

AIR QUALITY AND GREENHOUSE GAS EMISSIONS IMPACT ANALYSIS

MISSION AVENUE AND ROCK SPRINGS 7-ELEVEN GAS STATION PROJECT

CITY OF ESCONDIDO

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Project No. 19071

January 30, 2020

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ACRONYMS AND ABBREVIATIONS

AB	Assembly Bill
Air Basin	San Diego County 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 ₂ F ₆	hexafluoroethane
C ₂ H ₆	ethane
CH ₄	Methane
City	City of Escondido
CO	Carbon monoxide
CO ₂	Carbon dioxide
CO ₂ e	Carbon dioxide equivalent
CPUC	California Public Utilities Commission
DPM	Diesel particulate matter
EPA	Environmental Protection Agency
°F	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
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
PM ₁₀	Particles that are less than 10 micrometers in diameter
PM _{2.5}	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
SDAPCD	San Diego Air Pollution Control District
SANDAG	San Diego 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 and Greenhouse Gas (GHG) Emissions Impact Analysis has been completed to determine the air quality and GHG emissions impacts associated with the proposed 7-11 Mission Avenue and Rock Springs Gas Station 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 and GHG emissions thresholds including the California Environmental Quality Act (CEQA) significance thresholds;
- An analysis of the conformity of the proposed project with the San Diego County Air Pollution Control District's (SDAPCD) air quality strategies;
- An analysis of the short-term construction related and long-term operational air quality and GHG emissions impacts; and
- An analysis of the conformity of the proposed project with the applicable GHG emissions reduction plans and policies.

1.2 Site Location and Study Area

The project site is located in the central portion of the City of Escondido (City) on the northwest corner of W. Mission Avenue and Rock Springs Road. The project site is currently an existing automobile sale and is bounded by commercial to the north, existing retail shops to the east, West Mission Avenue and Farmer Boys to the south, and Rock Spring Road and an existing 7-Eleven to the west. The project local study area is shown in Figure 1.

Sensitive Receptors in Project Vicinity

The nearest sensitive receptors to the project site are the multi-family homes located as near as 770 feet to the north of the project site. The nearest K-12 school to the project site is Lincoln Elementary School, which is located as near as a 0.8-mile northeast of the project site.

1.3 Proposed Project Description

The proposed project will consist of removal of the existing automobile sales building and paved parking lot and construction of a new gas station with 16 vehicle fueling positions (8 dispenser pumps) and a 4,088 square foot convenience store. The proposed project would also include parking areas with 25 parking spaces. The proposed site plan is shown in Figure 2.

1.4 Executive Summary

Standard Air Quality and GHG Regulatory Conditions

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

City of Escondido Municipal Code

The following lists the City of Escondido Municipal Code regulations that are applicable to the proposed project.

Section 33-924(a)(6) Project Level Air Quality Thresholds

Section 33-924(a)(6) of the City's Municipal Code provides project level air pollutant threshold levels that should be utilized to determine significance levels for CEQA.

Section 33-924(a)(7) Project Level GHG Emissions Thresholds

Section 33-924(a)(7) of the City's Municipal Code provides project level GHG emissions threshold levels that should be utilized to determine significance levels for CEQA.

San Diego County Air Pollution Control District Rules

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

- Rule 20.2 Non-Major Stationary Sources – Controls the emissions of air contaminants;
- Rule 20.3 Major Stationary Sources and Prevention of Significant Deterioration (PSD) Stationary Sources – Controls the emissions of air contaminants);
- Rule 50 Visible Emissions – Controls visible emissions from all sources, including fugitive dust;
- Rule 51 Nuisance – Controls the emissions of odors and other air contaminants;
- Rule 55 Fugitive Dust Control – Controls the emissions of fugitive dust; and
- Rule 67.0.1 Architectural Coating – Establishes VOC content limits.

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 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.

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 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 and GHG emissions.

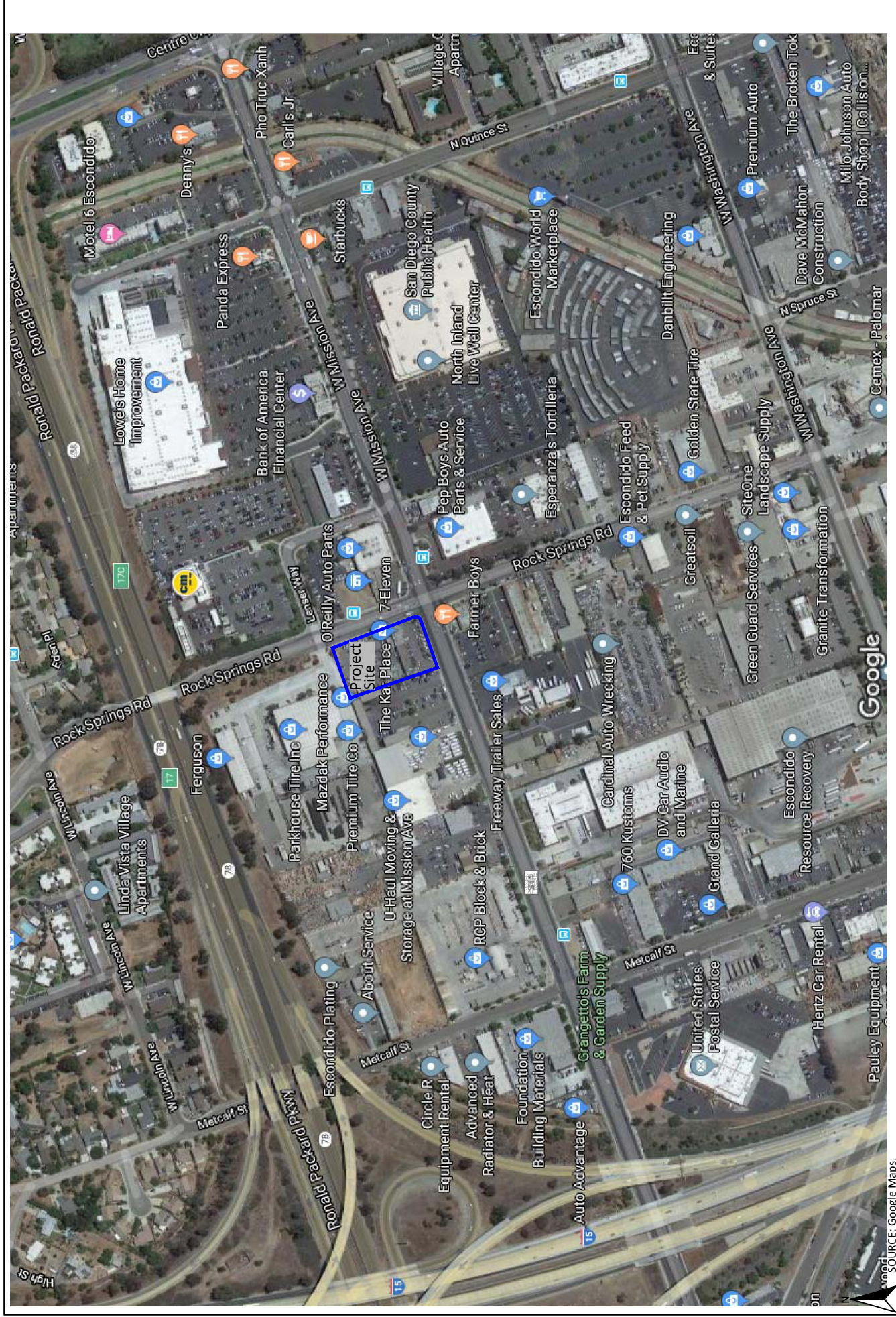


Figure 1
Project Local Study Area



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 (NO_x) is the generic term for a group of highly reactive gases which contain nitrogen and oxygen. While most NO_x are colorless and odorless, concentrations of NO₂ can often be seen as a reddish-brown layer over many urban areas. NO_x 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. NO_x reacts with other pollutants to form, ground-level ozone, nitrate particles, acid aerosols, as well as NO₂, 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 NO_x 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 NO_x 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 NO_x 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 NO_x and VOC are ozone precursors, the health effects associated with ozone are also indirect health effects associated with significant levels of NO_x 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 (SO_x) gases are formed when fuel containing sulfur, such as coal and oil is burned, as well as from the refining of gasoline. SO_x 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 (PM_{2.5}) 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 O₃ 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 O₃ 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 PM_{2.5} 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 50 miles northeast 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 (CO₂), methane (CH₄), ozone (O₃), water vapor, nitrous oxide (N₂O), 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 CO₂ and N₂O are byproducts of fossil fuel combustion. Methane, a potent greenhouse gas, results from off-gassing associated with agricultural practices and landfills. Sinks of CO₂, where CO₂ 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 CO₂ 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. CO₂ 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

CH₄ is an extremely effective absorber of radiation, although its atmospheric concentration is less than that of CO₂. Its lifetime in the atmosphere is brief (10 to 12 years), compared to some other GHGs (such as CO₂, N₂O, and Chlorofluorocarbons (CFCs)). CH₄ 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 N₂O 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). N₂O 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. N₂O 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 (C₂H₆) 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 (CHF₃), HFC-134a (CF₃CH₂F), and HFC-152a (CH₃CHF₂). 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 (CF₄) and hexafluoroethane (C₂F₆).

Concentrations of CF₄ in the atmosphere are over 70 ppt. The two main sources of PFCs are primary aluminum production and semiconductor manufacturing.

Sulfur Hexafluoride

Sulfur Hexafluoride (SF₆) is an inorganic, odorless, colorless, nontoxic, nonflammable gas. SF₆ has the highest global warming potential of any gas evaluated; 23,900 times that of CO₂. 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, CO₂. 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 CO₂e. As such, the GWP of CO₂ 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 ₂ O)	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 ₂ F 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 CO₂ 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 CO₂ equivalent (CO₂e) 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 CO₂ equivalent (CO₂e) 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 MMTCO₂e 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 MMTCO₂e 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.

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.

Air Pollutant	Concentration / Averaging Time		Most Relevant Effects
	California Standards	Federal Primary Standards	
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>.

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 (O₃) and by CARB as nonattainment for ozone, PM₁₀, and PM_{2.5}.

Table C – San Diego Air Basin Attainment Status

Pollutant	Averaging Time	Attainment Status	
		Federal	California
Ozone (O ₃)	1-Hour	No Federal Standard	Nonattainment
	8-Hour	Nonattainment	Nonattainment
Carbon Monoxide (CO)	1-Hour	Attainment	Attainment
	8-Hour	Attainment	Attainment
Nitrogen Dioxide (NO ₂)	1-Hour	No Federal Standard	Attainment
	Annual	Attainment	No State Standard
Sulfur Dioxide (SO ₂) ⁷	1-Hour	No Federal Standard	Attainment
	24-Hour	Attainment	Attainment
	Annual	Attainment	No State Standard
PM ₁₀	24-Hour	Attainment	Nonattainment
	Annual	Attainment	Nonattainment
PM _{2.5}	24-Hour	Attainment	Attainment
	Annual	Attainment	Nonattainment

Pollutant	Averaging Time	Attainment Status	
		Federal	California
Lead	30-Day	No Federal Standard	Attainment
	3-Months Rolling	Attainment	No State Standard
Sulfates	24-Hour	No Federal Standard	Attainment
Hydrogen Sulfide	1-Hour	No Federal Standard	Unclassified
Visibility Reducing Particulates	8-Hour	No Federal Standard	Unclassified

Source: California Air Resources Board and EPA.

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 PM_{2.5}. Currently, the Air Basin is in attainment with the ambient air quality standards for CO, NO₂, SO₂, 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 NO_x 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 NO_x 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 – San Diego Air Quality Management District

The SDAPCD is the agency principally responsible for comprehensive air pollution control in the San Diego Air Basin. To that end, as a regional agency, the SDAPCD works directly with the San Diego Association of Governments (SANDAG), county transportation commissions, and local governments and cooperates actively with all federal and state agencies. The SDAPCD regulates most air pollutant sources, except for motor vehicles, marine vessels, aircraft, and agricultural equipment, which are regulated by the CARB or the EPA. In addition, the SDAPCD along with the CARB maintains and operates ambient air quality monitoring stations at numerous locations throughout San Diego County, including one in Escondido. These stations are used to measure and monitor criteria pollutant levels in order to determine the attainment status of the pollutants within the Air Basin.

The Air Basin was designated nonattainment for the 1997 8-hour ozone NAAQS, effective June, 2004 based on ozone air quality measurements over the 2001-2003 three-year period. The Air Basin was designated as a “basic” (unclassified) nonattainment area, which allowed more flexibility to the SDAPCD than the more stringent nonattainment classifications. In June 2007, the SDAPCD submitted a SIP revision fulfilling the requirements EPA had established for a basic nonattainment area. However, due to a court ruling the EPA did not accept the SIP revision and instead reclassified the Air Basin as a “Moderate” ozone nonattainment area. On December 5, 2012 the SDAPCD applied for redesignation of the 1997 8-hour ozone based on air quality measurements over the 2009-2011 three-year period, which showed the Air Basin is currently in attainment for the 1997 standard.

In 2008, a more protective 8-hour ozone NAAQS was established by the EPA at a level of 0.075 ppm. The 2008 standard is independent of the 1997 standard, which currently remains in effect while the EPA undertakes rulemaking to address implementation of the 2008 standard.

In order to address the requirements of the California Clean Air Act (CCAA) of a 5 percent annual reduction in countywide emissions of ozone precursors or if that is not achievable an expeditious schedule for adopting every feasible control measure, the SDAPCD has developed the San Diego Regional Air Quality Strategy (RAQS) that identifies feasible emission control measure and provides expeditious progress

toward attaining the State's ozone standards. The RAQS control measures focus on emissions sources under the SDAPCD's authority, specifically stationary emissions sources and some area-wide sources that include residential water heaters, furnaces, architectural coatings, and consumer products. The RAQS was initially adopted by the SDAPCD on June 1992 and amended on March 1993 based on CARB comments. The SDAPCD further updated the RAQS on December 1995, June 1998, August 2001, July 2004, April 2009, and December 2016.

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

Rule 20.2 – Non-Major Stationary Sources

Rule 20.3 requires a new or modified emissions units, relocated emission units, replacement emission units, and emergency equipment emission units with a post-project potential to emit 10 pounds per day or more of PM10, NOx, VOC, or Sox shall be equipped with best available control technology (BACT) for each air contaminant.

Rule 20.3 – Major Stationary Sources and Prevention of Significant Deterioration (PSD) Stationary Sources

Rule 20.3 requires a new or modified emissions units, relocated emission units, replacement emission units, and emergency equipment emission units with a post-project potential to emit 10 pounds per day or more of PM10, NOx, VOC, or Sox shall be equipped with best available control technology (BACT) for each air contaminant.

Rule 51 - Nuisance

Rule 51 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 51 will reduce local air quality and odor impacts to nearby sensitive receptors.

Rule 55- Fugitive Dust

Rule 55 governs emissions of fugitive dust during construction activities and requires the following.

- No person shall engage in construction or demolition activities in a manner that discharges visible dust emissions into the atmosphere beyond the property line for a period or periods aggregating more than 3 minutes in any 60 minute period.
- Visible roadway dust as a result of active operations, spillage from transport trucks, erosions, or track-out/carry-out shall be minimized by the use of any of the equally effective track-out/carry-out and erosion control measures listed in Rule 55 that apply to the project or operation. These measures include: track-out grates or gravel beds at each egress point; wheel-washing at each egress during muddy conditions; soil binders, chemical soil stabilizers, geotextiles, mulching, or seeding; watering for dust control; and using secured tarps or cargo covering, watering, or treating of transported material for outbound transport trucks.

Rule 61.3 and Rule 61.4 – Gasoline Dispensing facilities

Rule 61.3 and 61.4 govern the operation of gasoline stations and requires that all underground storage tanks are equipped with a “CARB certified” enhanced vapor recovery system, all fill tubes are equipped with vapor tight caps, all dry breaks are equipped with vapor tight seals, a spill box shall be installed to capture any gasoline spillage, and all equipment is required to be properly maintained per CARB regulations. All gasoline dispensing units are required to be equipped with a “CARB certified” vapor recovery system, the dispensing system components all maintain vapor and liquid tight connections at all times and the breakaway coupling shall be equipped with a poppet valve that shall close when coupling is separated. Rule 61.3 also provides several additional requirements including detailed maintenance, testing, reporting, and recordkeeping requirements for all gas stations.

Rule 1200 - Toxic Air Contaminants –New Source Review

Requires new or modified stationary source units with the potential to emit TACs above rule threshold levels to either demonstrate that they will not increase the maximum incremental cancer risk above 1 in 1 million at every receptor location, or demonstrate that toxics best available control technology (T-BACT) will be employed if maximum incremental cancer risk is equal to or less than 10 in 1 million, or demonstrate compliance with the SDAPCD’s protocol for those sources with an increase in maximum incremental cancer risk at any receptor location of greater than 10 in 1 million but less than 100 in 1 million (SDAPCD 2017b).

Rule 1210 - Toxic Air Contaminant Public Health Risks –Public Notification and Risk Reduction

Requires each stationary source that is required to prepare a public risk assessment to provide written public notice of risks at or above the following levels: maximum incremental cancer risks equal to or greater than 10 in 1 million, or cancer burden equal to or greater than 1.0, or total acute noncancer health hazard index equal to or greater than 1.0, or total chronic noncancer health hazard index equal to or greater than 1.0 (SDAPCD 2017c).

4.4 Local – City of Escondido Air Quality Regulations

The City of Escondido Municipal Code provides the following Section that establishes air quality thresholds for new projects within the City.

Section 33-924. Coordination of CEQA, quality of life standards, and growth management provisions.

The purpose of this section is to ensure consistency between the city’s thresholds of environmental significance and the Public Facilities Master Plans which implements the growth management element of the general plan. The city’s general plan contains quality of life standards that are to be considered in comprehensive planning efforts as well as individual project review. The degree to which a project, and the area in which it is located, conforms to the quality of life standards, is an issue in determining threshold of significance. Notwithstanding the city’s goal of providing adequate infrastructure concurrent with development, the Public Facilities Master Plans acknowledges that the concurrent provision of infrastructure cannot be provided in all cases, particularly in the short term. Instead, only critical infrastructure deficiencies affect the timing of development. The following criteria are intended to clarify how facility deficiencies should affect the following CEQA determinations:

- (a) Negative and mitigates negative declarations. In situations where the preparation of a negative declaration is otherwise appropriate, yet quality of life standard deficiencies are found to exist, a negative declaration may still be prepared under the following circumstances, as applicable:
- (6) After mitigation, the project does not individually generate air-quality impacts for fixed, mobile or construction sources within the general plan area by more than any of the following thresholds per day:

Table D – Section 33-924 Criteria Pollutant Emissions Pounds per Day Thresholds

	Pounds per Day Thresholds						
	PM10	PM2.5	NOx	SOx	CO	Lead ¹	VOCs ²
Construction	100	55	250	250	550	3.2	75
Operation	100	55	250	250	550	3.2	55

Notes:

¹ Not applicable to construction

² Thresholds for VOCs per SCAQMD CEQA Air Quality Handbook.

Source: City of Escondido Municipal Code Section 33-924.

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-CO₂ 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 CO₂ per MWh for fossil fuel-fired utility boilers and 1,000 pounds of CO₂ per MWh for large natural gas-fired combustion units.

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

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 barbecue 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

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

The Title 24 standards are updated on a three-year schedule and since 2008 the standards have been incrementally moving to the 2020 goal of the zero-net-energy use. Currently the 2016 Title 24 standards are in effect and on January 1, 2020 the 2019 standards will go into effect, that have been designed so that the average new home built in California will now use zero-net-energy and that non-residential buildings will use about 30 percent less energy than the 2016 standards due mainly to lighting upgrades. The 2019 standards also encourage the use of battery storage and heat pump water heaters, require the more widespread use of LED lighting, as well as improve the building's thermal envelope through high performance attics, walls and windows. The 2019 standards also require improvements to ventilation systems by requiring highly efficient air filters to trap hazardous air particulates as well as improvements to kitchen ventilation systems.

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

CCR Title 24, Part 11: *California Green Building Standards* (CalGreen) was developed in response to continued efforts to reduce GHG emissions associated with energy consumption. The CalGreen Building Standards are also updated every three years and the current version is the 2016 California Green Building Standards Code, which became effective on January 1, 2017. The 2019 California Green Building Standard Code will become effective on January 1, 2020.

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

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

Some of the notable changes in the 2019 CALGreen Code over the current 2016 CALGreen Code include: an alignment of building code engineering requirements with the national standards that include anchorage requirements for solar panels, provides design requirements for buildings in tsunami zones,

increases Minimum Efficiency Reporting Value (MERV) for air filters from 8 to 13, increased electric vehicle charging requirements in parking areas, and sets minimum requirements for use of shade trees.

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.

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- 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 (MMTCO₂e). The 2020 target of 431 MMTCO₂e requires the reduction of 78 MMTCO₂e, or approximately 16 percent from the State’s projected 2020 business as usual emissions of 509 MMTCO₂e (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 CO₂ 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. In June 2009, the EPA granted California the authority to implement GHG emission reduction standards for light duty vehicles, in September 2009, amendments to the Pavley I regulations were adopted by CARB and implementation of the “Pavley I” regulations started in 2009.

The second set of regulations “Pavley II” was developed in 2010, and is being phased in between model years 2017 through 2025 with the goal of reducing GHG emissions by 45 percent by the year 2020 as compared to the 2002 fleet. The Pavley II standards were developed by linking the GHG emissions and formerly separate toxic tailpipe emissions standards previously known as the “LEV III” (third stage of the Low Emission Vehicle standards) into a single regulatory framework. The new rules reduce emissions from gasoline-powered cars as well as promote zero-emissions auto technologies such as electricity and hydrogen, and through increasing the infrastructure for fueling hydrogen vehicles. In 2009, the U.S. EPA granted California the authority to implement the GHG standards for passenger cars, pickup trucks and sport utility vehicles and these GHG emissions standards are currently being implemented nationwide. However, EPA has performed a midterm evaluation of the longer-term standards for model years 2022-2025, and based on the findings of this midterm evaluation, the EPA has proposed to amend the corporate average fuel economy (CAFE) and GHG emissions standards for light vehicles for model years 2021 through 2026. The EPA’s proposed amendments do not include any extension of the legal waiver granted to California by the 1970 Clean Air Act and which has allowed the State to set tighter standards for vehicle pipe emissions than the EPA standards. On September 20, 2019, California filed suit over the EPA decision to revoke California’s legal waiver that has been joined by 22 other states.

5.4 Regional – San Diego Air Pollution Control District

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

5.5 Local – City of Escondido

The City of Escondido has established global climate change and GHG emissions thresholds for new projects in the City in both the Municipal Code and the City of Escondido Adopted Climate Action Plan (E-CAP), adopted December 2013, which are discussed separately below.

City of Escondido Municipal Code

The City of Escondido Municipal Code provides the following Section that establishes GHG emission thresholds for new projects within the City.

Section 33-924. Coordination of CEQA, quality of life standards, and growth management provisions.

The purpose of this section is to ensure consistency between the city's thresholds of environmental significance and the Public Facilities Master Plans which implements the growth management element of the general plan. The city's general plan contains quality of life standards that are to be considered in comprehensive planning efforts as well as individual project review. The degree to which a project, and the area in which it is located, conforms to the quality of life standards, is an issue in determining threshold of significance. Notwithstanding the city's goal of providing adequate infrastructure concurrent with development, the Public Facilities Master Plans acknowledges that the concurrent provision of infrastructure cannot be provided in all cases, particularly in the short term. Instead, only critical infrastructure deficiencies affect the timing of development. The following criteria are intended to clarify how facility deficiencies should affect the following CEQA determinations:

- (a) Negative and mitigates negative declarations. In situations where the preparation of a negative declaration is otherwise appropriate, yet quality of life standard deficiencies are found to exist, a negative declaration may still be prepared under the following circumstances, as applicable:
- (7) Greenhouse gas (GHG) emissions. In situations where a negative declaration is otherwise appropriate, the following incremental GHG emissions are generally not considered significant:
 - a. Projects that do not generate more than two thousand five hundred (2,500) metric tons (MT) of carbon dioxide equivalent (CO₂e) greenhouse gas (GHG) emissions, or
 - b. Projects generating more than two thousand five hundred (2,500) MT CO₂e that have achieved one hundred (100) points implementing reduction measures outlined in the Escondido Climate Action Plan (E-CAP) screening tables, adopted by separate resolution, or
 - c. Projects generating more than two thousand five hundred (2,500) MT CO₂e that demonstrate through a project specific analysis quantifying GHG emissions that through mitigation and design features, the project reduces GHG emissions consistent with the E-CAP.

City of Escondido Climate Action Plan

The City of Escondido adopted the E-CAP and the City of Escondido Greenhouse Gas Emissions – Adopted CEQA Thresholds and Screening Tables (E-CAP Thresholds), on December 2013. The City prepared the E-CAP with the target of reducing GHG emissions within Escondido by 15 percent below 2013 levels by 2020. The City's target was developed to be consistent with the GHG emission reductions targets provided in AB 32 and ensures that the City is providing GHG reductions locally that complement statewide efforts. The E-CAP Thresholds Report provides a 2,500 MT CO₂e per year threshold of significance for new

development projects in the City. This threshold was developed by the City based on the GHG emissions amount allowed by a project such that 90 percent of emissions on average from all projects would exceed that level and be “captured” by the Screening Table or alternate emission analysis method.

For projects that exceed 2,500 MT CO₂e per year, the Adopted CEQA Thresholds and Screening Tables assigns each mitigation measure a point value, and if a project garner’s at least 100 points it will be consistent with the reduction quantities anticipated in the City’s CAP. Table E below provides the description and point value of each mitigation measure.

Table E – City of Escondido Screening Table for Implementation of GHG Reduction Measures for Commercial Development

Feature	Description	Assigned Points
REDUCTION MEASURE R2 E5: ENERGY EFFICIENCY FOR COMMERCIAL DEVELOPMENT		
Building Envelope		
Insulation	Title 24 standard (required)	0
	Modestly Enhanced Insulation (5% > Title 24)	3
	Enhanced Insulation (15% > Title 24)	7
	Greatly Enhanced Insulation (20% > Title 24)	11
Windows	Title 24 standard (required)	0
	Modestly Enhanced Window Insulation (5% > Title 24)	3
	Enhanced Window Insulation (15% > Title 24)	7
	Greatly Enhanced Insulation (20% > Title 24)	11
Doors	Title 24 standard (required)	0
	Modestly Enhanced Insulation (5% > Title 24)	3
	Enhanced Insulation (15% > Title 24)	7
	Greatly Enhanced Insulation (20% > Title 24)	11
Air Infiltration	Minimizing leaks in the building envelope is as important as the insulation properties of the building. Insulation does not work effectively if there is excess air leakage.	
	Title 24 standard (required)	0
	Modestly Enhanced Window Insulation (5% > Title 24)	3
	Enhanced Window Insulation (15% > Title 24)	7
	Greatly Enhanced Insulation (20% > Title 24)	11
Thermal Storage of Building	Thermal storage is a design characteristic that helps keep a constant temperature in the building. Common thermal storage devices include strategically placed water filled columns, water storage tanks, and thick masonry walls.	
	Thermal storage to reduce heating/cooling by 5°F within the building	5
	Thermal storage to reduce heating/cooling by 10°F within the building	11
	Note: Engineering details must be provided to substantiate the efficiency of the thermal storage device.	
Building Envelope Performance Standard	Alternatively, projects that have not been designed to a level of detail to know the specific attributes of the building envelope needed to utilize the features listed above can use this option instead in committing to one of the following performance standards:	
	Modestly Enhanced building envelope (5% > Title 24)	12

Table E – City of Escondido Screening Table for Implementation of GHG Reduction Measures for Commercial Development

Feature	Description	Assigned Points
	Enhanced building envelope (15% > Title 24)	28
	Greatly Enhanced building envelope (20% > Title 24)	44
Indoor Spaces Efficiencies		
Heating/Cooling Distribution System	Title 24 Standard (required)	0
	Modest Distribution Losses (5% > Title 24)	3
	Reduced Distribution Losses (15% > Title 24)	7
	Greatly Reduced Distribution Losses (5% > Title 24)	11
Space Heating/Cooling Equipment	Title 24 standard (required)	0
	Efficiency HVAC (5% > Title 24)	3
	High Efficiency HBAC (15% > Title 24)	7
	Very High Efficiency HBAC (20% > Title 24)	11
Commercial Heat Recovery Systems	Heat recovery strategies employed with commercial laundry, cooking equipment, and other commercial heat sources for reuse in HVAC air intake or other appropriate heat recovery technology. Point values for these types of systems will be determined based upon design and engineering data documenting the energy savings	TBD
Water Heaters	Title 24 standard (require)	0
	Efficiency Water Heater (Energy Star conventional that is 5% > Title 24)	3
	High Efficiency Water Heater (Conventional water heater that is 15% > Title 24)	7
	High Efficiency Water Heater (Conventional water heater that is 20% > Title 24)	11
	Solar Water Heating System	13
Daylighting	Daylighting is the ability of each room within the building to provide outside light during the day reducing the need for artificial lighting during daylight hours.	
	All peripheral rooms within building have at least one window (require)	1
	All rooms within building have daylight (through use of windows, solar tubes, skylights, etc.) such that each room has at least 800 lumens of light during a sunny day.	4
	All rooms daylighted to at least 1,000 lumens	6
Artificial Lighting	Title 24 standard (required)	0
	Efficient Lights (5% > Title 24)	3
	High Efficiency Lights (LED, etc. 15% > Title 24)	5
	Very High Efficiency Lights (LED, etc. 20% > Title 24)	7
Appliances	Title 24 standard (required)	0
	Efficient Appliances (5% > Title 24)	3
	High Efficiency Energy Star Appliances (15% > Title 24)	7
	Very High Efficiency Appliance (20% > Title 24)	11
Indoor Space Performance Standard	Alternatively, projects that have not been designed to a level of detail to know the specific attributes of the interior design of the buildings needed to utilize the points for the features listed above can use this option instead in committing to one of the following performance standards:	

Table E – City of Escondido Screening Table for Implementation of GHG Reduction Measures for Commercial Development

Feature	Description	Assigned Points
	Modestly Enhanced Interior and Appliances (5% > Title 24)	16
	Enhanced Interior and Appliances (15% > Title 24)	37
	Greatly Enhanced Interior and Appliances (20% > Title 24)	50
Building Placement	North/South alignment of building or other building placement such that the orientation of the buildings optimizes natural heating, cooling, and lighting.	3
Other	This allows innovation by the applicant to provide design features that increases the energy efficiency of the project not provided in the table. Note that engineering data will be require documenting the energy efficiency of innovative designs and point values given based upon the proven efficiency beyond Title 24 Energy Efficiency Standards.	TBD
Existing Commercial Building Retrofits	The applicant may wish to provide energy efficiency retrofit projects to existing residential dwelling units to further the point value of their project. Retrofitting existing commercial buildings within the City is a key reduction measure that is needed to reach the reduction goal. The potential for an applicant to take advantage of this program will be decided on a case by case basis and must have the approval of the Escondido Planning Department. The decision to allow applicants the ability to participate in this program will be evaluated based upon, but not limited to the following:	
	Will the energy efficiency retrofit project benefit low income or disadvantaged residents?	TBD
	Does the energy efficiency retrofit project fit within the overall assumptions in Reduction Measure R2 E3?	TBD
	Does the energy efficiency retrofit project provide co-benefits important to the City?	TBD
	Point value will be determined based upon engineering and design criteria of the energy efficiency retrofit project.	TBD
REDUCTION MEASURE R2 E2: NEW COMMERCIAL/INDUSTRIAL RENEWABLE ENERGY		
	Solar photovoltaic panels installed on commercial buildings or in collective neighborhood arrangements such that the total power provided augments:	
	Solar Ready Roofs (sturdy roof and electric hookups)	1
	10 percent of the power needs of the project	7
	20 percent of the power needs of the project	13
	30 percent of the power needs of the project	19
Photovoltaic	40 percent of the power needs of the project	25
	50 percent of the power needs of the project	31
	60 percent of the power needs of the project	37
	70 percent of the power needs of the project	43
	80 percent of the power needs of the project	49
	90 percent of the power needs of the project	52
	100 percent of the power needs of the project	57
Wind Turbines	Some areas of the City lend themselves to wind turbine applications. Analysis of the area's capacity to support wind turbines should be evaluated prior to choosing this feature.	

Table E – City of Escondido Screening Table for Implementation of GHG Reduction Measures for Commercial Development

Feature	Description	Assigned Points
	Wind turbines as part of the commercial development such that the total power provide augments:	
	10 percent of the power needs of the project	7
	20 percent of the power needs of the project	13
	30 percent of the power needs of the project	19
	40 percent of the power needs of the project	25
	50 percent of the power needs of the project	31
	60 percent of the power needs of the project	37
	70 percent of the power needs of the project	43
	80 percent of the power needs of the project	49
	90 percent of the power needs of the project	52
	100 percent of the power needs of the project	57
Offsite renewable energy project	The applicant may submit a proposal to supply an off-site renewable energy project such as renewable energy retrofits of existing residential that will help implement R2 E4, or existing commercial/industrial that will help implement R2 E7. These off-site renewable energy retrofit project proposals will be determined on a case by case basis accompanied by a detailed plan documenting the quantity of renewable energy the proposal will generate. Point values will be based upon the energy generated by the proposal.	TBD
Other Renewable Energy Generation	The applicant may have innovative designs or unique site circumstances (such as geothermal) that allow the project to generate electricity from renewable energy not provided in the table. The ability to supply other renewable energy and the point values allowed will be decided based upon engineering data documenting the ability to generate electricity.	TBD
REDUCTION MEASURE R2 W1: WATER USE REDUCTION INITIATIVE		
Irrigation and Landscaping		
	Limit conventional turf to < 20% of each lot (required)	0
Water Efficient Landscaping	Eliminate conventional turf from landscaping	2
	Eliminate turf and only provide drought tolerant plants	3
	Xeroscaping that requires not irrigation (after plants are established)	5
Water Efficient Irrigation Systems	Drip irrigation	1
	Smart irrigation control systems combined with drip irrigation (demonstrate 20% reduced water use)	2
Recycled Water	Graywater (purple pipe) irrigation system on site	4
Storm Water Reuse Systems	Innovative on-site storm water collection, filtration, and reuse systems are being developed that provide supplemental irrigation water and provide vector control. These systems can greatly reduce the irrigation needs of a project. Point values for these types of systems will be determined based upon design and engineering data documenting the water savings.	TBD
Potable Water		
Showers	Title 24 standard (required)	0
	EPA High Efficiency Showerheads (15% > Title 24)	3
Toilets	Title 24 standard (required)	0
	EPA High Efficiency Toilets (15% > Title 24)	3

Table E – City of Escondido Screening Table for Implementation of GHG Reduction Measures for Commercial Development

Feature	Description	Assigned Points
	Waterless Urinals (note that commercial buildings having both waterless urinals and high efficiency toilets have a combined point value of 6 points)	3
Faucets	Title 24 standard (required)	0
	EPA High Efficiency Faucets (15% > Title 24)	3
Commercial Dishwashers	Title 24 standards (required)	0
	EPA High Efficiency dishwashers (20% water savings)	3
Commercial Water Operations Program	Establish an operational program to reduce water loss from pools, water features, etc., by covering pools, adjusting fountain operational hours, and using water treatment to reduce draw down and replacement of water. Point values for these types of plans will be determined based upon design and engineering data documenting the water savings.	TBD
Potable Water Performance Standard	Alternatively, projects that have not been designed to a level of detail to know the specific attributes of the interior design of the buildings needed to utilize the points for the features listed above can use this option instead in committing to a potable water supply performance standard:	
	EPA High Efficiency Water Fixtures (15% > Title 24)	14
	EPA High Efficiency Water Fixtures and waterless urinals	17
REDUCTION MEASURE R2 T1: LAND USE BASED TRIPS AND VMT REDUCTION POLICIES		
Mixed Use	Mixes of land uses that complement one another in a way that reduces the need for vehicle trips can greatly reduce GHG emissions. The point value of mixed use projects will be determined based upon a Transportation Impact Analysis (TIA) demonstrating trip reductions and/or reductions in vehicle miles traveled.	
Local Retail Near Residential (Commercial only projects)	Having residential developments within walking and biking distance of local retail helps to reduce vehicle trips and/or vehicle miles traveled.	TBD
	The point value of residential projects in close proximity to local retail will be determined based upon traffic studies that demonstrate trip reductions and/or reductions in vehicle miles traveled (VMT).	TBD
REDUCTION MEASURE R2 T2: BICYCLE MASTER PLAN DEVELOPMENT		
Bicycle Infrastructure	Escondido's Bicycle Master Plan is extensive and describes the construction on 11.5 miles of Class I bike paths and 23 miles of Class II and Class III bikeways to build upon the current 8 miles of bikeways.	
	Provide bicycle paths within project boundaries.	TBD
	Provide bicycle path linkages between residential and other land uses.	3
	Provide bicycle path linkages between residential and transit.	5
REDUCTION MEASURE R2 T4: NEIGHBORHOOD ELECTRIC VEHICLE PLAN		
Electric Vehicles	Provide public charging station for use by an electric vehicle.	7

Source: City of Escondido Greenhouse Gas Emissions – Adopted CEQA Thresholds and Screening Tables, December 2013.

6.0 ATMOSPHERIC SETTING

6.1 San Diego Air Basin

The project site is located within the western portion of San Diego County in the City of Escondido, which is part of the San Diego Air Basin (Air Basin) that is contiguous with the political boundary of San Diego County. The Air Basin is divided by the Laguna Mountain Range with peaks that exceed 6,000 feet and runs approximately parallel to the coast about 45 miles inland and separates the coastal area from the desert. To the north of the Air Basin are the Santa Ana Mountains, which run along the Orange County coast, turning east to join with the Laguna Mountains near the San Diego-Orange County border.

6.2 Regional Climate

The climate of western San Diego County, is characterized by warm dry summers and mild, wet winters. The climate of the Air Basin, as well as all of Southern California, is largely controlled by the strength and position of the Pacific High, which is a semi-permanent high-pressure center located over the Pacific Ocean. The Pacific High influences the direction of prevailing winds (westerly to north-westerly) and maintains clear skies for much of the year.

The same atmospheric conditions that create a desirable living climate combine to limit the ability of the atmosphere to disperse the air pollution generated by the large population attracted to the pleasant climate. In the summer, subsidence inversions occur as descending air associated with the Pacific high pressure cell comes into contact with cool marine air. The boundary between the two layers of air creates a temperature inversion that traps pollutants. In the winter, radiation inversion occurs when air near the ground cools through radiation and the air aloft remains warm. This creates a shallow inversion layer between these two air masses that can also trap pollutants.

Limited rainfall occurs in the western San Diego County during the winter, as the oceanic high pressure center is the weakest and farthest south as the fringes of mid-latitude storms occasionally move through the area. The temperature and precipitation levels for the Escondido 2 Monitoring Station, which is the nearest weather station to the project site with historical data are shown below in Table F. Table F shows that August is typically the warmest month and January is typically the coolest month. Rainfall in the project area varies considerably in both time and space. Almost all the annual rainfall comes from the fringes of mid-latitude storms from late November to early April, with summers being almost completely dry.

Table F – Monthly Climate Data

Month	Average Maximum Temperature (°F)	Average Minimum Temperature (°F)	Average Total Precipitation (inches)	Average Total SnowFall (inches)
January	64.9	37.1	3.24	0.0
February	66.3	39.7	3.11	0.0
March	68.8	42.4	2.68	0.0
April	72.2	46.0	1.32	0.0
May	76.1	50.5	0.47	0.0
June	82.0	54.0	0.09	0.0
July	88.2	58.0	0.03	0.0
August	88.2	58.6	0.13	0.0
September	85.7	55.1	0.23	0.0

Month	Average Maximum Temperature (°F)	Average Minimum Temperature (°F)	Average Total Precipitation (inches)	Average Total SnowFall (inches)
October	79.0	48.7	0.70	0.0
November	72.9	41.2	1.54	0.0
December	66.5	37.4	2.67	0.0
Annual	75.9	47.4	16.22	0.0

Source: <https://wrcc.dri.edu/cgi-bin/cliMAIN.pl?ca2862>

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. The SDAPCD operates an extensive monitoring network throughout the County that continuously monitor ambient levels of criteria pollutants in compliance with federal monitoring regulations.

The project site is located in Escondido. The nearest monitoring site is the Escondido-E Valley Parkway Monitoring Station (Escondido Station), which is located approximately 1.2 miles east of the project site at 600 East Valley Parkway, Escondido. However air monitoring was discontinued at the Escondido Station, monitoring data has been obtained from both the San Diego – Rancho Carmel Monitoring Station (Rancho Carmel Station), which is located approximately 10 miles south of the project site and the San Diego-Kearny Villa Road Monitoring Station (San Diego Station), which is located approximately 19 miles south of the project site. The monitoring data is presented in Table G and shows the most recent three years of monitoring data from CARB. 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. The monitoring data presented in Table G shows that ozone and particulate matter (PM10 and PM2.5) are the air pollutants of primary concern in the project area, which are detailed below:

Table G – Local Area Air Quality Monitoring Summary

Pollutant (Standard)	Year		
	2016	2017	2018
Ozone:¹			
Maximum 1-Hour Concentration (ppm)	0.079	0.075	ND
Days > CAAQS (0.09 ppm)	0	0	ND
Maximum 8-Hour Concentration (ppm)	0.071	0.061	ND
Days > NAAQS (0.070 ppm)	1	0	ND
Days > CAAQs (0.070 ppm)	1	0	ND
Nitrogen Dioxide:²			
Maximum 1-Hour Concentration (ppb)	62.0	62.0	55.0
Days > NAAQS (100 ppb)	0	0	0
Days > CAAQS (180 ppb)	0	0	0
Inhalable Particulates (PM10):³			

Pollutant (Standard)	Year		
	2016	2017	2018
Maximum 24-Hour California Measurement (ug/m ³)	35.0	47.0	38.0
Days > NAAQS (150 ug/m ³)	0	0	0
Days > CAAQS (50 ug/m ³)	0	0	0
Annual Arithmetic Mean (AAM) (ug/m ³)	17.1	17.6	18.4
Annual > NAAQS (50 ug/m ³)	No	No	No
Annual > CAAQS (20 ug/m ³)	No	No	No
Ultra-Fine Particulates (PM_{2.5}):³			
Maximum 24-Hour National Measurement (ug/m ³)	19.4	27.5	32.2
Days > NAAQS (35 ug/m ³)	0	0	0
Annual Arithmetic Mean (AAM) (ug/m ³)	7.8	8.0	8.3
Annual > NAAQS and CAAQS (12 ug/m ³)	No	No	No

Notes: Exceedances are listed in **bold**. CAAQS = California Ambient Air Quality Standard; NAAQS = National Ambient Air Quality Standard; ppm = parts per million; ppb = parts per billion; ND = no data available.

¹ Data obtained from the Escondido Station.

² Data obtained from the San Diego Rancho Carmel Station.

³ Data obtained from the San Diego Kearny Villa Station.

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

Ozone

The State 1-hour concentration standard for ozone has not been exceeded over the past three years at the Escondido Station. The State 8-hour ozone standard has been exceeded by one day at the Escondido Station in the year 2016 and no exceedances occurred in 2017. The Federal 8-hour ozone standard has been exceeded by one day at the Escondido Station in the year 2016 and no exceedances occurred in 2017. There is no data for 2018 ozone at the Escondido 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 NO₂, 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 San Diego County contribute to the ozone levels experienced in Escondido, with the more significant areas being those directly upwind.

Nitrogen Dioxide

The San Diego Rancho Carmel Station did not record any exceedances of the Federal or State 1-hour NO₂ standard for the last three years.

Particulate Matter

Both the State and Federal 24-hour and annual concentration standards for PM₁₀ have not been exceeded for the last three years at the San Diego Kearny Villa Station. Over the past three years both the 24-hour concentration standard and annual concentration standard for PM_{2.5} has not been exceeded at the San Diego Kearny Villa Station. There does not appear to be a noticeable trend for PM₁₀ or PM_{2.5} in either maximum particulate concentrations or days of exceedances in the area. Particulate levels in the area are due to natural sources, grading operations, and motor vehicles.

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

7.0 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 San Diego 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 San Diego County, a Climate Zone of 13, utility company of San Diego Gas & Electric and an opening year of 2021 was utilized in this analysis.

Land Use Parameters

The proposed project consists of development of a gas station with 16 fueling positions that are covered with an approximately 4,284 square foot canopy and a 4,088 square foot convenience store. The proposed project would also include a parking lot with 25 parking spaces. The proposed project's land use parameters that were entered into the CalEEMod model are shown in Table H.

Table H – CalEEMod Land Use Parameters

Proposed Land Use	Land Use Subtype in CalEEMod	Land Use Size ¹	Lot Acreage ²	Building/Paving ³ (square feet)
Gas Station	Gasoline/Service Station	16 VFP	0.16	4,284
Convenience Store	Convenience Market	4.088 TSF	0.29	4,088
Parking Lot	Parking Lot	25 PS	0.70	10,000

Notes:

¹ VFP = Vehicle Fueling Position; TSF = Thousand Square Feet; PS = Parking Space

² Lot acreage calculated based on the total project area of 1.14-acre.

³ Building/Paving square feet represent area where architectural coatings will be applied.

Construction Parameters

Construction activities have been modeled as starting in August 2020 and taking 11 months to complete. The phases of construction activities that have been analyzed are detailed below and include: 1) Demolition; 2) Grading, 3) Building construction, 4) Application of architectural coatings, and 5) Paving.

Demolition

The demolition phase would consist of demolishing the existing auto sale building on the project site that includes approximately 3,720 square feet of building space to be demolished. In addition, approximately one acre of pavement (43,560 square feet) on the project site would also need to be demolished. The pavement was assumed to be an average of 4-inches thick and weigh 145 pounds per square foot, which results in 1,053 tons of pavement that would be removed from the project site. For the existing structures, CalEEMod utilizes a factor of 0.046 tons of debris of building material per building square foot. This results in 171 tons of debris that would be generated from demolition of the 3,720 square feet of existing building

space. Therefore, the combined demolition of the structures and pavement area would require the removal of 1,224 tons of debris that would be exported from the site and would require a total of 121 haul truck trips (average 6 haul truck trips per day during the demolition phase).

The demolition phase has been modeled as starting in August 2020 and occurring over four weeks. The demolition activities would require 13 worker trips per day. In order to account for water truck emissions, six vendor truck emissions were added to the demolition phase. The onsite equipment would consist of one concrete/industrial saw, one rubber tired dozers, and three of either tractors, loaders, or backhoes which is based on the CalEEMod default equipment mix.

Grading

The grading phase would occur after completion of the site preparation phase and was modeled as occurring over four days, which is based on the CalEEMod default timing. The grading activities are anticipated to be balanced, which would require no dirt to be imported or exported from the project site. The onsite equipment utilized during the grading phase was based on the CalEEMod default equipment list of one grader, one rubber tired dozer, and one of either tractors, loaders, or backhoes which is based on the CalEEMod default equipment mix. The grading activities would generate seven worker trips per day. In order to account for water truck emissions, six daily vendor truck trips were added to the grading phase.

Building Construction

The building construction phase would consist of construction of the gas station, convenience market, and parking area. The building construction would occur after the completion of the grading phase and was modeled as occurring over 200 days, which is based on the CalEEMod default timing. The building construction phase would generate seven worker trips and three vendor trips per day. The onsite equipment would consist of the simultaneous operation of one crane, one forklift, one generator, three welders, and one of either a tractor, loader, or backhoe, which is based on the CalEEMod default equipment mix.

Architectural Coating

The application of architectural coatings was modeled as occurring concurrently with the last ten days of the building construction phase. The architectural coating phase was modeled based on covering 12,558 square feet of non-residential interior area, 4,186 square feet of non-residential exterior area, and 600 square feet of parking area. The architectural coating phase would generate one worker trip per day. The onsite equipment would consist of one air compressor, which is based on the CalEEMod default equipment mix.

Paving

The paving phase would consist of paving the onsite parking lots and driveways to the project site. The paving phase was modeled as occurring ten days and starting after completion of the concurrent building construction and architectural coatings phases. The paving phase would generate 13 worker trips per day. The onsite equipment would consist of the simultaneous operation of one cement and mortar mixer, one paver, one paving equipment, one roller, and one of either a tractor, loader or backhoe, 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 were obtained from the *7-11 Mission Avenue and Rock Springs Gas Station Project Traffic Impact Study* (Traffic Impact Study), prepared by Integrated Engineering Group, December 2019, which found that the proposed project would generate a gross total of 3,475 daily trips. It should be noted that the Traffic Impact Study analyzed the convenience market and gas station as one land use. In order to provide a more accurate analyze the gas station and convenience market were analyzed as separate land uses in the CalEEMod model.

Since the trip generation rate provided in the Traffic Impact Study for gas station and convenience market is provided in terms of building square footage, the trips were analyzed under the Convenience Store land use and the Gas Station trip rate was set to zero. The vehicle trip rates and total trips per proposed land use are provided below in Table I. No other changes were made to the CalEEMod default mobile source parameters.

Table I – Operational Project Daily Trip Generation Rates Modeled in CalEEMod

Proposed Land Use	Land Use Size ¹	Daily Trip Rate ²	Gross Daily Trips
Gas Station ³	16 VFP	0	0
Convenience Store	4.088 TSF	850	3,475
Parking Lot	25 PS	0	0
Total Project Trips per Day			3,475

Notes:

¹ VFP = Vehicle Fueling Position; TSF = Thousand Square Feet; PS = Parking Space

² Daily trip rate obtained from the Traffic Impact Study (Integrated Engineering Group 2019)

³ Gas Station analyzed as part of the Convenience Store in the Traffic Impact Study (Integrated Engineering Group, 2019)

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 an onsite pedestrian network that would connect to the existing sidewalks. In addition, the CalEEMod mitigation of increase transit accessibility was also selected in order to account for North County Transit District Bus Stop 21727 that is located adjacent to the project site on the east side of Rock Springs Road.

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 project in the CalEEMod Model. No changes were made to the default energy usage parameters in the CalEEMod model.

The new 2019 Title 24, Part 6 building energy efficiency standards went into effect January 1, 2020 and require new lighting energy improvements that are 30 percent more efficient than the prior 2016 building standards. In order to account for the new standards, the CalEEMod mitigation of 30 percent lighting energy improvement was selected. A summary of the new 2019 Title 24 standards can be found at:

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 rates of 21 tons of solid waste per year from the proposed project. No changes were made to the default solid waste parameters or mitigation measures in the CalEEMod model.

The CalEEMod mitigation of a 50 percent reduction in landfill waste was selected to account for implementation of AB 341 that provides strategies to reduce, recycle or compost solid waste by 75 percent by 2020. Only 50 percent was selected, since AB 341 builds upon the waste reduction measures of SB 939 and 1374 and therefore, it was assumed approximately 25 percent of the waste reduction target has already been accounted for in the CalEEMod model.

Water and Wastewater

Water includes the water used for the interior of the buildings as well as for landscaping and is based on the GHG emissions associated with the energy used to transport and filter the water. The analysis was based on the default CalEEMod water usage rate of 797,710 gallons per year of indoor water use and 148,811 gallons per year of outdoor water use. No changes were made to the default water and wastewater parameters in the CalEEMod model.

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

7.2 Gasoline Transfer and Dispensing Modeling

The proposed project would include a gas station that is anticipated to have a maximum throughput of 2.5 million gallons of gasoline per year. Since the CalEEMod model does not analyze the VOC emissions created from the transfer and dispensing of gasoline at the proposed gas station, the VOC emissions have been calculated through use of the methodology provided in *Gasoline Service Station Industrywide Risk Assessment Guidelines* (CAPCOA Gas Station Guidelines), prepared by CAPCOA, November 1997.

The CAPCOA Gas Station Guidelines, details that a system that would meet SDAPCD Rule 61.3 and 61.4 requirements with both Phase I and Phase II systems with vent valves would create 1.27 pounds of VOC per 1,000 gallons of gasoline (see Scenario 6B). The emission rate calculated for Scenario 6B represents a

worst-case analysis that accounts for equipment failures or defects in the vapor recovery systems. Based on the maximum VOC emission rate of 1.27 pounds of VOC per 1,000 gallons for a gas station with 3.0 million gallons of gasoline per year, this would create 3,810 pounds of VOC per year or 10.44 pounds of VOC per day. This analysis has utilized the worst-case VOC emissions calculations from the CAPCOA Gas Station Guidelines.

8.0 IMPACT ANALYSIS

8.1 CEQA Thresholds of Significance

Consistent with CEQA and the State CEQA Guidelines, a significant impact related to air quality 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;
- 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.

8.2 Air Quality Compliance

CEQA requires a discussion of any inconsistencies between a proposed project and applicable air quality plans (CEQA Guidelines Section 15125). The air quality plans that apply to the proposed project includes SDAPCD's Regional Air Quality Strategy (RAQS) and the California State Implementation Plan (SIP). The following section discusses the proposed project's consistency with the SDAPCD's RAQS and SIP.

The California Clean Air Act requires areas that are designated nonattainment of state ambient air quality standards of any of the criteria pollutants to prepare and implement plans to attain the standards by the earliest practicable dates. As detailed above, the Air Basin is designated by the EPA for the national standards as a non-attainment area for ozone and by CARB as nonattainment for ozone, PM10, and PM2.5. The RAQS was developed to identify feasible emission control measures and provide expeditious progress toward attaining the state standard for ozone and particulate matter. The two pollutants analyzed in the RAQS are VOCs and NOx, which are precursors to the formation of ozone. Projected increases in motor vehicle usage, population, and growth create challenges in controlling and reducing air emissions. The RAQS, in conjunction with the Transportation Control Measures, were most recently revised in 2016.

The SIP is the document that sets forth the State's strategies for attaining the NAAQS. The SDAPCD is the agency responsible for preparing the portion of the SIP applicable to the SDAB. The RAQS outlines the plans and control measures designed to attain the NAAQS for ozone. The SDAPCD relies on information from CARB and SANDAG, including projected growth, mobile, area and all other source emissions in order to predict future emissions and develop appropriate strategies for the reduction of source air emissions through regulatory controls. The CARB mobile source emission projections and SANDAG growth projections are based on population and vehicle trends and land use plans developed by the incorporated cities and County of San Diego. As such, projects that propose development that is consistent with the growth anticipated by SANDAG would also be consistent with the RAQS and the SIP.

Implementation of the proposed project would consist of construction and operation of a convenience store, gas station, and parking lots. Project construction would be required to comply with SDAPCD Rules and Regulations, including Rules 50, 51, and 55, which forbid visible emissions, forbid nuisance activities, and require fugitive dust control measures, respectively. The proposed project would not change the general plan or zoning for the project site. The proposed project would not permanently change the existing or planned transportation network or traffic patterns anywhere in the Air Basin. Likewise, the Proposed Project would not conflict with any applicable land use plan or policy, because it would not result in any changes to the land use designation of the project site. As such, the Proposed Project would be consistent with the local general plan and SANDAG's growth projections.

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

Level of Significance

Less than significant impact.

8.3 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 Environmental Quality Regulations, as established in the City of Escondido Municipal Code Section 33-924(a)(6), establish criteria pollutant emissions thresholds to determine if a project's incremental contribution to air quality impacts would create a significant impact. The following section calculates the potential air emissions associated with the construction and operations of the proposed project and compares the emissions to the City's standards.

Construction Emissions

The construction activities for the proposed project are anticipated to include demolition of the existing automobile sales building and paved parking lot, grading of the project site, building construction and application of architectural coatings to the proposed gas station, convenience market and paving of the proposed parking lot and driveways. The CalEEMod model has been utilized to calculate the construction-related emissions from the proposed project and the input parameters utilized in this analysis have been detailed in Section 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, these activities have been analyzed together in Table J. Table J also shows the combined criteria pollutant emissions from building construction, paving, and architectural coating phases of construction.

Table J shows that during demolition or grading or the combined building construction and architectural coatings or paving phases that none of the analyzed criteria pollutants would exceed the City of Escondido emissions thresholds for construction activities as detailed in Section 33-924(a)(6) of the Municipal Code. Therefore, a less than significant air quality impact would occur from construction of the proposed project.

Table J – Construction-Related Criteria Pollutant Emissions

Activity	Pollutant Emissions (pounds/day)					
	VOC	NOx	CO	SO ₂	PM10	PM2.5
Demolition	2.26	23.37	15.61	0.04	2.74	1.36
Grading	1.41	15.79	6.86	0.02	5.71	3.19
Combined Building Construction and Architectural Coatings	22.38	16.68	15.32	0.04	0.98	0.88
Paving	1.01	7.77	9.20	0.01	0.53	0.41
Maximum Daily Construction Emissions	22.38	23.37	15.61	0.04	5.71	3.19
City of Escondido Construction Thresholds¹	75	250	550	250	100	55
Exceeds Threshold?	No	No	No	No	No	No

Notes:

¹ City of Escondido Thresholds from Section 33-924(a)(6) of the Municipal Code.

Source: CalEEMod Version 2016.3.2.

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.

The operations-related 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 VOC emissions created from the proposed gas station's storage and dispensing of gasoline have been analyzed through use of the CAPCOA Gas Station Guidelines, that have been detailed above in Section 7.2. The worst-case summer or winter VOC, NOx, CO, SO₂, PM10, and PM2.5 daily emissions created from the proposed project's long-term operations have been calculated and are summarized below in Table K and the CalEEMod daily emissions printouts are shown in Appendix A.

Table K – Operational Criteria Pollutant Emissions

Activity	Pollutant Emissions (pounds/day)					
	VOC	NOx	CO	SO ₂	PM10	PM2.5
Area Sources ¹	0.24	0.01	0.00	0.00	0.00	0.00
Energy Usage ²	0.00	0.02	0.01	0.00	0.00	0.00
Mobile Sources ³	4.11	13.32	29.08	0.06	4.22	1.17
Gasoline Storage and Dispensing ⁴	10.44	0.00	0.00	0.00	0.00	0.00
Total Emissions	14.79	13.34	28.09	0.06	4.22	1.17
City of Escondido Operational Thresholds⁵	55	250	550	250	100	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.

⁴ Gasoline storage and dispensing VOC emissions rate based on 1.27 pounds of VOC per 1,000 gallons of gasoline throughput, based on a maximum throughput of 3 million gallons of gasoline per year.

⁵ City of Escondido Thresholds from Section 33-924(a)(6) of the Municipal Code.

Source: Calculated from CalEEMod Version 2016.3.2.

Table K shows that during operation of the proposed project that none of the analyzed criteria pollutants would exceed the City of Escondido emissions thresholds for operational activities as detailed in Section 33-924(a)(6) of the Municipal Code. Therefore, a less than significant 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 K 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. In addition, PM10 and PM2.5 have 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 California Almanac of Emissions and Air Quality 2013 Edition*, prepared by CARB, shows that for the County of San Diego in the year 2020 the total VOC emissions will be 114 tons per day, NOx emissions will be 68 tons per day, SOx emissions will be 1 ton per day, PM10 emissions will be 74 tons per day, and PM2.5 emissions will be 19 tons per day. The Report does not provide any data for CO emissions. The project contribution to each criteria pollutant in the Air Basin is shown in Table L.

Table L – Project’s Contribution to Criteria Pollutants in the Air Basin

Emissions Source	Pollutant Emissions (pounds/day)					
	VOC	NOx	CO	SOx	PM10	PM2.5
Project Emissions ¹	14.79	13.34	28.09	0.06	4.22	1.17
Total Emissions in Air Basin ²	228,000	136,000	--	2,000	148,000	38,000
Project’s Percent of Air Emissions	0.0015%	0.0013%	--	0.00017%	0.0013%	0.0009%

Notes:

¹ From the project’s total operational emissions shown above in Table K.

² California Almanac of Emissions and Air Quality 2013 Edition.

As shown in Table L, the project would increase criteria pollutant emissions by as much as 0.0015 percent for VOC in the 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.

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

Level of Significance

Less than significant impact.

8.4 Sensitive Receptors

The Proposed Project would not expose sensitive receptors to substantial pollutant concentrations. The construction and operations-related impacts to the nearby sensitive receptors have been analyzed separately below.

Construction-Related Toxic Air Contaminants Impacts

The construction activities for the proposed project are anticipated to include grading of the project site, building construction and application of architectural coatings to the proposed convenience market and gas station, and paving of the proposed parking lot and driveways. 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. SDAPCD and CAPCOA 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. Given the relatively limited number of heavy-duty construction equipment and the short-term construction schedule, the Proposed Project would not result in a long-term (i.e., 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 Toxic Air Contaminant Impacts

The proposed project would include a gas station that is anticipated to have a maximum throughput of 3.0 million gallons of gasoline per year. As discussed above in Section 2.2, gas stations are a known source of TAC emissions. The SCAQMD provides the RiskTool (V1.103) that calculates the cancer risk from gasoline stations that can be found at <http://www.aqmd.gov/home/permits/risk-assessment>. The RiskTool has been utilized to calculate the cancer risk at the nearest offsite worker and resident and the RiskTool printout is provided in Appendix B.

The RiskTool found that the proposed project would create a cancer risk of 0.0776 per million persons at the nearest home and a cancer risk of 0.224 per million persons at the nearest offsite worker. These cancer risks are within the SDAPCD’s cancer risk threshold of 10 per million persons. As such, the TAC emissions and associated cancer risks from the proposed gas station would result in a less than significant impact to the nearby residents and offsite workers.

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.

8.5 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 gas station and convenience market. Potential sources that may emit odors during the on-going operations of the proposed project would primarily occur from odor emissions from gas dispensing activities and from the trash storage areas. Pursuant to City regulations, permanent trash enclosures that protect trash bins from rain as well as limit air circulation would be required for the trash storage areas. Due to the distance of the nearest receptors from the project site and through compliance with SDAPCD's Rule 51, no significant impact related to odors would occur during the on-going operations of the proposed project. Therefore, a less than significant odor impact would occur and no mitigation would be required.

Level of Significance

Less than significant impact.

8.6 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 convenience market and gas station. 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 Escondido has established GHG emissions thresholds in both Section 33-924(a)(7) of the City's Municipal Code and the *City of Escondido Adopted Climate Action Plan* (E-CAP), adopted December 2013. Both the Municipal Code and E-CAP provide a threshold of 2,500 MT CO₂e per year that is to be utilized in the determination of significance for CEQA analyses. It should be noted that the 2,500 MT CO₂e threshold 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. The *Final Staff Report Proposed Update to the SB 375 Greenhouse Gas Emission Reduction Targets*, prepared by CARB October 2017, provides recommendations for the MPOs located within the State to meet the new SB 32 targets. For SANDAG, which is the MPO that represents San Diego County and includes the project site, this Report recommends that SANDAG increase its year 2035 efficiency target from an 18 percent reduction to a 21 percent reduction in order to account for AB 197 and SB 32. This equates to a 16.7 percent increase in SANDAG's GHG emissions reduction target for the year 2035. In order to provide a conservative analysis, the threshold of 2,500 MT CO₂e per year was reduced by 16.7 percent to account for AB 197 and SB 32, which results in a modified threshold of 2,083 MT CO₂e per year. Therefore, the proposed project would be considered to create a significant cumulative GHG emissions impact if the proposed project would exceed the annual threshold of 2,083 MT CO₂e.

In order to determine if the proposed project meets the GHG emissions threshold set forth in the E-CAP and Municipal Code, the proposed project's GHG emissions have been calculated with the CalEEMod model based on the construction and operational parameters detailed in Section 7.1 above. A summary of the results is shown below in Table M and the CalEEMod model run annual printouts are provided in Appendix C.

Table M – Project Related Greenhouse Gas Annual Emissions

Category	Greenhouse Gas Emissions (Metric Tons per Year)			
	CO ₂	CH ₄	N ₂ O	CO ₂ e
Construction				
2020 Construction	113.85	0.02	0.00	14.38
2021 Construction	119.37	0.02	0.00	119.89
Operations (Opening Year 2021)				
Area Sources ¹	0.00	0.00	0.00	0.00
Energy Usage ²	28.66	0.00	0.00	28.77
Mobile Sources ³	979.53	0.07	0.00	981.43
Solid Waste ⁴	2.12	0.13	0.00	5.26
Water and Wastewater ⁵	3.07	0.14	0.00	3.53
Total Operational Emissions	1,013.38	0.34	0.00	1,018.99
City of Escondido Modified GHG Emissions Threshold⁶				2,083
Exceed Thresholds?				No

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 CO₂ and CH₄ 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 City of Escondido GHG Emissions Threshold of 2,500 MT CO₂e from both Section 33-924(a)(7) of the Municipal Code and the *City of Escondido Greenhouse Gas Emissions – Adopted CEQA Thresholds and Screening Tables*, December 2013. The 2,500 MT CO₂e threshold was reduced by 16.7 percent to account for AB 197 and SB 32.

Source: CalEEMod Version 2016.3.2.

The data provided in Table M shows that construction activities from the proposed project would generate GHG emissions as high as 119.89 MT CO₂e per year in year 2021 and operational activities would create 1,018.99 MT CO₂e per year for the worst-case project opening year 2021. The proposed project's calculated GHG emissions from both construction and operations would be within the City's GHG emissions threshold of 2,500 MT CO₂e per year as detailed in Section 33-924(a)(7) of the Municipal Code and the E-CAP and modified GHG emissions threshold of 2,083 that has been modified to account for the more stringent GHG emissions reductions required by AB 197 and SB 32. Therefore, a less than significant generation of GHG emissions would occur from development of the proposed project. Impacts would be less than significant.

Level of Significance

Less than significant impact.

8.7 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. Increases in concentrations of GHG emissions have the potential to result in global climate change. Common activities that generate GHG emissions include vehicular travel, electricity use, natural gas use, water use and waste generation.

The City of Escondido adopted the E-CAP and the E-CAP Thresholds with the target of reducing GHG emissions within Escondido by 15 percent below 2013 levels by 2020. The City's target was developed to be consistent with the GHG emission reductions targets provided in AB 32 and ensures that the City is providing GHG reductions locally that complement statewide efforts. The E-CAP Thresholds Report provides a 2,500 MT CO₂e per year threshold of significance for new development projects in the City. This threshold was developed by the City based on the GHG emissions amount allowed by a project such that 90 percent of emissions on average from all projects would exceed that level and be "captured" by the Screening Table or alternate emission analysis method. It should be noted that the 2,500 MT CO₂e threshold 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 GHG emission levels by 2030. This target was codified into statute through passage of AB 197 and SB 32 in September 2016. The *Final Staff Report Proposed Update to the SB 375 Greenhouse Gas Emission Reduction Targets*, prepared by CARB October 2017, provides recommendations for the MPOs located within the State to meet the new SB 32 targets. For SANDAG, which is the MPO that represents San Diego County and includes the project site, this Report recommends that SANDAG increase its year 2035 efficiency target from an 18 percent reduction to a 21 percent reduction in order to account for AB 197 and SB 32. This equates to a 16.7 percent increase in SANDAG's GHG emissions reduction target for the year 2035. In order to provide a conservative analysis, the threshold of 2,500 MT CO₂e per year was reduced by 16.7 percent to account for AB 197 and SB 32, which results in a modified threshold of 2,083 MT CO₂e per year. Therefore, the proposed project would be

considered to create a significant cumulative GHG emissions impact if the proposed project would exceed the annual threshold of 2,083 MT CO₂e.

As detailed above in Section 8.4, construction activities from the proposed project would generate GHG emissions as high as 119.89 MT CO₂e per year in year 2021 and operational activities would create 1,018.99 MT CO₂e per year for the worst-case project opening year 2021. The proposed project's calculated GHG emissions from both construction and operations would be within the E-CAP's GHG emissions threshold of 2,500 MT CO₂e per year CAP and modified GHG emissions threshold of 2,083 that has been modified to account for the more stringent GHG emissions reductions required by AB 197 and SB 32. Therefore, the proposed project would comply with the E-CAP reduction targets and would not conflict with the applicable plans for reducing GHG emissions. Impacts would be less than significant.

Level of Significance

Less than significant impact.

9.0 REFERENCES

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APPENDIX A

CalEEMod Model Daily Printouts

Mission Ave & Rock Springs 7-11 Gas Station - San Diego County, Summer

Mission Ave & Rock Springs 7-11 Gas Station
San Diego County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Gasoline/Service Station	16.00	Pump	0.16	4,284.00	0
Convenience Market (24 Hour)	4.09	1000sqft	0.29	4,088.00	0
Parking Lot	25.00	Space	0.70	10,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.6	Precipitation Freq (Days)	40
Climate Zone	13			Operational Year	2021

Utility Company San Diego Gas & Electric

CO2 Intensity (lb/MW/hr)	720.49	CH4 Intensity (lb/MW/hr)	0.029	N2O Intensity (lb/MW/hr)	0.006
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1.3 User Entered Comments & Non-Default Data

Mission Ave & Rock Springs 7-11 Gas Station - San Diego County, Summer

Project Characteristics -

Land Use - Lot Acreage set to 1.14-acre project site

Construction Phase -

Demolition - 171 tons of building material and 1,053 tons of pavement = 1,224 total tons of debris

Trips and VMT - 6 vendor trucks added to demolition and grading to account for water truck emissions

Vehicle Trips - Trip Rate set to match TIA of 850 daily trips per 4.088 TSF Convenience Market

Mobile Land Use Mitigation - Improve Pedestrian Network Onsite and Connecting Offsite. 0.01 mile to nearest Transit Station (North Co Transit District Bus Stop 21727)

Energy Mitigation - Per 2019 Title 24 requirements a 30% improvement to lighting energy was selected

Water Mitigation - Install low-flow fixtures and water-efficient irrigation

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

Mission Ave & Rock Springs 7-11 Gas Station - San Diego County, Summer

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	PhaseEndDate	7/12/2021	6/10/2021
tblConstructionPhase	PhaseEndDate	6/14/2021	6/10/2021
tblConstructionPhase	PhaseEndDate	9/7/2020	9/3/2020
tblConstructionPhase	PhaseEndDate	6/28/2021	6/24/2021
tblConstructionPhase	PhaseStartDate	6/29/2021	5/28/2021
tblConstructionPhase	PhaseStartDate	9/8/2020	9/4/2020
tblConstructionPhase	PhaseStartDate	9/2/2020	8/29/2020
tblConstructionPhase	PhaseStartDate	6/15/2021	6/11/2021
tblLandUse	LandUseSquareFeet	2,258.80	4,284.00
tblLandUse	LotAcreage	0.05	0.16
tblLandUse	LotAcreage	0.09	0.29
tblLandUse	LotAcreage	0.22	0.70
tblTripsAndVMT	VendorTripNumber	0.00	6.00
tblTripsAndVMT	VendorTripNumber	0.00	6.00
tblVehicleTrips	ST_TR	863.10	850.00
tblVehicleTrips	ST_TR	168.56	0.00
tblVehicleTrips	SU_TR	758.45	850.00
tblVehicleTrips	SU_TR	168.56	0.00
tblVehicleTrips	WD_TR	737.99	850.00
tblVehicleTrips	WD_TR	168.56	0.00

2.0 Emissions Summary

Mission Ave & Rock Springs 7-11 Gas Station - San Diego County, Summer

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															
Area	0.2382	4.0000e-005	4.6200e-003	0.0000		2.0000e-005	2.0000e-005	2.0000e-005	2.0000e-005	2.0000e-005		9.8700e-003	9.8700e-003	3.0000e-005		0.0105
Energy	1.7300e-003	0.0158	0.0132	9.0000e-005		1.2000e-003	1.2000e-003	1.2000e-003	1.2000e-003	1.2000e-003		18.9007	18.9007	3.6000e-004	3.5000e-004	19.0130
Mobile	4.2803	14.3291	29.3690	0.0770	5.6114	0.0696	5.6810	1.4998	0.0649	1.5647		7.838.366 ₈	7.838.366 ₈	0.5198		7.851.360 ₆
Total	4.5202	14.3449	29.3868	0.0771	5.6114	0.0708	5.6822	1.4998	0.0661	1.5659		7,857.277₄	7,857.277₄	0.5201	3.5000e-004	7,870.384₁

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															
Area	0.2382	4.0000e-005	4.6200e-003	0.0000		2.0000e-005	2.0000e-005	2.0000e-005	2.0000e-005	2.0000e-005		9.8700e-003	9.8700e-003	3.0000e-005		0.0105
Energy	1.7300e-003	0.0158	0.0132	9.0000e-005		1.2000e-003	1.2000e-003	1.2000e-003	1.2000e-003	1.2000e-003		18.9007	18.9007	3.6000e-004	3.5000e-004	19.0130
Mobile	4.1051	13.3156	25.3022	0.0607	4.1654	0.0570	4.2224	1.1133	0.0532	1.1665		6,190.509 ₉	6,190.509 ₉	0.4466		6,201.673 ₆
Total	4.3450	13.3314	25.3201	0.0608	4.1654	0.0583	4.2236	1.1133	0.0544	1.1677		6,209.420₅	6,209.420₅	0.4469	3.5000e-004	6,220.697₁

Mission Ave & Rock Springs 7-11 Gas Station - San Diego 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	N2O	CO2e
Percent Reduction	3.88	7.06	13.84	21.09	25.77	17.73	25.67	25.77	17.75	25.43	0.00	20.97	20.97	14.07	0.00	20.96

3.0 Construction Detail**Construction Phase**

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	8/1/2020	8/28/2020	5	20	
2	Grading	Grading	8/29/2020	9/3/2020	5	4	
3	Building Construction	Building Construction	9/4/2020	6/10/2021	5	200	
4	Paving	Paving	6/11/2021	6/24/2021	5	10	
5	Architectural Coating	Architectural Coating	5/28/2021	6/10/2021	5	10	

Acres of Grading (Site Preparation Phase): 0**Acres of Grading (Grading Phase): 1.5****Acres of Paving: 0.7****Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 12,558; Non-Residential Outdoor: 4,186; Striped Parking Area: 600 (Architectural Coating – sqft)****OffRoad Equipment**

Mission Ave & Rock Springs 7-11 Gas Station - San Diego County, Summer

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Paving	Cement and Mortar Mixers	1	6.00	9	0.56
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Cranes	1	6.00	231	0.29
Building Construction	Forklifts	1	6.00	89	0.20
Paving	Pavers	1	6.00	130	0.42
Paving	Rollers	1	7.00	80	0.38
Demolition	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Rubber Tired Dozers	1	6.00	247	0.40
Building Construction	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Demolition	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Grading	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Grading	Graders	1	6.00	187	0.41
Paving	Paving Equipment	1	8.00	132	0.36
Building Construction	Welders	3	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	5	13.00	6.00	121.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	3	8.00	6.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	7	7.00	3.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	5	13.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	1.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

Mission Ave & Rock Springs 7-11 Gas Station - San Diego County, Summer

3.1 Mitigation Measures Construction**3.2 Demolition - 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					1.3260	0.0000	1.3260	0.2008	0.0000	0.2008			0.0000			0.0000
Off-Road	2.1262	20.9463	14.6573	0.0241		1.1525	1.1525	1.0761	1.0761	1.0761		2,322.312 ₇	2,322.312 ₇	0.5970		2,337.236 ₃
Total	2.1262	20.9463	14.6573	0.0241	1.3260	1.1525	2.4784	0.2008	1.0761	1.2769		2,322.312₇	2,322.312₇	0.5970		2,337.236₃

Mission Ave & Rock Springs 7-11 Gas Station - San Diego County, Summer

3.2 Demolition - 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	0.0478	1.6877	0.3832	4.7400e-003	0.1057	5.3900e-003	0.1111	0.0290	5.1500e-003	0.0341		518.0776	518.0776	0.0456		519.2185
Vendor	0.0224	0.6766	0.1724	1.6400e-003	0.0406	3.3100e-003	0.0439	0.0117	3.1700e-003	0.0149		176.4241	176.4241	0.0130		176.7494
Worker	0.0477	0.0321	0.3685	1.1000e-003	0.1068	7.5000e-004	0.1075	0.0283	6.9000e-004	0.0290		109.5571	109.5571	3.2700e-003		109.6389
Total	0.1179	2.3964	0.9241	7.4800e-003	0.2531	9.4500e-003	0.2626	0.0690	9.0100e-003	0.0780		804.0588	804.0588	0.0619		805.6068

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					1.3260	0.0000	1.3260	0.2008	0.0000	0.2008			0.0000			0.0000
Off-Road	2.1262	20.9463	14.6573	0.0241		1.1525	1.1525	1.0761	1.0761	1.0761	0.0000	2,322.3127	2,322.3127	0.5970		2,337.2363
Total	2.1262	20.9463	14.6573	0.0241	1.3260	1.1525	2.4784	0.2008	1.0761	1.2769	0.0000	2,322.3127	2,322.3127	0.5970		2,337.2363

Mission Ave & Rock Springs 7-11 Gas Station - San Diego County, Summer

3.2 Demolition - 2020**Mitigated Construction Off-Site**

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	lb/day										lb/day					
Hauling	0.0478	1.6877	0.3632	4.7400e-003	0.1057	5.3900e-003	0.1111	0.0290	5.1500e-003	0.0341		518.0776	518.0776	0.0456		519.2185
Vendor	0.0224	0.6766	0.1724	1.6400e-003	0.0406	3.3100e-003	0.0439	0.0117	3.1700e-003	0.0149		176.4241	176.4241	0.0130		176.7494
Worker	0.0477	0.0321	0.3685	1.1000e-003	0.1068	7.5000e-004	0.1075	0.0283	6.9000e-004	0.0290		109.5571	109.5571	3.2700e-003		109.6389
Total	0.1179	2.3964	0.9241	7.4800e-003	0.2531	9.4500e-003	0.2626	0.0690	9.0100e-003	0.0780		804.0588	804.0588	0.0619		805.6068

3.3 Grading - 2020**Unmitigated Construction On-Site**

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	lb/day										lb/day					
Fugitive Dust					4.9143	0.0000	4.9143	2.5256	0.0000	2.5256			0.0000			0.0000
Off-Road	1.3498	15.0854	6.4543	0.0141		0.6844	0.6844	0.6296	0.6296	0.6296		1,365.7183	1,365.7183	0.4417		1,376.7609
Total	1.3498	15.0854	6.4543	0.0141	4.9143	0.6844	5.5986	2.5256	0.6296	3.1552		1,365.7183	1,365.7183	0.4417		1,376.7609

Mission Ave & Rock Springs 7-11 Gas Station - San Diego County, Summer

3.3 Grading - 2020**Unmitigated Construction Off-Site**

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	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	0.0224	0.6766	0.1724	1.6400e-003	0.0406	3.3100e-003	0.0439	0.0117	3.1700e-003	0.0149		176.4241	176.4241	0.0130		176.7494
Worker	0.0294	0.0198	0.2268	6.8000e-004	0.0657	4.6000e-004	0.0662	0.0174	4.2000e-004	0.0179		67.4198	67.4198	2.0100e-003		67.4701
Total	0.0518	0.6963	0.3991	2.3200e-003	0.1063	3.7700e-003	0.1101	0.0291	3.5900e-003	0.0327		243.8438	243.8438	0.0150		244.2195

Mitigated Construction On-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	lb/day										lb/day					
Fugitive Dust					4.9143	0.0000	4.9143	2.5256	0.0000	2.5256			0.0000			0.0000
Off-Road	1.3498	15.0854	6.4543	0.0141		0.6844	0.6844	0.6296	0.6296	0.6296	0.0000	1,365.7183	1,365.7183	0.4417		1,376.7609
Total	1.3498	15.0854	6.4543	0.0141	4.9143	0.6844	5.5986	2.5256	0.6296	3.1552	0.0000	1,365.7183	1,365.7183	0.4417		1,376.7609

Mission Ave & Rock Springs 7-11 Gas Station - San Diego County, Summer

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	0.0000	0.0000	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	0.0224	0.6766	0.1724	1.6400e-003	0.0406	3.3100e-003	0.0439	0.0117	3.1700e-003	0.0149		176.4241	176.4241	0.0130		176.7494
Worker	0.0294	0.0198	0.2268	6.8000e-004	0.0657	4.6000e-004	0.0662	0.0174	4.2000e-004	0.0179		67.4198	67.4198	2.0100e-003		67.4701
Total	0.0518	0.6963	0.3991	2.3200e-003	0.1063	3.7700e-003	0.1101	0.0291	3.5900e-003	0.0327		243.8438	243.8438	0.0150		244.2195

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	2.0305	14.7882	13.1881	0.0220		0.7960	0.7960		0.7688	0.7688		2,001.1595	2,001.1595	0.3715		2,010.4467
Total	2.0305	14.7882	13.1881	0.0220		0.7960	0.7960		0.7688	0.7688		2,001.1595	2,001.1595	0.3715		2,010.4467

Mission Ave & Rock Springs 7-11 Gas Station - San Diego County, Summer

3.4 Building Construction - 2020**Unmitigated Construction Off-Site**

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	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	0.0112	0.3383	0.0862	8.2000e-004	0.0203	1.6600e-003	0.0220	5.8500e-003	1.5800e-003	7.4300e-003		88.2120	88.2120	6.5100e-003		88.3747
Worker	0.0257	0.0173	0.1984	5.9000e-004	0.0575	4.0000e-004	0.0579	0.0153	3.7000e-004	0.0156		58.9923	58.9923	1.7600e-003		59.0363
Total	0.0369	0.3556	0.2846	1.4100e-003	0.0778	2.6600e-003	0.0799	0.0211	1.9500e-003	0.0231		147.2043	147.2043	8.2700e-003		147.4110

Mitigated Construction On-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	lb/day										lb/day					
Off-Road	2.0305	14.7882	13.1881	0.0220		0.7960	0.7960		0.7688	0.7688	0.0000	2,001.1595	2,001.1595	0.3715		2,010.4467
Total	2.0305	14.7882	13.1881	0.0220		0.7960	0.7960		0.7688	0.7688	0.0000	2,001.1595	2,001.1595	0.3715		2,010.4467

Mission Ave & Rock Springs 7-11 Gas Station - San Diego County, Summer

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	0.0112	0.3383	0.0862	8.2000e-004	0.0203	1.6600e-003	0.0220	5.8500e-003	1.5800e-003	7.4300e-003		88.2120	88.2120	6.5100e-003		88.3747
Worker	0.0257	0.0173	0.1984	5.9000e-004	0.0575	4.0000e-004	0.0579	0.0153	3.7000e-004	0.0156		58.9923	58.9923	1.7600e-003		59.0363
Total	0.0369	0.3556	0.2846	1.4100e-003	0.0778	2.6600e-003	0.0799	0.0211	1.9500e-003	0.0231		147.2043	147.2043	8.2700e-003		147.4110

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	1.8125	13.6361	12.8994	0.0221		0.6843	0.6843		0.6608	0.6608		2,001.220	2,001.220	0.3573		2,010.151
Total	1.8125	13.6361	12.8994	0.0221		0.6843	0.6843		0.6608	0.6608		2,001.220	2,001.220	0.3573		2,010.151

Mission Ave & Rock Springs 7-11 Gas Station - San Diego County, Summer

3.4 Building Construction - 2021**Unmitigated Construction Off-Site**

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	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	9.0700e-003	0.3055	0.0779	8.1000e-004	0.0203	6.4000e-004	0.0210	5.8500e-003	6.1000e-004	6.4600e-003		87.4056	87.4056	6.2500e-003		87.5617
Worker	0.0242	0.0157	0.1857	5.7000e-004	0.0575	4.0000e-004	0.0579	0.0153	3.7000e-004	0.0156		57.0109	57.0109	1.6300e-003		57.0515
Total	0.0333	0.3212	0.2635	1.3800e-003	0.0778	1.0400e-003	0.0789	0.0211	9.8000e-004	0.0221		144.4164	144.4164	7.8800e-003		144.6133

Mitigated Construction On-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	lb/day										lb/day					
Off-Road	1.8125	13.6361	12.8994	0.0221		0.6843	0.6843		0.6608	0.6608	0.0000	2,001.220	2,001.220	0.3573		2,010.151
Total	1.8125	13.6361	12.8994	0.0221		0.6843	0.6843		0.6608	0.6608	0.0000	2,001.220	2,001.220	0.3573		2,010.151

Mission Ave & Rock Springs 7-11 Gas Station - San Diego County, Summer

3.4 Building Construction - 2021**Mitigated Construction Off-Site**

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
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	9.0700e-003	0.3055	0.0779	8.1000e-004	0.0203	6.4000e-004	0.0210	5.8500e-003	6.1000e-004	6.4600e-003		87.4056	87.4056	6.2500e-003		87.5617
Worker	0.0242	0.0157	0.1857	5.7000e-004	0.0575	4.0000e-004	0.0579	0.0153	3.7000e-004	0.0156		57.0109	57.0109	1.6300e-003		57.0515
Total	0.0333	0.3212	0.2635	1.3800e-003	0.0778	1.0400e-003	0.0789	0.0211	9.8000e-004	0.0221		144.4164	144.4164	7.8800e-003		144.6133

3.5 Paving - 2021**Unmitigated Construction On-Site**

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
lb/day																
Off-Road	0.7739	7.7422	8.8569	0.0135		0.4153	0.4153		0.3830	0.3830		1,296.8664	1,296.8664	0.4111		1,307.1442
Paving	0.1834					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	0.9573	7.7422	8.8569	0.0135		0.4153	0.4153		0.3830	0.3830		1,296.8664	1,296.8664	0.4111		1,307.1442

Mission Ave & Rock Springs 7-11 Gas Station - San Diego County, Summer

3.5 Paving - 2021**Unmitigated Construction Off-Site**

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	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	0.0450	0.0292	0.3448	1.0600e-003	0.1068	7.4000e-004	0.1075	0.0283	6.8000e-004	0.0290		105.8773	105.8773	3.0200e-003		105.9529
Total	0.0450	0.0292	0.3448	1.0600e-003	0.1068	7.4000e-004	0.1075	0.0283	6.8000e-004	0.0290		105.8773	105.8773	3.0200e-003		105.9529

Mitigated Construction On-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	lb/day										lb/day					
Off-Road	0.7739	7.7422	8.8569	0.0135		0.4153	0.4153		0.3830	0.3830	0.0000	1,296.8664	1,296.8664	0.4111		1,307.1442
Paving	0.1834					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	0.9573	7.7422	8.8569	0.0135		0.4153	0.4153		0.3830	0.3830	0.0000	1,296.8664	1,296.8664	0.4111		1,307.1442

Mission Ave & Rock Springs 7-11 Gas Station - San Diego County, Summer

3.5 Paving - 2021**Mitigated Construction Off-Site**

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	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	0.0450	0.0292	0.3448	1.0600e-003	0.1068	7.4000e-004	0.1075	0.0283	6.8000e-004	0.0290		105.8773	105.8773	3.0200e-003		105.9529
Total	0.0450	0.0292	0.3448	1.0600e-003	0.1068	7.4000e-004	0.1075	0.0283	6.8000e-004	0.0290		105.8773	105.8773	3.0200e-003		105.9529

3.6 Architectural Coating - 2021**Unmitigated Construction On-Site**

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	lb/day										lb/day					
Archit. Coating	20.0974					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	0.0941		281.4481	281.4481	0.0193		281.9309
Total	20.3163	1.5268	1.8176	2.9700e-003		0.0941	0.0941		0.0941	0.0941		281.4481	281.4481	0.0193		281.9309

Mission Ave & Rock Springs 7-11 Gas Station - San Diego County, Summer

3.6 Architectural Coating - 2021**Unmitigated Construction Off-Site**

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	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	3.4600e-003	2.2500e-003	0.0265	8.0000e-005	8.2100e-003	6.0000e-005	8.2700e-003	2.1800e-003	5.0000e-005	2.2300e-003		8.1444	8.1444	2.3000e-004		8.1502
Total	3.4600e-003	2.2500e-003	0.0265	8.0000e-005	8.2100e-003	6.0000e-005	8.2700e-003	2.1800e-003	5.0000e-005	2.2300e-003		8.1444	8.1444	2.3000e-004		8.1502

Mitigated Construction On-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	lb/day										lb/day					
Archit. Coating	20.0974					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	20.3163	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

Mission Ave & Rock Springs 7-11 Gas Station - San Diego County, Summer

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	3.4600e-003	2.2500e-003	0.0265	8.0000e-005	8.2100e-003	6.0000e-005	8.2700e-003	2.1800e-003	5.0000e-005	2.2300e-003		8.1444	8.1444	2.3000e-004		8.1502
Total	3.4600e-003	2.2500e-003	0.0265	8.0000e-005	8.2100e-003	6.0000e-005	8.2700e-003	2.1800e-003	5.0000e-005	2.2300e-003		8.1444	8.1444	2.3000e-004		8.1502

4.0 Operational Detail - Mobile**4.1 Mitigation Measures Mobile**

Increase Transit Accessibility

Improve Pedestrian Network

Mission Ave & Rock Springs 7-11 Gas Station - San Diego 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	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	4.1051	13.3156	25.3022	0.0607	4.1654	0.0570	4.2224	1.1133	0.0532	1.1665	6,190.509	9	6,190.509	0.4466		6,201.673
Unmitigated	4.2803	14.3291	29.3690	0.0770	5.6114	0.0696	5.6810	1.4998	0.0649	1.5647	7,838.366	8	7,838.366	0.5198		7,851.360

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated Annual VMT	Mitigated Annual VMT
	Weekday	Saturday	Sunday		
Convenience Market (24 Hour)	3,474.80	3,474.80	3474.80	2,646,328	1,964,398
Gasoline/Service Station	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Total	3,474.80	3,474.80	3,474.80	2,646,328	1,964,398

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	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
Convenience Market (24 Hour)	9.50	7.30	7.30	0.90	80.10	19.00	24	15	61
Gasoline/Service Station	9.50	7.30	7.30	2.00	79.00	19.00	14	27	59
Parking Lot	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Mission Ave & Rock Springs 7-11 Gas Station - San Diego County, Summer

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Convenience Market (24 Hour)	0.593936	0.041843	0.182569	0.108325	0.016436	0.005513	0.015940	0.023523	0.001912	0.001972	0.006090	0.000748	0.001193
Gasoline/Service Station	0.593936	0.041843	0.182569	0.108325	0.016436	0.005513	0.015940	0.023523	0.001912	0.001972	0.006090	0.000748	0.001193
Parking Lot	0.593936	0.041843	0.182569	0.108325	0.016436	0.005513	0.015940	0.023523	0.001912	0.001972	0.006090	0.000748	0.001193

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Install High Efficiency Lighting

	ROG	NOx	CO	SO2	Fugitive 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															
NaturalGas Mitigated	1.7300e-003	0.0158	0.0132	9.0000e-005		1.2000e-003	1.2000e-003		1.2000e-003	1.2000e-003	18.9007	18.9007	18.9007	3.6000e-004	3.5000e-004	19.0130
NaturalGas Unmitigated	1.7300e-003	0.0158	0.0132	9.0000e-005		1.2000e-003	1.2000e-003		1.2000e-003	1.2000e-003	18.9007	18.9007	18.9007	3.6000e-004	3.5000e-004	19.0130

Mission Ave & Rock Springs 7-11 Gas Station - San Diego County, Summer

5.2 Energy by Land Use - NaturalGas**Unmitigated**

Land Use	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
	kBTU/yr																
lb/day																	
Convenience Market (24 Hour)	24.976	2.7000e-004	2.4500e-003	2.0600e-003	1.0000e-005	1.9000e-004	1.9000e-004	1.9000e-004		1.9000e-004	1.9000e-004		2.9384	2.9384	6.0000e-005	5.0000e-005	2.9558
Gasoline/Service Station	135.68	1.4600e-003	0.0133	0.0112	8.0000e-005	1.0100e-003	1.0100e-003	1.0100e-003		1.0100e-003	1.0100e-003		15.9623	15.9623	3.1000e-004	2.9000e-004	16.0572
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		1.7300e-003	0.0158	0.0132	9.0000e-005	1.2000e-003	1.2000e-003	1.2000e-003		1.2000e-003	1.2000e-003		18.9007	18.9007	3.7000e-004	3.4000e-004	19.0130

Mitigated

Land Use	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
	kBTU/yr																
lb/day																	
Convenience Market (24 Hour)	0.024976	2.7000e-004	2.4500e-003	2.0600e-003	1.0000e-005	1.9000e-004	1.9000e-004	1.9000e-004		1.9000e-004	1.9000e-004		2.9384	2.9384	6.0000e-005	5.0000e-005	2.9558
Gasoline/Service Station	0.13568	1.4600e-003	0.0133	0.0112	8.0000e-005	1.0100e-003	1.0100e-003	1.0100e-003		1.0100e-003	1.0100e-003		15.9623	15.9623	3.1000e-004	2.9000e-004	16.0572
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		1.7300e-003	0.0158	0.0132	9.0000e-005	1.2000e-003	1.2000e-003	1.2000e-003		1.2000e-003	1.2000e-003		18.9007	18.9007	3.7000e-004	3.4000e-004	19.0130

6.0 Area Detail

Mission Ave & Rock Springs 7-11 Gas Station - San Diego County, Summer

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	0.2382	4.0000e-005	4.6200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.8700e-003	9.8700e-003	3.0000e-005		0.0105
Unmitigated	0.2382	4.0000e-005	4.6200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.8700e-003	9.8700e-003	3.0000e-005		0.0105

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	0.0551					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.1827					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	4.3000e-004	4.0000e-005	4.6200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.8700e-003	9.8700e-003	3.0000e-005		0.0105
Total	0.2382	4.0000e-005	4.6200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.8700e-003	9.8700e-003	3.0000e-005		0.0105

Mission Ave & Rock Springs 7-11 Gas Station - San Diego County, Summer

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	0.0551					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.1827					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	4.3000e-004	4.0000e-005	4.6200e-003	0.0000	2.0000e-005	2.0000e-005	2.0000e-005	2.0000e-005	2.0000e-005	2.0000e-005		9.8700e-003	9.8700e-003	3.0000e-005		0.0105
Total	0.2382	4.0000e-005	4.6200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.8700e-003	9.8700e-003	3.0000e-005		0.0105

7.0 Water Detail**7.1 Mitigation Measures Water**

Install Low Flow Bathroom Faucet
 Install Low Flow Kitchen Faucet
 Install Low Flow Toilet
 Use Water Efficient Irrigation System

8.0 Waste Detail**8.1 Mitigation Measures Waste**

Institute Recycling and Composting Services

9.0 Operational Offroad

Mission Ave & Rock Springs 7-11 Gas Station - San Diego County, Summer

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

Fire Pumps and Emergency Generators

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

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

Equipment Type	Number
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11.0 Vegetation

Mission Ave & Rock Springs 7-11 Gas Station - San Diego County, Winter

Mission Ave & Rock Springs 7-11 Gas Station
San Diego County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Gasoline/Service Station	16.00	Pump	0.16	4,284.00	0
Convenience Market (24 Hour)	4.09	1000sqft	0.29	4,088.00	0
Parking Lot	25.00	Space	0.70	10,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.6	Precipitation Freq (Days)	40
Climate Zone	13			Operational Year	2021
Utility Company	San Diego Gas & Electric				

CO2 Intensity (lb/MW/hr)	720.49	CH4 Intensity (lb/MW/hr)	0.029	N2O Intensity (lb/MW/hr)	0.006
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1.3 User Entered Comments & Non-Default Data

Mission Ave & Rock Springs 7-11 Gas Station - San Diego County, Winter

Project Characteristics -

Land Use - Lot Acreage set to 1.14-acre project site

Construction Phase -

Demolition - 171 tons of building material and 1,053 tons of pavement = 1,224 total tons of debris

Trips and VMT - 6 vendor trucks added to demolition and grading to account for water truck emissions

Vehicle Trips - Trip Rate set to match TIA of 850 daily trips per 4.088 TSF Convenience Market

Mobile Land Use Mitigation - Improve Pedestrian Network Onsite and Connecting Offsite. 0.01 mile to nearest Transit Station (North Co Transit District Bus Stop 21727)

Energy Mitigation - Per 2019 Title 24 requirements a 30% improvement to lighting energy was selected

Water Mitigation - Install low-flow fixtures and water-efficient irrigation

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

Mission Ave & Rock Springs 7-11 Gas Station - San Diego County, Winter

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	PhaseEndDate	7/12/2021	6/10/2021
tblConstructionPhase	PhaseEndDate	6/14/2021	6/10/2021
tblConstructionPhase	PhaseEndDate	9/7/2020	9/3/2020
tblConstructionPhase	PhaseEndDate	6/28/2021	6/24/2021
tblConstructionPhase	PhaseStartDate	6/29/2021	5/28/2021
tblConstructionPhase	PhaseStartDate	9/8/2020	9/4/2020
tblConstructionPhase	PhaseStartDate	9/2/2020	8/29/2020
tblConstructionPhase	PhaseStartDate	6/15/2021	6/11/2021
tblLandUse	LandUseSquareFeet	2,258.80	4,284.00
tblLandUse	LotAcreage	0.05	0.16
tblLandUse	LotAcreage	0.09	0.29
tblLandUse	LotAcreage	0.22	0.70
tblTripsAndVMT	VendorTripNumber	0.00	6.00
tblTripsAndVMT	VendorTripNumber	0.00	6.00
tblVehicleTrips	ST_TR	863.10	850.00
tblVehicleTrips	ST_TR	168.56	0.00
tblVehicleTrips	SU_TR	758.45	850.00
tblVehicleTrips	SU_TR	168.56	0.00
tblVehicleTrips	WD_TR	737.99	850.00
tblVehicleTrips	WD_TR	168.56	0.00

2.0 Emissions Summary

[illegible]

Mission Ave & Rock Springs 7-11 Gas Station - San Diego County, Winter

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															
Area	0.2382	4.0000e-005	4.6200e-003	0.0000		2.0000e-005	2.0000e-005	2.0000e-005	2.0000e-005	2.0000e-005		9.8700e-003	9.8700e-003	3.0000e-005		0.0105
Energy	1.7300e-003	0.0158	0.0132	9.0000e-005		1.2000e-003	1.2000e-003	1.2000e-003	1.2000e-003	1.2000e-003		18.9007	18.9007	3.6000e-004	3.5000e-004	19.0130
Mobile	4.1394	14.3982	31.7907	0.0727	5.6114	0.0710	5.6824	1.4998	0.0663	1.5660		7,398.5966	7,398.5966	0.5470		7,412.2707
Total	4.3793	14.4140	31.8085	0.0728	5.6114	0.0722	5.6836	1.4998	0.0675	1.5673		7,417.5071	7,417.5071	0.5474	3.5000e-004	7,431.2942

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															
Area	0.2382	4.0000e-005	4.6200e-003	0.0000		2.0000e-005	2.0000e-005	2.0000e-005	2.0000e-005	2.0000e-005		9.8700e-003	9.8700e-003	3.0000e-005		0.0105
Energy	1.7300e-003	0.0158	0.0132	9.0000e-005		1.2000e-003	1.2000e-003	1.2000e-003	1.2000e-003	1.2000e-003		18.9007	18.9007	3.6000e-004	3.5000e-004	19.0130
Mobile	3.9676	13.3220	28.0783	0.0573	4.1654	0.0585	4.2238	1.1133	0.0545	1.1678		5,832.3756	5,832.3756	0.4760		5,844.2749
Total	4.2076	13.3378	28.0962	0.0574	4.1654	0.0597	4.2251	1.1133	0.0558	1.1690		5,851.2862	5,851.2862	0.4764	3.5000e-004	5,863.2984

Mission Ave & Rock Springs 7-11 Gas Station - San Diego 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	N2O	CO2e
Percent Reduction	3.92	7.47	11.67	21.20	25.77	17.36	25.66	25.77	17.40	25.41	0.00	21.12	21.12	12.97	0.00	21.10

3.0 Construction Detail**Construction Phase**

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	8/1/2020	8/28/2020	5	20	
2	Grading	Grading	8/29/2020	9/3/2020	5	4	
3	Building Construction	Building Construction	9/4/2020	6/10/2021	5	200	
4	Paving	Paving	6/11/2021	6/24/2021	5	10	
5	Architectural Coating	Architectural Coating	5/28/2021	6/10/2021	5	10	

Acres of Grading (Site Preparation Phase): 0**Acres of Grading (Grading Phase): 1.5****Acres of Paving: 0.7****Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 12,558; Non-Residential Outdoor: 4,186; Striped Parking Area: 600 (Architectural Coating – sqft)****OffRoad Equipment**

Mission Ave & Rock Springs 7-11 Gas Station - San Diego County, Winter

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Paving	Cement and Mortar Mixers	1	6.00	9	0.56
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Cranes	1	6.00	231	0.29
Building Construction	Forklifts	1	6.00	89	0.20
Paving	Pavers	1	6.00	130	0.42
Paving	Rollers	1	7.00	80	0.38
Demolition	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Rubber Tired Dozers	1	6.00	247	0.40
Building Construction	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Demolition	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Grading	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Grading	Graders	1	6.00	187	0.41
Paving	Paving Equipment	1	8.00	132	0.36
Building Construction	Welders	3	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	5	13.00	6.00	121.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	3	8.00	6.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	7	7.00	3.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	5	13.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	1.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

Mission Ave & Rock Springs 7-11 Gas Station - San Diego County, Winter

3.1 Mitigation Measures Construction**3.2 Demolition - 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					1.3260	0.0000	1.3260	0.2008	0.0000	0.2008			0.0000			0.0000
Off-Road	2.1262	20.9463	14.6573	0.0241		1.1525	1.1525	1.0761	1.0761	1.0761		2,322.312 ₇	2,322.312 ₇	0.5970		2,337.236 ₃
Total	2.1262	20.9463	14.6573	0.0241	1.3260	1.1525	2.4784	0.2008	1.0761	1.2769		2,322.312₇	2,322.312₇	0.5970		2,337.236₃

Mission Ave & Rock Springs 7-11 Gas Station - San Diego County, Winter

3.2 Demolition - 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															
Hauling	0.0492	1.7040	0.4085	4.6600e-003	0.1057	5.5000e-003	0.1112	0.0290	5.2600e-003	0.0342		509.1894	509.1894	0.0472		510.3694
Vendor	0.0235	0.6760	0.1913	1.6000e-003	0.0406	3.3700e-003	0.0440	0.0117	3.2300e-003	0.0149		171.8773	171.8773	0.0138		172.2231
Worker	0.0540	0.0361	0.3474	1.0300e-003	0.1068	7.5000e-004	0.1075	0.0283	6.9000e-004	0.0290		102.8472	102.8472	3.1000e-003		102.9246
Total	0.1267	2.4161	0.9472	7.2900e-003	0.2531	9.6200e-003	0.2627	0.0690	9.1800e-003	0.0782		783.9139	783.9139	0.0641		785.5171

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															
Fugitive Dust					1.3260	0.0000	1.3260	0.2008	0.0000	0.2008			0.0000			0.0000
Off-Road	2.1262	20.9463	14.6573	0.0241		1.1525	1.1525	1.0761	1.0761	1.0761	0.0000	2,322.312 ₇	2,322.312 ₇	0.5970		2,337.236 ₃
Total	2.1262	20.9463	14.6573	0.0241	1.3260	1.1525	2.4784	0.2008	1.0761	1.2769	0.0000	2,322.312₇	2,322.312₇	0.5970		2,337.236₃

Mission Ave & Rock Springs 7-11 Gas Station - San Diego County, Winter

3.2 Demolition - 2020**Mitigated Construction Off-Site**

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	lb/day										lb/day					
Hauling	0.0492	1.7040	0.4085	4.6600e-003	0.1057	5.5000e-003	0.1112	0.0290	5.2600e-003	0.0342		509.1894	509.1894	0.0472		510.3694
Vendor	0.0235	0.6760	0.1913	1.6000e-003	0.0406	3.3700e-003	0.0440	0.0117	3.2300e-003	0.0149		171.8773	171.8773	0.0138		172.2231
Worker	0.0540	0.0361	0.3474	1.0300e-003	0.1068	7.5000e-004	0.1075	0.0283	6.9000e-004	0.0290		102.8472	102.8472	3.1000e-003		102.9246
Total	0.1267	2.4161	0.9472	7.2900e-003	0.2531	9.6200e-003	0.2627	0.0690	9.1800e-003	0.0782		783.9139	783.9139	0.0641		785.5171

3.3 Grading - 2020**Unmitigated Construction On-Site**

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	lb/day										lb/day					
Fugitive Dust					4.9143	0.0000	4.9143	2.5256	0.0000	2.5256			0.0000			0.0000
Off-Road	1.3498	15.0854	6.4543	0.0141		0.6844	0.6844	0.6296	0.6296	0.6296		1,365.7183	1,365.7183	0.4417		1,376.7609
Total	1.3498	15.0854	6.4543	0.0141	4.9143	0.6844	5.5986	2.5256	0.6296	3.1552		1,365.7183	1,365.7183	0.4417		1,376.7609

Mission Ave & Rock Springs 7-11 Gas Station - San Diego County, Winter

3.3 Grading - 2020**Unmitigated Construction Off-Site**

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	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	0.0235	0.6760	0.1913	1.6000e-003	0.0406	3.3700e-003	0.0440	0.0117	3.2300e-003	0.0149		171.8773	171.8773	0.0138		172.2231
Worker	0.0333	0.0222	0.2138	6.4000e-004	0.0657	4.6000e-004	0.0662	0.0174	4.2000e-004	0.0179		63.2906	63.2906	1.9100e-003		63.3382
Total	0.0567	0.6982	0.4051	2.2400e-003	0.1063	3.8300e-003	0.1102	0.0291	3.6500e-003	0.0328		235.1679	235.1679	0.0157		235.5613

Mitigated Construction On-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	lb/day										lb/day					
Fugitive Dust					4.9143	0.0000	4.9143	2.5256	0.0000	2.5256			0.0000			0.0000
Off-Road	1.3498	15.0854	6.4543	0.0141		0.6844	0.6844	0.6296	0.6296	0.6296	0.0000	1,365.718 ₃	1,365.718 ₃	0.4417		1,376.760 ₉
Total	1.3498	15.0854	6.4543	0.0141	4.9143	0.6844	5.5986	2.5256	0.6296	3.1552	0.0000	1,365.718₃	1,365.718₃	0.4417		1,376.760₉

Mission Ave & Rock Springs 7-11 Gas Station - San Diego County, Winter

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	0.0000	0.0000	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	0.0235	0.6760	0.1913	1.6000e-003	0.0406	3.3700e-003	0.0440	0.0117	3.2300e-003	0.0149		171.8773	171.8773	0.0138		172.2231
Worker	0.0333	0.0222	0.2138	6.4000e-004	0.0657	4.6000e-004	0.0662	0.0174	4.2000e-004	0.0179		63.2906	63.2906	1.9100e-003		63.3382
Total	0.0567	0.6982	0.4051	2.2400e-003	0.1063	3.8300e-003	0.1102	0.0291	3.6500e-003	0.0328		235.1679	235.1679	0.0157		235.5613

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	2.0305	14.7882	13.1881	0.0220		0.7960	0.7960		0.7688	0.7688		2,001.1595	2,001.1595	0.3715		2,010.4467
Total	2.0305	14.7882	13.1881	0.0220		0.7960	0.7960		0.7688	0.7688		2,001.1595	2,001.1595	0.3715		2,010.4467

Mission Ave & Rock Springs 7-11 Gas Station - San Diego County, Winter

3.4 Building Construction - 2020**Unmitigated Construction Off-Site**

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	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	0.0117	0.3380	0.0956	8.0000e-004	0.0203	1.6900e-003	0.0220	5.8500e-003	1.6100e-003	7.4600e-003		85.9387	85.9387	6.9200e-003		86.1116
Worker	0.0291	0.0194	0.1871	5.6000e-004	0.0575	4.0000e-004	0.0579	0.0153	3.7000e-004	0.0156		55.3792	55.3792	1.6700e-003		55.4209
Total	0.0408	0.3574	0.2827	1.3600e-003	0.0778	2.0900e-003	0.0799	0.0211	1.9800e-003	0.0231		141.3179	141.3179	8.5900e-003		141.5325

Mitigated Construction On-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	lb/day										lb/day					
Off-Road	2.0305	14.7882	13.1881	0.0220		0.7960	0.7960		0.7688	0.7688	0.0000	2,001.1595	2,001.1595	0.3715		2,010.4467
Total	2.0305	14.7882	13.1881	0.0220		0.7960	0.7960		0.7688	0.7688	0.0000	2,001.1595	2,001.1595	0.3715		2,010.4467

Mission Ave & Rock Springs 7-11 Gas Station - San Diego County, Winter

3.4 Building Construction - 2020**Mitigated Construction Off-Site**

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	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	0.0117	0.3380	0.0956	8.0000e-004	0.0203	1.6900e-003	0.0220	5.8500e-003	1.6100e-003	7.4600e-003		85.9387	85.9387	6.9200e-003		86.1116
Worker	0.0291	0.0194	0.1871	5.6000e-004	0.0575	4.0000e-004	0.0579	0.0153	3.7000e-004	0.0156		55.3792	55.3792	1.6700e-003		55.4209
Total	0.0408	0.3574	0.2827	1.3600e-003	0.0778	2.0900e-003	0.0799	0.0211	1.9800e-003	0.0231		141.3179	141.3179	8.5900e-003		141.5325

3.4 Building Construction - 2021**Unmitigated Construction On-Site**

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	lb/day										lb/day					
Off-Road	1.8125	13.6361	12.8994	0.0221		0.6843	0.6843		0.6608	0.6608		2,001.220	2,001.220	0.3573		2,010.151
Total	1.8125	13.6361	12.8994	0.0221		0.6843	0.6843		0.6608	0.6608		2,001.220	2,001.220	0.3573		2,010.151

Mission Ave & Rock Springs 7-11 Gas Station - San Diego County, Winter

3.4 Building Construction - 2021**Unmitigated Construction Off-Site**

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
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	9.5600e-003	0.3047	0.0867	7.9000e-004	0.0203	6.7000e-004	0.0210	5.8500e-003	6.4000e-004	6.4800e-003		85.1458	85.1458	6.6300e-003		85.3116
Worker	0.0275	0.0177	0.1745	5.4000e-004	0.0575	4.0000e-004	0.0579	0.0153	3.7000e-004	0.0156		53.5183	53.5183	1.5400e-003		53.5568
Total	0.0370	0.3223	0.2612	1.3300e-003	0.0778	1.0700e-003	0.0789	0.0211	1.0100e-003	0.0221		138.6641	138.6641	8.1700e-003		138.8684

Mitigated Construction On-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
lb/day																
Off-Road	1.8125	13.6361	12.8994	0.0221		0.6843	0.6843		0.6608	0.6608	0.0000	2,001.220	2,001.220	0.3573		2,010.151
Total	1.8125	13.6361	12.8994	0.0221		0.6843	0.6843		0.6608	0.6608	0.0000	2,001.220	2,001.220	0.3573		2,010.151

Mission Ave & Rock Springs 7-11 Gas Station - San Diego County, Winter

3.4 Building Construction - 2021**Mitigated Construction Off-Site**

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	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	9.5600e-003	0.3047	0.0867	7.9000e-004	0.0203	6.7000e-004	0.0210	5.8500e-003	6.4000e-004	6.4800e-003		85.1458	85.1458	6.6300e-003		85.3116
Worker	0.0275	0.0177	0.1745	5.4000e-004	0.0575	4.0000e-004	0.0579	0.0153	3.7000e-004	0.0156		53.5183	53.5183	1.5400e-003		53.5568
Total	0.0370	0.3223	0.2612	1.3300e-003	0.0778	1.0700e-003	0.0789	0.0211	1.0100e-003	0.0221		138.6641	138.6641	8.1700e-003		138.8684

3.5 Paving - 2021**Unmitigated Construction On-Site**

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	lb/day										lb/day					
Off-Road	0.7739	7.7422	8.8569	0.0135		0.4153	0.4153		0.3830	0.3830		1,296.8664	1,296.8664	0.4111		1,307.1442
Paving	0.1834					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	0.9573	7.7422	8.8569	0.0135		0.4153	0.4153		0.3830	0.3830		1,296.8664	1,296.8664	0.4111		1,307.1442

Mission Ave & Rock Springs 7-11 Gas Station - San Diego County, Winter

3.5 Paving - 2021**Unmitigated Construction Off-Site**

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	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	0.0510	0.0328	0.3241	1.0000e-003	0.1068	7.4000e-004	0.1075	0.0283	6.8000e-004	0.0290		99.3912	99.3912	2.8600e-003		99.4626
Total	0.0510	0.0328	0.3241	1.0000e-003	0.1068	7.4000e-004	0.1075	0.0283	6.8000e-004	0.0290		99.3912	99.3912	2.8600e-003		99.4626

Mitigated Construction On-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	lb/day										lb/day					
Off-Road	0.7739	7.7422	8.8569	0.0135		0.4153	0.4153		0.3830	0.3830	0.0000	1,296.8664	1,296.8664	0.4111		1,307.1442
Paving	0.1834					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	0.9573	7.7422	8.8569	0.0135		0.4153	0.4153		0.3830	0.3830	0.0000	1,296.8664	1,296.8664	0.4111		1,307.1442

Mission Ave & Rock Springs 7-11 Gas Station - San Diego County, Winter

3.5 Paving - 2021**Mitigated Construction Off-Site**

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	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	0.0510	0.0328	0.3241	1.0000e-003	0.1068	7.4000e-004	0.1075	0.0283	6.8000e-004	0.0290		99.3912	99.3912	2.8600e-003		99.4626
Total	0.0510	0.0328	0.3241	1.0000e-003	0.1068	7.4000e-004	0.1075	0.0283	6.8000e-004	0.0290		99.3912	99.3912	2.8600e-003		99.4626

3.6 Architectural Coating - 2021**Unmitigated Construction On-Site**

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	lb/day										lb/day					
Archit. Coating	20.0974					0.0000	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	0.0941		281.4481	281.4481	0.0193		281.9309
Total	20.3163	1.5268	1.8176	2.9700e-003		0.0941	0.0941		0.0941	0.0941		281.4481	281.4481	0.0193		281.9309

Mission Ave & Rock Springs 7-11 Gas Station - San Diego County, Winter

3.6 Architectural Coating - 2021**Unmitigated Construction Off-Site**

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	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	3.9200e-003	2.5200e-003	0.0249	8.0000e-005	8.2100e-003	6.0000e-005	8.2700e-003	2.1800e-003	5.0000e-005	2.2300e-003		7.6455	7.6455	2.2000e-004		7.6510
Total	3.9200e-003	2.5200e-003	0.0249	8.0000e-005	8.2100e-003	6.0000e-005	8.2700e-003	2.1800e-003	5.0000e-005	2.2300e-003		7.6455	7.6455	2.2000e-004		7.6510

Mitigated Construction On-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	lb/day										lb/day					
Archit. Coating	20.0974					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	0.0941	0.0000	281.4481	281.4481	0.0193		281.9309
Total	20.3163	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

Mission Ave & Rock Springs 7-11 Gas Station - San Diego County, Winter

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	3.9200e-003	2.5200e-003	0.0249	8.0000e-005	8.2100e-003	6.0000e-005	8.2700e-003	2.1800e-003	5.0000e-005	2.2300e-003		7.6455	7.6455	2.2000e-004		7.6510
Total	3.9200e-003	2.5200e-003	0.0249	8.0000e-005	8.2100e-003	6.0000e-005	8.2700e-003	2.1800e-003	5.0000e-005	2.2300e-003		7.6455	7.6455	2.2000e-004		7.6510

4.0 Operational Detail - Mobile**4.1 Mitigation Measures Mobile**

Increase Transit Accessibility

Improve Pedestrian Network

Mission Ave & Rock Springs 7-11 Gas Station - San Diego 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	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	3.9676	13.3220	28.0783	0.0573	4.1654	0.0585	4.2238	1.1133	0.0545	1.1678		5,832.3756	5,832.3756	0.4760		5,844.2749
Unmitigated	4.1394	14.3982	31.7907	0.0727	5.6114	0.0710	5.6824	1.4998	0.0663	1.5660		7,398.5966	7,398.5966	0.5470		7,412.2707

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated		Mitigated	
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT	Annual VMT	Annual VMT
Convenience Market (24 Hour)	3,474.80	3,474.80	3474.80	2,646,328		1,964,398	
Gasoline/Service Station	0.00	0.00	0.00				
Parking Lot	0.00	0.00	0.00				
Total	3,474.80	3,474.80	3,474.80	2,646,328		1,964,398	

4.3 Trip Type Information

Land Use	Miles				Trip %				Trip Purpose %			
	H-W or C-W	H-S or C-C	H-O or C-C	H-W or C-NW	H-W or C-W	H-S or C-C	H-O or C-C	H-O or C-NW	Primary	Diverted	Pass-by	Pass-by
Convenience Market (24 Hour)	9.50	7.30	7.30	7.30	0.90	80.10	19.00	19.00	24	15	61	61
Gasoline/Service Station	9.50	7.30	7.30	7.30	2.00	79.00	19.00	19.00	14	27	59	59
Parking Lot	9.50	7.30	7.30	7.30	0.00	0.00	0.00	0.00	0	0	0	0

4.4 Fleet Mix

Mission Ave & Rock Springs 7-11 Gas Station - San Diego County, Winter

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Convenience Market (24 Hour)	0.593936	0.041843	0.182569	0.108325	0.016436	0.005513	0.015940	0.023523	0.001912	0.001972	0.006090	0.000748	0.001193
Gasoline/Service Station	0.593936	0.041843	0.182569	0.108325	0.016436	0.005513	0.015940	0.023523	0.001912	0.001972	0.006090	0.000748	0.001193
Parking Lot	0.593936	0.041843	0.182569	0.108325	0.016436	0.005513	0.015940	0.023523	0.001912	0.001972	0.006090	0.000748	0.001193

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Install High Efficiency Lighting

	ROG	NOx	CO	SO2	Fugitive 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															
NaturalGas Mitigated	1.7300e-003	0.0158	0.0132	9.0000e-005		1.2000e-003	1.2000e-003		1.2000e-003	1.2000e-003	18.9007	18.9007	18.9007	3.6000e-004	3.5000e-004	19.0130
NaturalGas Unmitigated	1.7300e-003	0.0158	0.0132	9.0000e-005		1.2000e-003	1.2000e-003		1.2000e-003	1.2000e-003	18.9007	18.9007	18.9007	3.6000e-004	3.5000e-004	19.0130

Mission Ave & Rock Springs 7-11 Gas Station - San Diego County, Winter

5.2 Energy by Land Use - NaturalGas**Unmitigated**

Land Use	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
	kBTU/yr																
lb/day																	
Convenience Market (24 Hour)	24.976	2.7000e-004	2.4500e-003	2.0600e-003	1.0000e-005	1.9000e-004	1.9000e-004	1.9000e-004		1.9000e-004	1.9000e-004		2.9384	2.9384	6.0000e-005	5.0000e-005	2.9558
Gasoline/Service Station	135.68	1.4600e-003	0.0133	0.0112	8.0000e-005	1.0100e-003	1.0100e-003	1.0100e-003		1.0100e-003	1.0100e-003		15.9623	15.9623	3.1000e-004	2.9000e-004	16.0572
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		1.7300e-003	0.0158	0.0132	9.0000e-005	1.2000e-003	1.2000e-003	1.2000e-003		1.2000e-003	1.2000e-003		18.9007	18.9007	3.7000e-004	3.4000e-004	19.0130

Mitigated

Land Use	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
	kBTU/yr																
lb/day																	
Convenience Market (24 Hour)	0.024976	2.7000e-004	2.4500e-003	2.0600e-003	1.0000e-005	1.9000e-004	1.9000e-004	1.9000e-004		1.9000e-004	1.9000e-004		2.9384	2.9384	6.0000e-005	5.0000e-005	2.9558
Gasoline/Service Station	0.13568	1.4600e-003	0.0133	0.0112	8.0000e-005	1.0100e-003	1.0100e-003	1.0100e-003		1.0100e-003	1.0100e-003		15.9623	15.9623	3.1000e-004	2.9000e-004	16.0572
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		1.7300e-003	0.0158	0.0132	9.0000e-005	1.2000e-003	1.2000e-003	1.2000e-003		1.2000e-003	1.2000e-003		18.9007	18.9007	3.7000e-004	3.4000e-004	19.0130

6.0 Area Detail

Mission Ave & Rock Springs 7-11 Gas Station - San Diego County, Winter

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	0.2382	4.0000e-005	4.6200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.8700e-003	9.8700e-003	3.0000e-005		0.0105
Unmitigated	0.2382	4.0000e-005	4.6200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.8700e-003	9.8700e-003	3.0000e-005		0.0105

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	0.0551					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.1827					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	4.3000e-004	4.0000e-005	4.6200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.8700e-003	9.8700e-003	3.0000e-005		0.0105
Total	0.2382	4.0000e-005	4.6200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.8700e-003	9.8700e-003	3.0000e-005		0.0105

Mission Ave & Rock Springs 7-11 Gas Station - San Diego County, Winter

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	0.0551					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.1827					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	4.3000e-004	4.0000e-005	4.6200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.8700e-003	9.8700e-003	3.0000e-005		0.0105
Total	0.2382	4.0000e-005	4.6200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.8700e-003	9.8700e-003	3.0000e-005		0.0105

7.0 Water Detail**7.1 Mitigation Measures Water**

Install Low Flow Bathroom Faucet
 Install Low Flow Kitchen Faucet
 Install Low Flow Toilet
 Use Water Efficient Irrigation System

8.0 Waste Detail**8.1 Mitigation Measures Waste**

Institute Recycling and Composting Services

9.0 Operational Offroad

Mission Ave & Rock Springs 7-11 Gas Station - San Diego County, Winter

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

Fire Pumps and Emergency Generators

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

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

User Defined Equipment

Equipment Type	Number
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11.0 Vegetation

APPENDIX B

Gas Station Cancer RiskTool (V1.103) Printouts

GASOLINE DISPENSING SERVICE STATION

(Procedure Version 8.1 & Package N, September 1, 2017) - Risk Tool V1.103

AN:	
Facility Name:	7-11 Mission Ave
Deem Complete Date:	

Storage Tank Type	Underground	MET Station	Mission Viejo
Annual Throughput	million gallons /year	Distance to Resident	235 meter
T-BACT	YES	Distance to Commercial	20 meter

MICR Calculation: MICR = MICR per 1 Million gallons/yr x Annual Throughput (Million gallons/yr)

HIA & HIC Calculation: Negligible compared to Cancer risk and is not calculated.

MICR Result

	Resident	Commercial
MICR		
MICR ≤ 10	PASS	PASS

Interpolation for MICR from Nearest Distances

	Residential		Commercial	
	near	actual	near	actual
Distance (meter)	200	235	20	20
MICR (per 1 million gasoline gallon throughput per year)	0.094	0.0776	0.224	0.224

Look up from Table 12 - MICR for Underground Storage Tank

Station	Receptor	Downwind Distance (m)					
		25	50	75	100	200	500
Mission Viejo	Resident	2.721	0.981	0.515	0.319	0.094	0.018
	Commercial	0.224	0.081	0.042	0.026	0.008	0.002

APPENDIX C

CalEEMod Model Annual Printouts

Mission Ave & Rock Springs 7-11 Gas Station - San Diego County, Annual

Mission Ave & Rock Springs 7-11 Gas Station
San Diego County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Gasoline/Service Station	16.00	Pump	0.16	4,284.00	0
Convenience Market (24 Hour)	4.09	1000sqft	0.29	4,088.00	0
Parking Lot	25.00	Space	0.70	10,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.6	Precipitation Freq (Days)	40
Climate Zone	13			Operational Year	2021
Utility Company	San Diego Gas & Electric				

CO2 Intensity (lb/MW/hr)	720.49	CH4 Intensity (lb/MW/hr)	0.029	N2O Intensity (lb/MW/hr)	0.006
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1.3 User Entered Comments & Non-Default Data

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Project Characteristics -

Land Use - Lot Acreage set to 1.14-acre project site

Construction Phase -

Demolition - 171 tons of building material and 1,053 tons of pavement = 1,224 total tons of debris

Trips and VMT - 6 vendor trucks added to demolition and grading to account for water truck emissions

Vehicle Trips - Trip Rate set to match TIA of 850 daily trips per 4.088 TSF Convenience Market

Mobile Land Use Mitigation - Improve Pedestrian Network Onsite and Connecting Offsite. 0.01 mile to nearest Transit Station (North Co Transit District Bus Stop 21727)

Energy Mitigation - Per 2019 Title 24 requirements a 30% improvement to lighting energy was selected

Water Mitigation - Install low-flow fixtures and water-efficient irrigation

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

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Table Name	Column Name	Default Value	New Value
tblConstructionPhase	PhaseEndDate	7/12/2021	6/10/2021
tblConstructionPhase	PhaseEndDate	6/14/2021	6/10/2021
tblConstructionPhase	PhaseEndDate	9/7/2020	9/3/2020
tblConstructionPhase	PhaseEndDate	6/28/2021	6/24/2021
tblConstructionPhase	PhaseStartDate	6/29/2021	5/28/2021
tblConstructionPhase	PhaseStartDate	9/8/2020	9/4/2020
tblConstructionPhase	PhaseStartDate	9/2/2020	8/29/2020
tblConstructionPhase	PhaseStartDate	6/15/2021	6/11/2021
tblLandUse	LandUseSquareFeet	2,258.80	4,284.00
tblLandUse	LotAcreage	0.05	0.16
tblLandUse	LotAcreage	0.09	0.29
tblLandUse	LotAcreage	0.22	0.70
tblTripsAndVMT	VendorTripNumber	0.00	6.00
tblTripsAndVMT	VendorTripNumber	0.00	6.00
tblVehicleTrips	ST_TR	863.10	850.00
tblVehicleTrips	ST_TR	168.56	0.00
tblVehicleTrips	SU_TR	758.45	850.00
tblVehicleTrips	SU_TR	168.56	0.00
tblVehicleTrips	WD_TR	737.99	850.00
tblVehicleTrips	WD_TR	168.56	0.00

2.0 Emissions Summary

[illegible]

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Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	8-1-2020	10-31-2020	0.6493	0.6493
2	11-1-2020	1-31-2021	0.5501	0.5501
3	2-1-2021	4-30-2021	0.5024	0.5024
4	5-1-2021	7-31-2021	0.3845	0.3845
		Highest	0.6493	0.6493

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	0.0434	0.0000	4.2000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	8.1000e-004	8.1000e-004	0.0000	0.0000	8.6000e-004
Energy	3.2000e-004	2.8700e-003	2.4100e-003	2.0000e-005		2.2000e-004	2.2000e-004		2.2000e-004	2.2000e-004	0.0000	32.6875	32.6875	1.2500e-003	3.0000e-004	32.8092
Mobile	0.7270	2.6413	5.5813	0.0134	0.9973	0.0128	1.0101	0.2671	0.0119	0.2790	0.0000	1,239.880 ₂	1,239.880 ₂	0.0877	0.0000	1,242.073 ₈
Waste						0.0000	0.0000		0.0000	0.0000	4.2445	0.0000	4.2445	0.2509	0.0000	10.5157
Water						0.0000	0.0000		0.0000	0.0000	0.1635	3.3406	3.5041	0.0169	4.2000e-004	4.0539
Total	0.7707	2.6441	5.5841	0.0134	0.9973	0.0130	1.0103	0.2671	0.0121	0.2792	4.4081	1,275.909₂	1,280.317₃	0.3568	7.2000e-004	1,289.453₅

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2.2 Overall Operational**Mitigated Operational**

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr										MT/yr					
Area	0.0434	0.0000	4.2000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	8.1000e-004	8.1000e-004	0.0000	0.0000	8.6000e-004
Energy	3.2000e-004	2.8700e-003	2.4100e-003	2.0000e-005	2.2000e-004	2.2000e-004	2.2000e-004	2.2000e-004	2.2000e-004	2.2000e-004	0.0000	28.6628	28.6628	1.0900e-003	2.7000e-004	28.7704
Mobile	0.6957	2.4461	4.8994	0.0106	0.7403	0.0105	0.7508	0.1983	9.7700e-003	0.2080	0.0000	979.5296	979.5296	0.0760	0.0000	981.4293
Waste						0.0000	0.0000		0.0000	0.0000	2.1223	0.0000	2.1223	0.1254	0.0000	5.2578
Water						0.0000	0.0000		0.0000	0.0000	0.1380	2.9284	3.0665	0.0143	3.6000e-004	3.5308
Total	0.7394	2.4490	4.9022	0.0106	0.7403	0.0107	0.7510	0.1983	9.9900e-003	0.2082	2.2603	1,011.121₆	1,013.381₉	0.2168	6.3000e-004	1,018.989₂

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	4.06	7.38	12.21	21.06	25.77	17.57	25.66	25.77	17.57	25.42	48.72	20.75	20.85	39.24	12.50	20.98

3.0 Construction Detail**Construction Phase**

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Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	8/1/2020	8/28/2020	5	20	
2	Grading	Grading	8/29/2020	9/3/2020	5	4	
3	Building Construction	Building Construction	9/4/2020	6/10/2021	5	200	
4	Paving	Paving	6/11/2021	6/24/2021	5	10	
5	Architectural Coating	Architectural Coating	5/28/2021	6/10/2021	5	10	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 1.5

Acres of Paving: 0.7

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 12,558; Non-Residential Outdoor: 4,186; Striped Parking Area: 600 (Architectural Coating – sqft)

OffRoad Equipment

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Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Paving	Cement and Mortar Mixers	1	6.00	9	0.56
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Cranes	1	6.00	231	0.29
Building Construction	Forklifts	1	6.00	89	0.20
Paving	Pavers	1	6.00	130	0.42
Paving	Rollers	1	7.00	80	0.38
Demolition	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Rubber Tired Dozers	1	6.00	247	0.40
Building Construction	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Demolition	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Grading	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Grading	Graders	1	6.00	187	0.41
Paving	Paving Equipment	1	8.00	132	0.36
Building Construction	Welders	3	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	5	13.00	6.00	121.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	3	8.00	6.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	7	7.00	3.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	5	13.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	1.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

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3.1 Mitigation Measures Construction**3.2 Demolition - 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					0.0133	0.0000	0.0133	2.0100e-003	0.0000	2.0100e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0213	0.2095	0.1466	2.4000e-004		0.0115	0.0115		0.0108	0.0108	0.0000	21.0677	21.0677	5.4200e-003	0.0000	21.2031
Total	0.0213	0.2095	0.1466	2.4000e-004	0.0133	0.0115	0.0248	2.0100e-003	0.0108	0.0128	0.0000	21.0677	21.0677	5.4200e-003	0.0000	21.2031

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3.2 Demolition - 2020**Unmitigated Construction Off-Site**

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr										MT/yr					
Hauling	4.8000e-004	0.0172	3.9400e-003	5.0000e-005	1.0400e-003	5.0000e-005	1.0900e-003	2.8000e-004	5.0000e-005	3.4000e-004	0.0000	4.6661	4.6661	4.2000e-004	0.0000	4.6766
Vendor	2.3000e-004	6.8400e-003	1.8200e-003	2.0000e-005	4.0000e-004	3.0000e-005	4.3000e-004	1.1000e-004	3.0000e-005	1.5000e-004	0.0000	1.5832	1.5832	1.2000e-004	0.0000	1.5862
Worker	4.8000e-004	3.5000e-004	3.4800e-003	1.0000e-005	1.0400e-003	1.0000e-005	1.0500e-003	2.8000e-004	1.0000e-005	2.8000e-004	0.0000	0.9423	0.9423	3.0000e-005	0.0000	0.9431
Total	1.1900e-003	0.0244	9.2400e-003	8.0000e-005	2.4800e-003	9.0000e-005	2.5700e-003	6.7000e-004	9.0000e-005	7.7000e-004	0.0000	7.1916	7.1916	5.7000e-004	0.0000	7.2058

Mitigated Construction On-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr										MT/yr					
Fugitive Dust					0.0133	0.0000	0.0133	2.0100e-003	0.0000	2.0100e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0213	0.2095	0.1466	2.4000e-004		0.0115	0.0115		0.0108	0.0108	0.0000	21.0676	21.0676	5.4200e-003	0.0000	21.2030
Total	0.0213	0.2095	0.1466	2.4000e-004	0.0133	0.0115	0.0248	2.0100e-003	0.0108	0.0128	0.0000	21.0676	21.0676	5.4200e-003	0.0000	21.2030

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3.2 Demolition - 2020**Mitigated Construction Off-Site**

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr										MT/yr					
Hauling	4.8000e-004	0.0172	3.9400e-003	5.0000e-005	1.0400e-003	5.0000e-005	1.0900e-003	2.8000e-004	5.0000e-005	3.4000e-004	0.0000	4.6661	4.6661	4.2000e-004	0.0000	4.6766
Vendor	2.3000e-004	6.8400e-003	1.8200e-003	2.0000e-005	4.0000e-004	3.0000e-005	4.3000e-004	1.1000e-004	3.0000e-005	1.5000e-004	0.0000	1.5832	1.5832	1.2000e-004	0.0000	1.5862
Worker	4.8000e-004	3.5000e-004	3.4800e-003	1.0000e-005	1.0400e-003	1.0000e-005	1.0500e-003	2.8000e-004	1.0000e-005	2.8000e-004	0.0000	0.9423	0.9423	3.0000e-005	0.0000	0.9431
Total	1.1900e-003	0.0244	9.2400e-003	8.0000e-005	2.4800e-003	9.0000e-005	2.5700e-003	6.7000e-004	9.0000e-005	7.7000e-004	0.0000	7.1916	7.1916	5.7000e-004	0.0000	7.2058

3.3 Grading - 2020**Unmitigated Construction On-Site**

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr										MT/yr					
Fugitive Dust					9.8300e-003	0.0000	9.8300e-003	5.0500e-003	0.0000	5.0500e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.7000e-003	0.0302	0.0129	3.0000e-005		1.3700e-003	1.3700e-003	1.2600e-003		1.2600e-003	0.0000	2.4779	2.4779	8.0000e-004	0.0000	2.4980
Total	2.7000e-003	0.0302	0.0129	3.0000e-005	9.8300e-003	1.3700e-003	0.0112	5.0500e-003	1.2600e-003	6.3100e-003	0.0000	2.4779	2.4779	8.0000e-004	0.0000	2.4980

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3.3 Grading - 2020**Unmitigated Construction Off-Site**

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	5.0000e-005	1.3700e-003	3.6000e-004	0.0000	8.0000e-005	1.0000e-005	9.0000e-005	2.0000e-005	1.0000e-005	3.0000e-005	0.0000	0.3166	0.3166	2.0000e-005	0.0000	0.3172
Worker	6.0000e-005	4.0000e-005	4.3000e-004	0.0000	1.3000e-004	0.0000	1.3000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.1160	0.1160	0.0000	0.0000	0.1161
Total	1.1000e-004	1.4100e-003	7.9000e-004	0.0000	2.1000e-004	1.0000e-005	2.2000e-004	5.0000e-005	1.0000e-005	6.0000e-005	0.0000	0.4326	0.4326	2.0000e-005	0.0000	0.4333

Mitigated Construction On-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr										MT/yr					
Fugitive Dust					9.8300e-003	0.0000	9.8300e-003	5.0500e-003	0.0000	5.0500e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.7000e-003	0.0302	0.0129	3.0000e-005		1.3700e-003	1.3700e-003	1.2600e-003	1.2600e-003	1.2600e-003	0.0000	2.4779	2.4779	8.0000e-004	0.0000	2.4980
Total	2.7000e-003	0.0302	0.0129	3.0000e-005	9.8300e-003	1.3700e-003	0.0112	5.0500e-003	1.2600e-003	6.3100e-003	0.0000	2.4779	2.4779	8.0000e-004	0.0000	2.4980

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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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	5.0000e-005	1.3700e-003	3.6000e-004	0.0000	8.0000e-005	1.0000e-005	9.0000e-005	2.0000e-005	1.0000e-005	3.0000e-005	0.0000	0.3166	0.3166	2.0000e-005	0.0000	0.3172
Worker	6.0000e-005	4.0000e-005	4.3000e-004	0.0000	1.3000e-004	0.0000	1.3000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.1160	0.1160	0.0000	0.0000	0.1161
Total	1.1000e-004	1.4100e-003	7.9000e-004	0.0000	2.1000e-004	1.0000e-005	2.2000e-004	5.0000e-005	1.0000e-005	6.0000e-005	0.0000	0.4326	0.4326	2.0000e-005	0.0000	0.4333

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	0.0863	0.6285	0.5605	9.4000e-004		0.0338	0.0338		0.0327	0.0327	0.0000	77.1554	77.1554	0.0143	0.0000	77.5135
Total	0.0863	0.6285	0.5605	9.4000e-004		0.0338	0.0338		0.0327	0.0327	0.0000	77.1554	77.1554	0.0143	0.0000	77.5135

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3.4 Building Construction - 2020**Unmitigated Construction Off-Site**

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	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	4.9000e-004	0.0145	3.8600e-003	3.0000e-005	8.5000e-004	7.0000e-005	9.2000e-004	2.4000e-004	7.0000e-005	3.1000e-004	0.0000	3.3642	3.3642	2.6000e-004	0.0000	3.3707
Worker	1.1000e-003	8.1000e-004	7.9600e-003	2.0000e-005	2.3900e-003	2.0000e-005	2.4000e-003	6.3000e-004	2.0000e-005	6.5000e-004	0.0000	2.1565	2.1565	6.0000e-005	0.0000	2.1581
Total	1.5900e-003	0.0153	0.0118	5.0000e-005	3.2400e-003	9.0000e-005	3.3200e-003	8.7000e-004	9.0000e-005	9.6000e-004	0.0000	5.5207	5.5207	3.2000e-004	0.0000	5.5288

Mitigated Construction On-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr										MT/yr					
Off-Road	0.0863	0.6285	0.5605	9.4000e-004		0.0338	0.0338		0.0327	0.0327	0.0000	77.1553	77.1553	0.0143	0.0000	77.5134
Total	0.0863	0.6285	0.5605	9.4000e-004		0.0338	0.0338		0.0327	0.0327	0.0000	77.1553	77.1553	0.0143	0.0000	77.5134

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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	4.9000e-004	0.0145	3.8600e-003	3.0000e-005	8.5000e-004	7.0000e-005	9.2000e-004	2.4000e-004	7.0000e-005	3.1000e-004	0.0000	3.3642	3.3642	2.6000e-004	0.0000	3.3707
Worker	1.1000e-003	8.1000e-004	7.9600e-003	2.0000e-005	2.3900e-003	2.0000e-005	2.4000e-003	6.3000e-004	2.0000e-005	6.5000e-004	0.0000	2.1565	2.1565	6.0000e-005	0.0000	2.1581
Total	1.5900e-003	0.0153	0.0118	5.0000e-005	3.2400e-003	9.0000e-005	3.3200e-003	8.7000e-004	9.0000e-005	9.6000e-004	0.0000	5.5207	5.5207	3.2000e-004	0.0000	5.5288

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	0.1042	0.7841	0.7417	1.2700e-003		0.0394	0.0394		0.0380	0.0380	0.0000	104.3899	104.3899	0.0186	0.0000	104.8558
Total	0.1042	0.7841	0.7417	1.2700e-003		0.0394	0.0394		0.0380	0.0380	0.0000	104.3899	104.3899	0.0186	0.0000	104.8558

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3.4 Building Construction - 2021**Unmitigated Construction Off-Site**

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	5.3000e-004	0.0177	4.7300e-003	5.0000e-005	1.1400e-003	4.0000e-005	1.1800e-003	3.3000e-004	4.0000e-005	3.7000e-004	0.0000	4.5098	4.5098	3.3000e-004	0.0000	4.5182
Worker	1.4000e-003	1.0000e-003	0.0101	3.0000e-005	3.2300e-003	2.0000e-005	3.2500e-003	8.6000e-004	2.0000e-005	8.8000e-004	0.0000	2.8196	2.8196	8.0000e-005	0.0000	2.8216
Total	1.9300e-003	0.0187	0.0148	8.0000e-005	4.3700e-003	6.0000e-005	4.4300e-003	1.1900e-003	6.0000e-005	1.2500e-003	0.0000	7.3294	7.3294	4.1000e-004	0.0000	7.3398

Mitigated Construction On-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr										MT/yr					
Off-Road	0.1042	0.7841	0.7417	1.2700e-003		0.0394	0.0394		0.0380	0.0380	0.0000	104.3898	104.3898	0.0186	0.0000	104.8557
Total	0.1042	0.7841	0.7417	1.2700e-003		0.0394	0.0394		0.0380	0.0380	0.0000	104.3898	104.3898	0.0186	0.0000	104.8557

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3.4 Building Construction - 2021**Mitigated Construction Off-Site**

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	5.3000e-004	0.0177	4.7300e-003	5.0000e-005	1.1400e-003	4.0000e-005	1.1800e-003	3.3000e-004	4.0000e-005	3.7000e-004	0.0000	4.5098	4.5098	3.3000e-004	0.0000	4.5182
Worker	1.4000e-003	1.0000e-003	0.0101	3.0000e-005	3.2300e-003	2.0000e-005	3.2500e-003	8.6000e-004	2.0000e-005	8.8000e-004	0.0000	2.8196	2.8196	8.0000e-005	0.0000	2.8216
Total	1.9300e-003	0.0187	0.0148	8.0000e-005	4.3700e-003	6.0000e-005	4.4300e-003	1.1900e-003	6.0000e-005	1.2500e-003	0.0000	7.3294	7.3294	4.1000e-004	0.0000	7.3398

3.5 Paving - 2021**Unmitigated Construction On-Site**

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr										MT/yr					
Off-Road	3.8700e-003	0.0387	0.0443	7.0000e-005		2.0800e-003	2.0800e-003	1.9100e-003	1.9100e-003	1.9100e-003	0.0000	5.8825	5.8825	1.8600e-003	0.0000	5.9291
Paving	9.2000e-004					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	4.7900e-003	0.0387	0.0443	7.0000e-005		2.0800e-003	2.0800e-003	1.9100e-003	1.9100e-003	1.9100e-003	0.0000	5.8825	5.8825	1.8600e-003	0.0000	5.9291

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3.5 Paving - 2021**Unmitigated Construction Off-Site**

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.3000e-004	1.6000e-004	1.6200e-003	1.0000e-005	5.2000e-004	0.0000	5.2000e-004	1.4000e-004	0.0000	1.4000e-004	0.0000	0.4553	0.4553	1.0000e-005	0.0000	0.4557
Total	2.3000e-004	1.6000e-004	1.6200e-003	1.0000e-005	5.2000e-004	0.0000	5.2000e-004	1.4000e-004	0.0000	1.4000e-004	0.0000	0.4553	0.4553	1.0000e-005	0.0000	0.4557

Mitigated Construction On-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr										MT/yr					
Off-Road	3.8700e-003	0.0387	0.0443	7.0000e-005		2.0800e-003	2.0800e-003	1.9100e-003	1.9100e-003	1.9100e-003	0.0000	5.8825	5.8825	1.8600e-003	0.0000	5.9291
Paving	9.2000e-004					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	4.7900e-003	0.0387	0.0443	7.0000e-005		2.0800e-003	2.0800e-003	1.9100e-003	1.9100e-003	1.9100e-003	0.0000	5.8825	5.8825	1.8600e-003	0.0000	5.9291

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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	2.3000e-004	1.6000e-004	1.6200e-003	1.0000e-005	5.2000e-004	0.0000	5.2000e-004	1.4000e-004	0.0000	1.4000e-004	0.0000	0.4553	0.4553	1.0000e-005	0.0000	0.4557
Total	2.3000e-004	1.6000e-004	1.6200e-003	1.0000e-005	5.2000e-004	0.0000	5.2000e-004	1.4000e-004	0.0000	1.4000e-004	0.0000	0.4553	0.4553	1.0000e-005	0.0000	0.4557

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	0.1005					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.0900e-003	7.6300e-003	9.0900e-003	1.0000e-005		4.7000e-004	4.7000e-004	4.7000e-004	4.7000e-004	4.7000e-004	0.0000	1.2766	1.2766	9.0000e-005	0.0000	1.2788
Total	0.1016	7.6300e-003	9.0900e-003	1.0000e-005		4.7000e-004	4.7000e-004	4.7000e-004	4.7000e-004	4.7000e-004	0.0000	1.2766	1.2766	9.0000e-005	0.0000	1.2788

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3.6 Architectural Coating - 2021**Unmitigated Construction Off-Site**

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.0000e-005	1.0000e-005	1.2000e-004	0.0000	4.0000e-005	0.0000	4.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0350	0.0350	0.0000	0.0000	0.0351
Total	2.0000e-005	1.0000e-005	1.2000e-004	0.0000	4.0000e-005	0.0000	4.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0350	0.0350	0.0000	0.0000	0.0351

Mitigated Construction On-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr										MT/yr					
Archit. Coating	0.1005					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.0900e-003	7.6300e-003	9.0900e-003	1.0000e-005		4.7000e-004	4.7000e-004	4.7000e-004	4.7000e-004	4.7000e-004	0.0000	1.2766	1.2766	9.0000e-005	0.0000	1.2788
Total	0.1016	7.6300e-003	9.0900e-003	1.0000e-005		4.7000e-004	4.7000e-004		4.7000e-004	4.7000e-004	0.0000	1.2766	1.2766	9.0000e-005	0.0000	1.2788

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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	2.0000e-005	1.0000e-005	1.2000e-004	0.0000	4.0000e-005	0.0000	4.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0350	0.0350	0.0000	0.0000	0.0351
Total	2.0000e-005	1.0000e-005	1.2000e-004	0.0000	4.0000e-005	0.0000	4.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0350	0.0350	0.0000	0.0000	0.0351

4.0 Operational Detail - Mobile**4.1 Mitigation Measures Mobile**

Increase Transit Accessibility

Improve Pedestrian Network

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	ROG	NOx	CO	SO2	Fugitive 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	0.6957	2.4461	4.8994	0.0106	0.7403	0.0105	0.7508	0.1983	9.7700e-003	0.2080	0.0000	979.5296	979.5296	0.0760	0.0000	981.4293
Unmitigated	0.7270	2.6413	5.5813	0.0134	0.9973	0.0128	1.0101	0.2671	0.0119	0.2790	0.0000	1,239.8802	1,239.8802	0.0877	0.0000	1,242.0738

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate				Unmitigated		Mitigated	
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT	Annual VMT	Annual VMT	Annual VMT
Convenience Market (24 Hour)	3,474.80	3,474.80	3,474.80	2,646,328	2,646,328	1,964,398		
Gasoline/Service Station	0.00	0.00	0.00					
Parking Lot	0.00	0.00	0.00					
Total	3,474.80	3,474.80	3,474.80	2,646,328	2,646,328	1,964,398		

4.3 Trip Type Information

Land Use	Miles				Trip %				Trip Purpose %			
	H-W or C-W	H-S or C-C	H-O or C-C	H-W or C-NW	H-W or C-W	H-S or C-C	H-O or C-C	H-O or C-NW	Primary	Diverted	Pass-by	Pass-by
Convenience Market (24 Hour)	9.50	7.30	7.30	7.30	0.90	80.10	19.00	19.00	24	15	61	61
Gasoline/Service Station	9.50	7.30	7.30	7.30	2.00	79.00	19.00	19.00	14	27	59	59
Parking Lot	9.50	7.30	7.30	7.30	0.00	0.00	0.00	0.00	0	0	0	0

4.4 Fleet Mix

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Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Convenience Market (24 Hour)	0.593936	0.041843	0.182569	0.108325	0.016436	0.005513	0.015940	0.023523	0.001912	0.001972	0.006090	0.000748	0.001193
Gasoline/Service Station	0.593936	0.041843	0.182569	0.108325	0.016436	0.005513	0.015940	0.023523	0.001912	0.001972	0.006090	0.000748	0.001193
Parking Lot	0.593936	0.041843	0.182569	0.108325	0.016436	0.005513	0.015940	0.023523	0.001912	0.001972	0.006090	0.000748	0.001193

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Install High Efficiency Lighting

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
tons/yr																
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	25.5336	25.5336	1.0300e-003	2.1000e-004	25.6226
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	29.5583	29.5583	1.1900e-003	2.5000e-004	29.6614
NaturalGas Mitigated	3.2000e-004	2.8700e-003	2.4100e-003	2.0000e-005		2.2000e-004	2.2000e-004		2.2000e-004	2.2000e-004	0.0000	3.1292	3.1292	6.0000e-005	6.0000e-005	3.1478
NaturalGas Unmitigated	3.2000e-004	2.8700e-003	2.4100e-003	2.0000e-005		2.2000e-004	2.2000e-004		2.2000e-004	2.2000e-004	0.0000	3.1292	3.1292	6.0000e-005	6.0000e-005	3.1478

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5.3 Energy by Land Use - Electricity**Unmitigated**

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Convenience Market (24 Hour)	51345.3	16.7801	6.8000e-004	1.4000e-004	16.8386
Gasoline/Service Station	35600	11.6344	4.7000e-004	1.0000e-004	11.6750
Parking Lot	3500	1.1438	5.0000e-005	1.0000e-005	1.1478
Total		29.5583	1.2000e-003	2.5000e-004	29.6614

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Convenience Market (24 Hour)	43717.1	14.2871	5.8000e-004	1.2000e-004	14.3370
Gasoline/Service Station	31962.9	10.4458	4.2000e-004	9.0000e-005	10.4822
Parking Lot	2450	0.8007	3.0000e-005	1.0000e-005	0.8035
Total		25.5336	1.0300e-003	2.2000e-004	25.6226

6.0 Area Detail

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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	0.0434	0.0000	4.2000e-004	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	8.1000e-004	8.1000e-004	0.0000	0.0000	8.6000e-004
Unmitigated	0.0434	0.0000	4.2000e-004	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	8.1000e-004	8.1000e-004	0.0000	0.0000	8.6000e-004

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	0.0101					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0333					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	4.0000e-005	0.0000	4.2000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	8.1000e-004	8.1000e-004	0.0000	0.0000	8.6000e-004
Total	0.0434	0.0000	4.2000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	8.1000e-004	8.1000e-004	0.0000	0.0000	8.6000e-004

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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	0.0101					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0333					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	4.0000e-005	0.0000	4.2000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	8.1000e-004	8.1000e-004	0.0000	0.0000	8.6000e-004
Total	0.0434	0.0000	4.2000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	8.1000e-004	8.1000e-004	0.0000	0.0000	8.6000e-004

7.0 Water Detail**7.1 Mitigation Measures Water**

- Install Low Flow Bathroom Faucet
- Install Low Flow Kitchen Faucet
- Install Low Flow Toilet
- Use Water Efficient Irrigation System

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	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	3.0665	0.0143	3.6000e-004	3.5308
Unmitigated	3.5041	0.0169	4.2000e-004	4.0539

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Convenience Market (24 Hour)	0.302957 / 0.185683	2.0595	9.9500e-003	2.5000e-004	2.3826
Gasoline/Service Station	0.21251 / 0.130248	1.4446	6.9800e-003	1.7000e-004	1.6713
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		3.5041	0.0169	4.2000e-004	4.0539

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7.2 Water by Land Use**Mitigated**

	Indoor/Outdoor Use	Total CO ₂	CH ₄	N ₂ O	CO ₂ e
Land Use	Mgal	MT/yr			
Convenience Market (24 Hour)	0.255695 / 0.174356	1.8023	8.4000e-003	2.1000e-004	2.0752
Gasoline/Service Station	0.179359 / 0.122303	1.2642	5.8900e-003	1.5000e-004	1.4557
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		3.0665	0.0143	3.6000e-004	3.5308

8.0 Waste Detail**8.1 Mitigation Measures Waste**

Institute Recycling and Composting Services

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Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	2.1223	0.1254	0.0000	5.2578
Unmitigated	4.2445	0.2509	0.0000	10.5157

8.2 Waste by Land Use**Unmitigated**

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Convenience Market (24 Hour)	12.29	2.4948	0.1474	0.0000	6.1807
Gasoline/Service Station	8.62	1.7498	0.1034	0.0000	4.3350
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Total		4.2445	0.2509	0.0000	10.5157

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8.2 Waste by Land Use**Mitigated**

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Convenience Market (24 Hour)	6.145	1.2474	0.0737	0.0000	3.0903
Gasoline/Service Station	4.31	0.8749	0.0517	0.0000	2.1675
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Total		2.1223	0.1254	0.0000	5.2578

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
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10.0 Stationary Equipment**Fire Pumps and Emergency Generators**

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

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

Equipment Type	Number
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11.0 Vegetation
