.6000e-004	0.0392	0.0000		1.4000e-004	1.4000e-004		1.4000e-004	1.4000e-004		0.0838	0.0838	2.2000e-004		0.0893

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	0.4745					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	3.5986					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	3.6600e-003	3.6000e-004	0.0392	0.0000		1.4000e-004	1.4000e-004		1.4000e-004	1.4000e-004		0.0838	0.0838	2.2000e-004		0.0893
Total	**4.0768**	**3.6000e-004**	**0.0392**	**0.0000**		**1.4000e-004**	**1.4000e-004**		**1.4000e-004**	**1.4000e-004**		**0.0838**	**0.0838**	**2.2000e-004**		**0.0893**

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	0.4745					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	3.5986					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	3.6600e-003	3.6000e-004	0.0392	0.0000		1.4000e-004	1.4000e-004		1.4000e-004	1.4000e-004		0.0838	0.0838	2.2000e-004		0.0893
Total	**4.0768**	**3.6000e-004**	**0.0392**	**0.0000**		**1.4000e-004**	**1.4000e-004**		**1.4000e-004**	**1.4000e-004**		**0.0838**	**0.0838**	**2.2000e-004**		**0.0893**

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

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

Sapphire Hotel & Event Center

Riverside-South Coast County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Parking Lot	254.00	Space	0.85	36,810.00	0
Hotel	120.00	Room	6.14	174,240.00	0
Other Asphalt Surfaces	3.34	Acre	3.34	145,490.40	0
Other Non-Asphalt Surfaces	5.45	Acre	5.45	237,402.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.4	**Precipitation Freq (Days)**	28
Climate Zone	10			**Operational Year**	2021
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	500	**CH4 Intensity (lb/MWhr)**	0.021	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Sapphire Hotel & Event Center - Riverside-South Coast County, Winter

Project Characteristics - SCE's Intensity factors reduced by 28.8% to account for percentage of carbon-free electricity as detailed in Edison Inter. 2017 Sustainability Report

Land Use - Lot Acreage based on the gross project area of 15.78 acres

Construction Phase - Construction schedule provided by applicant

Grading - Site Preparation - Export 30,000 cu yds of spoils; Grading Import/Export 10,000 cu yds

Trips and VMT - 6 vendor trips added to Site Prep and Grading to account for water truck emissions

Vehicle Trips - Hotel Trip Rate = 8.36 daily trips per room from TIA

Energy Use -

Construction Off-road Equipment Mitigation - Water Exposed Area 2x per day selected to account for SCAQMD Rule 403 Minimum Requirements

Mobile Land Use Mitigation - Improve Ped Network Onsite & Connecting Offsite

Energy Mitigation - Exceed Title 24 - 30% improvement to account for 2019 Title 24 Standards

Water Mitigation - Install low-flow faucets, toilets and showers and use water-efficient irrigation systems

Waste Mitigation - Reduction in Waste selected to account for AB 341.

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	10.00	22.00
tblConstructionPhase	NumDays	30.00	43.00
tblConstructionPhase	NumDays	300.00	305.00
tblConstructionPhase	NumDays	20.00	21.00
tblConstructionPhase	NumDays	20.00	44.00
tblConstructionPhase	PhaseEndDate	12/12/2019	12/31/2019
tblConstructionPhase	PhaseEndDate	1/23/2020	2/28/2020
tblConstructionPhase	PhaseEndDate	3/18/2021	4/30/2021
tblConstructionPhase	PhaseEndDate	4/15/2021	5/31/2021
tblConstructionPhase	PhaseEndDate	5/13/2021	7/31/2021
tblConstructionPhase	PhaseStartDate	11/29/2019	12/1/2019
tblConstructionPhase	PhaseStartDate	12/13/2019	1/1/2020
tblConstructionPhase	PhaseStartDate	1/24/2020	3/1/2020

tblConstructionPhase	PhaseStartDate	3/19/2021	5/1/2021
tblConstructionPhase	PhaseStartDate	4/16/2021	6/1/2021
tblGrading	MaterialExported	0.00	30,000.00
tblGrading	MaterialImported	0.00	10,000.00
tblLandUse	LandUseSquareFeet	101,600.00	36,810.00
tblLandUse	LotAcreage	2.29	0.85
tblLandUse	LotAcreage	4.00	6.14
tblProjectCharacteristics	CH4IntensityFactor	0.029	0.021
tblProjectCharacteristics	CO2IntensityFactor	702.44	500
tblProjectCharacteristics	N2OIntensityFactor	0.006	0.004
tblTripsAndVMT	VendorTripNumber	0.00	6.00
tblTripsAndVMT	VendorTripNumber	0.00	6.00
tblVehicleTrips	ST_TR	8.19	8.36
tblVehicleTrips	SU_TR	5.95	8.36
tblVehicleTrips	WD_TR	8.17	8.36

2.0 Emissions Summary

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					
2019	5.4596	90.3001	29.0159	0.1693	21.4607	2.5570	24.0178	10.8388	2.3585	13.1973	0.0000	17,674.3353	17,674.3353	2.1576	0.0000	17,728.2760
2020	4.7247	57.8174	33.7376	0.0871	9.4733	2.2011	11.6744	3.8107	2.0259	5.8366	0.0000	8,651.9504	8,651.9504	2.1143	0.0000	8,704.8075
2021	39.8134	27.0266	25.9006	0.0750	3.4044	0.9926	4.3970	0.9170	0.9332	1.8502	0.0000	7,482.6361	7,482.6361	0.8823	0.0000	7,504.6926
Maximum	**39.8134**	**90.3001**	**33.7376**	**0.1693**	**21.4607**	**2.5570**	**24.0178**	**10.8388**	**2.3585**	**13.1973**	**0.0000**	**17,674.3353**	**17,674.3353**	**2.1576**	**0.0000**	**17,728.2760**

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					
2019	5.4596	90.3001	29.0159	0.1693	11.4293	2.5570	13.9863	5.3625	2.3585	7.7210	0.0000	17,674.3353	17,674.3353	2.1576	0.0000	17,728.2760
2020	4.7247	57.8174	33.7376	0.0871	4.6868	2.2011	6.8878	1.8302	2.0259	3.8561	0.0000	8,651.9503	8,651.9503	2.1143	0.0000	8,704.8075
2021	39.8134	27.0266	25.9006	0.0750	3.4044	0.9926	4.3970	0.9170	0.9332	1.8502	0.0000	7,482.6361	7,482.6361	0.8823	0.0000	7,504.6925
Maximum	**39.8134**	**90.3001**	**33.7376**	**0.1693**	**11.4293**	**2.5570**	**13.9863**	**5.3625**	**2.3585**	**7.7210**	**0.0000**	**17,674.3353**	**17,674.3353**	**2.1576**	**0.0000**	**17,728.2760**

Sapphire Hotel & Event Center - Riverside-South Coast County, Winter

	ROG	NOx	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	43.15	0.00	36.96	47.90	0.00	35.71	0.00	0.00	0.00	0.00	0.00	0.00

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	4.0768	3.6000e-004	0.0392	0.0000		1.4000e-004	1.4000e-004		1.4000e-004	1.4000e-004		0.0838	0.0838	2.2000e-004		0.0893
Energy	0.3089	2.8085	2.3592	0.0169		0.2135	0.2135		0.2135	0.2135		3,370.2312	3,370.2312	0.0646	0.0618	3,390.2588
Mobile	1.5326	12.5153	16.1113	0.0679	5.1054	0.0512	5.1566	1.3660	0.0481	1.4141		6,941.2453	6,941.2453	0.4364		6,952.1545
Total	**5.9183**	**15.3242**	**18.5097**	**0.0848**	**5.1054**	**0.2648**	**5.3702**	**1.3660**	**0.2616**	**1.6277**		**10,311.5603**	**10,311.5603**	**0.5012**	**0.0618**	**10,342.5027**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	4.0768	3.6000e-004	0.0392	0.0000		1.4000e-004	1.4000e-004		1.4000e-004	1.4000e-004		0.0838	0.0838	2.2000e-004		0.0893
Energy	0.2238	2.0342	1.7087	0.0122		0.1546	0.1546		0.1546	0.1546		2,441.0448	2,441.0448	0.0468	0.0448	2,455.5507
Mobile	1.5239	12.4204	15.8825	0.0668	5.0033	0.0503	5.0536	1.3387	0.0472	1.3859		6,823.5718	6,823.5718	0.4331		6,834.3999
Total	**5.8244**	**14.4549**	**17.6305**	**0.0790**	**5.0033**	**0.2051**	**5.2083**	**1.3387**	**0.2020**	**1.5407**		**9,264.7004**	**9,264.7004**	**0.4801**	**0.0448**	**9,290.0400**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	1.59	5.67	4.75	6.83	2.00	22.56	3.01	2.00	22.81	5.35	0.00	10.15	10.15	4.20	27.58	10.18

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	12/1/2019	12/31/2019	5	22	
2	Grading	Grading	1/1/2020	2/28/2020	5	43	
3	Building Construction	Building Construction	3/1/2020	4/30/2021	5	305	
4	Paving	Paving	5/1/2021	5/31/2021	5	21	
5	Architectural Coating	Architectural Coating	6/1/2021	7/31/2021	5	44	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 107.5

Acres of Paving: 9.64

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 261,360; Non-Residential Outdoor: 87,120; Striped Parking Area: 25,182 (Architectural Coating – sqft)

OffRoad Equipment

Sapphire Hotel & Event Center - Riverside-South Coast County, Winter

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
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	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Grading	Scrapers	2	8.00	367	0.48
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	3,750.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	6.00	1,250.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	249.00	97.00	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	50.00	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 - 2019

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					18.2389	0.0000	18.2389	9.9568	0.0000	9.9568			0.0000			0.0000
Off-Road	4.3350	45.5727	22.0630	0.0380		2.3904	2.3904		2.1991	2.1991		3,766.4529	3,766.4529	1.1917		3,796.2445
Total	**4.3350**	**45.5727**	**22.0630**	**0.0380**	**18.2389**	**2.3904**	**20.6293**	**9.9568**	**2.1991**	**12.1560**		**3,766.4529**	**3,766.4529**	**1.1917**		**3,796.2445**

3.2 Site Preparation - 2019

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	1.0068	43.9830	6.1560	0.1279	2.9822	0.1602	3.1423	0.8175	0.1532	0.9708		13,564.0262	13,564.0262	0.9462		13,587.6809
Vendor	0.0210	0.6815	0.1488	1.5200e-003	0.0384	5.2500e-003	0.0437	0.0111	5.0200e-003	0.0161		160.1632	160.1632	0.0148		160.5329
Worker	0.0968	0.0630	0.6481	1.8400e-003	0.2012	1.2400e-003	0.2024	0.0534	1.1400e-003	0.0545		183.6931	183.6931	4.9800e-003		183.8177
Total	**1.1246**	**44.7274**	**6.9529**	**0.1313**	**3.2218**	**0.1667**	**3.3885**	**0.8819**	**0.1594**	**1.0413**		**13,907.8824**	**13,907.8824**	**0.9660**		**13,932.0315**

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					8.2075	0.0000	8.2075	4.4806	0.0000	4.4806			0.0000			0.0000
Off-Road	4.3350	45.5727	22.0630	0.0380		2.3904	2.3904		2.1991	2.1991	0.0000	3,766.4529	3,766.4529	1.1917		3,796.2445
Total	**4.3350**	**45.5727**	**22.0630**	**0.0380**	**8.2075**	**2.3904**	**10.5979**	**4.4806**	**2.1991**	**6.6797**	**0.0000**	**3,766.4529**	**3,766.4529**	**1.1917**		**3,796.2445**

3.2 Site Preparation - 2019

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	1.0068	43.9830	6.1560	0.1279	2.9822	0.1602	3.1423	0.8175	0.1532	0.9708		13,564.0262	13,564.0262	0.9462		13,587.6809
Vendor	0.0210	0.6815	0.1488	1.5200e-003	0.0384	5.2500e-003	0.0437	0.0111	5.0200e-003	0.0161		160.1632	160.1632	0.0148		160.5329
Worker	0.0968	0.0630	0.6481	1.8400e-003	0.2012	1.2400e-003	0.2024	0.0534	1.1400e-003	0.0545		183.6931	183.6931	4.9800e-003		183.8177
Total	**1.1246**	**44.7274**	**6.9529**	**0.1313**	**3.2218**	**0.1667**	**3.3885**	**0.8819**	**0.1594**	**1.0413**		**13,907.8824**	**13,907.8824**	**0.9660**		**13,932.0315**

3.3 Grading - 2020

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					8.7028	0.0000	8.7028	3.6010	0.0000	3.6010			0.0000			0.0000
Off-Road	4.4501	50.1975	31.9583	0.0620		2.1739	2.1739		2.0000	2.0000		6,005.8653	6,005.8653	1.9424		6,054.4257
Total	**4.4501**	**50.1975**	**31.9583**	**0.0620**	**8.7028**	**2.1739**	**10.8767**	**3.6010**	**2.0000**	**5.6010**		**6,005.8653**	**6,005.8653**	**1.9424**		**6,054.4257**

3.3 Grading - 2020

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	0.1573	6.9435	0.9947	0.0216	0.5085	0.0222	0.5308	0.1394	0.0213	0.1607		2,289.4123	2,289.4123	0.1532		2,293.2415
Vendor	0.0176	0.6141	0.1322	1.5100e-003	0.0384	3.5500e-003	0.0420	0.0111	3.4000e-003	0.0145		159.0257	159.0257	0.0138		159.3704
Worker	0.0997	0.0623	0.6524	1.9800e-003	0.2236	1.3500e-003	0.2249	0.0593	1.2500e-003	0.0605		197.6472	197.6472	4.9100e-003		197.7699
Total	**0.2746**	**7.6199**	**1.7793**	**0.0251**	**0.7705**	**0.0271**	**0.7977**	**0.2098**	**0.0259**	**0.2357**		**2,646.0851**	**2,646.0851**	**0.1719**		**2,650.3818**

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					3.9163	0.0000	3.9163	1.6204	0.0000	1.6204			0.0000			0.0000
Off-Road	4.4501	50.1975	31.9583	0.0620		2.1739	2.1739		2.0000	2.0000	0.0000	6,005.8653	6,005.8653	1.9424		6,054.4257
Total	**4.4501**	**50.1975**	**31.9583**	**0.0620**	**3.9163**	**2.1739**	**6.0902**	**1.6204**	**2.0000**	**3.6204**	**0.0000**	**6,005.8653**	**6,005.8653**	**1.9424**		**6,054.4257**

3.3 Grading - 2020

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	0.1573	6.9435	0.9947	0.0216	0.5085	0.0222	0.5308	0.1394	0.0213	0.1607		2,289.4123	2,289.4123	0.1532		2,293.2415
Vendor	0.0176	0.6141	0.1322	1.5100e-003	0.0384	3.5500e-003	0.0420	0.0111	3.4000e-003	0.0145		159.0257	159.0257	0.0138		159.3704
Worker	0.0997	0.0623	0.6524	1.9800e-003	0.2236	1.3500e-003	0.2249	0.0593	1.2500e-003	0.0605		197.6472	197.6472	4.9100e-003		197.7699
Total	**0.2746**	**7.6199**	**1.7793**	**0.0251**	**0.7705**	**0.0271**	**0.7977**	**0.2098**	**0.0259**	**0.2357**		**2,646.0851**	**2,646.0851**	**0.1719**		**2,650.3818**

3.4 Building Construction - 2020

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	2.1198	19.1860	16.8485	0.0269		1.1171	1.1171		1.0503	1.0503		2,553.0631	2,553.0631	0.6229		2,568.6345
Total	**2.1198**	**19.1860**	**16.8485**	**0.0269**		**1.1171**	**1.1171**		**1.0503**	**1.0503**		**2,553.0631**	**2,553.0631**	**0.6229**		**2,568.6345**

3.4 Building Construction - 2020

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
Vendor	0.2852	9.9282	2.1379	0.0244	0.6212	0.0574	0.6786	0.1788	0.0550	0.2338		2,570.9148	2,570.9148	0.2230		2,576.4887
Worker	1.2409	0.7752	8.1217	0.0247	2.7832	0.0169	2.8001	0.7381	0.0155	0.7537		2,460.7071	2,460.7071	0.0611		2,462.2351
Total	**1.5261**	**10.7035**	**10.2596**	**0.0491**	**3.4044**	**0.0743**	**3.4787**	**0.9170**	**0.0705**	**0.9874**		**5,031.6219**	**5,031.6219**	**0.2841**		**5,038.7238**

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	2.1198	19.1860	16.8485	0.0269		1.1171	1.1171		1.0503	1.0503	0.0000	2,553.0631	2,553.0631	0.6229		2,568.6345
Total	**2.1198**	**19.1860**	**16.8485**	**0.0269**		**1.1171**	**1.1171**		**1.0503**	**1.0503**	**0.0000**	**2,553.0631**	**2,553.0631**	**0.6229**		**2,568.6345**

3.4 Building Construction - 2020

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
Vendor	0.2852	9.9282	2.1379	0.0244	0.6212	0.0574	0.6786	0.1788	0.0550	0.2338		2,570.9148	2,570.9148	0.2230		2,576.4887
Worker	1.2409	0.7752	8.1217	0.0247	2.7832	0.0169	2.8001	0.7381	0.0155	0.7537		2,460.7071	2,460.7071	0.0611		2,462.2351
Total	**1.5261**	**10.7035**	**10.2596**	**0.0491**	**3.4044**	**0.0743**	**3.4787**	**0.9170**	**0.0705**	**0.9874**		**5,031.6219**	**5,031.6219**	**0.2841**		**5,038.7238**

3.4 Building Construction - 2021

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	1.9009	17.4321	16.5752	0.0269		0.9586	0.9586		0.9013	0.9013		2,553.3639	2,553.3639	0.6160		2,568.7643
Total	**1.9009**	**17.4321**	**16.5752**	**0.0269**		**0.9586**	**0.9586**		**0.9013**	**0.9013**		**2,553.3639**	**2,553.3639**	**0.6160**		**2,568.7643**

3.4 Building Construction - 2021

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
Vendor	0.2405	8.8990	1.8945	0.0242	0.6211	0.0176	0.6387	0.1788	0.0168	0.1957		2,550.8402	2,550.8402	0.2113		2,556.1223
Worker	1.1585	0.6955	7.4309	0.0239	2.7832	0.0164	2.7996	0.7381	0.0151	0.7532		2,378.4319	2,378.4319	0.0550		2,379.8060
Total	**1.3990**	**9.5945**	**9.3254**	**0.0481**	**3.4044**	**0.0340**	**3.4383**	**0.9170**	**0.0319**	**0.9489**		**4,929.2722**	**4,929.2722**	**0.2662**		**4,935.9283**

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	1.9009	17.4321	16.5752	0.0269		0.9586	0.9586		0.9013	0.9013	0.0000	2,553.3639	2,553.3639	0.6160		2,568.7643
Total	**1.9009**	**17.4321**	**16.5752**	**0.0269**		**0.9586**	**0.9586**		**0.9013**	**0.9013**	**0.0000**	**2,553.3639**	**2,553.3639**	**0.6160**		**2,568.7643**

3.4 Building Construction - 2021

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
Vendor	0.2405	8.8990	1.8945	0.0242	0.6211	0.0176	0.6387	0.1788	0.0168	0.1957		2,550.8402	2,550.8402	0.2113		2,556.1223
Worker	1.1585	0.6955	7.4309	0.0239	2.7832	0.0164	2.7996	0.7381	0.0151	0.7532		2,378.4319	2,378.4319	0.0550		2,379.8060
Total	**1.3990**	**9.5945**	**9.3254**	**0.0481**	**3.4044**	**0.0340**	**3.4383**	**0.9170**	**0.0319**	**0.9489**		**4,929.2722**	**4,929.2722**	**0.2662**		**4,935.9283**

3.5 Paving - 2021

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	1.2556	12.9191	14.6532	0.0228		0.6777	0.6777		0.6235	0.6235		2,207.2109	2,207.2109	0.7139		2,225.0573
Paving	0.5228					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.7783**	**12.9191**	**14.6532**	**0.0228**		**0.6777**	**0.6777**		**0.6235**	**0.6235**		**2,207.2109**	**2,207.2109**	**0.7139**		**2,225.0573**

3.5 Paving - 2021

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
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
Worker	0.0698	0.0419	0.4476	1.4400e-003	0.1677	9.9000e-004	0.1687	0.0445	9.1000e-004	0.0454		143.2790	143.2790	3.3100e-003		143.3618
Total	**0.0698**	**0.0419**	**0.4476**	**1.4400e-003**	**0.1677**	**9.9000e-004**	**0.1687**	**0.0445**	**9.1000e-004**	**0.0454**		**143.2790**	**143.2790**	**3.3100e-003**		**143.3618**

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	1.2556	12.9191	14.6532	0.0228		0.6777	0.6777		0.6235	0.6235	0.0000	2,207.2109	2,207.2109	0.7139		2,225.0573
Paving	0.5228					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.7783**	**12.9191**	**14.6532**	**0.0228**		**0.6777**	**0.6777**		**0.6235**	**0.6235**	**0.0000**	**2,207.2109**	**2,207.2109**	**0.7139**		**2,225.0573**

3.5 Paving - 2021

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
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
Worker	0.0698	0.0419	0.4476	1.4400e-003	0.1677	9.9000e-004	0.1687	0.0445	9.1000e-004	0.0454		143.2790	143.2790	3.3100e-003		143.3618
Total	**0.0698**	**0.0419**	**0.4476**	**1.4400e-003**	**0.1677**	**9.9000e-004**	**0.1687**	**0.0445**	**9.1000e-004**	**0.0454**		**143.2790**	**143.2790**	**3.3100e-003**		**143.3618**

3.6 Architectural Coating - 2021

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	39.3619					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2189	1.5268	1.8176	2.9700e-003		0.0941	0.0941		0.0941	0.0941		281.4481	281.4481	0.0193		281.9309
Total	**39.5808**	**1.5268**	**1.8176**	**2.9700e-003**		**0.0941**	**0.0941**		**0.0941**	**0.0941**		**281.4481**	**281.4481**	**0.0193**		**281.9309**

3.6 Architectural Coating - 2021

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
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
Worker	0.2326	0.1397	1.4922	4.7900e-003	0.5589	3.2900e-003	0.5622	0.1482	3.0300e-003	0.1513		477.5968	477.5968	0.0110		477.8727
Total	**0.2326**	**0.1397**	**1.4922**	**4.7900e-003**	**0.5589**	**3.2900e-003**	**0.5622**	**0.1482**	**3.0300e-003**	**0.1513**		**477.5968**	**477.5968**	**0.0110**		**477.8727**

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	39.3619					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2189	1.5268	1.8176	2.9700e-003		0.0941	0.0941		0.0941	0.0941	0.0000	281.4481	281.4481	0.0193		281.9309
Total	**39.5808**	**1.5268**	**1.8176**	**2.9700e-003**		**0.0941**	**0.0941**		**0.0941**	**0.0941**	**0.0000**	**281.4481**	**281.4481**	**0.0193**		**281.9309**

3.6 Architectural Coating - 2021

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
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
Worker	0.2326	0.1397	1.4922	4.7900e-003	0.5589	3.2900e-003	0.5622	0.1482	3.0300e-003	0.1513		477.5968	477.5968	0.0110		477.8727
Total	**0.2326**	**0.1397**	**1.4922**	**4.7900e-003**	**0.5589**	**3.2900e-003**	**0.5622**	**0.1482**	**3.0300e-003**	**0.1513**		**477.5968**	**477.5968**	**0.0110**		**477.8727**

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	1.5239	12.4204	15.8825	0.0668	5.0033	0.0503	5.0536	1.3387	0.0472	1.3859		6,823.5718	6,823.5718	0.4331		6,834.3999
Unmitigated	1.5326	12.5153	16.1113	0.0679	5.1054	0.0512	5.1566	1.3660	0.0481	1.4141		6,941.2453	6,941.2453	0.4364		6,952.1545

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Other Asphalt Surfaces	0.00	0.00	0.00		
Hotel	1,003.20	1,003.20	1003.20	2,393,807	2,345,931
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Total	1,003.20	1,003.20	1,003.20	2,393,807	2,345,931

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
Other Asphalt Surfaces	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
Hotel	16.60	8.40	6.90	19.40	61.60	19.00	58	38	4
Other Non-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
Other Asphalt Surfaces	0.542116	0.037578	0.185203	0.118503	0.016241	0.005141	0.017392	0.068695	0.001383	0.001183	0.004582	0.000945	0.001038
Hotel	0.542116	0.037578	0.185203	0.118503	0.016241	0.005141	0.017392	0.068695	0.001383	0.001183	0.004582	0.000945	0.001038
Other Non-Asphalt Surfaces	0.542116	0.037578	0.185203	0.118503	0.016241	0.005141	0.017392	0.068695	0.001383	0.001183	0.004582	0.000945	0.001038
Parking Lot	0.542116	0.037578	0.185203	0.118503	0.016241	0.005141	0.017392	0.068695	0.001383	0.001183	0.004582	0.000945	0.001038

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	0.2238	2.0342	1.7087	0.0122		0.1546	0.1546		0.1546	0.1546		2,441.0448	2,441.0448	0.0468	0.0448	2,455.5507
NaturalGas Unmitigated	0.3089	2.8085	2.3592	0.0169		0.2135	0.2135		0.2135	0.2135		3,370.2312	3,370.2312	0.0646	0.0618	3,390.2588

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					
Hotel	28647	0.3089	2.8085	2.3592	0.0169		0.2135	0.2135		0.2135	0.2135		3,370.2312	3,370.2312	0.0646	0.0618	3,390.2588
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
Other Non-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		**0.3089**	**2.8085**	**2.3592**	**0.0169**		**0.2135**	**0.2135**		**0.2135**	**0.2135**		**3,370.2312**	**3,370.2312**	**0.0646**	**0.0618**	**3,390.2588**

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					
Hotel	20.7489	0.2238	2.0342	1.7087	0.0122		0.1546	0.1546		0.1546	0.1546		2,441.0448	2,441.0448	0.0468	0.0448	2,455.5507
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
Other Non-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		**0.2238**	**2.0342**	**1.7087**	**0.0122**		**0.1546**	**0.1546**		**0.1546**	**0.1546**		**2,441.0448**	**2,441.0448**	**0.0468**	**0.0448**	**2,455.5507**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	4.0768	3.6000e-004	0.0392	0.0000		1.4000e-004	1.4000e-004		1.4000e-004	1.4000e-004		0.0838	0.0838	2.2000e-004		0.0893
Unmitigated	4.0768	3.6000e-004	0.0392	0.0000		1.4000e-004	1.4000e-004		1.4000e-004	1.4000e-004		0.0838	0.0838	2.2000e-004		0.0893

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	0.4745					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	3.5986					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	3.6600e-003	3.6000e-004	0.0392	0.0000		1.4000e-004	1.4000e-004		1.4000e-004	1.4000e-004		0.0838	0.0838	2.2000e-004		0.0893
Total	**4.0768**	**3.6000e-004**	**0.0392**	**0.0000**		**1.4000e-004**	**1.4000e-004**		**1.4000e-004**	**1.4000e-004**		**0.0838**	**0.0838**	**2.2000e-004**		**0.0893**

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	0.4745					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	3.5986					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	3.6600e-003	3.6000e-004	0.0392	0.0000		1.4000e-004	1.4000e-004		1.4000e-004	1.4000e-004		0.0838	0.0838	2.2000e-004		0.0893
Total	**4.0768**	**3.6000e-004**	**0.0392**	**0.0000**		**1.4000e-004**	**1.4000e-004**		**1.4000e-004**	**1.4000e-004**		**0.0838**	**0.0838**	**2.2000e-004**		**0.0893**

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

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 B

EMFAC2017 Model Printouts

EMFAC2017 (v1.0.2) Emissions Inventory
Region Type: Air Basin
Region: SOUTH COAST
Calendar Year: 2019
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

Region	Calendar Y	Vehicle Cat	Model Year	Speed	Fuel	Population	VMT	Trips	Fuel Consumption
SOUTH COAST	2019	HHDT	Aggregated	Aggregatec	GAS	101.2689	7,659	2,026	2.0
SOUTH COAST	2019	LDA	Aggregated	Aggregatec	GAS	6081048	244,446,391	28,695,373	8,546.8
SOUTH COAST	2019	LDT1	Aggregated	Aggregatec	GAS	651943.4	24,807,246	2,983,370	1,008.7
SOUTH COAST	2019	LDT2	Aggregated	Aggregatec	GAS	2073197	80,872,282	9,694,322	3,631.6
SOUTH COAST	2019	LHDT1	Aggregated	Aggregatec	GAS	175207.5	6,463,196	2,610,330	629.8
SOUTH COAST	2019	LHDT2	Aggregated	Aggregatec	GAS	28634.65	1,024,337	426,614	114.6
SOUTH COAST	2019	MCY	Aggregated	Aggregatec	GAS	259354.2	1,869,286	518,708	51.3
SOUTH COAST	2019	MDV	Aggregated	Aggregatec	GAS	1497221	54,845,361	6,911,949	2,999.3
SOUTH COAST	2019	MH	Aggregated	Aggregatec	GAS	35590.49	335,289	3,560	67.3
SOUTH COAST	2019	MHDT	Aggregated	Aggregatec	GAS	24590.83	1,348,347	492,013	274.0
SOUTH COAST	2019	OBUS	Aggregated	Aggregatec	GAS	5873.334	259,979	117,514	53.2
SOUTH COAST	2019	SBUS	Aggregated	Aggregatec	GAS	2127.585	88,942	8,510	10.0
SOUTH COAST	2019	UBUS	Aggregated	Aggregatec	GAS	931.1469	87,702	3,725	18.7

vehicle miles per day (All Categories) 416,456,016

17407 1,000 gall per day
17407182 gallons per day

Fleet Avg Miles per gallon 23.9

EMFAC2017 (v1.0.2) Emissions Inventory
Region Type: Air Basin
Region: SOUTH COAST
Calendar Year: 2019
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

Region	Calendar Y	Vehicle Cat	Model Year	Speed	Fuel	Population	VMT	Trips	Fuel Consumption
SOUTH COAST	2019	HHDT	Aggregated	Aggregated	DSL	92086.456	11035509.7	918238.1	1756.357
SOUTH COAST	2019	LDA	Aggregated	Aggregated	DSL	45875.256	1896328.9	216399.5	42.11914
SOUTH COAST	2019	LDT1	Aggregated	Aggregated	DSL	482.355	11462.4	1688.987	0.524598
SOUTH COAST	2019	LDT2	Aggregated	Aggregated	DSL	9664.5065	445809.6	48035.03	13.63116
SOUTH COAST	2019	LHDT1	Aggregated	Aggregated	DSL	97012.581	4044994.9	1220296	195.5523
SOUTH COAST	2019	LHDT2	Aggregated	Aggregated	DSL	37899.954	1552333.1	476733.7	83.01222
SOUTH COAST	2019	MDV	Aggregated	Aggregated	DSL	23710.3	1023300.7	117204.2	40.71306
SOUTH COAST	2019	MH	Aggregated	Aggregated	DSL	11071.442	110800.3	1107.144	10.75767
SOUTH COAST	2019	MHDT	Aggregated	Aggregated	DSL	114050.54	7128971.3	1136926	714.723
SOUTH COAST	2019	OBUS	Aggregated	Aggregated	DSL	4003.9331	293204.8	39272.79	37.05915
SOUTH COAST	2019	SBUS	Aggregated	Aggregated	DSL	6232.5511	197082.4	71922.78	26.67112
SOUTH COAST	2019	UBUS	Aggregated	Aggregated	DSL	18.196918	1877.4	72.78767	0.296796

Diesel Truck (HHDT, MDV, MHDT) vehicle miles per day	19,187,782	2,512	1,000 gall per day
		2511793	gallons per day
Diesel Truck Fleet Avg Miles per gallon	7.6		

APPENDIX C

CalEEMod Model Business As Usual Year 2010 Annual Printouts

Sapphire Hotel & Event Center - BAU Year 2010

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	3.34	Acre	3.34	145,490.40	0
Other Non-Asphalt Surfaces	5.45	Acre	5.45	237,402.00	0
Parking Lot	254.00	Space	0.85	36,810.00	0
Hotel	120.00	Room	6.14	174,240.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.4	**Precipitation Freq (Days)**	28
Climate Zone	10			**Operational Year**	2010
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Lot Acreage based on the gross project area of 15.78 acres

Construction Phase - Construction schedule provided by applicant

Trips and VMT - 6 vendor trips added to Site Prep and Grading to account for water truck emissions

Grading - Site Preparation - Export 30,000 cu yds of spoils; Grading Import/Export 10,000 cu yds

Vehicle Trips - Hotel Trip Rate = 8.36 daily trips per room from TIA

Energy Use -

Construction Off-road Equipment Mitigation - Water Exposed Area 2x per day selected to account for SCAQMD Rule 403 Minimum Requirements

Mobile Land Use Mitigation - Improve Ped Network Onsite & Connecting Offsite

Energy Mitigation -

Water Mitigation -

Waste Mitigation -

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_EF_Nonresidential_Exterior	250	100
tblAreaCoating	Area_EF_Nonresidential_Interior	250	100
tblAreaCoating	Area_EF_Residential_Exterior	100	50
tblLandUse	LandUseSquareFeet	101,600.00	36,810.00
tblLandUse	LotAcreage	2.29	0.85
tblLandUse	LotAcreage	4.00	6.14
tblTripsAndVMT	HaulingTripNumber	0.00	3,750.00
tblTripsAndVMT	HaulingTripNumber	0.00	1,250.00
tblTripsAndVMT	VendorTripNumber	0.00	6.00
tblTripsAndVMT	VendorTripNumber	0.00	6.00

2.0 Emissions Summary

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					
2019	0.0726	1.5900	0.3880	3.6000e-003	0.2433	0.0302	0.2735	0.1223	0.0279	0.1502	0.0000	343.2749	343.2749	0.0318	0.0000	344.0707
2020	0.4903	4.6047	3.7312	0.0105	0.5707	0.1779	0.7487	0.1811	0.1664	0.3476	0.0000	954.7378	954.7378	0.1313	0.0000	958.0212
2021	2.0719	1.3423	1.3581	3.7000e-003	0.1579	0.0519	0.2098	0.0425	0.0488	0.0913	0.0000	334.3531	334.3531	0.0415	0.0000	335.3895
Maximum	**2.0719**	**4.6047**	**3.7312**	**0.0105**	**0.5707**	**0.1779**	**0.7487**	**0.1811**	**0.1664**	**0.3476**	**0.0000**	**954.7378**	**954.7378**	**0.1313**	**0.0000**	**958.0212**

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					
2019	0.0726	1.5900	0.3880	3.6000e-003	0.1340	0.0302	0.1642	0.0622	0.0279	0.0902	0.0000	343.2749	343.2749	0.0318	0.0000	344.0706
2020	0.4903	4.6047	3.7312	0.0105	0.4682	0.1779	0.6461	0.1386	0.1664	0.3050	0.0000	954.7373	954.7373	0.1313	0.0000	958.0208
2021	2.0719	1.3423	1.3581	3.7000e-003	0.1579	0.0519	0.2098	0.0425	0.0488	0.0913	0.0000	334.3529	334.3529	0.0415	0.0000	335.3893
Maximum	**2.0719**	**4.6047**	**3.7312**	**0.0105**	**0.4682**	**0.1779**	**0.6461**	**0.1386**	**0.1664**	**0.3050**	**0.0000**	**954.7373**	**954.7373**	**0.1313**	**0.0000**	**958.0208**

Sapphire Hotel & Event Center - BAU Year 2010 - Riverside-South Coast County, Annual

	ROG	NOx	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**	**21.80**	**0.00**	**17.20**	**29.66**	**0.00**	**17.42**	**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	**11-1-2019**	**1-31-2020**	2.3844	2.3844
2	**2-1-2020**	**4-30-2020**	1.3872	1.3872
3	**5-1-2020**	**7-31-2020**	1.1031	1.1031
4	**8-1-2020**	**10-31-2020**	1.1027	1.1027
5	**11-1-2020**	**1-31-2021**	1.0664	1.0664
6	**2-1-2021**	**4-30-2021**	0.9646	0.9646
7	**5-1-2021**	**7-31-2021**	2.0969	2.0969
		Highest	2.3844	2.3844

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.7440	5.0000e-005	5.4400e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	9.5000e-003	9.5000e-003	3.0000e-005	0.0000	0.0103
Energy	0.0564	0.5126	0.4306	3.0800e-003		0.0390	0.0390		0.0390	0.0390	0.0000	1,569.1556	1,569.1556	0.0524	0.0189	1,576.0889
Mobile	0.8324	4.1858	8.7317	0.0136	0.8601	0.1100	0.9701	0.2308	0.1050	0.3358	0.0000	1,239.8039	1,239.8039	0.1507	0.0000	1,243.5722
Waste						0.0000	0.0000		0.0000	0.0000	13.3365	0.0000	13.3365	0.7882	0.0000	33.0406
Water						0.0000	0.0000		0.0000	0.0000	0.9657	13.8262	14.7919	0.0998	2.4600e-003	18.0190
Total	**1.6328**	**4.6984**	**9.1677**	**0.0167**	**0.8601**	**0.1490**	**1.0091**	**0.2308**	**0.1440**	**0.3748**	**14.3022**	**2,822.7952**	**2,837.0974**	**1.0911**	**0.0213**	**2,870.7311**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.7440	5.0000e-005	5.4400e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	9.5000e-003	9.5000e-003	3.0000e-005	0.0000	0.0103
Energy	0.0564	0.5126	0.4306	3.0800e-003		0.0390	0.0390		0.0390	0.0390	0.0000	1,569.1556	1,569.1556	0.0524	0.0189	1,576.0889
Mobile	0.8257	4.1206	8.6029	0.0133	0.8429	0.1082	0.9511	0.2262	0.1033	0.3294	0.0000	1,216.9756	1,216.9756	0.1495	0.0000	1,220.7127
Waste						0.0000	0.0000		0.0000	0.0000	13.3365	0.0000	13.3365	0.7882	0.0000	33.0406
Water						0.0000	0.0000		0.0000	0.0000	0.9657	13.8262	14.7919	0.0998	2.4600e-003	18.0190
Total	**1.6260**	**4.6332**	**9.0388**	**0.0164**	**0.8429**	**0.1472**	**0.9900**	**0.2262**	**0.1422**	**0.3684**	**14.3022**	**2,799.9669**	**2,814.2691**	**1.0899**	**0.0213**	**2,847.8716**

	ROG	NOx	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	**0.41**	**1.39**	**1.41**	**1.50**	**2.00**	**1.25**	**1.89**	**2.00**	**1.23**	**1.70**	**0.00**	**0.81**	**0.80**	**0.11**	**0.00**	**0.80**

3.0 Construction Detail

Construction Phase

Sapphire Hotel & Event Center - BAU Year 2010 - Riverside-South Coast County, Annual

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	12/1/2019	12/31/2019	5	10	
2	Grading	Grading	1/1/2020	2/28/2020	5	30	
3	Building Construction	Building Construction	3/1/2020	4/30/2021	5	300	
4	Paving	Paving	5/1/2021	5/31/2021	5	20	
5	Architectural Coating	Architectural Coating	6/1/2021	7/31/2021	5	20	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 75

Acres of Paving: 9.64

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 261,360; Non-Residential Outdoor: 87,120; Striped Parking Area: 25,182 (Architectural Coating – sqft)

OffRoad Equipment

Sapphire Hotel & Event Center - BAU Year 2010 - Riverside-South Coast County, Annual

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

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	6.00	3,750.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	6.00	1,250.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	249.00	97.00	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	50.00	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 - 2019

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					0.1987	0.0000	0.1987	0.1092	0.0000	0.1092	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0477	0.5013	0.2427	4.2000e-004		0.0263	0.0263		0.0242	0.0242	0.0000	37.5856	37.5856	0.0119	0.0000	37.8829
Total	**0.0477**	**0.5013**	**0.2427**	**4.2000e-004**	**0.1987**	**0.0263**	**0.2250**	**0.1092**	**0.0242**	**0.1334**	**0.0000**	**37.5856**	**37.5856**	**0.0119**	**0.0000**	**37.8829**

3.2 Site Preparation - 2019

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	0.0237	1.0803	0.1363	3.1400e-003	0.0420	3.8400e-003	0.0458	0.0124	3.6700e-003	0.0160	0.0000	302.1749	302.1749	0.0198	0.0000	302.6686
Vendor	2.2000e-004	7.6200e-003	1.5200e-003	2.0000e-005	4.2000e-004	6.0000e-005	4.7000e-004	1.2000e-004	5.0000e-005	1.8000e-004	0.0000	1.6343	1.6343	1.4000e-004	0.0000	1.6378
Worker	9.8000e-004	7.2000e-004	7.5100e-003	2.0000e-005	2.1800e-003	1.0000e-005	2.1900e-003	5.8000e-004	1.0000e-005	5.9000e-004	0.0000	1.8802	1.8802	5.0000e-005	0.0000	1.8815
Total	**0.0249**	**1.0887**	**0.1453**	**3.1800e-003**	**0.0446**	**3.9100e-003**	**0.0484**	**0.0131**	**3.7300e-003**	**0.0168**	**0.0000**	**305.6894**	**305.6894**	**0.0199**	**0.0000**	**306.1878**

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					0.0894	0.0000	0.0894	0.0492	0.0000	0.0492	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0477	0.5013	0.2427	4.2000e-004		0.0263	0.0263		0.0242	0.0242	0.0000	37.5855	37.5855	0.0119	0.0000	37.8828
Total	**0.0477**	**0.5013**	**0.2427**	**4.2000e-004**	**0.0894**	**0.0263**	**0.1157**	**0.0492**	**0.0242**	**0.0734**	**0.0000**	**37.5855**	**37.5855**	**0.0119**	**0.0000**	**37.8828**

3.2 Site Preparation - 2019

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	0.0237	1.0803	0.1363	3.1400e-003	0.0420	3.8400e-003	0.0458	0.0124	3.6700e-003	0.0160	0.0000	302.1749	302.1749	0.0198	0.0000	302.6686
Vendor	2.2000e-004	7.6200e-003	1.5200e-003	2.0000e-005	4.2000e-004	6.0000e-005	4.7000e-004	1.2000e-004	5.0000e-005	1.8000e-004	0.0000	1.6343	1.6343	1.4000e-004	0.0000	1.6378
Worker	9.8000e-004	7.2000e-004	7.5100e-003	2.0000e-005	2.1800e-003	1.0000e-005	2.1900e-003	5.8000e-004	1.0000e-005	5.9000e-004	0.0000	1.8802	1.8802	5.0000e-005	0.0000	1.8815
Total	**0.0249**	**1.0887**	**0.1453**	**3.1800e-003**	**0.0446**	**3.9100e-003**	**0.0484**	**0.0131**	**3.7300e-003**	**0.0168**	**0.0000**	**305.6894**	**305.6894**	**0.0199**	**0.0000**	**306.1878**

3.3 Grading - 2020

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					0.1865	0.0000	0.1865	0.0773	0.0000	0.0773	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0957	1.0793	0.6871	1.3300e-003		0.0467	0.0467		0.0430	0.0430	0.0000	117.1412	117.1412	0.0379	0.0000	118.0884
Total	**0.0957**	**1.0793**	**0.6871**	**1.3300e-003**	**0.1865**	**0.0467**	**0.2332**	**0.0773**	**0.0430**	**0.1203**	**0.0000**	**117.1412**	**117.1412**	**0.0379**	**0.0000**	**118.0884**

3.3 Grading - 2020

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	4.7100e-003	0.2172	0.0281	6.7000e-004	0.0119	6.8000e-004	0.0126	3.3800e-003	6.5000e-004	4.0300e-003	0.0000	64.9563	64.9563	4.0700e-003	0.0000	65.0581
Vendor	3.7000e-004	0.0134	2.6200e-003	3.0000e-005	8.1000e-004	8.0000e-005	8.9000e-004	2.4000e-004	7.0000e-005	3.1000e-004	0.0000	3.1720	3.1720	2.5000e-004	0.0000	3.1783
Worker	1.9800e-003	1.3800e-003	0.0148	4.0000e-005	4.7300e-003	3.0000e-005	4.7600e-003	1.2600e-003	3.0000e-005	1.2800e-003	0.0000	3.9543	3.9543	1.0000e-004	0.0000	3.9567
Total	**7.0600e-003**	**0.2320**	**0.0455**	**7.4000e-004**	**0.0175**	**7.9000e-004**	**0.0183**	**4.8800e-003**	**7.5000e-004**	**5.6200e-003**	**0.0000**	**72.0825**	**72.0825**	**4.4200e-003**	**0.0000**	**72.1931**

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					0.0839	0.0000	0.0839	0.0348	0.0000	0.0348	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0957	1.0793	0.6871	1.3300e-003		0.0467	0.0467		0.0430	0.0430	0.0000	117.1411	117.1411	0.0379	0.0000	118.0882
Total	**0.0957**	**1.0793**	**0.6871**	**1.3300e-003**	**0.0839**	**0.0467**	**0.1307**	**0.0348**	**0.0430**	**0.0778**	**0.0000**	**117.1411**	**117.1411**	**0.0379**	**0.0000**	**118.0882**

3.3 Grading - 2020

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	4.7100e-003	0.2172	0.0281	6.7000e-004	0.0119	6.8000e-004	0.0126	3.3800e-003	6.5000e-004	4.0300e-003	0.0000	64.9563	64.9563	4.0700e-003	0.0000	65.0581
Vendor	3.7000e-004	0.0134	2.6200e-003	3.0000e-005	8.1000e-004	8.0000e-005	8.9000e-004	2.4000e-004	7.0000e-005	3.1000e-004	0.0000	3.1720	3.1720	2.5000e-004	0.0000	3.1783
Worker	1.9800e-003	1.3800e-003	0.0148	4.0000e-005	4.7300e-003	3.0000e-005	4.7600e-003	1.2600e-003	3.0000e-005	1.2800e-003	0.0000	3.9543	3.9543	1.0000e-004	0.0000	3.9567
Total	**7.0600e-003**	**0.2320**	**0.0455**	**7.4000e-004**	**0.0175**	**7.9000e-004**	**0.0183**	**4.8800e-003**	**7.5000e-004**	**5.6200e-003**	**0.0000**	**72.0825**	**72.0825**	**4.4200e-003**	**0.0000**	**72.1931**

3.4 Building Construction - 2020

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	0.2321	2.1009	1.8449	2.9500e-003		0.1223	0.1223		0.1150	0.1150	0.0000	253.6129	253.6129	0.0619	0.0000	255.1598
Total	**0.2321**	**2.1009**	**1.8449**	**2.9500e-003**		**0.1223**	**0.1223**		**0.1150**	**0.1150**	**0.0000**	**253.6129**	**253.6129**	**0.0619**	**0.0000**	**255.1598**

3.4 Building Construction - 2020

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	0.0302	1.1048	0.2161	2.7300e-003	0.0671	6.2500e-003	0.0733	0.0194	5.9800e-003	0.0253	0.0000	261.1696	261.1696	0.0209	0.0000	261.6915
Worker	0.1253	0.0878	0.9375	2.7700e-003	0.2997	1.8500e-003	0.3015	0.0796	1.7000e-003	0.0813	0.0000	250.7315	250.7315	6.2800e-003	0.0000	250.8884
Total	**0.1555**	**1.1926**	**1.1537**	**5.5000e-003**	**0.3668**	**8.1000e-003**	**0.3749**	**0.0989**	**7.6800e-003**	**0.1066**	**0.0000**	**511.9011**	**511.9011**	**0.0272**	**0.0000**	**512.5800**

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	0.2321	2.1009	1.8449	2.9500e-003		0.1223	0.1223		0.1150	0.1150	0.0000	253.6126	253.6126	0.0619	0.0000	255.1594
Total	**0.2321**	**2.1009**	**1.8449**	**2.9500e-003**		**0.1223**	**0.1223**		**0.1150**	**0.1150**	**0.0000**	**253.6126**	**253.6126**	**0.0619**	**0.0000**	**255.1594**

3.4 Building Construction - 2020

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	0.0302	1.1048	0.2161	2.7300e-003	0.0671	6.2500e-003	0.0733	0.0194	5.9800e-003	0.0253	0.0000	261.1696	261.1696	0.0209	0.0000	261.6915
Worker	0.1253	0.0878	0.9375	2.7700e-003	0.2997	1.8500e-003	0.3015	0.0796	1.7000e-003	0.0813	0.0000	250.7315	250.7315	6.2800e-003	0.0000	250.8884
Total	**0.1555**	**1.1926**	**1.1537**	**5.5000e-003**	**0.3668**	**8.1000e-003**	**0.3749**	**0.0989**	**7.6800e-003**	**0.1066**	**0.0000**	**511.9011**	**511.9011**	**0.0272**	**0.0000**	**512.5800**

3.4 Building Construction - 2021

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	0.0817	0.7496	0.7127	1.1600e-003		0.0412	0.0412		0.0388	0.0388	0.0000	99.6040	99.6040	0.0240	0.0000	100.2048
Total	**0.0817**	**0.7496**	**0.7127**	**1.1600e-003**		**0.0412**	**0.0412**		**0.0388**	**0.0388**	**0.0000**	**99.6040**	**99.6040**	**0.0240**	**0.0000**	**100.2048**

3.4 Building Construction - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	9.9500e-003	0.3889	0.0748	1.0600e-003	0.0263	7.4000e-004	0.0271	7.6000e-003	7.1000e-004	8.3100e-003	0.0000	101.7612	101.7612	7.7600e-003	0.0000	101.9553
Worker	0.0459	0.0309	0.3371	1.0500e-003	0.1177	7.1000e-004	0.1184	0.0313	6.5000e-004	0.0319	0.0000	95.1688	95.1688	2.2200e-003	0.0000	95.2242
Total	**0.0559**	**0.4198**	**0.4119**	**2.1100e-003**	**0.1440**	**1.4500e-003**	**0.1455**	**0.0389**	**1.3600e-003**	**0.0402**	**0.0000**	**196.9300**	**196.9300**	**9.9800e-003**	**0.0000**	**197.1795**

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	0.0817	0.7496	0.7127	1.1600e-003		0.0412	0.0412		0.0388	0.0388	0.0000	99.6039	99.6039	0.0240	0.0000	100.2047
Total	**0.0817**	**0.7496**	**0.7127**	**1.1600e-003**		**0.0412**	**0.0412**		**0.0388**	**0.0388**	**0.0000**	**99.6039**	**99.6039**	**0.0240**	**0.0000**	**100.2047**

3.4 Building Construction - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	9.9500e-003	0.3889	0.0748	1.0600e-003	0.0263	7.4000e-004	0.0271	7.6000e-003	7.1000e-004	8.3100e-003	0.0000	101.7612	101.7612	7.7600e-003	0.0000	101.9553
Worker	0.0459	0.0309	0.3371	1.0500e-003	0.1177	7.1000e-004	0.1184	0.0313	6.5000e-004	0.0319	0.0000	95.1688	95.1688	2.2200e-003	0.0000	95.2242
Total	**0.0559**	**0.4198**	**0.4119**	**2.1100e-003**	**0.1440**	**1.4500e-003**	**0.1455**	**0.0389**	**1.3600e-003**	**0.0402**	**0.0000**	**196.9300**	**196.9300**	**9.9800e-003**	**0.0000**	**197.1795**

3.5 Paving - 2021

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	0.0132	0.1357	0.1539	2.4000e-004		7.1200e-003	7.1200e-003		6.5500e-003	6.5500e-003	0.0000	21.0247	21.0247	6.8000e-003	0.0000	21.1947
Paving	5.7600e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0189**	**0.1357**	**0.1539**	**2.4000e-004**		**7.1200e-003**	**7.1200e-003**		**6.5500e-003**	**6.5500e-003**	**0.0000**	**21.0247**	**21.0247**	**6.8000e-003**	**0.0000**	**21.1947**

3.5 Paving - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.8000e-004	4.6000e-004	4.9600e-003	2.0000e-005	1.7300e-003	1.0000e-005	1.7400e-003	4.6000e-004	1.0000e-005	4.7000e-004	0.0000	1.3999	1.3999	3.0000e-005	0.0000	1.4008
Total	**6.8000e-004**	**4.6000e-004**	**4.9600e-003**	**2.0000e-005**	**1.7300e-003**	**1.0000e-005**	**1.7400e-003**	**4.6000e-004**	**1.0000e-005**	**4.7000e-004**	**0.0000**	**1.3999**	**1.3999**	**3.0000e-005**	**0.0000**	**1.4008**

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	0.0132	0.1357	0.1539	2.4000e-004		7.1200e-003	7.1200e-003		6.5500e-003	6.5500e-003	0.0000	21.0246	21.0246	6.8000e-003	0.0000	21.1946
Paving	5.7600e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0189**	**0.1357**	**0.1539**	**2.4000e-004**		**7.1200e-003**	**7.1200e-003**		**6.5500e-003**	**6.5500e-003**	**0.0000**	**21.0246**	**21.0246**	**6.8000e-003**	**0.0000**	**21.1946**

3.5 Paving - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.8000e-004	4.6000e-004	4.9600e-003	2.0000e-005	1.7300e-003	1.0000e-005	1.7400e-003	4.6000e-004	1.0000e-005	4.7000e-004	0.0000	1.3999	1.3999	3.0000e-005	0.0000	1.4008
Total	**6.8000e-004**	**4.6000e-004**	**4.9600e-003**	**2.0000e-005**	**1.7300e-003**	**1.0000e-005**	**1.7400e-003**	**4.6000e-004**	**1.0000e-005**	**4.7000e-004**	**0.0000**	**1.3999**	**1.3999**	**3.0000e-005**	**0.0000**	**1.4008**

3.6 Architectural Coating - 2021

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	1.9051					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.8200e-003	0.0336	0.0400	7.0000e-005		2.0700e-003	2.0700e-003		2.0700e-003	2.0700e-003	0.0000	5.6172	5.6172	3.9000e-004	0.0000	5.6268
Total	**1.9099**	**0.0336**	**0.0400**	**7.0000e-005**		**2.0700e-003**	**2.0700e-003**		**2.0700e-003**	**2.0700e-003**	**0.0000**	**5.6172**	**5.6172**	**3.9000e-004**	**0.0000**	**5.6268**

3.6 Architectural Coating - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.7200e-003	3.1800e-003	0.0346	1.1000e-004	0.0121	7.0000e-005	0.0122	3.2100e-003	7.0000e-005	3.2800e-003	0.0000	9.7773	9.7773	2.3000e-004	0.0000	9.7830
Total	**4.7200e-003**	**3.1800e-003**	**0.0346**	**1.1000e-004**	**0.0121**	**7.0000e-005**	**0.0122**	**3.2100e-003**	**7.0000e-005**	**3.2800e-003**	**0.0000**	**9.7773**	**9.7773**	**2.3000e-004**	**0.0000**	**9.7830**

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	1.9051					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.8200e-003	0.0336	0.0400	7.0000e-005		2.0700e-003	2.0700e-003		2.0700e-003	2.0700e-003	0.0000	5.6172	5.6172	3.9000e-004	0.0000	5.6268
Total	**1.9099**	**0.0336**	**0.0400**	**7.0000e-005**		**2.0700e-003**	**2.0700e-003**		**2.0700e-003**	**2.0700e-003**	**0.0000**	**5.6172**	**5.6172**	**3.9000e-004**	**0.0000**	**5.6268**

3.6 Architectural Coating - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.7200e-003	3.1800e-003	0.0346	1.1000e-004	0.0121	7.0000e-005	0.0122	3.2100e-003	7.0000e-005	3.2800e-003	0.0000	9.7773	9.7773	2.3000e-004	0.0000	9.7830
Total	**4.7200e-003**	**3.1800e-003**	**0.0346**	**1.1000e-004**	**0.0121**	**7.0000e-005**	**0.0122**	**3.2100e-003**	**7.0000e-005**	**3.2800e-003**	**0.0000**	**9.7773**	**9.7773**	**2.3000e-004**	**0.0000**	**9.7830**

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	tons/yr										MT/yr					
Mitigated	0.8257	4.1206	8.6029	0.0133	0.8429	0.1082	0.9511	0.2262	0.1033	0.3294	0.0000	1,216.9756	1,216.9756	0.1495	0.0000	1,220.7127
Unmitigated	0.8324	4.1858	8.7317	0.0136	0.8601	0.1100	0.9701	0.2308	0.1050	0.3358	0.0000	1,239.8039	1,239.8039	0.1507	0.0000	1,243.5722

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Hotel	980.40	982.80	714.00	2,249,409	2,204,421
Other Asphalt Surfaces	0.00	0.00	0.00		
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Total	980.40	982.80	714.00	2,249,409	2,204,421

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
Hotel	16.60	8.40	6.90	19.40	61.60	19.00	58	38	4
Other Asphalt Surfaces	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
Other Non-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
Hotel	0.466931	0.060112	0.168008	0.175941	0.037203	0.008410	0.015268	0.056562	0.001254	0.001542	0.005522	0.000888	0.002360
Other Asphalt Surfaces	0.466931	0.060112	0.168008	0.175941	0.037203	0.008410	0.015268	0.056562	0.001254	0.001542	0.005522	0.000888	0.002360
Other Non-Asphalt Surfaces	0.466931	0.060112	0.168008	0.175941	0.037203	0.008410	0.015268	0.056562	0.001254	0.001542	0.005522	0.000888	0.002360
Parking Lot	0.466931	0.060112	0.168008	0.175941	0.037203	0.008410	0.015268	0.056562	0.001254	0.001542	0.005522	0.000888	0.002360

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	1,011.1760	1,011.1760	0.0418	8.6400e-003	1,014.7935
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	1,011.1760	1,011.1760	0.0418	8.6400e-003	1,014.7935
NaturalGas Mitigated	0.0564	0.5126	0.4306	3.0800e-003		0.0390	0.0390		0.0390	0.0390	0.0000	557.9796	557.9796	0.0107	0.0102	561.2954
NaturalGas Unmitigated	0.0564	0.5126	0.4306	3.0800e-003		0.0390	0.0390		0.0390	0.0390	0.0000	557.9796	557.9796	0.0107	0.0102	561.2954

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					
Hotel	1.04561e+007	0.0564	0.5126	0.4306	3.0800e-003		0.0390	0.0390		0.0390	0.0390	0.0000	557.9796	557.9796	0.0107	0.0102	561.2954
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
Other Non-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		**0.0564**	**0.5126**	**0.4306**	**3.0800e-003**		**0.0390**	**0.0390**		**0.0390**	**0.0390**	**0.0000**	**557.9796**	**557.9796**	**0.0107**	**0.0102**	**561.2954**

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					
Hotel	1.04561e+007	0.0564	0.5126	0.4306	3.0800e-003		0.0390	0.0390		0.0390	0.0390	0.0000	557.9796	557.9796	0.0107	0.0102	561.2954
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
Other Non-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		**0.0564**	**0.5126**	**0.4306**	**3.0800e-003**		**0.0390**	**0.0390**		**0.0390**	**0.0390**	**0.0000**	**557.9796**	**557.9796**	**0.0107**	**0.0102**	**561.2954**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Hotel	3.16071e+006	1,007.0711	0.0416	8.6000e-003	1,010.6739
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	12883.5	4.1050	1.7000e-004	4.0000e-005	4.1196
Total		**1,011.1760**	**0.0418**	**8.6400e-003**	**1,014.7935**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Hotel	3.16071e+006	1,007.0711	0.0416	8.6000e-003	1,010.6739
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	12883.5	4.1050	1.7000e-004	4.0000e-005	4.1196
Total		**1,011.1760**	**0.0418**	**8.6400e-003**	**1,014.7935**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.7440	5.0000e-005	5.4400e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	9.5000e-003	9.5000e-003	3.0000e-005	0.0000	0.0103
Unmitigated	0.7440	5.0000e-005	5.4400e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	9.5000e-003	9.5000e-003	3.0000e-005	0.0000	0.0103

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	0.0866					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.6568					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	6.0000e-004	5.0000e-005	5.4400e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	9.5000e-003	9.5000e-003	3.0000e-005	0.0000	0.0103
Total	**0.7440**	**5.0000e-005**	**5.4400e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**	**0.0000**	**9.5000e-003**	**9.5000e-003**	**3.0000e-005**	**0.0000**	**0.0103**

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	0.0866					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.6568					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	6.0000e-004	5.0000e-005	5.4400e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	9.5000e-003	9.5000e-003	3.0000e-005	0.0000	0.0103
Total	**0.7440**	**5.0000e-005**	**5.4400e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**	**0.0000**	**9.5000e-003**	**9.5000e-003**	**3.0000e-005**	**0.0000**	**0.0103**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	14.7919	0.0998	2.4600e-003	18.0190
Unmitigated	14.7919	0.0998	2.4600e-003	18.0190

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Hotel	3.04401 / 0.338224	14.7919	0.0998	2.4600e-003	18.0190
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Other Non-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		**14.7919**	**0.0998**	**2.4600e-003**	**18.0190**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Hotel	3.04401 / 0.338224	14.7919	0.0998	2.4600e-003	18.0190
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Other Non-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		**14.7919**	**0.0998**	**2.4600e-003**	**18.0190**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	13.3365	0.7882	0.0000	33.0406
Unmitigated	13.3365	0.7882	0.0000	33.0406

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Hotel	65.7	13.3365	0.7882	0.0000	33.0406
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Total		**13.3365**	**0.7882**	**0.0000**	**33.0406**

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Hotel	65.7	13.3365	0.7882	0.0000	33.0406
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Total		**13.3365**	**0.7882**	**0.0000**	**33.0406**

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 D

CalEEMod Model Opening Year 2021 Annual Printouts

Sapphire Hotel & Event Center

Riverside-South Coast County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Parking Lot	254.00	Space	0.85	36,810.00	0
Hotel	120.00	Room	6.14	174,240.00	0
Other Asphalt Surfaces	3.34	Acre	3.34	145,490.40	0
Other Non-Asphalt Surfaces	5.45	Acre	5.45	237,402.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.4	**Precipitation Freq (Days)**	28
Climate Zone	10			**Operational Year**	2021
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	500	**CH4 Intensity (lb/MWhr)**	0.021	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Sapphire Hotel & Event Center - Riverside-South Coast County, Annual

Project Characteristics - SCE's Intensity factors reduced by 28.8% to account for percentage of carbon-free electricity as detailed in Edison Inter. 2017 Sustainability Report

Land Use - Lot Acreage based on the gross project area of 15.78 acres

Construction Phase - Construction schedule provided by applicant

Grading - Site Preparation - Export 30,000 cu yds of spoils; Grading Import/Export 10,000 cu yds

Trips and VMT - 6 vendor trips added to Site Prep and Grading to account for water truck emissions

Vehicle Trips - Hotel Trip Rate = 8.36 daily trips per room from TIA

Energy Use -

Construction Off-road Equipment Mitigation - Water Exposed Area 2x per day selected to account for SCAQMD Rule 403 Minimum Requirements

Mobile Land Use Mitigation - Improve Ped Network Onsite & Connecting Offsite

Energy Mitigation - Exceed Title 24 - 30% improvement to account for 2019 Title 24 Standards

Water Mitigation - Install low-flow faucets, toilets and showers and use water-efficient irrigation systems

Waste Mitigation - Reduction in Waste selected to account for AB 341.

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	10.00	22.00
tblConstructionPhase	NumDays	30.00	43.00
tblConstructionPhase	NumDays	300.00	305.00
tblConstructionPhase	NumDays	20.00	21.00
tblConstructionPhase	NumDays	20.00	44.00
tblConstructionPhase	PhaseEndDate	12/12/2019	12/31/2019
tblConstructionPhase	PhaseEndDate	1/23/2020	2/28/2020
tblConstructionPhase	PhaseEndDate	3/18/2021	4/30/2021
tblConstructionPhase	PhaseEndDate	4/15/2021	5/31/2021
tblConstructionPhase	PhaseEndDate	5/13/2021	7/31/2021
tblConstructionPhase	PhaseStartDate	11/29/2019	12/1/2019
tblConstructionPhase	PhaseStartDate	12/13/2019	1/1/2020
tblConstructionPhase	PhaseStartDate	1/24/2020	3/1/2020

tblConstructionPhase	PhaseStartDate	3/19/2021	5/1/2021
tblConstructionPhase	PhaseStartDate	4/16/2021	6/1/2021
tblGrading	MaterialExported	0.00	30,000.00
tblGrading	MaterialImported	0.00	10,000.00
tblLandUse	LandUseSquareFeet	101,600.00	36,810.00
tblLandUse	LotAcreage	2.29	0.85
tblLandUse	LotAcreage	4.00	6.14
tblProjectCharacteristics	CH4IntensityFactor	0.029	0.021
tblProjectCharacteristics	CO2IntensityFactor	702.44	500
tblProjectCharacteristics	N2OIntensityFactor	0.006	0.004
tblTripsAndVMT	VendorTripNumber	0.00	6.00
tblTripsAndVMT	VendorTripNumber	0.00	6.00
tblVehicleTrips	ST_TR	8.19	8.36
tblVehicleTrips	SU_TR	5.95	8.36
tblVehicleTrips	WD_TR	8.17	8.36

2.0 Emissions Summary

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					
2019	0.0597	1.0007	0.3137	1.8800e-003	0.2356	0.0281	0.2637	0.1191	0.0259	0.1450	0.0000	178.4523	178.4523	0.0211	0.0000	178.9787
2020	0.4889	4.5390	3.7227	0.0103	0.5702	0.1777	0.7479	0.1808	0.1662	0.3470	0.0000	935.0998	935.0998	0.1301	0.0000	938.3525
2021	1.0324	1.3423	1.3581	3.7000e-003	0.1579	0.0519	0.2098	0.0425	0.0488	0.0913	0.0000	334.3531	334.3531	0.0415	0.0000	335.3895
Maximum	**1.0324**	**4.5390**	**3.7227**	**0.0103**	**0.5702**	**0.1777**	**0.7479**	**0.1808**	**0.1662**	**0.3470**	**0.0000**	**935.0998**	**935.0998**	**0.1301**	**0.0000**	**938.3525**

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					
2019	0.0597	1.0007	0.3137	1.8800e-003	0.1252	0.0281	0.1533	0.0589	0.0259	0.0848	0.0000	178.4522	178.4522	0.0211	0.0000	178.9787
2020	0.4889	4.5390	3.7227	0.0103	0.4673	0.1777	0.6450	0.1382	0.1662	0.3045	0.0000	935.0994	935.0994	0.1301	0.0000	938.3520
2021	1.0324	1.3423	1.3581	3.7000e-003	0.1579	0.0519	0.2098	0.0425	0.0488	0.0913	0.0000	334.3529	334.3529	0.0415	0.0000	335.3893
Maximum	**1.0324**	**4.5390**	**3.7227**	**0.0103**	**0.4673**	**0.1777**	**0.6450**	**0.1382**	**0.1662**	**0.3045**	**0.0000**	**935.0994**	**935.0994**	**0.1301**	**0.0000**	**938.3520**

Sapphire Hotel & Event Center - Riverside-South Coast County, Annual

	ROG	NOx	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**	**22.13**	**0.00**	**17.46**	**30.03**	**0.00**	**17.62**	**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	**11-1-2019**	**1-31-2020**	1.7526	1.7526
2	**2-1-2020**	**4-30-2020**	1.3564	1.3564
3	**5-1-2020**	**7-31-2020**	1.1031	1.1031
4	**8-1-2020**	**10-31-2020**	1.1027	1.1027
5	**11-1-2020**	**1-31-2021**	1.0664	1.0664
6	**2-1-2021**	**4-30-2021**	0.9646	0.9646
7	**5-1-2021**	**7-31-2021**	1.0676	1.0676
		Highest	1.7526	1.7526

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.7438	4.0000e-005	4.9000e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	9.5000e-003	9.5000e-003	3.0000e-005	0.0000	0.0101
Energy	0.0564	0.5126	0.4306	3.0800e-003		0.0390	0.0390		0.0390	0.0390	0.0000	1,277.7393	1,277.7393	0.0409	0.0160	1,283.5267
Mobile	0.2789	2.3194	3.0000	0.0127	0.9140	9.2400e-003	0.9232	0.2449	8.6700e-003	0.2536	0.0000	1,174.6603	1,174.6603	0.0695	0.0000	1,176.3983
Waste						0.0000	0.0000		0.0000	0.0000	13.3365	0.0000	13.3365	0.7882	0.0000	33.0406
Water						0.0000	0.0000		0.0000	0.0000	0.9657	9.8415	10.8073	0.0996	2.4200e-003	14.0187
Total	**1.0790**	**2.8320**	**3.4354**	**0.0158**	**0.9140**	**0.0482**	**0.9622**	**0.2449**	**0.0476**	**0.2925**	**14.3022**	**2,462.2507**	**2,476.5529**	**0.9982**	**0.0184**	**2,506.9945**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.7438	4.0000e-005	4.9000e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	9.5000e-003	9.5000e-003	3.0000e-005	0.0000	0.0101
Energy	0.0408	0.3712	0.3118	2.2300e-003		0.0282	0.0282		0.0282	0.0282	0.0000	1,047.1996	1,047.1996	0.0348	0.0126	1,051.8095
Mobile	0.2772	2.3019	2.9560	0.0125	0.8957	9.0800e-003	0.9048	0.2400	8.5200e-003	0.2485	0.0000	1,154.9221	1,154.9221	0.0690	0.0000	1,156.6464
Waste						0.0000	0.0000		0.0000	0.0000	6.6683	0.0000	6.6683	0.3941	0.0000	16.5203
Water						0.0000	0.0000		0.0000	0.0000	0.7726	7.9917	8.7643	0.0797	1.9400e-003	11.3339
Total	**1.0619**	**2.6731**	**3.2728**	**0.0147**	**0.8957**	**0.0373**	**0.9330**	**0.2400**	**0.0368**	**0.2767**	**7.4408**	**2,210.1229**	**2,217.5638**	**0.5775**	**0.0145**	**2,236.3202**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**1.59**	**5.61**	**4.74**	**6.73**	**2.00**	**22.61**	**3.03**	**2.00**	**22.86**	**5.40**	**47.97**	**10.24**	**10.46**	**42.15**	**21.29**	**10.80**

3.0 Construction Detail

Construction Phase

Sapphire Hotel & Event Center - Riverside-South Coast County, Annual

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	12/1/2019	12/31/2019	5	22	
2	Grading	Grading	1/1/2020	2/28/2020	5	43	
3	Building Construction	Building Construction	3/1/2020	4/30/2021	5	305	
4	Paving	Paving	5/1/2021	5/31/2021	5	21	
5	Architectural Coating	Architectural Coating	6/1/2021	7/31/2021	5	44	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 107.5

Acres of Paving: 9.64

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 261,360; Non-Residential Outdoor: 87,120; Striped Parking Area: 25,182 (Architectural Coating – sqft)

OffRoad Equipment

Sapphire Hotel & Event Center - Riverside-South Coast County, Annual

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
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	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Grading	Scrapers	2	8.00	367	0.48
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	3,750.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	6.00	1,250.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	249.00	97.00	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	50.00	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 - 2019

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					0.2006	0.0000	0.2006	0.1095	0.0000	0.1095	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0477	0.5013	0.2427	4.2000e-004		0.0263	0.0263		0.0242	0.0242	0.0000	37.5856	37.5856	0.0119	0.0000	37.8829
Total	**0.0477**	**0.5013**	**0.2427**	**4.2000e-004**	**0.2006**	**0.0263**	**0.2269**	**0.1095**	**0.0242**	**0.1337**	**0.0000**	**37.5856**	**37.5856**	**0.0119**	**0.0000**	**37.8829**

3.2 Site Preparation - 2019

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	0.0108	0.4911	0.0619	1.4300e-003	0.0323	1.7400e-003	0.0341	8.8800e-003	1.6700e-003	0.0105	0.0000	137.3522	137.3522	8.9800e-003	0.0000	137.5766
Vendor	2.2000e-004	7.6200e-003	1.5200e-003	2.0000e-005	4.2000e-004	6.0000e-005	4.7000e-004	1.2000e-004	5.0000e-005	1.8000e-004	0.0000	1.6343	1.6343	1.4000e-004	0.0000	1.6378
Worker	9.8000e-004	7.2000e-004	7.5100e-003	2.0000e-005	2.1800e-003	1.0000e-005	2.1900e-003	5.8000e-004	1.0000e-005	5.9000e-004	0.0000	1.8802	1.8802	5.0000e-005	0.0000	1.8815
Total	**0.0120**	**0.4994**	**0.0710**	**1.4700e-003**	**0.0349**	**1.8100e-003**	**0.0367**	**9.5800e-003**	**1.7300e-003**	**0.0113**	**0.0000**	**140.8667**	**140.8667**	**9.1700e-003**	**0.0000**	**141.0959**

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					0.0903	0.0000	0.0903	0.0493	0.0000	0.0493	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0477	0.5013	0.2427	4.2000e-004		0.0263	0.0263		0.0242	0.0242	0.0000	37.5855	37.5855	0.0119	0.0000	37.8828
Total	**0.0477**	**0.5013**	**0.2427**	**4.2000e-004**	**0.0903**	**0.0263**	**0.1166**	**0.0493**	**0.0242**	**0.0735**	**0.0000**	**37.5855**	**37.5855**	**0.0119**	**0.0000**	**37.8828**

3.2 Site Preparation - 2019

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	0.0108	0.4911	0.0619	1.4300e-003	0.0323	1.7400e-003	0.0341	8.8800e-003	1.6700e-003	0.0105	0.0000	137.3522	137.3522	8.9800e-003	0.0000	137.5766
Vendor	2.2000e-004	7.6200e-003	1.5200e-003	2.0000e-005	4.2000e-004	6.0000e-005	4.7000e-004	1.2000e-004	5.0000e-005	1.8000e-004	0.0000	1.6343	1.6343	1.4000e-004	0.0000	1.6378
Worker	9.8000e-004	7.2000e-004	7.5100e-003	2.0000e-005	2.1800e-003	1.0000e-005	2.1900e-003	5.8000e-004	1.0000e-005	5.9000e-004	0.0000	1.8802	1.8802	5.0000e-005	0.0000	1.8815
Total	**0.0120**	**0.4994**	**0.0710**	**1.4700e-003**	**0.0349**	**1.8100e-003**	**0.0367**	**9.5800e-003**	**1.7300e-003**	**0.0113**	**0.0000**	**140.8667**	**140.8667**	**9.1700e-003**	**0.0000**	**141.0959**

3.3 Grading - 2020

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					0.1871	0.0000	0.1871	0.0774	0.0000	0.0774	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0957	1.0793	0.6871	1.3300e-003		0.0467	0.0467		0.0430	0.0430	0.0000	117.1412	117.1412	0.0379	0.0000	118.0884
Total	**0.0957**	**1.0793**	**0.6871**	**1.3300e-003**	**0.1871**	**0.0467**	**0.2339**	**0.0774**	**0.0430**	**0.1204**	**0.0000**	**117.1412**	**117.1412**	**0.0379**	**0.0000**	**118.0884**

3.3 Grading - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	3.2800e-003	0.1515	0.0196	4.7000e-004	0.0108	4.7000e-004	0.0113	2.9600e-003	4.5000e-004	3.4100e-003	0.0000	45.3184	45.3184	2.8400e-003	0.0000	45.3894
Vendor	3.7000e-004	0.0134	2.6200e-003	3.0000e-005	8.1000e-004	8.0000e-005	8.9000e-004	2.4000e-004	7.0000e-005	3.1000e-004	0.0000	3.1720	3.1720	2.5000e-004	0.0000	3.1783
Worker	1.9800e-003	1.3800e-003	0.0148	4.0000e-005	4.7300e-003	3.0000e-005	4.7600e-003	1.2600e-003	3.0000e-005	1.2800e-003	0.0000	3.9543	3.9543	1.0000e-004	0.0000	3.9567
Total	**5.6300e-003**	**0.1663**	**0.0370**	**5.4000e-004**	**0.0163**	**5.8000e-004**	**0.0169**	**4.4600e-003**	**5.5000e-004**	**5.0000e-003**	**0.0000**	**52.4446**	**52.4446**	**3.1900e-003**	**0.0000**	**52.5244**

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					0.0842	0.0000	0.0842	0.0348	0.0000	0.0348	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0957	1.0793	0.6871	1.3300e-003		0.0467	0.0467		0.0430	0.0430	0.0000	117.1411	117.1411	0.0379	0.0000	118.0882
Total	**0.0957**	**1.0793**	**0.6871**	**1.3300e-003**	**0.0842**	**0.0467**	**0.1309**	**0.0348**	**0.0430**	**0.0778**	**0.0000**	**117.1411**	**117.1411**	**0.0379**	**0.0000**	**118.0882**

3.3 Grading - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	3.2800e-003	0.1515	0.0196	4.7000e-004	0.0108	4.7000e-004	0.0113	2.9600e-003	4.5000e-004	3.4100e-003	0.0000	45.3184	45.3184	2.8400e-003	0.0000	45.3894
Vendor	3.7000e-004	0.0134	2.6200e-003	3.0000e-005	8.1000e-004	8.0000e-005	8.9000e-004	2.4000e-004	7.0000e-005	3.1000e-004	0.0000	3.1720	3.1720	2.5000e-004	0.0000	3.1783
Worker	1.9800e-003	1.3800e-003	0.0148	4.0000e-005	4.7300e-003	3.0000e-005	4.7600e-003	1.2600e-003	3.0000e-005	1.2800e-003	0.0000	3.9543	3.9543	1.0000e-004	0.0000	3.9567
Total	**5.6300e-003**	**0.1663**	**0.0370**	**5.4000e-004**	**0.0163**	**5.8000e-004**	**0.0169**	**4.4600e-003**	**5.5000e-004**	**5.0000e-003**	**0.0000**	**52.4446**	**52.4446**	**3.1900e-003**	**0.0000**	**52.5244**

3.4 Building Construction - 2020

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	0.2321	2.1009	1.8449	2.9500e-003		0.1223	0.1223		0.1150	0.1150	0.0000	253.6129	253.6129	0.0619	0.0000	255.1598
Total	**0.2321**	**2.1009**	**1.8449**	**2.9500e-003**		**0.1223**	**0.1223**		**0.1150**	**0.1150**	**0.0000**	**253.6129**	**253.6129**	**0.0619**	**0.0000**	**255.1598**

3.4 Building Construction - 2020

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	0.0302	1.1048	0.2161	2.7300e-003	0.0671	6.2500e-003	0.0733	0.0194	5.9800e-003	0.0253	0.0000	261.1696	261.1696	0.0209	0.0000	261.6915
Worker	0.1253	0.0878	0.9375	2.7700e-003	0.2997	1.8500e-003	0.3015	0.0796	1.7000e-003	0.0813	0.0000	250.7315	250.7315	6.2800e-003	0.0000	250.8884
Total	**0.1555**	**1.1926**	**1.1537**	**5.5000e-003**	**0.3668**	**8.1000e-003**	**0.3749**	**0.0989**	**7.6800e-003**	**0.1066**	**0.0000**	**511.9011**	**511.9011**	**0.0272**	**0.0000**	**512.5800**

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	0.2321	2.1009	1.8449	2.9500e-003		0.1223	0.1223		0.1150	0.1150	0.0000	253.6126	253.6126	0.0619	0.0000	255.1594
Total	**0.2321**	**2.1009**	**1.8449**	**2.9500e-003**		**0.1223**	**0.1223**		**0.1150**	**0.1150**	**0.0000**	**253.6126**	**253.6126**	**0.0619**	**0.0000**	**255.1594**

3.4 Building Construction - 2020

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	0.0302	1.1048	0.2161	2.7300e-003	0.0671	6.2500e-003	0.0733	0.0194	5.9800e-003	0.0253	0.0000	261.1696	261.1696	0.0209	0.0000	261.6915
Worker	0.1253	0.0878	0.9375	2.7700e-003	0.2997	1.8500e-003	0.3015	0.0796	1.7000e-003	0.0813	0.0000	250.7315	250.7315	6.2800e-003	0.0000	250.8884
Total	**0.1555**	**1.1926**	**1.1537**	**5.5000e-003**	**0.3668**	**8.1000e-003**	**0.3749**	**0.0989**	**7.6800e-003**	**0.1066**	**0.0000**	**511.9011**	**511.9011**	**0.0272**	**0.0000**	**512.5800**

3.4 Building Construction - 2021

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	0.0817	0.7496	0.7127	1.1600e-003		0.0412	0.0412		0.0388	0.0388	0.0000	99.6040	99.6040	0.0240	0.0000	100.2048
Total	**0.0817**	**0.7496**	**0.7127**	**1.1600e-003**		**0.0412**	**0.0412**		**0.0388**	**0.0388**	**0.0000**	**99.6040**	**99.6040**	**0.0240**	**0.0000**	**100.2048**

3.4 Building Construction - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	9.9500e-003	0.3889	0.0748	1.0600e-003	0.0263	7.4000e-004	0.0271	7.6000e-003	7.1000e-004	8.3100e-003	0.0000	101.7612	101.7612	7.7600e-003	0.0000	101.9553
Worker	0.0459	0.0309	0.3371	1.0500e-003	0.1177	7.1000e-004	0.1184	0.0313	6.5000e-004	0.0319	0.0000	95.1688	95.1688	2.2200e-003	0.0000	95.2242
Total	**0.0559**	**0.4198**	**0.4119**	**2.1100e-003**	**0.1440**	**1.4500e-003**	**0.1455**	**0.0389**	**1.3600e-003**	**0.0402**	**0.0000**	**196.9300**	**196.9300**	**9.9800e-003**	**0.0000**	**197.1795**

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	0.0817	0.7496	0.7127	1.1600e-003		0.0412	0.0412		0.0388	0.0388	0.0000	99.6039	99.6039	0.0240	0.0000	100.2047
Total	**0.0817**	**0.7496**	**0.7127**	**1.1600e-003**		**0.0412**	**0.0412**		**0.0388**	**0.0388**	**0.0000**	**99.6039**	**99.6039**	**0.0240**	**0.0000**	**100.2047**

3.4 Building Construction - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	9.9500e-003	0.3889	0.0748	1.0600e-003	0.0263	7.4000e-004	0.0271	7.6000e-003	7.1000e-004	8.3100e-003	0.0000	101.7612	101.7612	7.7600e-003	0.0000	101.9553
Worker	0.0459	0.0309	0.3371	1.0500e-003	0.1177	7.1000e-004	0.1184	0.0313	6.5000e-004	0.0319	0.0000	95.1688	95.1688	2.2200e-003	0.0000	95.2242
Total	**0.0559**	**0.4198**	**0.4119**	**2.1100e-003**	**0.1440**	**1.4500e-003**	**0.1455**	**0.0389**	**1.3600e-003**	**0.0402**	**0.0000**	**196.9300**	**196.9300**	**9.9800e-003**	**0.0000**	**197.1795**

3.5 Paving - 2021

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	0.0132	0.1357	0.1539	2.4000e-004		7.1200e-003	7.1200e-003		6.5500e-003	6.5500e-003	0.0000	21.0247	21.0247	6.8000e-003	0.0000	21.1947
Paving	5.4900e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0187**	**0.1357**	**0.1539**	**2.4000e-004**		**7.1200e-003**	**7.1200e-003**		**6.5500e-003**	**6.5500e-003**	**0.0000**	**21.0247**	**21.0247**	**6.8000e-003**	**0.0000**	**21.1947**

3.5 Paving - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.8000e-004	4.6000e-004	4.9600e-003	2.0000e-005	1.7300e-003	1.0000e-005	1.7400e-003	4.6000e-004	1.0000e-005	4.7000e-004	0.0000	1.3999	1.3999	3.0000e-005	0.0000	1.4008
Total	**6.8000e-004**	**4.6000e-004**	**4.9600e-003**	**2.0000e-005**	**1.7300e-003**	**1.0000e-005**	**1.7400e-003**	**4.6000e-004**	**1.0000e-005**	**4.7000e-004**	**0.0000**	**1.3999**	**1.3999**	**3.0000e-005**	**0.0000**	**1.4008**

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	0.0132	0.1357	0.1539	2.4000e-004		7.1200e-003	7.1200e-003		6.5500e-003	6.5500e-003	0.0000	21.0246	21.0246	6.8000e-003	0.0000	21.1946
Paving	5.4900e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0187**	**0.1357**	**0.1539**	**2.4000e-004**		**7.1200e-003**	**7.1200e-003**		**6.5500e-003**	**6.5500e-003**	**0.0000**	**21.0246**	**21.0246**	**6.8000e-003**	**0.0000**	**21.1946**

3.5 Paving - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.8000e-004	4.6000e-004	4.9600e-003	2.0000e-005	1.7300e-003	1.0000e-005	1.7400e-003	4.6000e-004	1.0000e-005	4.7000e-004	0.0000	1.3999	1.3999	3.0000e-005	0.0000	1.4008
Total	**6.8000e-004**	**4.6000e-004**	**4.9600e-003**	**2.0000e-005**	**1.7300e-003**	**1.0000e-005**	**1.7400e-003**	**4.6000e-004**	**1.0000e-005**	**4.7000e-004**	**0.0000**	**1.3999**	**1.3999**	**3.0000e-005**	**0.0000**	**1.4008**

3.6 Architectural Coating - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.8660					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.8200e-003	0.0336	0.0400	7.0000e-005		2.0700e-003	2.0700e-003		2.0700e-003	2.0700e-003	0.0000	5.6172	5.6172	3.9000e-004	0.0000	5.6268
Total	**0.8708**	**0.0336**	**0.0400**	**7.0000e-005**		**2.0700e-003**	**2.0700e-003**		**2.0700e-003**	**2.0700e-003**	**0.0000**	**5.6172**	**5.6172**	**3.9000e-004**	**0.0000**	**5.6268**

3.6 Architectural Coating - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.7200e-003	3.1800e-003	0.0346	1.1000e-004	0.0121	7.0000e-005	0.0122	3.2100e-003	7.0000e-005	3.2800e-003	0.0000	9.7773	9.7773	2.3000e-004	0.0000	9.7830
Total	**4.7200e-003**	**3.1800e-003**	**0.0346**	**1.1000e-004**	**0.0121**	**7.0000e-005**	**0.0122**	**3.2100e-003**	**7.0000e-005**	**3.2800e-003**	**0.0000**	**9.7773**	**9.7773**	**2.3000e-004**	**0.0000**	**9.7830**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.8660					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.8200e-003	0.0336	0.0400	7.0000e-005		2.0700e-003	2.0700e-003		2.0700e-003	2.0700e-003	0.0000	5.6172	5.6172	3.9000e-004	0.0000	5.6268
Total	**0.8708**	**0.0336**	**0.0400**	**7.0000e-005**		**2.0700e-003**	**2.0700e-003**		**2.0700e-003**	**2.0700e-003**	**0.0000**	**5.6172**	**5.6172**	**3.9000e-004**	**0.0000**	**5.6268**

3.6 Architectural Coating - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.7200e-003	3.1800e-003	0.0346	1.1000e-004	0.0121	7.0000e-005	0.0122	3.2100e-003	7.0000e-005	3.2800e-003	0.0000	9.7773	9.7773	2.3000e-004	0.0000	9.7830
Total	**4.7200e-003**	**3.1800e-003**	**0.0346**	**1.1000e-004**	**0.0121**	**7.0000e-005**	**0.0122**	**3.2100e-003**	**7.0000e-005**	**3.2800e-003**	**0.0000**	**9.7773**	**9.7773**	**2.3000e-004**	**0.0000**	**9.7830**

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	tons/yr										MT/yr					
Mitigated	0.2772	2.3019	2.9560	0.0125	0.8957	9.0800e-003	0.9048	0.2400	8.5200e-003	0.2485	0.0000	1,154.9221	1,154.9221	0.0690	0.0000	1,156.6464
Unmitigated	0.2789	2.3194	3.0000	0.0127	0.9140	9.2400e-003	0.9232	0.2449	8.6700e-003	0.2536	0.0000	1,174.6603	1,174.6603	0.0695	0.0000	1,176.3983

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Other Asphalt Surfaces	0.00	0.00	0.00		
Hotel	1,003.20	1,003.20	1003.20	2,393,807	2,345,931
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Total	1,003.20	1,003.20	1,003.20	2,393,807	2,345,931

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
Other Asphalt Surfaces	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
Hotel	16.60	8.40	6.90	19.40	61.60	19.00	58	38	4
Other Non-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
Other Asphalt Surfaces	0.542116	0.037578	0.185203	0.118503	0.016241	0.005141	0.017392	0.068695	0.001383	0.001183	0.004582	0.000945	0.001038
Hotel	0.542116	0.037578	0.185203	0.118503	0.016241	0.005141	0.017392	0.068695	0.001383	0.001183	0.004582	0.000945	0.001038
Other Non-Asphalt Surfaces	0.542116	0.037578	0.185203	0.118503	0.016241	0.005141	0.017392	0.068695	0.001383	0.001183	0.004582	0.000945	0.001038
Parking Lot	0.542116	0.037578	0.185203	0.118503	0.016241	0.005141	0.017392	0.068695	0.001383	0.001183	0.004582	0.000945	0.001038

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	643.0573	643.0573	0.0270	5.1400e-003	645.2655
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	719.7597	719.7597	0.0302	5.7600e-003	722.2314
NaturalGas Mitigated	0.0408	0.3712	0.3118	2.2300e-003		0.0282	0.0282		0.0282	0.0282	0.0000	404.1424	404.1424	7.7500e-003	7.4100e-003	406.5440
NaturalGas Unmitigated	0.0564	0.5126	0.4306	3.0800e-003		0.0390	0.0390		0.0390	0.0390	0.0000	557.9796	557.9796	0.0107	0.0102	561.2954

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					
Hotel	1.04561e+007	0.0564	0.5126	0.4306	3.0800e-003		0.0390	0.0390		0.0390	0.0390	0.0000	557.9796	557.9796	0.0107	0.0102	561.2954
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
Other Non-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		**0.0564**	**0.5126**	**0.4306**	**3.0800e-003**		**0.0390**	**0.0390**		**0.0390**	**0.0390**	**0.0000**	**557.9796**	**557.9796**	**0.0107**	**0.0102**	**561.2954**

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					
Hotel	7.57334e+006	0.0408	0.3712	0.3118	2.2300e-003		0.0282	0.0282		0.0282	0.0282	0.0000	404.1424	404.1424	7.7500e-003	7.4100e-003	406.5440
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
Other Non-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		**0.0408**	**0.3712**	**0.3118**	**2.2300e-003**		**0.0282**	**0.0282**		**0.0282**	**0.0282**	**0.0000**	**404.1424**	**404.1424**	**7.7500e-003**	**7.4100e-003**	**406.5440**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Hotel	3.16071e+006	716.8378	0.0301	5.7300e-003	719.2994
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	12883.5	2.9219	1.2000e-004	2.0000e-005	2.9320
Total		**719.7597**	**0.0302**	**5.7500e-003**	**722.2314**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Hotel	2.82251e+006	640.1354	0.0269	5.1200e-003	642.3336
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	12883.5	2.9219	1.2000e-004	2.0000e-005	2.9320
Total		**643.0573**	**0.0270**	**5.1400e-003**	**645.2655**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.7438	4.0000e-005	4.9000e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	9.5000e-003	9.5000e-003	3.0000e-005	0.0000	0.0101
Unmitigated	0.7438	4.0000e-005	4.9000e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	9.5000e-003	9.5000e-003	3.0000e-005	0.0000	0.0101

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	0.0866					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.6568					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	4.6000e-004	4.0000e-005	4.9000e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	9.5000e-003	9.5000e-003	3.0000e-005	0.0000	0.0101
Total	**0.7438**	**4.0000e-005**	**4.9000e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**	**0.0000**	**9.5000e-003**	**9.5000e-003**	**3.0000e-005**	**0.0000**	**0.0101**

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	0.0866					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.6568					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	4.6000e-004	4.0000e-005	4.9000e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	9.5000e-003	9.5000e-003	3.0000e-005	0.0000	0.0101
Total	**0.7438**	**4.0000e-005**	**4.9000e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**	**0.0000**	**9.5000e-003**	**9.5000e-003**	**3.0000e-005**	**0.0000**	**0.0101**

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

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	8.7643	0.0797	1.9400e-003	11.3339
Unmitigated	10.8073	0.0996	2.4200e-003	14.0187

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Hotel	3.04401 / 0.338224	10.8073	0.0996	2.4200e-003	14.0187
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Other Non-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		**10.8073**	**0.0996**	**2.4200e-003**	**14.0187**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Hotel	2.43521 / 0.317592	8.7643	0.0797	1.9400e-003	11.3339
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Other Non-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		**8.7643**	**0.0797**	**1.9400e-003**	**11.3339**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	6.6683	0.3941	0.0000	16.5203
Unmitigated	13.3365	0.7882	0.0000	33.0406

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Hotel	65.7	13.3365	0.7882	0.0000	33.0406
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Total		**13.3365**	**0.7882**	**0.0000**	**33.0406**

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Hotel	32.85	6.6683	0.3941	0.0000	16.5203
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Total		**6.6683**	**0.3941**	**0.0000**	**16.5203**

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