APPENDIX C – Air Quality and Greenhouse Gas Emissions Impact Analysis, dated July 8, 2022, prepared by Vista Environmental.

AIR QUALITY AND GREENHOUSE GAS EMISSIONS IMPACT ANALYSIS

VIDAL SOLAR PROJECT

COUNTY OF SAN BERNARDINO

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ACRONYMS AND ABBREVIATIONS

AB	Assembly Bill
AQMP	Air Quality Management Plan
BACT	Best Available Control Technology
CAAQS	California Ambient Air Quality Standards
CalEEMod	California Emissions Estimator Model
CalEPA	California Environmental Protection Agency
CAPCOA	California Air Pollution Control Officers Association
CARB	California Air Resources Board
CCAA	California Clean Air Act
CEC	California Energy Commission
CEQA	California Environmental Quality Act
CFCs	chlorofluorocarbons
Cf_4	tetrafluoromethane
C_2F_6	hexafluoroethane
C_2H_6	ethane
CH_4	Methane
CO	Carbon monoxide
CO_2	Carbon dioxide
CO_2e	Carbon dioxide equivalent
County	County of San Bernardino
CPUC	California Public Utilities Commission
DPM	Diesel particulate matter
EPA	Environmental Protection Agency
ºF	Fahrenheit
FTIP	Federal Transportation Improvement Program
GHG	Greenhouse gas
GWP	Global warming potential
HAP	Hazardous Air Pollutants
HFCs	Hydrofluorocarbons
IPCC	International Panel on Climate Change
LCFS	Low Carbon Fuel Standard

MDAB	Mojave Desert Air Basin
MDAQMD	Mojave Desert Air Quality Management District
$MMTCO_2e$	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
OPR	Office of Planning and Research
Pfc	Perfluorocarbons
PM	Particle matter
PM10	Particles that are less than 10 micrometers in diameter
PM2.5	Particles that are less than 2.5 micrometers in diameter
PPM	Parts per million
PPB	Parts per billion
PPT	Parts per trillion
RTIP	Regional Transportation Improvement Plan
RTP	Regional Transportation Plan
SAR	Second Assessment Report
SB	Senate Bill
SCAQMD	South Coast Air Quality Management District
SBCOG	San Bernardino Council of Governments
SCS	Sustainable communities strategy
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 Vidal Solar 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 and 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 Mojave Desert Air Quality Management District's (MDAQMD) 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 all applicable GHG emissions reduction plans and policies.

1.2 Site Location and Study Area

The approximately 1,220-acre project site is located approximately 2.5 miles southeast of the Town of Vidal, an unincorporated area of San Bernardino County (County) that is located just east of U.S. Route 95, just north of the Riverside County border, and just west of the Colorado River. The project location and vicinity map is shown in Figure 1.

Sensitive Receptors in Project Vicinity

The nearest sensitive receptor to the project site is an unoccupied home that is located as near as 740 feet west of the project site and is located on the west side of U.S. 95. The location of the nearest unoccupied home is shown in Figure 2. The nearest occupied residence is the existing residence located over 1,600 feet to the north along Old Parker Road.

1.3 Proposed Project Description

The proposed project consists of the development of a photovoltaic (PV) solar energy facility that would include: PV panels, a battery energy storage system (BESS), fencing, service roads, a power collection system, communication cables, overhead and underground transmission lines, electrical switchyards, a project substation and a Western Power Administration (WAPA) substation that will connect to the existing 161 kilovolt overhead transmission lines and operations and maintenance facilities. The proposed site plan is shown in Figure 3.

Specifically, the proposed project will install a solar farm consisting of 391,872 PV solar modules located within solar arrays that will generate a total of 160 Megawatts (MW) and would cover approximately 810 acres. Within the proposed solar arrays located across the project site would be power conversion

stations (PCS), also known as inverters that would contain at a minimum one inverter and one transformer.

The proposed project would include a 640 MWh battery energy storage system (BESS). The BESS would likely consist of containers housing batteries connected in strings and mounted on racks. The container would likely include a transformer, monitoring equipment, and lighting and cooling equipment. The Project would utilize up to 47 containers (depending on container dimensions). Each container would be up to 80 feet long by 8 feet wide and 8 feet tall. The BESS is anticipated to utilize approximately 7.1 acres of the project site.

The proposed project would also include a project substation and a WAPA substation that are anticipated to include transformers, bus work, switches, breakers, and all associated equipment required to be compliant with utility grade interconnection services. The substation site would be cleared, graded, and graveled. A security fence would be installed around the perimeter for safety and security purposes. The two substations would cover approximately 7.5 acres of the project site and the BESS may be co-located within or adjacent to the substation yard.

In addition, the proposed project would include construction of new access roads (unpaved up to 20 feet wide), that would include an unpaved gravel onsite access road from U.S Route 95 to the proposed substations that would cover approximately 6 acres of the project site.

Construction of the proposed project is anticipated to start in the first quarter of 2023 and would last approximately 14 months. The onsite workforce is expected to average 220 workers per day with a peak up to 495 workers.

1.4 Executive Summary

Standard Air Quality, Energy, and GHG Regulatory Conditions

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

MDAQMD Rules

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

- Rule 401 Visible Emissions – Limits fugitive dust emissions;
- Rule 402 Nuisance – Controls the emissions of odors and other air contaminants;
- Rule 403 and 403.2 Fugitive Dust – Controls the emissions of fugitive dust;
- Rule 442 Solvents – Establishes VOC content limits in solvents;
- Rules 1103 Cutback and Emulsified Asphalt – Controls the VOC content in asphalt; and
- Rule 1113 Architectural Coatings - Controls the VOC content in paints and solvents

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?

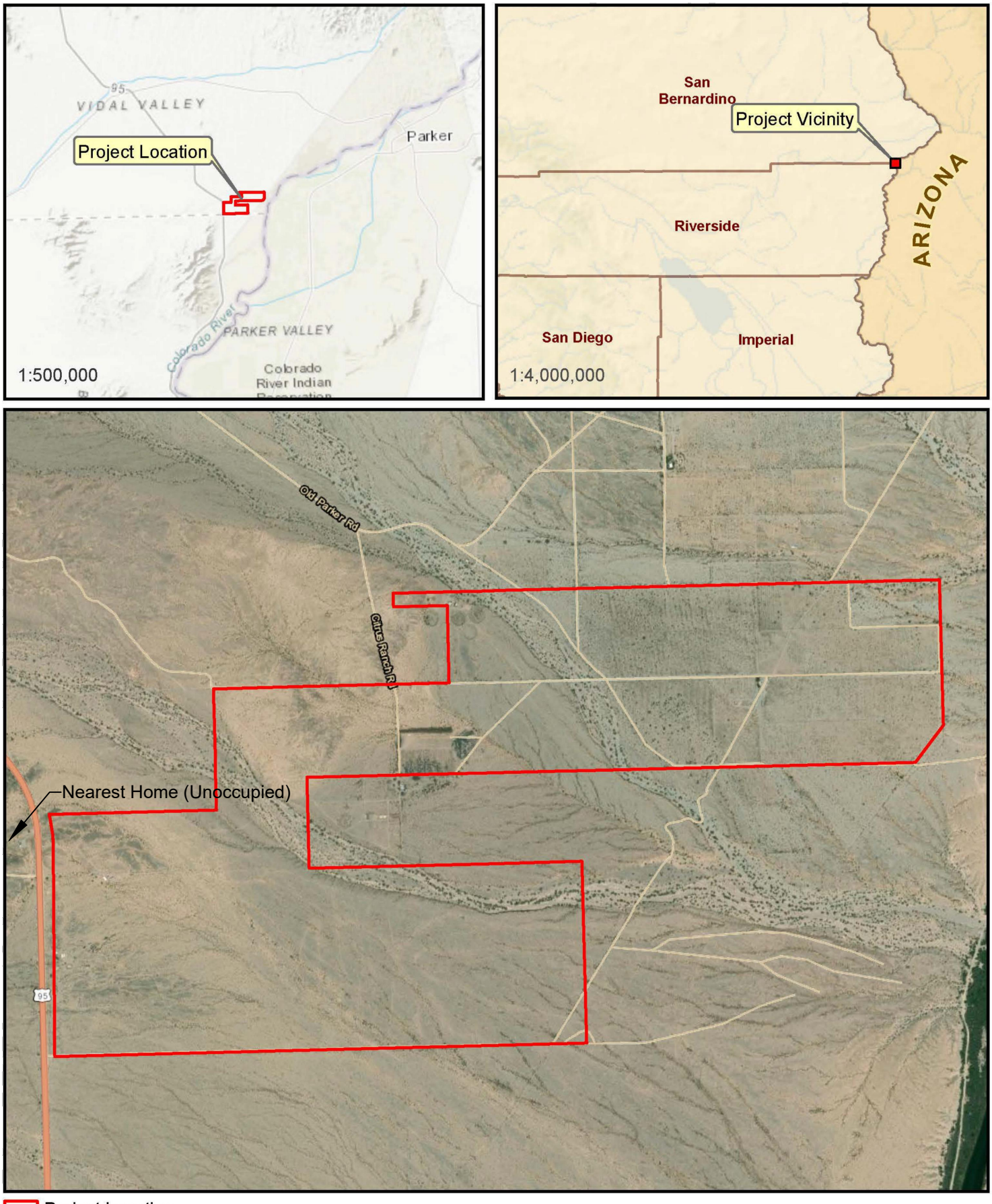
Less than significant impact.

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

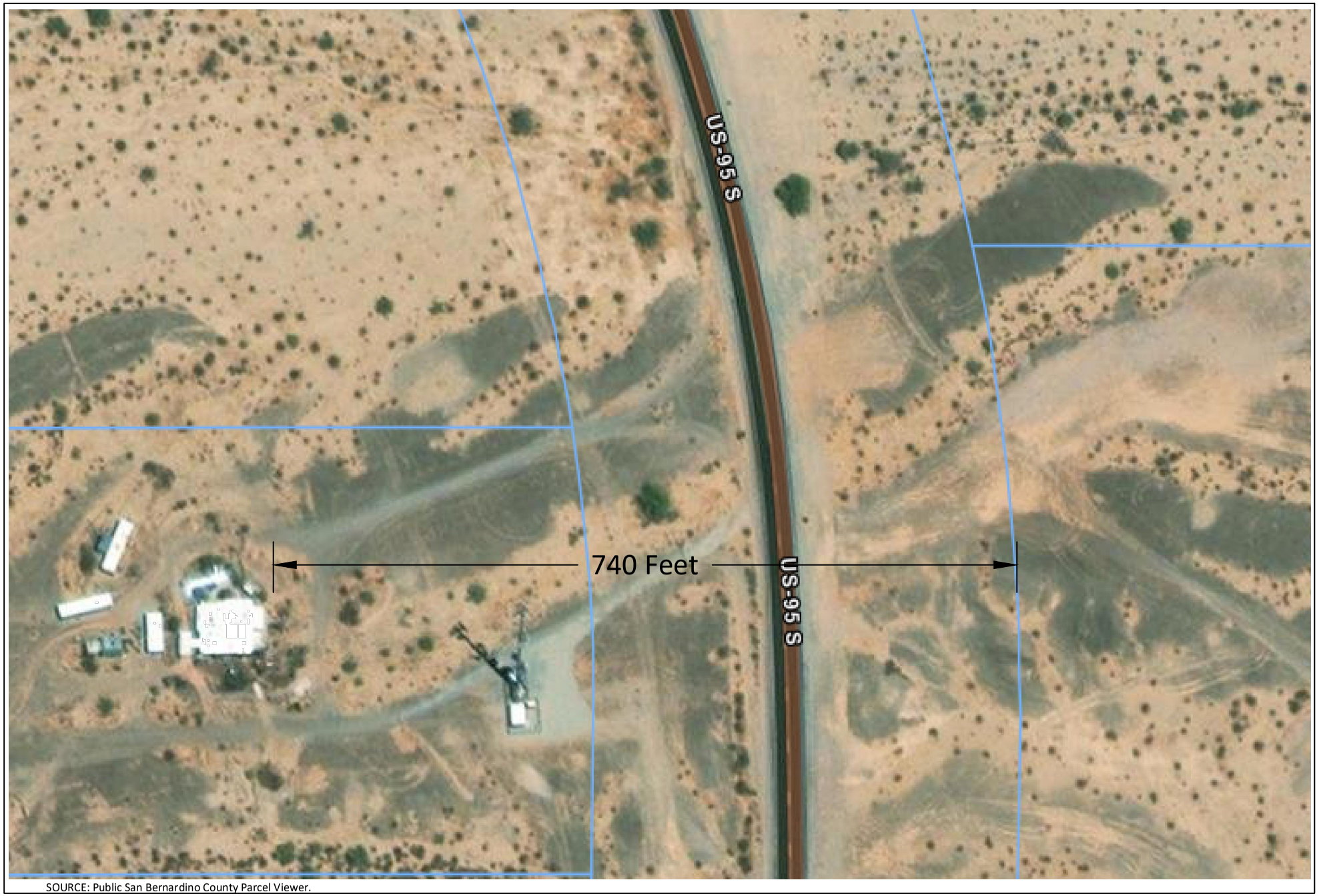
This analysis found that implementation of the State, MDAQMD, and County air quality and GHG emissions reductions regulations were adequate to limit criteria pollutants, toxic air contaminants, odors, and GHG emissions from the proposed project to less than significant levels. No mitigation measures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



SOURCE: Chambers Group.

VISTA ENVIRONMENTAL

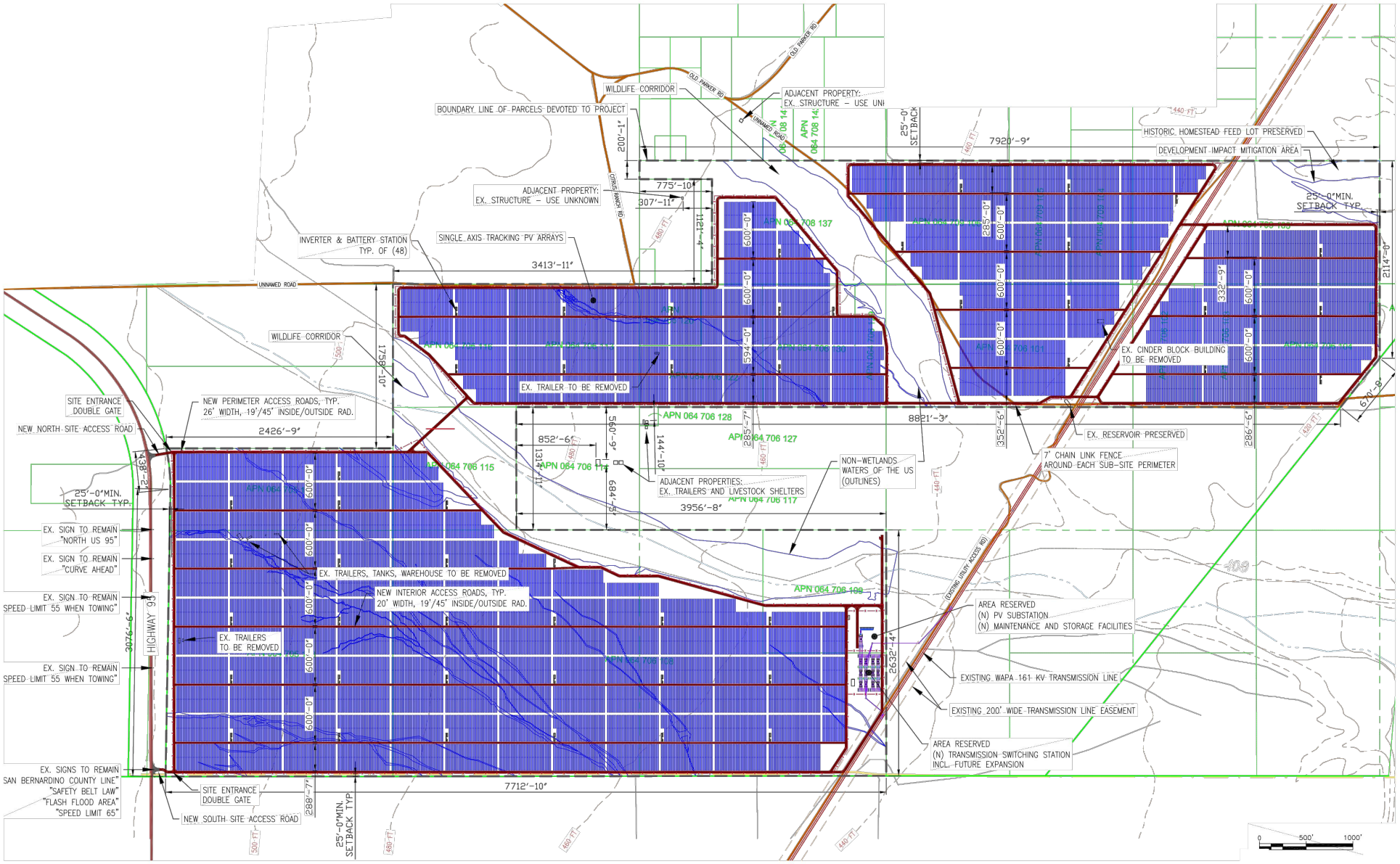
Figure 1
Project Location and Vicinity Map



SOURCE: Public San Bernardino County Parcel Viewer.

VISTA ENVIRONMENTAL

Figure 2
Location of Nearest Home (Unoccupied) on West Side of Project Site



SOURCE: CORE.

VISTA ENVIRONMENTAL

Figure 3
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, 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 United States Environmental Protection Agency (EPA) calls these pollutants "criteria" air pollutants because it regulates them by developing human health-based and/or environmentally-based criteria for setting permissible levels. The following provides descriptions of each of the criteria pollutants and ozone precursors.

Nitrogen Oxides

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

Ozone

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

Carbon Monoxide

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

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

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

Sulfur Oxides

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

Lead

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

Particulate Matter

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

Volatile Organic Compounds

Hydrocarbons are organic gases that are formed from hydrogen and carbon and sometimes other elements. Hydrocarbons that contribute to formation of O_3 are referred to and regulated as VOCs (also referred to as reactive organic gases). Combustion engine exhaust, oil refineries, and fossil-fueled power plants are the sources of hydrocarbons. Other sources of hydrocarbons include evaporation from petroleum fuels, solvents, dry cleaning solutions, and paint.

VOC is not classified as a criteria pollutant, since VOCs by themselves are not a known source of adverse health effects. The primary health effects of VOCs result from the formation of O_3 and its related health effects. High levels of VOCs in the atmosphere can interfere with oxygen intake by reducing the amount of available oxygen through displacement. Carcinogenic forms of hydrocarbons, such as benzene, are considered toxic air contaminants (TACs). There are no separate health standards for VOCs as a group.

2.2 Other Pollutants of Concern

Toxic Air Contaminants

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

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

According to *The California Almanac of Emissions and Air Quality 2013 Edition*, the majority of the estimated health risk from TACs can be attributed to relatively few compounds, the most important of which is diesel particulate matter (DPM). DPM is a subset of PM2.5 because the size of diesel particles are typically 2.5 microns and smaller. The identification of DPM as a TAC in 1998 led the 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.

Another TAC is asbestos that 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. Due to the distance to the nearest natural occurrences of asbestos, the project site is not likely to contain asbestos.

The MDAQMD CEQA Guidelines, February 2020 provide no discussion of Valley Fever, as such it is not an issue that needs to be discussed in the MDAQMD area.

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

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.

The following provides a description of the predominant GHGs and their global warming potential.

Carbon Dioxide

The natural production and absorption of CO_2 is achieved through the terrestrial biosphere and the ocean. However, humankind has altered the natural carbon cycle by burning coal, oil, natural gas, and wood. Since the industrial revolution began in the mid 1700s, each of these activities has increased in scale and distribution. CO_2 was the first GHG demonstrated to be increasing in atmospheric concentration with the first conclusive measurements being made in the last half of the 20th century. Prior to the industrial revolution, concentrations were fairly stable at 280 parts per million (ppm). The International Panel on Climate Change (IPCC) indicates that concentrations were 379 ppm in 2005, an increase of more than 30 percent. Left unchecked, the IPCC projects that concentration of carbon dioxide in the atmosphere is projected to increase to a minimum of 540 ppm by 2100 as a direct result of anthropogenic sources. This could result in an average global temperature rise of at least two degrees Celsius or 3.6 degrees Fahrenheit.

Methane

CH_4 is an extremely effective absorber of radiation, although its atmospheric concentration is less than that of CO_2. Its lifetime in the atmosphere is brief (10 to 12 years), compared to some other GHGs (such as CO_2, N_2O, and Chlorofluorocarbons (CFCs)). CH_4 has both natural and anthropogenic sources. It is released as part of the biological processes in low oxygen environments, such as in swamplands or in rice

production (at the roots of the plants). Over the last 50 years, human activities such as growing rice, raising cattle, using natural gas, and mining coal have added to the atmospheric concentration of methane. Other anthropocentric sources include fossil-fuel combustion and biomass burning.

Nitrous Oxide

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

Chlorofluorocarbons

CFCs are gases formed synthetically by replacing all hydrogen atoms in methane or ethane (C_2H_6) with chlorine and/or fluorine atoms. CFCs are nontoxic, nonflammable, insoluble, and chemically unreactive in the troposphere (the level of air at the Earth's surface). CFCs have no natural source, but were first synthesized in 1928. They were used for refrigerants, aerosol propellants, and cleaning solvents. Due to the discovery that they are able to destroy stratospheric ozone, a global effort to halt their production was undertaken and in 1989 the European Community agreed to ban CFCs by 2000 and subsequent treaties banned CFCs worldwide by 2010. This effort was extremely successful, and the levels of the major CFCs are now remaining level or declining. However, their long atmospheric lifetimes mean that some of the CFCs will remain in the atmosphere for over 100 years.

Hydrofluorocarbons

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

Perfluorocarbons

Perfluorocarbons (PFCs) have stable molecular structures and do not break down through the chemical processes in the lower atmosphere. High-energy ultraviolet rays about 60 kilometers above Earth's surface are able to destroy the compounds. Because of this, PFCs have very long lifetimes, between 10,000 and 50,000 years. Two common PFCs are tetrafluoromethane (CF_4) and hexafluoroethane (C_2F_6). Concentrations of CF_4 in the atmosphere are over 70 ppt. The two main sources of PFCs are primary aluminum production and semiconductor manufacturing.

Sulfur Hexafluoride

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

distribution equipment, in the magnesium industry, in semiconductor manufacturing, and as a tracer gas for leak detection.

Aerosols

Aerosols are particles emitted into the air through burning biomass (plant material) and fossil fuels. Aerosols can warm the atmosphere by absorbing and emitting heat and can cool the atmosphere by reflecting light. Cloud formation can also be affected by aerosols. Sulfate aerosols are emitted when fuel containing sulfur is burned. Black carbon (or soot) is emitted during biomass burning due to the incomplete combustion of fossil fuels. Particulate matter regulation has been lowering aerosol concentrations in the United States; however, global concentrations are likely increasing.

3.2 Global Warming Potential

GHGs have varying global warming potential (GWP). The GWP is the potential of a gas or aerosol to trap heat in the atmosphere; it is the cumulative radiative forcing effects of a gas over a specified time horizon resulting from the emission of a unit mass of gas relative to the reference gas, CO_2. The GHGs listed by the IPCC and the CEQA Guidelines are discussed in this section in order of abundance in the atmosphere. Water vapor, the most abundant GHG, is not included in this list because its natural concentrations and fluctuations far outweigh its anthropogenic (human-made) sources. To simplify reporting and analysis, GHGs are commonly defined in terms of their GWP. The IPCC defines the GWP of various GHG emissions on a normalized scale that recasts all GHG emissions in terms of CO_2e. As such, the GWP of CO_2 is equal to 1. The GWP values used in this analysis are based on the IPCC Second Assessment Report (SAR) and United Nations Framework Convention on Climate Change (UNFCCC) reporting guidelines, and are detailed in Table A. The SAR GWPs are used in CARB's California inventory and Assembly Bill (AB) 32 Scoping Plan estimates.

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

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

Notes:
[1] Defined as the half-life of the gas.
[2] Compared to the same quantity of CO_2 emissions and is based on the Intergovernmental Panel On Climate Change (IPCC) 2007 standard, which is utilized in CalEEMod (Version 2016.3.2),that is used in this report (CalEEMod user guide: Appendix A).
Definitions: ppm = parts per million; ppb = parts per billion; ppt = parts per trillion
Source: IPCC 2007, EPA 2015

3.3 Greenhouse Gas Emissions Inventory

According to the Carbon Dioxide Information Analysis Center[1], 9,855 $MMTCO_2e$ were created globally in the year 2014. According to the EPA, the breakdown of global GHG emissions by sector consists of: 25 percent from electricity and heat production; 21 percent from industry; 24 percent from agriculture, forestry and other land use activities; 14 percent from transportation; 6 percent from building energy use; and 10 percent from all other sources of energy use[2].

According to *Inventory of U.S. Greenhouse Gas Emissions and Sinks 1990-2019,* prepared by EPA, in 2019 total U.S. GHG emissions were 6,558 $MMTCO_2e$. Total U.S. emissions have increased by 4 percent between 1990 and 2016 and GHG emissions decreased by 13 percent between 2005 and 2019. The recent decrease in GHG emissions was a result of multiple factors, including population, economic growth, energy markets, and technological changes the include energy efficiency and energy fuel choices. Between 2018 and 2019, GHG emissions decreased by almost 2 percent due to multiple factors, including a one percent decrease in total energy use.

According to *California Greenhouse Gas Emissions for 2000 to 2019 Trends of Emissions and Other Indicators*, prepared by CARB, July 28, 2021, the State of California created 418.2 million metric tons of carbon dioxide equivalent ($MMTCO_2e$) in 2019. The 2019 emissions were 7.2 $MMTCO_2e$ lower than 2018 levels and almost 13 $MMTCO_2e$ below the State adopted year 2020 GHG limit of 431 $MMTCO_2e$. The breakdown of California GHG emissions by sector consists of: 39.7 percent from transportation; 21.1 percent from industrial; 14.1 percent from electricity generation; 7.6 percent from agriculture; 10.5 percent from residential and commercial buildings; 4.9 percent from high global warming potential sources, and 2.1 percent from waste.

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

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 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 Mojave Desert Air Basin (MDAB) has been designated by EPA for the national standards as a non-attainment area for ozone and PM10. Currently, the MDAB is in attainment with the national ambient air quality standards for PM2.5, CO, SO_2, and NO_2.

Table C – Mojave Desert Air Basin Attainment Status

Pollutant	Federal Designation	State Designation
Ozone (O_3)	Non-attainment*	Non-attainment
Respirable Particulate Matter (PM10)	Non-attainment**	Non-attainment
Fine Particulate Matter (PM2.5)	Unclassified/Attainment	Non-attainment*
Carbon Monoxide (CO)	Unclassified/Attainment	Attainment
Nitrogen Dioxide (NO_2)	Unclassified/Attainment	Attainment
Sulfur Dioxide (SO_2)	Unclassified/Attainment	Attainment

* Southwest corner of desert portion of San Bernardino County only;
** San Bernardino County portion only
Source: https://www.mdaqmd.ca.gov/home/showpublisheddocument/1267/636337468837000000

4.2 State – California Air Resources Board

The California Air Resources Board (CARB), which is a part of the California Environmental Protection Agency (CalEPA), 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 MDAB has been designated by the CARB as a non-attainment area for ozone, PM10, and PM2.5. Currently, the MDAB is in attainment with the ambient air quality standards for CO, NO_2, and SO_2.

The following lists the State's CCR air quality emission rules that are applicable, but not limited to solar projects in the State.

Assembly Bill 2588

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

CARB Regulation for In-Use Off-Road Diesel Vehicles

On July 26, 2007, the CARB adopted CCR Title 13, Article 4.8, Chapter 9, Section 2449 to reduce DPM and NOx emissions from in-use off-road heavy-duty diesel vehicles in California. Such vehicles are used in construction, mining, and industrial operations. The regulation limits idling to no more than five consecutive minutes, requires reporting and labeling, and requires disclosure of the regulation upon vehicle sale. Performance requirements of the rule are based on a fleet's average NOx emissions, which can be met by replacing older vehicles with newer, cleaner vehicles or by applying exhaust retrofits. The regulation was amended in 2010 to delay the original timeline of the performance requirement making the first compliance deadline January 1, 2014 for large fleets (over 5,000 horsepower), 2017 for medium fleets (2,501-5,000 horsepower), and 2019 for small fleets (2,500 horsepower or less). Currently, no commercial operation in California may add any equipment to their fleet that has a Tier 0 or Tier 1 engine. By January 1, 2018 medium and large fleets will be restricted from adding Tier 2 engines to their fleets and by January 2023, no commercial operation will be allowed to add Tier 2 engines to their fleets. It should be noted that commercial fleets may continue to use their existing Tier 0 and 1 equipment, if they can demonstrate that the average emissions from their entire fleet emissions meet the NOx emissions targets.

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

On December 12, 2008 the CARB adopted Resolution 08-43, which limits NOx, PM10 and PM2.5 emissions from on-road diesel truck fleets that operate in California. On October 12, 2009 Executive Order R-09-010 was adopted that codified Resolution 08-43 into Section 2025, title 13 of the California Code of

Regulations. This regulation requires that by the year 2023 all commercial diesel trucks that operate in California shall meet model year 2010 (Tier 4 Final) or latter emission standards. In the interim period, this regulation provides annual interim targets for fleet owners to meet. By January 1, 2014, 50 percent of a truck fleet is required to have installed Best Available Control Technology (BACT) for NOx emissions and 100 percent of a truck fleet installed BACT for PM10 emissions. This regulation also provides a few exemptions including a onetime per year 3-day pass for trucks registered outside of California. All on-road diesel trucks utilized during construction of the proposed project will be required to comply with Resolution 08-43.

4.3 Regional – Mojave Desert Air Basin

The MDAQMD is the agency principally responsible for comprehensive air pollution control in the San Bernardino County portion of the MDAB. To that end, as a regional agency, the MDAQMD works directly with the County and incorporated communities as well as the military bases within the MDAB to control air emissions within the MDAB. The applicable attainment plans adopted by the MDAQMD are described below.

MDAQMD Federal 8-hour Ozone Attainment Plan (Western Mojave Desert Non-Attainment Area)

On April 15, 2004, the USEPA designated the Western Mojave Desert nonattainment area as nonattainment for the 8-hour ozone NAAQS pursuant to the provisions of the Federal CAA. The Western Mojave Desert Ozone Nonattainment Area includes part of San Bernardino County, a portion of the MDAQMD, as well as the Antelope Valley portion of Los Angeles County. As a result, the MDAQMD prepared its Ozone Attainment Plan in June 2008 to: (1) demonstrate that the MDAQMD will meet the primary required Federal ozone planning milestones, attainment of the 8-hour ozone NAAQS by 2019 (revised June 2021); (2) present the progress the MDAQMD will make towards meeting all required ozone planning milestones; and (3) discuss the newest 0.075 part per million 8-hour ozone NAAQS, preparatory to an expected non-attainment designation for the new NAAQS. In February 2017, MDAQMD updated the 2008 Ozone Attainment Plan and adopted the MDAQMD Federal 75 ppb Ozone Attainment Plan (Western Mojave Desert Nonattainment Plan) to satisfy FCAA requirements that the MDAQMD develop a plan to attain the 0.075 ppm 8-hour ozone NAAQS.

Final Mojave Desert Planning Area Federal Particulate Matter 10 (PM10) Attainment Plan

On January 20, 1994, the USEPA re-designated a significant portion of the Mojave Desert as a nonattainment area with respect to the NAAQS for PM10. This nonattainment area covers a vast geographical region, including the urban areas of Victor Valley and Barstow, the Morongo Basin, along with the rural desert environs reaching to the Nevada and Arizona state lines. The PM10 Attainment Plan was prepared in July 1995 to provide a complete description and submittal to USEPA of the PM10 attainment planning elements which the MDAQMD will implement to bring the nonattainment area into compliance with federal law. Most importantly, the PM10 Attainment Plan serves as a planning tool for reducing PM10 pollution. The PM10 Attainment Plan sets forth an air quality improvement program for the region which will be implemented by both the public and private sector of the community.

In addition to the above attainment plans, the MDAQMD has adopted the following rules that are applicable to the proposed project.

Rule 401 – Visible Emissions

Rule 401 limits the discharge of any emissions source, including fugitive dust, for a period of more than three minutes in any hour, which creates an observable opacity of 20 percent or more (as dark in shade as No. 1 on the Ringelmann Chart).

Rule 402 - Nuisance

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

Rules 403 and 403.2 - Fugitive Dust

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

- Do not allow any track out of material onto public roadways and remove all track out at the end of each workday.
- Cover loaded haul vehicles while operating on public roads.
- Use periodic watering on active sites and pre-water all areas prior to clearing and soil moving activities.
- Apply nontoxic chemical stabilizers according to manufacturer specifications to all construction areas.
- Replant all disturbed area as soon as practical.
- Suspend all grading activities during high wind conditions.

Rule 442 – Usage of Solvents

Rule 442 governs the use manufacturing of paint thinners and multi-purpose solvents that are used in thinning of coating materials, cleaning of coating application equipment, and other solvent cleaning operations. This rule regulates the VOC content of solvents used during construction. Solvents used during construction and operation of the proposed project must comply with MDAQMD Rule 442.

Rules 1103 – Cutback and Emulsified Asphalt

Rule 1103 governs the sale, use, and manufacturing of asphalt and limits the VOC content in asphalt. This rule regulates the VOC contents of asphalt used during construction as well as any on-going maintenance during operations. Therefore, all asphalt used during construction and operation of the proposed project must comply with MDAQMD Rule 1103.

Rule 1113 – Architectural Coatings

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

4.4 Local – County of San Bernardino

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

San Bernardino County Countywide Plan / Policy Plan

The County's Countywide Plan, adopted on October 27, 2020, serves as a set of plans and tools for the County's unincorporated communities and complements the Countywide vision. The Countywide Plan consists of the Policy Plan, Business Plan, and Community Action Guides, together with the supporting environmental clearance. The Policy Plan is a component of the Countywide Plan that is an update and expansion of the County's General Plan for the unincorporated areas. The following goals and policies are applicable to the Project:

Natural Resources Element

Goal NR-1: Air Quality
Air quality that promotes health and wellness of residents in San Bernardino County through improvements in locally generated emission.

Policies

NR-1.1 Land use. We promote compact and transit-oriented development countywide and regulate the types and locations of development in unincorporated areas to minimize vehicle miles traveled and greenhouse gas emissions.

NR-1.2 Indoor air quality. We promote the improvement of indoor air quality through the California Building and Energy Codes and through the provision of public health programs and services.

NR-1.3 Coordination on air pollution. We collaborate with air quality management districts and other local agencies to monitor and reduce major pollutants affecting the county at the emission source.

NR-1.6 Fugitive dust emissions. We coordinate with air quality management districts on requirements for dust control plans, revegetation, and soil compaction to prevent fugitive dust emissions.

NR-1.8 Construction and operations. We invest in County facilities and fleet vehicles to improve energy efficiency and reduce emissions. We encourage County contractors and other builders and developers to use low-emission construction vehicles and equipment to improve air quality and reduce emissions.

NR-1.9 Building design and upgrades. We use the CALGreen Code to meet energy efficiency standards for new buildings and encourage the upgrading of existing buildings to incorporate design elements, building materials, and fixtures that improve environmental sustainability and reduce emissions.

Renewable Energy Element

Policies

RE 4.1 Apply standards to the design, siting, and operation of all renewable energy facilities that protect the environment, including sensitive biological resources, air quality, water supply and quality, cultural, archaeological, paleontological and scenic resources.

RE4.3.1 Define measures required to minimize ground disturbance, soil erosion, flooding, and blowing of sand and dust, with appropriate enforcements mechanisms in the Development Code

Hazards Element

Policies

HZ-3.3 Air quality management districts establish community emissions reduction plans for unincorporated environmental justice focus areas that should be considered in these areas. With particular emphasis in addressing the types of pollution identified in the Hazard Element table.

San Bernardino County Development Code

Section 83.01.040

(c) Diesel Exhaust Emissions Control Measures. The following emissions control measures shall apply to all discretionary land use projects approved by the County on or after January 15, 2009:

(1) On-Road Diesel Vehicles. On-road diesel vehicles are regulated by the State of California Air Resources Board.

(2) Off-Road Diesel Vehicle/Equipment Operations. All business establishments and contractors that use off-road diesel vehicle/equipment as part of their normal business operations shall adhere to the following measures during their operations in order to reduce diesel particulate matter emissions from diesel-fueled engines:

(A) Off-road vehicles/equipment shall not be left idling on site for periods in excess of five minutes. The idling limit does not apply to:

(I) Idling when queuing;

(II) Idling to verify that the vehicle is in safe operating condition;

(III) Idling for testing, servicing, repairing or diagnostic purposes;

(IV) Idling necessary to accomplish work for which the vehicle was designed (such as operating a crane);

(V) Idling required to bring the machine system to operating temperature; and

(VI) Idling necessary to ensure safe operation of the vehicle.

(B) Use reformulated ultra-low-sulfur diesel fuel in equipment and use equipment certified by the U.S. Environmental Protection Agency (EPA) or that pre-dates EPA regulations.

(C) Maintain engines in good working order to reduce emissions.

(D) Signs shall be posted requiring vehicle drivers to turn off engines when parked.

(E) Any requirements or standards subsequently adopted by the South Coast Air Quality Management District, the Mojave Desert Air Quality Management District or the California Air Resources Board.

(F) Provide temporary traffic control during all phases of construction.

(G) On-site electrical power connections shall be provided for electric construction tools to eliminate the need for diesel-powered electric generators, where feasible.

(H) Maintain construction equipment engines in good working order to reduce emissions. The developer shall have each contractor certify that all construction equipment is properly serviced and maintained in good operating condition.

(I) Contractors shall use ultra-low sulfur diesel fuel for stationary construction equipment as required by Air Quality Management District (AQMD) Rules 431.1 and 431.2 to reduce the release of undesirable emissions.

(J) Substitute electric and gasoline-powered equipment for diesel-powered equipment, where feasible.

Section 84.29.035

(c) The finding of fact shall include the following:

(20) The proposed commercial solar energy generation facility will be designed, constructed, and operated so as to minimize dust generation, including provision of sufficient watering of excavated or graded soil during construction to prevent excessive dust. Watering will occur at a minimum of three (3) times daily on disturbed soil areas with active operations, unless dust is otherwise controlled by rainfall or use of a dust palliative, or other approved dust control measure.

(21) All clearing, grading, earth moving, and excavation activities will cease during period of winds greater than 20 miles per hour (mph), averaged over one hour, or when dust plumes of 20 percent or greater opacity impact public roads, occupied structures, or neighboring property, and in conformance with AQMD regulations.

(22) For sites where the boundary of a new commercial solar energy generation facility will be located within one-quarter mile of a primary residential structure, an adequate wind barrier will be provided to reduce potentially blowing dust in the direction of the residence during construction and ongoing operation of the commercial solar energy generation facility.

(23) Any unpaved roads and access ways will be treated and maintained with a dust palliative or graveled or treated by another approved dust control Chapter 83.09 of the Development Code.

(24) On-site vehicle speed will be limited to 15 mph.

5.0 GLOBAL CLIMATE CHANGE MANAGEMENT

The regulatory setting related to global climate change is addressed through the efforts of various 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 Federal – United States Environmental Protection Agency

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

In Massachusetts v. Environmental Protection Agency (Docket No. 05–1120), argued November 29, 2006 and decided April 2, 2007, the U.S. Supreme Court held that not only did the EPA have authority to regulate greenhouse gases, but the EPA's reasons for not regulating this area did not fit the statutory requirements. As such, the U.S. Supreme Court ruled that the EPA should be required to regulate CO_2 and other GHGs as pollutants under the federal Clean Air Act.

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

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

On August 3, 2015, the EPA announced the Clean Power Plan, emissions guidelines for U.S. states to follow in developing plans to reduce GHG emissions from existing fossil fuel-fired power plants (Federal Register Vol. 80, No. 205, October 23 2015). On February 9, 2016 the Supreme Court stayed implementation of the Clean Power Plan due to a legal challenge from 29 states and in April 2017, the Supreme Court put the case on a 60 day hold and directed both sides to make arguments for whether it should keep the case on hold indefinitely or close it and remand the issue to the EPA. On October 11, 2017, the EPA issued a formal proposal to repeal the Clean Power Plan, however the repeal of the Plan will require following the same rule-making system used to create regulations and will likely result in court challenges.

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

5.2 State

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

In 2008, CARB approved a Climate Change Scoping Plan that proposes a "comprehensive set of actions designed to reduce overall carbon GHG emissions in California, improve our environment, reduce our dependence on oil, diversify our energy sources, save energy, create new jobs, and enhance public health" (CARB 2008). The Climate Change Scoping Plan has a range of GHG reduction actions which include direct regulations; alternative compliance mechanisms; monetary and non-monetary incentives; voluntary actions; market-based mechanisms such as a cap-and-trade system. In 2014, CARB approved the First Update to the Climate Change Scoping Plan (CARB, 2014) that identifies additional strategies moving beyond the 2020 targets to the year 2050. On December 14, 2017 CARB adopted the California's 2017 Climate Change Scoping Plan, November 2017 (CARB, 2017) that provides specific statewide policies and measures to achieve the 2030 GHG reduction target of 40 percent below 1990 levels by 2030 and the aspirational 2050 GHG reduction target of 80 percent below 1990 levels by 2050. In addition, the State has passed the following laws directing CARB to develop actions to reduce GHG emissions, which are listed below in chronological order, with the most current first.

Executive Order N-79-20

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

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

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

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

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

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

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

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

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

Senate Bill 100 and Executive Order B-55-18

Senate Bill 100 (SB 100) was adopted September 2018 and the California Governor issued Executive Order B-55-18 in September 2018, shortly before the Global Climate Action Summit started in San Francisco. SB 100 and Executive Order B-55-18 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 *2020-2045 Regional Transportation Plan/Sustainable Communities Strategy* (Connect SoCal), adopted September 3, 2020 provides a 2035 GHG emission reduction target of 19 percent reduction over the 2005 per capita emissions levels. The Connect SoCal include new initiatives of land use, transportation and technology to meet the 2035 new 19 percent GHG emission reduction target for 2035. CARB is also charged with reviewing SCAG's RTP/SCS for consistency with its assigned targets.

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

Assembly Bill 1109

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

Executive Order S-1-07

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

In 2009 CARB approved the proposed regulation to implement the LCFS. The standard was challenged in the courts, but has been in effect since 2011 and was re-approved by the CARB in 2015. The LCFS is anticipated to reduce GHG emissions by about 16 MMT per year by 2020. The LCFS is designed to provide a framework that uses market mechanisms to spur the steady introduction of lower carbon fuels. The framework establishes performance standards that fuel producers and importers must meet annually.

Reformulated gasoline mixed with corn-derived ethanol and low-sulfur diesel fuel represent the baseline fuels. Lower carbon fuels may be ethanol, biodiesel, renewable diesel, or blends of these fuels with gasoline or diesel. Compressed natural gas and liquefied natural gas also may be low-carbon fuels. Hydrogen and electricity, when used in fuel cells or electric vehicles, are also considered as low-carbon fuels.

Senate Bill 97

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

Pursuant to the requirements of SB 97 as stated above, on December 30, 2009 the Natural Resources Agency adopted amendments to the State CEQA guidelines that addresses GHG emissions. The CEQA Guidelines Amendments changed 14 sections of the CEQA Guidelines and incorporated GHG language throughout the Guidelines. However, no GHG emissions thresholds of significance were provided and no specific mitigation measures were identified. The GHG emission reduction amendments went into effect on March 18, 2010 and are summarized below:

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

Assembly Bill 32

In 2006, the California State Legislature adopted AB 32, the California Global Warming Solutions Act of 2006. AB 32 requires CARB, to adopt rules and regulations that would achieve GHG emissions equivalent to statewide levels in 1990 by 2020 through an enforceable statewide emission cap which will be phased in starting in 2012. Emission reductions shall include carbon sequestration projects that would remove carbon from the atmosphere and utilize best management practices that are technologically feasible and cost effective.

In 2007 CARB released the calculated Year 1990 GHG emissions of 431 $MMTCO_2e$. The 2020 target of 431 $MMTCO_2e$ requires the reduction of 78 $MMTCO_2e$, or approximately 16 percent from the State's projected 2020 business as usual emissions of 509 $MMTCO_2e$ (CARB, 2014). Under AB 32, CARB was required to adopt regulations by January 1, 2011 to achieve reductions in GHGs to meet the 1990 cap by 2020. Early measures CARB took to lower GHG emissions included requiring operators of the largest industrial facilities that emit 25,000 metric tons of CO_2 in a calendar year to submit verification of GHG emissions by December 1, 2010. The CARB Board also approved nine discrete early action measures that include regulations affecting landfills, motor vehicle fuels, refrigerants in cars, port operations and other sources, all of which became enforceable on or before January 1, 2010.

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

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

Executive Order S-14-08

In 2008 the California Governor issued Executive Order S-14-08 that expedites the permitting process for renewable energy facilities, including the proposed solar PV project. Executive Order S-14-08 requires collaboration between the CEC and Department of Fish and Wildlife in order to reduce the permitting time.

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.

The EPA has performed a midterm evaluation of the longer-term standards for model years 2022-2025, and based on the findings of this midterm evaluation, the EPA proposed The Safer Affordable Fuel Efficient (SAFE) Vehicles Proposed Rule for Model Years 2021-2026 that amends the corporate average fuel economy (CAFE) and GHG emissions standards for light vehicles for model years 2021 through 2026. The SAFE Vehicles Rule was published on April 30, 2020 and made effective on June 29, 2020.

5.3 Regional – Mojave Desert Air Quality Management District

The MDAQMD is the agency principally responsible for comprehensive air pollution control that includes GHG emissions in the San Bernardino County portion of the MDAB. To that end, as a regional agency, the MDAQMD works directly with the County and incorporated communities as well as the military bases within the MDAB to control GHG emissions within the MDAB.

5.4 Local – County of San Bernardino

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

The *County of San Bernardino Greenhouse Gas Emissions Reduction Plan* (GHG Plan), prepared September, 2011, requires the reduction of 159,423 metric tons of $C0_2$ equivalent emissions ($MTCO_2e$) per year from

new development by 2020 as compared to the unmitigated conditions. The *Greenhouse Gas Emissions Development Review Processes* (GHG Review Processes), prepared for the County of San Bernardino, March 2015, provides project level direction on how the County plans to achieve the reduction in GHG Emissions.

In addition, the County participated with SANBAG's regional planning efforts in the adoption of the San Bernardino County Regional Greenhouse Gas Reduction Plan (2014 Regional GHG Reduction Plan), March 2014. The 2014 Regional GHG Reduction Plan was developed in order to meet the requirements of AB 32 and SB 375 and includes a regional GHG emissions inventory, summarizes actions that participating jurisdictions have selected to reduce GHG emissions to 1990 levels by 2020, and provides specific reduction goals for each participating jurisdiction. In March 2021, San Bernardino Council of Governments (SBCOG) prepared an update to the Regional GHG Plan (2021 Regional GHG Plan), in order to address SB 32, which mandates a 40 percent reduction in GHG emissions from 1990 levels by 2030. The 2021 Regional GHG Plan was prepared in accordance with the GHG reduction measures provided in the California's 2017 Climate Change Scoping Plan, November 2017 (CARB, 2017).

6.0 ATMOSPHERIC SETTING

6.1 Regional Climate

The project site is located within the San Bernardino County portion of the Mojave Desert Air Basin (MDAB). The MDAB is an assemblage of mountain ranges interspersed with long broad valleys that often contain dry lakes. Many of the lower mountains which dot the vast terrain rise from 1,000 to 4,000 feet above the valley floor. Prevailing winds in the MDAB are out of the west and southwest. These prevailing winds are due to the proximity of the MDAB to coastal and central regions and the blocking nature of the Sierra Nevada Mountains to the north; air masses pushed onshore in southern California by differential heating are channeled through the MDAB. The MDAB is separated from the southern California coastal and central California valley regions by mountains (highest elevation approximately 10,000 feet), whose passes form the main channels for these air masses.

The Mojave Desert is bordered in the southwest by the San Bernardino Mountains, separated from the San Gabriel Mountains by the Cajon Pass (4,200 feet). A lesser channel lies between the San Bernardino Mountains and the Little San Bernardino Mountains (the Morongo Valley).

6.2 Local Climate

The project site is located within the Palo Verde Valley portion of the Mojave Desert that lies in the low desert, at the eastern end of a series of valleys (notably the Coachella Valley) whose primary channel is the San Gorgonio Pass between the San Bernardino and San Jacinto Mountains. Hot summers, mild winters, infrequent rainfall, moderate afternoon breezes and generally fair weather characterize the climate of Palo Verde, an interior sub-climate of Southern California's Mediterranean climate. The most important local weather pattern is associated with the funneling of the daily onshore sea breeze through San Gorgonio Pass into the lower desert from the heavily developed portions of the South Coast Air Basin. This daily airflow brings polluted air into the area late in the afternoon from late spring to early fall. This transport pattern creates both unhealthful air quality as well as destroying the scenic vistas of the mountains surrounding Palo Verde Valley.

The temperature and precipitation levels for the Parker, Arizona Monitoring Station that is located approximately 10 miles northeast of the project site is the nearest weather station to the project site with historical data are shown below in Table D. Table D shows that July is typically the warmest month and January is typically the coolest month. Rainfall in the project area varies considerably in both time and space. Most of the annual rainfall comes from the fringes of mid-latitude storms from late November to early April, and during the summer monsoon season from July to September.

Table D – Monthly Climate Data

Month	Average Maximum Temperature (°F)	Average Minimum Temperature (°F)	Average Total Precipitation (inches)	Average Total Snow Depth (inches)
January	67.3	36.1	0.72	0.0
February	73.0	40.8	0.58	0.0
March	78.9	45.7	0.49	0.0
April	87.4	52.2	0.19	0.0
May	95.3	59.7	0.08	0.0
June	104.0	68.5	0.03	0.0
July	108.3	77.5	0.32	0.0
August	106.6	76.8	0.60	0.0
September	101.6	68.1	0.48	0.0
October	90.5	55.1	0.31	0.0
November	77.4	42.7	0.35	0.0
December	67.5	36.1	0.61	0.0
Annual	**88.2**	**54.9**	**4.74**	**0.0**

Source: https://wrcc.dri.edu/cgi-bin/cliMAIN.pl?az6250

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 MDAB as well as from air pollutants that travel from the coastal areas to the MDAB. The MDAQMD operates an extensive monitoring network throughout the County that continuously monitor ambient levels of criteria pollutants in compliance with federal monitoring regulations. Since not all air monitoring stations measure all of the tracked pollutants, the data from the following four monitoring stations, listed in the order of proximity to the project site have been used; Blythe Monitoring Station (Blythe Station), Joshua Tree National Park Monitoring Station (Joshua Tree Station), Niland Monitoring Station (Niland Station), and Palm Springs Monitoring Station (Palm Springs Station).

The Blythe Station is located approximately 33 miles south of the project site at 495 W Murphy Street, Blythe, the Joshua Tree Station is located approximately 80 miles west of the project site at Cottonwood Campground, the Niland Station is located approximately 84 miles southwest of the project site at 7711 English Road, Niland, and the Palm Springs Station is located approximately 119 miles west of the project site at 590 Racquet Club Avenue, Palm Springs. The monitoring data is presented in Table E and shows the most recent three years of monitoring data from CARB. Ozone was measured at the Blythe Station, NO_2 was measured at the Palm Springs Station, PM10 was measured at the Niland Station, and PM2.5 was measured at the Joshua Tree Station.

Table E – Local Area Air Quality Monitoring Summary

Pollutant (Standard)	Year 2018	2019	2020
Ozone:[1]			
Maximum 1-Hour Concentration (ppm)	0.067	0.064	0.066
Days > CAAQS (0.09 ppm)	0	0	0
Maximum 8-Hour Concentration (ppm)	0.060	0.059	0.053
Days > NAAQS (0.070 ppm)	0	0	0
Days > CAAQs (0.070 ppm)	0	0	0
Nitrogen Dioxide:[2]			
Maximum 1-Hour Concentration (ppb)	42.5	41.4	47.4
Days > NAAQS (100 ppb)	0	0	0
Inhalable Particulates (PM10) :[3]			
Maximum 24-Hour National Measurement (ug/m^3)	331.5	155.7	239.8
Days > NAAQS (150 ug/m^3)	10	1	1
Days > CAAQS (50 ug/m^3)	7	49	66
Annual Arithmetic Mean (AAM) (ug/m^3)	47.5	32.1	35.6
Annual > NAAQS (50 ug/m^3)	No	No	No
Annual > CAAQS (20 ug/m^3)	**Yes**	**Yes**	**Yes**
Ultra-Fine Particulates (PM2.5):[4]			
Maximum 24-Hour National Measurement (ug/m^3)	34.1	21.6	47.4
Days > NAAQS (35 ug/m^3)	0	0	**2**
Annual Arithmetic Mean (AAM) (ug/m^3)	ND	ND	ND
Annual > NAAQS and CAAQS (12 ug/m^3)	ND	ND	ND

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

[1] Data obtained from the Blythe Station.

[2] Data obtained from the Palm Springs Station.

[3] Data obtained from the Niland Station.

[4] Data obtained from the Joshua Tree Station.

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

Ozone

The State 1-hour and 8-hour concentration standards for ozone have not been exceeded over the past three years at the Blythe Station. The Federal 8-hour ozone standard has not been exceeded over the past three years at the Blythe Station.

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

Nitrogen Dioxide

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

Particulate Matter

The State 24-hour concentration standard for PM10 has been exceeded between 7 and 66 days each year over the past three years at the Niland Station. Over the past three years the Federal 24-hour standard for PM10 has been exceeded between 1 and 10 days each year of the past three years at the Niland Station. The annual PM10 concentration at the Niland Station has exceeded the State standard for the past three years and has not exceeded the Federal standard for the past three years.

Over the past three years the 24-hour concentration standard for PM2.5 has been exceeded between 0 and 2 days each year over the past three years at the Joshua Tree Station. No data was available for the annual PM2.5 concentration standards at the Joshua Tree Station. There does not appear to be a noticeable trend for PM10 or PM2.5 in either maximum particulate concentrations or days of exceedances in the area. Particulate levels in the area are due to natural sources, grading operations, and motor vehicles.

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

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 2020.4.0. CalEEMod is a computer model published by the SCAQMD for estimating air pollutant emissions. The CalEEMod program uses the EMFAC2017 computer program to calculate the emission rates specific for the Mojave Desert portion of San Bernardino County for employee, vendor and haul truck vehicle trips and the OFFROAD2011 computer program to calculate emission rates for heavy equipment operations. EMFAC2017 and OFFROAD2011 are computer programs generated by CARB that calculates composite emission rates for vehicles. Emission rates are reported by the program in grams per trip and grams per mile or grams per running hour.

The project characteristics in the CalEEMod model were set to a project location of the Mojave Desert portion of San Bernardino County, a Climate Zone of 10, utility company of Southern California Edison, and an opening year of 2024 was utilized in this analysis. In addition, the EMFAC off-model adjustment factors for gasoline light duty vehicle to account for the SAFE Vehicle rule was selected in the CalEEMod model run.

Land Use Parameters

The proposed project consists of the development of a PV solar energy facility that would include: PV panels, a BESS, fencing, service roads, a power collection system, communication cables, overhead and underground transmission lines, electrical switchyards, two substations and operations and maintenance facilities. Specifically, the proposed project will install a solar farm consisting of 391,872 PV solar modules located within solar arrays that will generate a total of 160 MW and would cover approximately 810 acres. The BESS would likely consist of up to 47 containers that would be up to 80 feet long by 8 feet wide and 8 feet tall (up to 30,080 square feet of container space) on approximately 7.1 acres of the project site. The two substations would cover approximately 7.5 acres of the project site and the BESS may be co-located within or adjacent to the substation yard. In addition, the proposed project would include construction of new access roads (unpaved gravel up to 20 feet wide), that would include an unpaved onsite access road from U.S Route 95 to the proposed substations that would cover approximately 6 acres of the project site. The proposed project's land use parameters that were entered into the CalEEMod model are shown in Table F.

Table F – CalEEMod Land Use Parameters

Proposed Land Use	Land Use Subtype in CalEEMod	Land Use Size[1]	Lot Acreage[2]	Building/Paving (square feet)
Solar Panels	Other Non-Asphalt Surfaces	810.00 AC	223.49	35,283,600
BESS	Refrigerated Warehouse – No Rail	30.08 TSF	7.10	30,080
Substations	User Defined Industrial	7.50 AC	7.50	100,000
Onsite Access Roads	Other Non-Asphalt Surfaces	6.0 AC	6.00	261,360

Notes:
[1] AC = Acres; TSF = Thousand square feet.
[2] Lot acreage calculated based on the total disturbed area of 830.6-acres.

Construction Parameters

Construction of the proposed project is anticipated to start in the first quarter of 2023 and would last 14 months, which were utilized in the CalEEMod model. The onsite workforce is expected to average 220 workers per day with a peak up to 495 workers. The phases of construction activities that have been analyzed are detailed below and include: 1) Site Preparation; 2) Access Roads Construction; 3) Electrical Infrastructure; and 4) PV System Assembly and Installation, and 5) BESS and Substations Installation.

The CalEEMod model provides the selection of "mitigation" to account for project conditions that would result in less emissions than a project without these conditions, however it should be noted that this "mitigation" may represent regulatory requirements. This includes the required to adherence to MDAQMD Rule 403, which requires that the Best Available Control Measures be utilized to reduce fugitive dust emissions. Table G provides a summary of the anticipated construction equipment and vehicle trips generated by each phase

Table G – Off-Road Equipment and Vehicle Trips for Construction of the Proposed Project

Equipment Type	Equipment Quantity	Horse-power	Load Factor	Operating Hours per Day	Worker Trips per Day[1]	Vendor Truck Trips per Day
Site Preparation						
Rubber Tired Dozers	3	247	0.40	8	18	6
Crawler Tractors	4	212	0.43	8		
Access Road Construction						
Pavers	2	130	0.42	8	15	6
Paving Equipment	2	132	0.36	8		
Rollers	2	80	0.38	8		
Electrical Infrastructure						
Excavators	2	158	0.38	8	13	6
Rubber Tired Loaders	1	203	0.36	8		
Tractors/Loaders/Backhoes	2	97	0.37	8		
PV System Assembly						
Air Compressor	1	78	0.48	8	990	50
Cranes	1	231	0.29	8		
Forklifts	3	89	0.20	8		
Generator Set	1	84	0.74	8		
Grader	1	187	0.41	8		
Tractors/Loaders/Backhoes	1	97	0.37	8		
Welders	3	46	0.45	8		
BESS and Substation Installation						
Aerial Lift	1	63	0.31	8	990	50
Air Compressor	1	78	0.48	8		
Cranes	2	231	0.29	8		
Forklifts	3	89	0.20	8		
Generator Set	1	84	0.74	8		
Tractors/Loaders/Backhoes	1	97	0.37	8		
Welders	3	46	0.45	8		

Notes:

[1] Worker Trips for Site Preparation, Access Road Construction and Electrical Infrastructure from CalEEMod model default values, for PV System Assembly and BESS and Substation Installation from Traffic Study.

Source: Project Applicant and CalEEMod Version 2020.4.0 (see Appendix A).

Site Preparation

The site preparation phase would begin with clearing of existing brush and rocks on the area of the project site that will be disturbed. The site preparation phase is anticipated to start January 2023 and was based on occurring over 90 working days. The site preparation phase would generate up to 18 worker trips per day. In addition, 6 vendor trips per day were added to the CalEEMod model, in order to account for water truck emissions. The onsite equipment would consist of three rubber tired dozers, and four of either tractors, loaders, or backhoes, which is based on the CalEEMod default equipment mix. The mitigation of applying water to all exposed areas two times per day was chosen in order to account for the fugitive dust reduction that would occur through adhering to MDAQMD Rule 403, which requires that the Best Available Control Measures be utilized to reduce fugitive dust emissions.

Access Road Construction

The construction of the access roads was modeled as a paving phase in the CalEEMod model. The access road construction was modeled as occurring after completion of the site preparation phase and occurring over 15 working days. The paving phase would generate up to 15 worker trips per day and 6 vendor truck trips per day. The onsite equipment would consist of the simultaneous operation of two pavers, two paving equipment, and two rollers, which is based on the CalEEMod default equipment mix.

Electrical Infrastructure

The electrical infrastructure construction phase would consist of installation of underground utilities and was modeled as a trenching phase in CalEEMod. The electrical infrastructure phase would occur after the completion of the paving of access road phase and was modeled as occurring over 20 working days. This phase would generate 15 worker trips and 6 vendor trips per day. The onsite equipment would consist of the simultaneous operation of 2 excavators, 1 rubber tired loader, and 2 of either tractors, loaders, or backhoes.

PV System Assembly and Installation

The PV system assembly and Installation phase was modeled as a building construction phase in CalEEMod. This phase would occur after completion of the electrical infrastructure phase and was modeled as occurring over 90 working days. This phase would generate up to 990 worker trips per day and up to 50 vendor truck trips per day. The onsite equipment was modeled as consisting of one air compressor, one crane, three forklifts, one generator set, one grader, three welders, and one of either a tractor, loader, or backhoe.

BESS and Substations Installation

The BESS and Substations Installation phase was modeled as a building construction phase in CalEEMod. This phase would occur after completion of the PV system assembly and installation phase and was modeled as occurring over 90 working days. This phase would generate up to 990 worker trips per day and up to 50 vendor truck trips per day. The onsite equipment was modeled as consisting of one aerial lift, one air compressor, two cranes, three forklifts, one generator set, three welders, and one of either a tractor, loader, or backhoe.

Operational Emissions Modeling

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

Mobile Sources

Mobile sources include emissions the additional vehicle miles generated from the proposed project. Up to 12 full-time and/or part-time staff would be required for operation, which would result in the generation of up to 24 daily trips from the operation of the project, which was entered into the CalEEMod model. No other changes were made to the default mobile source parameters in the CalEEMod model.

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 natural gas emission rates were set to zero, since no natural gas will be used onsite. For electricity use, the proposed solar PV panels system is rated at 160 MW. The 160 MW were converted to 160,000 kW panels and was then multiplied by 8 hours, to provide a conservative average hours per day of sunlight that the solar panels will generate electricity and then divided by 1.2 to account for the loss associated with converting the direct current (DC) power from the solar panels to the alternating current (AC) power on the electrical grid and then multiplying by 365 days, which resulted in the proposed solar panels generating 389,333,333 kilowatt-hours per year. According to the BESS system specifications, the air conditioning units and power conversion associated with the proposed BESS will not use more than 2 percent of the electricity stored, the calculated 389,333,333 kWh generated by the solar panels was multiplied by 2 percent, which results in the proposed project utilizing 7,786,667 kWh (7,787 MWh) per year that was entered into the CalEEMod model.

Solid Waste

Waste includes the GHG emissions associated with the processing of waste from the proposed project as well as the GHG emissions from the waste once it is interred into a landfill. The analysis was based on the default CalEEMod waste generation rate of 28 tons of solid waste per year from the proposed project. No changes were made to the default solid waste parameters or mitigation measures in the CalEEMod model.

Water and Wastewater

Water is based on the GHG emissions associated with the energy used to transport and filter the water. No water will be used for fire suppressant for the BESS and no water would be utilized for dust control during operation of the proposed project. However, once per year, the solar panels may be cleaned with water, which would utilize up to 8,000 gallons per cleaning. As such 8,000 gallons per year was entered in to the CalEEMod model. No other changes were made to the default water and wastewater parameters in the CalEEMod model.

8.0 THRESHOLDS OF SIGNIFICANCE

8.1 MDAQMD Significance Thresholds

The MDAQMD's CEQA and Federal Conformity Guidelines (MDAQMD, 2020), outlines significance determination thresholds. The MDAQMD Guidelines state that any project is significant if it triggers or exceed the most appropriate evaluation criteria, and further specifies that the emissions comparison (criteria number 1) is sufficient for most projects:

1. Generate total emissions (direct and indirect) in excess of the threshold given in Table H;
2. Generates a violation of any ambient air quality standard when added to the local background;
3. Does not conform with the applicable attainment or maintenance plan(s)[3];
4. Exposes sensitive receptors to substantial pollutant concentrations, including those resulting in a cancer risk greater than or equal to 10 in a million and/or a Hazard Index (HI) (non-cancerous) greater than or equal to 1.

The MDAQMD significant emissions thresholds are shown in Table H. According to the MDAQMD Guidelines, A significant project must incorporate mitigation sufficient to reduce its impact to a level that is not significant. A project that cannot be mitigated to a level that is not significant must incorporate all feasible mitigation. Note that the emission thresholds are given as a daily value and an annual value, so that multi-phased project (such as project with a construction phase and a separate operational phase) with phases shorter than one year can be compared to the daily value. Since construction of the proposed project is anticipated to take over a year, the annual threshold has been utilized for both short-term construction impact analysis and long-term operational impacts.

Table H – MDAQMD Significant Emissions Thresholds

Pollutant	Annual Threshold (tons)	Daily Threshold (pounds)
Greenhouse Gases (CO_2e)	100,000	548,000
Carbon Monoxide (CO)	100	548
Oxides of Nitrogen (NO_X)	25	137
Volatile Organic Compounds (VOC)	25	137
Oxides of Sulfur (SO_X)	25	137
Particulate Matter (PM_{10})	15	82
Particulate Matter ($PM_{2.5}$)	12	65
Hydrogen Sulfide (H_2S)	10	54
Lead (Pb)	0.6	3

Source: https://www.mdaqmd.ca.gov/home/showpublisheddocument?id=8510

3 A project is deemed to not exceed this threshold, and hence not be significant, if it is consistent with the existing land use plan. Zoning changes, specific plans, general plan amendments and similar land use plan changes which do not increase dwelling unit density, do not increase vehicle trips, and do not increase vehicle miles traveled are also deemed to not exceed this threshold.

9.0 IMPACT ANALYSIS

9.1 CEQA Thresholds of Significance

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

9.2 Air Quality Compliance

The proposed project would not conflict with or obstruct implementation of the MDAQMD Air Quality Management Plans (AQMPs). The Project Site is located within the Mojave Desert Air Basin and is regulated by the MDAQMD. The MDAQMD PM10 Attainment Plan and Ozone Attainment Plan established under the Western Mojave Desert AQMPs set forth a comprehensive set of programs that will lead the Basin into compliance with Federal and State air quality standards. The control measures and related emission reduction estimates within the MDAQMD PM10 Attainment Plan and Ozone Attainment Plan are based upon emissions projections for a future development scenario derived from land use, population, and employment characteristics defined in consultation with local governments. Accordingly, conformance with these attainment plans is determined by:

- Demonstrating Project consistency with local land use plans and/or population projections (Criterion 1);
- Demonstrating Project compliance with applicable MDAQMD Rules and Regulations (Criterion 2); and
- Demonstrating Project implementation will not increase the frequency or severity of a violation in the Federal or State ambient air quality standards (Criterion 3).

Criterion 1: Consistency with local land use plans and/or population projections.

Growth projections included in the AQMPs form the basis for the projections of air pollutant emissions and are based on general plan land use designations and the *2020-2045 Regional Transportation Plan/Sustainable Communities Strategy* (Connect SoCal), adopted September 3, 2020 and the *2019 Federal Transportation Improvement* Program (2019 FTIP), adopted September 2018, which addresses regional development and growth forecasts. While SCAG has recently adopted the Connect SoCal, the MDAQMD has not released an updated AQMP that utilizes information from the Connect SoCal. As such, this consistency analysis is based off the 2016-2040 RTP/SCS. The population, housing, and employment

forecasts within the 2016-2040 RTP/SCS are based on local general plans as well as input from local governments, such as the County. The MDAQMD has incorporated these same demographic growth forecasts for various socioeconomic categories (e.g., population, housing, employment) into the AQMPs.

San Bernardino Land Use Service Zoning Maps is the local law that regulates various aspects of how land can be used. The project site is designated and is zoned as Resource Conservation (RC). The RC land use zoning district provides sites for open space and recreational activities, single-family homes on very large parcels, and similar and compatible uses. Commercial renewable energy facilities are an allowable land use within the RC land use zoning district.

The County's unincorporated area population estimate as of January 1, 2021 was 1,871,997 persons, and the County's total area population estimate as of January 1, 2021 was 2,175,909 persons. SCAG growth forecasts in the 2016-2040 RTP/SCS estimate the County's population to reach 2,731,000 persons by 2040, representing a total increase of 620,000 persons between 2015 and 2040.13 Additionally, SCAG growth forecasts in the 2016-2040 RTP/SCS estimate the County's employment to reach 1,028,000 jobs by 2040, representing a total increase of 299,000 jobs between 2012 and 2040.14

The proposed project would include neither a residential component that would increase local population growth, nor a commercial component that would substantially increase employment. Construction of the proposed project would not result in residential, commercial, or growth-inducing development that would result in a substantial increase in growth-related emissions. In addition, because of the presence of locally available construction workers, and because of the relatively short duration of construction (approximately 14 months), workers are not expected to relocate to the area with their families. Up to 8 to 12 full-time and/or part-time staff would be required for operation, inspection, security, maintenance, and system monitoring purposes. Due to the limited number of employees required for the full time operation of the proposed project, the proposed project would not cause the SCAG growth forecast to be exceeded. As the MDAQMD has incorporated these forecasts on population, housing, and employment into the AQMPs, the Project would be consistent with the AQMPs. Impacts would be less than significant.

Criterion 2: Compliance with applicable MDAQMD Rules and Regulations.

The Project would be required to comply with all applicable MDAQMD Rules and Regulations. This would include MDAQMD Rules 401, 402, and 403. MDAQMD Rule 403 requires periodic watering for short-term stabilization of disturbed surface area to minimize visible fugitive dust (PM10) emissions, covering loaded haul vehicles, and reduction of non-essential earth moving activities during higher wind conditions. The proposed project would comply with applicable MDAQMD rules, and as such, would not conflict with applicable MDAQMD Rules and Regulations; therefore, impacts would be less than significant.

Criterion 3: Demonstrating Project implementation will not increase the frequency or severity of a violation in the Federal or State ambient air quality standards.

Analysis of the proposed project's potential to result in more frequent or severe violations of the CAAQS and NAAQS can be satisfied by comparing the proposed project emissions to MDAQMD thresholds. Based on the air quality modeling analysis contained in this report, short-term construction air emissions would not result in significant impacts based on MDAQMD thresholds of significance discussed above in Section 8.1. The ongoing operation of the proposed project would generate air pollutant emissions that are inconsequential and would not result in significant impacts based on MDAQMD thresholds of significance discussed above in Section 8.1.

Therefore, the proposed project would not delay the MDAB's attainment goals for ozone, PM10, and PM2.5, and would not result in an increase in the frequency or severity of existing air quality violations. As such, the proposed project would not cause or contribute to localized air quality violations or delay the attainment of air quality standard or interim emissions reductions specified in the AQMPs; thus, impacts would be reduced to less than significant.

Level of Significance

Less than significant.

9.3 Cumulative Net Increase in Non-Attainment Pollution

The proposed project would not result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable Federal or State ambient air quality standard. The following section calculates the potential air emissions associated with the construction and operations of the proposed project and compares the emissions to the MDAQMD criteria pollutant emissions standards detailed above in Section 8.1.

Construction Emissions

Construction activities for the proposed project are anticipated to start in the first quarter of 2023 and would last approximately 14 months. The CalEEMod model has been utilized to calculate the construction-related criteria pollutant emissions from the proposed project and the input parameters utilized in this analysis have been detailed in Section 7.1. The annual construction-related criteria pollutant emissions from the proposed project is shown below in Table I and the CalEEMod Annual printouts are shown in Appendix A.

Table I – Construction-Related Air Pollutant Emissions

Construction Year	Pollutant Emissions[1] (tons per year)					
	VOC	NOx	CO	SO_2	PM10	PM2.5
2023	0.49	2.92	4.15	<0.01	0.65	0.77
2024	0.11	0.53	1.02	<0.01	0.05	0.07
MDAQMD Thresholds	**25**	**25**	**100**	**25**	**15**	**12**
Exceeds Thresholds?	No	No	No	No	No	No

Notes:
[1] Construction based on adherence to fugitive dust suppression requirements from MDAQMD Rule 403.2.
Source: CalEEMod Version 2020.4.0.

Table I shows that none of the analyzed criteria pollutants emissions would exceed the MDAQMD annual thresholds during construction of the proposed project. Therefore, a less than significant air quality emissions impact would occur from construction of the proposed project.

Operational Emissions

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 annual operations-related criteria pollutant emissions from the proposed project is shown below in Table J and the CalEEMod annual printouts are shown in Appendix A.

Table J – Operations-Related Air Pollutant Emissions

Emissions Source	Pollutant Emissions (tons per year)					
	VOC	NOx	CO	SO_2	PM10	PM2.5
Area Sources[1]	4.19	<0.01	<0.01	0.00	<0.01	<0.01
Energy Sources[2]	0.00	0.00	0.00	0.00	0.00	0.00
Mobile Sources[3]	0.01	0.02	0.12	<0.01	0.03	<0.01
Total Emissions	**4.20**	**0.02**	**0.12**	**<0.01**	**0.03**	**<0.01**
MDAQMD Thresholds	**25**	**25**	**100**	**25**	**15**	**12**
Exceeds Thresholds?	No	No	No	No	No	No

Notes:
[1] Area sources consist of emissions from consumer products, hearths, architectural coatings, and landscaping equipment.
[2] Energy usage consist of emissions from natural gas usage (no natural gas would be utilized by the proposed project).
[3] Mobile sources consist of emissions from vehicles and road dust.
Source: CalEEMod Version 2020.4.0.

Table J shows that none of the analyzed criteria pollutants emissions would exceed the MDAQMD annual emissions thresholds during operation of the proposed project. Therefore, a less than significant air quality emissions impact would occur from operation of the proposed project.

Friant Ranch Decision

In *Sierra Club v. County of Fresno* (2018) 6 Cal.5th 502 (also referred to as "*Friant Ranch*"), the California Supreme Court held that when an EIR concluded that when a project would have significant impacts to air quality impacts, an EIR should "make a reasonable effort to substantively connect a project's air quality impacts to likely health consequences." As shown in Table T above, and unlike the project at issue in the *Friant Ranch* case, the project's emissions of criteria pollutants would not exceed the MDAQMD's thresholds and would not have a significant air quality impact. Therefore, it is not necessary to connect this small project's air quality impacts to likely health impacts. However, for informational purposes this analysis considers the Court's direction as follows:

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

Although it has been determined that the project would not result in significant air quality impacts, this analysis details the specific health risks created from each criteria pollutant above in Section 3.1 and specifically in Table B. In addition, the specific health risks created from diesel particulate matter is detailed above in Section 2.2 of this analysis. As such, this analysis meets the part 1 requirements of the Friant Ranch Case.

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

The Friant Ranch Case found that an EIR's air quality analysis must meaningfully connect the identified air quality impacts to the human health consequences of those impacts, or meaningfully explain why that

analysis cannot be provided. As noted in the Brief of Amicus Curiae by the SCAQMD in the Friant Ranch case (https://www.courts.ca.gov/documents/9-s219783-ac-south-coast-air-quality-mgt-dist-041315.pdf) (Brief), SCAQMD has among the most sophisticated air quality modeling and health impact evaluation capability of any of the air districts in the State, and thus it is uniquely situated to express an opinion on how lead agencies should correlate air quality impacts with specific health outcomes. The SCAQMD discusses that it may be infeasible to quantify health risks caused by projects similar to the proposed project, due to many factors. It is necessary to have data regarding the sources and types of air toxic contaminants, location of emission points, velocity of emissions, the meteorology and topography of the area, and the location of receptors (worker and residence). The Brief states that it may not be feasible to perform a health risk assessment for airborne toxics that will be emitted by a generic industrial building that was built on "speculation" (i.e., without knowing the future tenant(s)). Even where a health risk assessment can be prepared, however, the resulting maximum health risk value is only a calculation of risk, it does not necessarily mean anyone will contract cancer as a result of the Project. The Brief also cites the author of the CARB methodology, which reported that a PM2.5 methodology is not suited for small projects and may yield unreliable results. Similarly, SCAQMD staff does not currently know of a way to accurately quantify ozone-related health impacts caused by NOX or VOC emissions from relatively small projects, due to photochemistry and regional model limitations. The Brief concludes, with respect to the Friant Ranch EIR, that although it may have been technically possible to plug the data into a methodology, the results would not have been reliable or meaningful.

On the other hand, for extremely large regional projects (unlike the proposed project), the SCAQMD states that it has been able to correlate potential health outcomes for very large emissions sources – as part of their rulemaking activity, specifically 6,620 pounds per day of NOx and 89,180 pounds per day of VOC (1,208 tons per year of NOx and 16,275 tons per year of VOC) were expected to result in approximately 20 premature deaths per year and 89,947 school absences due to ozone.

As shown above in Table I, project-related construction activities would generate a maximum of 0.31 tons per year of VOC and 2.12 tons per year of NOx and as shown above in Table J, operation of the proposed project would generate 4.21 tons per year of VOC and 0.02 tons per year of NOx. The proposed project would not generate anywhere near these levels of 1,208 tons per year of NOx or 16,275 tons per year of VOC emissions. Therefore, the proposed project's emissions are not sufficiently high enough to use a regional modeling program to correlate health effects on a basin-wide level.

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

Level of Significance

Less than significant impact.

9.4 Sensitive Receptors

The proposed project would not expose sensitive receptors to substantial pollutant concentrations. The MDAQMD Guidelines details that sensitive receptor land uses consist of: Residences, schools, daycare centers, playgrounds and medical facilities are considered sensitive receptor land uses. The nearest sensitive receptor to the project site is an unoccupied home that is located as near as 740 feet west of the project site and on the west side of U.S. 95. The closest occupied residence is located over 1,600 feet to the north along Old Parker Road.

According to the MDAQMD Guidelines, the following project types proposed for sites within the specified distance to an existing or planned (zoned) sensitive receptor land use must be evaluated to determine if it exposes sensitive receptors to substantial pollutant concentrations:

- Any industrial project within 1000 feet;
- A distribution center (40 or more trucks per day) within 1000 feet;
- A major transportation project (50,000 or more vehicles per day) within 1000 feet;
- A dry cleaner using perchloroethylene within 500 feet;
- A gasoline dispensing facility within 300 feet.

The proposed project would consist of development of a PV solar energy facility, which would emit nominal air emissions. As such, the proposed project would not be considered one of the above land uses. Therefore, the proposed project would result in a less than significant exposure of sensitive receptors to substantial pollutant concentrations.

Level of Significance

Less than significant impact.

9.5 Odor Emissions Adversely Affecting a Substantial Number of People

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

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

Construction-Related Odor Impacts

Potential sources that may emit odors during construction activities include the application of coatings such as asphalt pavement, paints and solvents and from emissions from diesel equipment. Standard construction requirements that limit the time of day when construction may occur as well as MDAQMD

Rule 442 that limits VOC content in solvents, Rule 1103 that limits VOC content in asphalt and Rule 1113 that limits the VOC content in paints and solvents would minimize odor impacts from construction. As such, the objectionable odors that may be produced during the construction process would be temporary and would not likely be noticeable for extended periods of time beyond the project site's boundaries. Through compliance with the applicable regulations that reduce odors and due to the transitory nature of construction odors, a less than significant odor impact would occur and no mitigation would be required.

Operations-Related Odor Impacts

The proposed project would consist of the development of a PV solar energy facility, which does not include any components that are a known sources of odors. Therefore, a less than significant odor impact would occur and no mitigation would be required.

Level of Significance

Less than significant impact.

9.6 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 PV solar energy facility. The proposed project is anticipated to generate GHG emissions from construction activities and from operational activities that would include area sources, energy usage, mobile sources, waste disposal, and water usage. The proposed project is also anticipated to reduce GHG emissions by providing production of non-carbon emissions electrical generation that would replace existing carbon-powered electrical generation source

The MDAQMD shares responsibility with CARB for ensuring that all state and federal GHG standards are achieved and maintained within its jurisdiction. The MDAQMD CEQA Guidelines provides a project level significance threshold of 100,000 tons of CO_2e per year for both construction and operational activities. The MDAQMD developed this threshold in order to comply with the GHG emission reductions required by AB 32.

The project's GHG emissions have been calculated with the CalEEMod model based on the construction and operational parameters detailed above in Section 7.1. A summary of the results is shown below in Table K and the CalEEMod model run is provided in Appendix A.

Table K – Project Related Greenhouse Gas Annual Emissions

	Greenhouse Gas Emissions (Metric Tons per Year)			
Category	**CO_2**	**CH_4**	**N_2O**	**CO_2e**
Construction				
Year 2023	877.67	0.11	0.02	887.28
Year 2024	232.19	0.02	<0.01	234.73
Total Construction Emissions	1,109.86	0.13	0.03	1,122.01
Amortized Construction Emissions[1] (30 Years)	**37.00**	**<0.01**	**<0.01**	**37.40**
Operations				
Area Sources[2]	0.02	<0.01	0.00	0.02
Energy Usage and Production[3]	1,380.96	0.12	0.01	1,388.08
Mobile Sources[4]	23.89	<0.01	<0.01	24.29
Solid Waste[5]	5.74	0.34	0.00	14.22
Water and Wastewater[6]	0.02	0.00	0.00	0.02
Total Operational Emissions	**1,410.62**	**0.46**	**0.02**	**1,426.62**
Total Annual Emission (Construction & Operations)	**1,447.61**	**0.46**	**0.02**	**1,464.02**
MDAQMD Threshold				**100,000**
Exceed Thresholds?				**No**

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

The data provided in Table K shows that the construction activities would create a total of 1,122.01 $MTCO_2e$, which equates to 37.40 $MTCO_2e$ per year, when amortized over 30 years. Table K also shows that operational activities would create 1426.62 $MTCO_2e$ per year and when combined with the amortized construction emissions, the proposed project would create a total of 1,464.02 $MTCO_2e$ per year, which is within the MDAQMD threshold of 100,000 $MTCO_2e$ per year that is described above in Section 8.1. Therefore, a less than significant generation of greenhouse gas emissions would occur from development of the proposed project. Impacts would be less than significant.

Level of Significance

Less than significant impact.

9.7 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. Since the *County of San Bernardino Greenhouse Gas Emissions Reduction Plan* (GHG Plan), September 2011 is not consistent with the State's post-2020 GHG reduction goals, the GHG Plan was not used in this analysis. Instead, the consistency analysis for the proposed project is based off the project's consistency with the *San Bernardino County Regional Greenhouse Gas Reduction Plan* (RGHGRP), prepared by SBCOG, March 2021, the County's Policy Plan, and CARB's 2017 Scoping Plan Update.

Consistency with the 2021 Regional GHG Reduction Plan

The Regional GHG Reduction Plan includes GHG inventories, and local GHG reduction strategies for each of the 25 Partnership jurisdictions including the unincorporated areas of San Bernardino County. This RGHGRP is not mandatory for the Partnership jurisdictions. Instead, it provides information that can be used by Partnership jurisdictions, if they choose so, to develop individual climate action plans (CAPs). The RGHGHRP describes the reductions that are possible if SBCOG and every Partnership jurisdiction were to adopt the reduction strategies as described in the document.

The RGHGRP demonstrates how Unincorporated San Bernardino could achieve its selected goal, "of reducing its community GHG emissions to a level that is 40% below its 2020 GHG emissions level by 2030".11 The majority (approximately 80 percent) of unincorporated San Bernardino County's GHG reduction goal will be achieved through state efforts, such as the Pavley vehicle standards, the state's low carbon fuel standard, the RPS, and other state measures to reduce GHG emissions in the on-road, solid waste and building energy sectors in 2030. According to the RGHGRP, the remaining 20 percent need to meet its goal could be achieved "primarily through the following local measures, in order of reductions achieved: Solar Installation for Existing Commercial/Industrial (Energy-8); Waste Diversion and Reduction (Waste-2); Solar Installation for Existing Housing (Energy-7)."12 As shown on Table 3-75 of the RGHGRP13, the County has proposed to adopt ten GHG reduction measures, including increasing the energy efficiency of and solar installation upon new and existing buildings, Transportation Demand Management and Synchronization, expanded bike lanes, waste diversion and reduction, water efficient landscaping, and other measures. It should be noted that the County has not adopted its jurisdictional plan.

Of the 10 GHG reduction measures proposed, the following two apply to the County directly and not project owners or occupants: OnRoad-3 encouraging signal synchronization and OnRoad-4 encouraging bike lanes; thus, these measures are not applicable to the proposed project. The following six measures do not apply to the proposed project because they are directed towards sources the proposed project would not include: Energy-1 improving the energy efficiency of new buildings, Energy-7 encouraging solar installation for existing housing, Energy-8 encouraging solar installation for existing commercial and industrial, Energy-10 encouraging urban tree planting for shading and energy savings, Offroad-2 directed at heavy duty diesel truck idling, and PS-1 proposing a GHG performance standard for new development. The proposed project is designed to be consistent with GHG reduction measure Water-3, encouraging water-efficient landscaping practices, and would be operated consistent with Waste-2 encouraging increased waste diversion and reduction if adopted and as applicable.

Assuming the County is successful in adopting its plan substantively as written, the above discussion demonstrates that the Project would be consistent with the applicable portions of the jurisdictional GHG reduction measures contained in the RGHGRP, and impacts would be less than significant.

Consistency with the San Bernardino County Policy Plan

As previously discussed, the San Bernardino Policy Plan includes goals and policies that all new projects are required to comply with, as applicable. Project consistency with the policy plan goals and policies is discussed in Table 3, Consistency with the County's Policy Plan. As depicted in Table L, the proposed project would be consistent with the policy plan and potential impacts would be less than significant.

Table L – Consistency with GHG Policies in the County's Policy Plan

Policy No.	San Bernardino County Policy Plan Policy	Proposed Project Consistency with Policy
IU-4.3	**Waste diversion.** We shall meet or exceed state waste diversion requirements, augment future landfill capacity, and reduce greenhouse gas emissions and use of natural resources through the reduction, reuse, or recycling of solid waste.	**Consistent.** The proposed project is a solar generation and energy storage facility, which would generate a limited amount of solid waste from project operations. The proposed project would be required to comply with State waste diversion requirements. As such, the proposed project would be consistent with this policy.
IU-5.5	**Energy and fuel facilities.** We encourage the development and upgrade of energy and regional fuel facilities in areas that do not pose significant environmental or public health and safety hazards, and in a manner that is compatible with military operations and local community identity.	**Consistent.** The proposed project is a solar generation and energy storage facility and would not create additional significant environmental or public health and safety hazards as it would displace fossil fuel energy production. Clean energy would be produced from operation of the proposed project. Therefore, the proposed project would not conflict with this policy.
NR-1.1	**Land use.** We promote compact and transit-oriented development countywide and regulate the types and locations of development in unincorporated areas to minimize vehicle miles traveled and greenhouse gas emissions.	**Consistent.** The proposed project would generate minimal vehicle miles traveled and associated GHG emissions. Therefore, the proposed project would not conflict with this policy.
NR-1.7	**Greenhouse gas reduction targets**. We strive to meet the 2040 and 2050 greenhouse gas emission reduction targets in accordance with state law.	**Consistent.** The proposed project would indirectly reduce GHG emissions overall and is consistent with state goals and requirements to replace non-carbon neutral electricity sources with carbon-neutral electrical sources. Therefore, the proposed project would be consistent with this policy.
NR-1.9	**Building design and upgrades.** We use the CALGreen Code to meet energy efficiency standards for new buildings and encourage the upgrading of existing buildings to incorporate design elements, building materials, and fixtures that improve environmental sustainability and reduce emissions.	**Consistent.** The proposed project would be required to comply the most current CalGreen Code and Title 24 Standards, as applicable. Therefore, the proposed project would not conflict with this policy.
RE 4.10	Prohibit utility-oriented RE project development on sites that would create adverse impacts on the quality of life or economic development opportunities in existing unincorporated communities. Any exceptions or revisions to the following policy direction would require approval by the Board of Supervisors.	**Consistent.** The proposed project is located on land that is crossed over by high voltage lines and has limited use, other than for PV solar projects. Therefore, the proposed project would not conflict with this policy.
RE 5.2	Utility-oriented RE generation projects on private land in the unincorporated County will be limited to the site-types below, in addition to meeting criteria established herein and in the Development Code: ix. Sites within or adjacent to electric transmission and utility distribution corridors	**Consistent.** The proposed project is located on land that is crossed over by high voltage lines.. Therefore, the proposed project is consistent with this policy.

Source: County of San Bernardino, 2020.

Consistency with the 2017 CARB Scoping Plan

The 2017 Scoping Plan identifies additional GHG reduction measures necessary to achieve the 2030 target. These measures build upon those identified in the first update to the Scoping Plan (2013). Although a number of these measures are currently established as policies and measures, some measures have not yet been formally proposed or adopted. It is expected that these measures or similar actions to reduce GHG emissions will be adopted as required to achieve statewide GHG emissions targets. Provided in Table M, Consistency with the 2017 Scoping Plan, is an evaluation of applicable reduction actions/strategies by emissions source category to determine how the proposed project would be consistent with or exceed reduction actions/strategies outlined in the 2017 Scoping Plan. Therefore, the proposed project would be consistent with the 2017 CARB Scoping Plan and potential impacts would be less than significant in this regard.

Table M – Consistency with the 2017 Scoping Plan

Actions and Strategies	Proposed Project Consistency with Actions and Strategies
SB 350	
Achieve a 50 percent Renewable Portfolio Standard (RPS) by 2030, with a doubling of energy efficiency savings by 2030	**No Conflict.** The proposed project includes the construction and operation of a renewable energy generation and storage facility. Therefore, the proposed project would help the State achieve the Renewables Portfolio Standard (RPS) goals. As such, the proposed project would be consistent with SB 350 (and SB 100).
Low Carbon Fuel Standard (LCFS)	
Increase stringency of carbon fuel standards; reduce the carbon intensity of fuels by 18 percent by 2030, which is up from 10 percent in 2020.	**No Conflict.** This standard applies to all vehicle fuels sold in California including that could be used in vehicles associated with the proposed project. The proposed project would not impede this goal.
Mobile Source Strategy (Cleaner Technology and Fuel Scenario)	
Maintain existing GHG standards of light and heavy-duty vehicles while adding an addition 4.2 million zero emission vehicles (ZEVs) on the road. Increase the number of ZEV buses, delivery trucks, or other trucks.	**No Conflict.** The proposed project may include occasional light- and heavy duty truck uses for operations and maintenance activities. Trucks uses associated with the Project would be required to comply with all CARB regulations, including the LCFS and newer engine standards. The Project would not conflict with the CARB's goal of adding 4.2 million zero-emission (ZEVs) on the road. As such, the proposed project would not conflict with the goals of the Mobile Source Strategy.
Sustainable Freight Action Plan	
Improve the freight system efficiency and maximize the use of near zero emission vehicles and equipment powered by renewable energy. Deploy over 100,000 zero-emission trucks and equipment by 2030.	**No Conflict.** As described above, occasional truck uses associated with the proposed project would be required to comply with all CARB regulations, including the LCFS and newer engine standards. Additionally, the Project would comply with all future applicable regulatory standards adopted by CARB and would not conflict with CARB's goal to deploy over 100,000 zero-emission trucks and equipment by 2030.
Short-Lived Climate Pollutant (SLCP) Reduction Strategy	
Reduce the GHG emissions of methane and hydrofluorocarbons by 40 percent below the 2013 levels by 2030. Furthermore, reduce the emissions of black carbon by 50 percent below the 2013 levels by the year 2030.	**No Conflict.** The proposed project would not emit a large amount of CH4 (methane) emissions; refer to Table 2. Furthermore, the proposed project would comply with all applicable CARB and MDAQMD hydrofluorocarbon regulations. As such, the Project would not conflict with the SLCP reduction strategy.

Actions and Strategies	Proposed Project Consistency with Actions and Strategies
Post-2020 Cap and Trade Programs	
The Cap-and-Trade Program will reduce greenhouse gas (GHG) emissions from major sources (covered entities) by setting a firm cap on statewide GHG emissions while employing market mechanisms to cost-effectively achieve the emission-reduction goals.	**Not Applicable.** As seen in Table K, the proposed project is estimated to generate approximately 1,464.02 $MTCO_2e$ per year, which is below the 25,000 $MTCO_2e$ per year Cap-and-Trade screening level. Therefore, this goal is not applicable to the proposed project.

Source: CARB, 2017.

Level of Significance

Less than significant impact.

10.0 REFERENCES

Breeze Software, *California Emissions Estimator Model* (CalEEMod) version 2016.3.2.

California Air Resources Board, *Appendix VII Risk Characterization Scenarios,* October 2000.

California Air Resources Board, *First Update to the Climate Change Scoping Plan,* May 2014.

California Air Resources Board, *Resolution 08-43,* December 12, 2008.

California Air Resources Board, *Recommended Approaches for Setting Interim Significance Thresholds for Greenhouse Gases under the California Environmental Quality Act,* on October 24, 2008.

California Air Resources Board, *Final Staff Report Proposed Update to the SB 375 Greenhouse Gas Emission Reduction Targets*, October 2017.

California Air Resources Board, *The California Almanac of Emissions and Air Quality 2013 Edition*.

California Department of Conservation, *A General Guide for Ultramafic Rocks in California – Areas More Likely to Contain Naturally Occurring Asbestos,* August, 2000.

County of San Bernardino, *County Policy Plan*¸ October 2020.

County of San Bernardino, *County of San Bernardino General Plan Renewable Energy and Conservation Element,* Amended February 2019.

County of San Bernardino, *Greenhouse Gas Emissions Development Review Processes County of San Bernardino, California,* March 2015.

Environmental Protection Agency, *Nonattainment Major New Source Review Implementation Under 8-Hour Ozone National Ambient Air Quality Standard: Reconsideration*, June 30, 2005.

Environmental Protection Agency, *Inventory of U.S. Greenhouse Gas Emissions and Sinks 1990-2016.*

Mojave Desert Air Quality Management District, *California Environmental Quality Act (CEQA) and Federal Conformity Guidelines,* February, 2020.

Mojave Desert Air Quality Management District, *Rule 402 Nuisance,* Readopted July 25, 1977.

Mojave Desert Air Quality Management District, *Rule 403 Fugitive Dust,* Readopted July 25, 1977.

Mojave Desert Air Quality Management District, *Rule 1103 Cutback and Emulsified Asphalt,* Adopted December 21, 1994.

Mojave Desert Air Quality Management District, *Rule 1113 Architectural Coatings,* Amended April 23, 2012.

Office of Environmental Health Hazard Assessment (OEHHA), *Air Toxics Hot Spots Program Risk Assessment Guidelines Guidance Manual for Preparation of Health Risk Assessments,* February 2015

San Bernardino Council of Governments, *San Bernardino County Regional Greenhouse Gas Reduction Plan,* March 2021.

South Coast Air Quality Management District, *CEQA Air Quality Handbook, April 1993.*

Southern California Association of Governments, *2020-2045 Regional Transportation Plan/Sustainable Communities Strategy* (Connect SoCal), September 3, 2020.

Southern California Association of Governments, *2019 Federal Transportation Improvement Program (FTIP) Guidelines*, September 2018.

University of California, Davis, *Transportation Project-Level Carbon Monoxide Protocol,* December 1997.

U.S. Geological Survey, *Reported Historic Asbestos Mines, Historic Asbestos Prospects, and Other Natural Occurrences of Asbestos in California,* 2011.

APPENDIX A

CalEEMod Model Annual Printouts

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

Vidal Solar Project

San Bernardino-Mojave Desert County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Refrigerated Warehouse-No Rail	30.08	1000sqft	7.10	30,080.00	0
User Defined Industrial	7.50	User Defined Unit	7.50	100,000.00	0
Other Non-Asphalt Surfaces	6.00	Acre	6.00	261,360.00	0
Other Non-Asphalt Surfaces	810.00	Acre	810.00	35,283,600.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.6	**Precipitation Freq (Days)**	32
Climate Zone	10			**Operational Year**	2024
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	390.98	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Total area disturbed on project site 830.6 acres

Construction Phase - Construction schedule provided by applicant

Off-road Equipment -

Off-road Equipment - BESS & Substation Construction - 1 Aerial Lift, 1 Air Compressor, 2 Cranes, 3 Forklifts, 1 Generator, 1 Tractor/Loader/Backhoe, and 3 Welders

Off-road Equipment - Electrical Infrastructure - 2 Excavators, 1 Rubber Tired Loader, 2 Tractors/Loaders/Backhoes

Off-road Equipment -

Off-road Equipment - PV System - 1 Air Compressor, 1 Crane, 3 Forklifts, 1 Generator Set, 1 Tractor/loader/backhoes, 3 Welders

Vidal Solar Project - San Bernardino-Mojave Desert County, Annual

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

Trips and VMT - PV System and BESS-Substation would generate 990 worker trips and 50 vendor trips per day. 6 Vendor trips added to Site Preparation, Electrical and Paving phases

Grading - 831 acres graded

Vehicle Trips - Up to 24 daily trips

Energy Use - Natural Gas use set to zero. Electric usage set to 7,786,667 kWhy/year

Water And Wastewater - Outdoor water use set to 8000 gallons per year

Construction Off-road Equipment Mitigation - Water Exposed Area 2x per day selected to account for MDAQMD Rule 403 minimum requirements

Energy Mitigation -

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	540.00	90.00
tblConstructionPhase	NumDays	990.00	15.00
tblConstructionPhase	NumDays	13,950.00	90.00
tblConstructionPhase	NumDays	13,950.00	90.00
tblEnergyUse	LightingElect	2.37	0.00
tblEnergyUse	NT24E	36.52	258.87
tblEnergyUse	NT24NG	48.51	0.00
tblEnergyUse	T24E	0.95	0.00
tblEnergyUse	T24NG	3.22	0.00
tblGrading	AcresOfGrading	135.00	831.00
tblLandUse	LandUseSquareFeet	0.00	100,000.00
tblLandUse	LotAcreage	0.69	7.10
tblLandUse	LotAcreage	0.00	7.50
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	3.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00

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

tblOffRoadEquipment	UsageHours	7.00	8.00
tblTripsAndVMT	VendorTripNumber	0.00	6.00
tblTripsAndVMT	VendorTripNumber	5,847.00	50.00
tblTripsAndVMT	VendorTripNumber	5,847.00	50.00
tblTripsAndVMT	VendorTripNumber	0.00	6.00
tblTripsAndVMT	VendorTripNumber	0.00	6.00
tblTripsAndVMT	WorkerTripNumber	14,984.00	990.00
tblTripsAndVMT	WorkerTripNumber	14,984.00	990.00
tblVehicleTrips	ST_TR	2.12	0.80
tblVehicleTrips	SU_TR	2.12	0.80
tblVehicleTrips	WD_TR	2.12	0.80
tblWater	IndoorWaterUseRate	6,956,000.00	0.00
tblWater	OutdoorWaterUseRate	0.00	8,000.00

2.0 Emissions Summary

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

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2023	0.4913	2.9230	4.1459	9.7500e-003	1.8256	0.1263	1.9519	0.6470	0.1183	0.7653	0.0000	877.6748	877.6748	0.1128	0.0228	887.2773
2024	0.1142	0.5287	1.0176	2.5600e-003	0.1870	0.0203	0.2073	0.0499	0.0192	0.0691	0.0000	232.1943	232.1943	0.0199	6.8500e-003	234.7314
Maximum	**0.4913**	**2.9230**	**4.1459**	**9.7500e-003**	**1.8256**	**0.1263**	**1.9519**	**0.6470**	**0.1183**	**0.7653**	**0.0000**	**877.6748**	**877.6748**	**0.1128**	**0.0228**	**887.2773**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2023	0.4913	2.9230	4.1459	9.7500e-003	1.1361	0.1263	1.2624	0.3750	0.1183	0.4933	0.0000	877.6743	877.6743	0.1128	0.0228	887.2769
2024	0.1142	0.5287	1.0176	2.5600e-003	0.1870	0.0203	0.2073	0.0499	0.0192	0.0691	0.0000	232.1942	232.1942	0.0199	6.8500e-003	234.7313
Maximum	**0.4913**	**2.9230**	**4.1459**	**9.7500e-003**	**1.1361**	**0.1263**	**1.2624**	**0.3750**	**0.1183**	**0.4933**	**0.0000**	**877.6743**	**877.6743**	**0.1128**	**0.0228**	**887.2769**

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

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**34.26**	**0.00**	**31.93**	**39.03**	**0.00**	**32.59**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	**1-1-2023**	**3-31-2023**	0.9808	0.9808
2	**4-1-2023**	**6-30-2023**	0.6472	0.6472
3	**7-1-2023**	**9-30-2023**	0.8573	0.8573
4	**10-1-2023**	**12-31-2023**	0.9622	0.9622
5	**1-1-2024**	**3-31-2024**	0.6252	0.6252
		Highest	0.9808	0.9808

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	4.1928	7.0000e-005	7.8300e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005	0.0000	0.0153	0.0153	4.0000e-005	0.0000	0.0163
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1,380.9560	1,380.9560	0.1166	0.0141	1,388.0801
Mobile	0.0116	0.0178	0.1162	2.5000e-004	0.0265	2.1000e-004	0.0267	7.0800e-003	1.9000e-004	7.2700e-003	0.0000	23.8900	23.8900	1.4100e-003	1.2200e-003	24.2887
Waste						0.0000	0.0000		0.0000	0.0000	5.7406	0.0000	5.7406	0.3393	0.0000	14.2221
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0158	0.0158	0.0000	0.0000	0.0158
Total	**4.2044**	**0.0179**	**0.1240**	**2.5000e-004**	**0.0265**	**2.4000e-004**	**0.0267**	**7.0800e-003**	**2.2000e-004**	**7.3000e-003**	**5.7406**	**1,404.8770**	**1,410.6176**	**0.4573**	**0.0154**	**1,426.6229**

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

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	4.1928	7.0000e-005	7.8300e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005	0.0000	0.0153	0.0153	4.0000e-005	0.0000	0.0163
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1,380.9560	1,380.9560	0.1166	0.0141	1,388.0801
Mobile	0.0116	0.0178	0.1162	2.5000e-004	0.0265	2.1000e-004	0.0267	7.0800e-003	1.9000e-004	7.2700e-003	0.0000	23.8900	23.8900	1.4100e-003	1.2200e-003	24.2887
Waste						0.0000	0.0000		0.0000	0.0000	5.7406	0.0000	5.7406	0.3393	0.0000	14.2221
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0158	0.0158	0.0000	0.0000	0.0158
Total	**4.2044**	**0.0179**	**0.1240**	**2.5000e-004**	**0.0265**	**2.4000e-004**	**0.0267**	**7.0800e-003**	**2.2000e-004**	**7.3000e-003**	**5.7406**	**1,404.8770**	**1,410.6176**	**0.4573**	**0.0154**	**1,426.6229**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	1/1/2023	5/7/2023	5	90	
2	Acces Rd Construction	Paving	5/8/2023	5/26/2023	5	15	
3	Electrical Infrastructure	Trenching	5/27/2023	6/23/2023	5	20	

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

4	PV System Assembly & Installation	Building Construction	6/24/2023	10/27/2023	5	90	
5	BESS and Substation Construction	Building Construction	10/28/2023	3/1/2024	5	90	

Acres of Grading (Site Preparation Phase): 831

Acres of Grading (Grading Phase): 0

Acres of Paving: 816

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
PV System Assembly & Installation	Air Compressors	1	8.00	78	0.48
PV System Assembly & Installation	Cranes	1	8.00	231	0.29
PV System Assembly & Installation	Forklifts	3	8.00	89	0.20
PV System Assembly & Installation	Generator Sets	1	8.00	84	0.74
PV System Assembly & Installation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
PV System Assembly & Installation	Welders	3	8.00	46	0.45
BESS and Substation Construction	Aerial Lifts	1	8.00	63	0.31
BESS and Substation Construction	Air Compressors	1	8.00	78	0.48
BESS and Substation Construction	Cranes	2	8.00	231	0.29
BESS and Substation Construction	Forklifts	3	8.00	89	0.20
BESS and Substation Construction	Generator Sets	1	8.00	84	0.74
BESS and Substation Construction	Tractors/Loaders/Backhoes	1	7.00	97	0.37
BESS and Substation Construction	Welders	3	8.00	46	0.45
Acces Rd Construction	Pavers	2	8.00	130	0.42
Acces Rd Construction	Paving Equipment	2	8.00	132	0.36

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

Acces Rd Construction	Rollers	2	8.00	80	0.38
Electrical Infrastructure	Excavators	2	8.00	158	0.38
Electrical Infrastructure	Rubber Tired Loaders	1	8.00	203	0.36
Electrical Infrastructure	Tractors/Loaders/Backhoes	2	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	6.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
PV System Assembly & Installation	10	990.00	50.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
BESS and Substation Construction	12	990.00	50.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Acces Rd Construction	6	15.00	6.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Electrical Infrastructure	5	13.00	6.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Vidal Solar Project - San Bernardino-Mojave Desert County, Annual

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

3.2 Site Preparation - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					1.2536	0.0000	1.2536	0.4945	0.0000	0.4945	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1197	1.2386	0.8210	1.7100e-003		0.0570	0.0570		0.0524	0.0524	0.0000	150.5281	150.5281	0.0487	0.0000	151.7452
Total	**0.1197**	**1.2386**	**0.8210**	**1.7100e-003**	**1.2536**	**0.0570**	**1.3106**	**0.4945**	**0.0524**	**0.5469**	**0.0000**	**150.5281**	**150.5281**	**0.0487**	**0.0000**	**151.7452**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	3.1000e-004	0.0103	4.0900e-003	5.0000e-005	1.8000e-003	8.0000e-005	1.8800e-003	5.2000e-004	7.0000e-005	5.9000e-004	0.0000	4.9514	4.9514	1.3000e-004	7.3000e-004	5.1726
Worker	2.3600e-003	1.6600e-003	0.0205	6.0000e-005	6.5300e-003	3.0000e-005	6.5600e-003	1.7300e-003	3.0000e-005	1.7700e-003	0.0000	5.1341	5.1341	1.6000e-004	1.5000e-004	5.1829
Total	**2.6700e-003**	**0.0120**	**0.0246**	**1.1000e-004**	**8.3300e-003**	**1.1000e-004**	**8.4400e-003**	**2.2500e-003**	**1.0000e-004**	**2.3600e-003**	**0.0000**	**10.0855**	**10.0855**	**2.9000e-004**	**8.8000e-004**	**10.3555**

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

3.2 Site Preparation - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.5641	0.0000	0.5641	0.2225	0.0000	0.2225	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1197	1.2386	0.8210	1.7100e-003		0.0570	0.0570		0.0524	0.0524	0.0000	150.5280	150.5280	0.0487	0.0000	151.7451
Total	**0.1197**	**1.2386**	**0.8210**	**1.7100e-003**	**0.5641**	**0.0570**	**0.6211**	**0.2225**	**0.0524**	**0.2749**	**0.0000**	**150.5280**	**150.5280**	**0.0487**	**0.0000**	**151.7451**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	3.1000e-004	0.0103	4.0900e-003	5.0000e-005	1.8000e-003	8.0000e-005	1.8800e-003	5.2000e-004	7.0000e-005	5.9000e-004	0.0000	4.9514	4.9514	1.3000e-004	7.3000e-004	5.1726
Worker	2.3600e-003	1.6600e-003	0.0205	6.0000e-005	6.5300e-003	3.0000e-005	6.5600e-003	1.7300e-003	3.0000e-005	1.7700e-003	0.0000	5.1341	5.1341	1.6000e-004	1.5000e-004	5.1829
Total	**2.6700e-003**	**0.0120**	**0.0246**	**1.1000e-004**	**8.3300e-003**	**1.1000e-004**	**8.4400e-003**	**2.2500e-003**	**1.0000e-004**	**2.3600e-003**	**0.0000**	**10.0855**	**10.0855**	**2.9000e-004**	**8.8000e-004**	**10.3555**

Vidal Solar Project - San Bernardino-Mojave Desert County, Annual

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

3.3 Acces Rd Construction - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	7.7500e-003	0.0764	0.1094	1.7000e-004		3.8300e-003	3.8300e-003		3.5200e-003	3.5200e-003	0.0000	15.0202	15.0202	4.8600e-003	0.0000	15.1416
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**7.7500e-003**	**0.0764**	**0.1094**	**1.7000e-004**		**3.8300e-003**	**3.8300e-003**		**3.5200e-003**	**3.5200e-003**	**0.0000**	**15.0202**	**15.0202**	**4.8600e-003**	**0.0000**	**15.1416**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	5.0000e-005	1.7200e-003	6.8000e-004	1.0000e-005	3.0000e-004	1.0000e-005	3.1000e-004	9.0000e-005	1.0000e-005	1.0000e-004	0.0000	0.8252	0.8252	2.0000e-005	1.2000e-004	0.8621
Worker	3.3000e-004	2.3000e-004	2.8500e-003	1.0000e-005	9.1000e-004	0.0000	9.1000e-004	2.4000e-004	0.0000	2.5000e-004	0.0000	0.7131	0.7131	2.0000e-005	2.0000e-005	0.7199
Total	**3.8000e-004**	**1.9500e-003**	**3.5300e-003**	**2.0000e-005**	**1.2100e-003**	**1.0000e-005**	**1.2200e-003**	**3.3000e-004**	**1.0000e-005**	**3.5000e-004**	**0.0000**	**1.5383**	**1.5383**	**4.0000e-005**	**1.4000e-004**	**1.5820**

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

3.3 Acces Rd Construction - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	7.7500e-003	0.0764	0.1094	1.7000e-004		3.8300e-003	3.8300e-003		3.5200e-003	3.5200e-003	0.0000	15.0201	15.0201	4.8600e-003	0.0000	15.1416
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**7.7500e-003**	**0.0764**	**0.1094**	**1.7000e-004**		**3.8300e-003**	**3.8300e-003**		**3.5200e-003**	**3.5200e-003**	**0.0000**	**15.0201**	**15.0201**	**4.8600e-003**	**0.0000**	**15.1416**

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	1.7200e-003	6.8000e-004	1.0000e-005	3.0000e-004	1.0000e-005	3.1000e-004	9.0000e-005	1.0000e-005	1.0000e-004	0.0000	0.8252	0.8252	2.0000e-005	1.2000e-004	0.8621
Worker	3.3000e-004	2.3000e-004	2.8500e-003	1.0000e-005	9.1000e-004	0.0000	9.1000e-004	2.4000e-004	0.0000	2.5000e-004	0.0000	0.7131	0.7131	2.0000e-005	2.0000e-005	0.7199
Total	**3.8000e-004**	**1.9500e-003**	**3.5300e-003**	**2.0000e-005**	**1.2100e-003**	**1.0000e-005**	**1.2200e-003**	**3.3000e-004**	**1.0000e-005**	**3.5000e-004**	**0.0000**	**1.5383**	**1.5383**	**4.0000e-005**	**1.4000e-004**	**1.5820**

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

3.4 Electrical Infrastructure - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	9.5100e-003	0.0882	0.1249	2.3000e-004		3.9200e-003	3.9200e-003		3.6100e-003	3.6100e-003	0.0000	20.0390	20.0390	6.4800e-003	0.0000	20.2011
Total	**9.5100e-003**	**0.0882**	**0.1249**	**2.3000e-004**		**3.9200e-003**	**3.9200e-003**		**3.6100e-003**	**3.6100e-003**	**0.0000**	**20.0390**	**20.0390**	**6.4800e-003**	**0.0000**	**20.2011**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	7.0000e-005	2.3000e-003	9.1000e-004	1.0000e-005	4.0000e-004	2.0000e-005	4.2000e-004	1.2000e-004	2.0000e-005	1.3000e-004	0.0000	1.1003	1.1003	3.0000e-005	1.6000e-004	1.1495
Worker	3.8000e-004	2.7000e-004	3.2900e-003	1.0000e-005	1.0500e-003	1.0000e-005	1.0500e-003	2.8000e-004	1.0000e-005	2.8000e-004	0.0000	0.8240	0.8240	3.0000e-005	2.0000e-005	0.8318
Total	**4.5000e-004**	**2.5700e-003**	**4.2000e-003**	**2.0000e-005**	**1.4500e-003**	**3.0000e-005**	**1.4700e-003**	**4.0000e-004**	**3.0000e-005**	**4.1000e-004**	**0.0000**	**1.9243**	**1.9243**	**6.0000e-005**	**1.8000e-004**	**1.9813**

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

3.4 Electrical Infrastructure - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	9.5100e-003	0.0882	0.1249	2.3000e-004		3.9200e-003	3.9200e-003		3.6100e-003	3.6100e-003	0.0000	20.0390	20.0390	6.4800e-003	0.0000	20.2010
Total	**9.5100e-003**	**0.0882**	**0.1249**	**2.3000e-004**		**3.9200e-003**	**3.9200e-003**		**3.6100e-003**	**3.6100e-003**	**0.0000**	**20.0390**	**20.0390**	**6.4800e-003**	**0.0000**	**20.2010**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	7.0000e-005	2.3000e-003	9.1000e-004	1.0000e-005	4.0000e-004	2.0000e-005	4.2000e-004	1.2000e-004	2.0000e-005	1.3000e-004	0.0000	1.1003	1.1003	3.0000e-005	1.6000e-004	1.1495
Worker	3.8000e-004	2.7000e-004	3.2900e-003	1.0000e-005	1.0500e-003	1.0000e-005	1.0500e-003	2.8000e-004	1.0000e-005	2.8000e-004	0.0000	0.8240	0.8240	3.0000e-005	2.0000e-005	0.8318
Total	**4.5000e-004**	**2.5700e-003**	**4.2000e-003**	**2.0000e-005**	**1.4500e-003**	**3.0000e-005**	**1.4700e-003**	**4.0000e-004**	**3.0000e-005**	**4.1000e-004**	**0.0000**	**1.9243**	**1.9243**	**6.0000e-005**	**1.8000e-004**	**1.9813**

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

3.5 PV System Assembly & Installation - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0961	0.7625	0.8378	1.4300e-003		0.0361	0.0361		0.0346	0.0346	0.0000	119.4172	119.4172	0.0220	0.0000	119.9680
Total	**0.0961**	**0.7625**	**0.8378**	**1.4300e-003**		**0.0361**	**0.0361**		**0.0346**	**0.0346**	**0.0000**	**119.4172**	**119.4172**	**0.0220**	**0.0000**	**119.9680**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.5900e-003	0.0861	0.0341	4.2000e-004	0.0150	6.3000e-004	0.0156	4.3300e-003	6.0000e-004	4.9300e-003	0.0000	41.2618	41.2618	1.0700e-003	6.1000e-003	43.1050
Worker	0.1298	0.0912	1.1273	3.0400e-003	0.3590	1.8600e-003	0.3609	0.0954	1.7200e-003	0.0971	0.0000	282.3764	282.3764	8.7900e-003	8.2700e-003	285.0614
Total	**0.1324**	**0.1773**	**1.1614**	**3.4600e-003**	**0.3740**	**2.4900e-003**	**0.3765**	**0.0997**	**2.3200e-003**	**0.1020**	**0.0000**	**323.6382**	**323.6382**	**9.8600e-003**	**0.0144**	**328.1664**

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

3.5 PV System Assembly & Installation - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0961	0.7625	0.8378	1.4300e-003		0.0361	0.0361		0.0346	0.0346	0.0000	119.4170	119.4170	0.0220	0.0000	119.9678
Total	**0.0961**	**0.7625**	**0.8378**	**1.4300e-003**		**0.0361**	**0.0361**		**0.0346**	**0.0346**	**0.0000**	**119.4170**	**119.4170**	**0.0220**	**0.0000**	**119.9678**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.5900e-003	0.0861	0.0341	4.2000e-004	0.0150	6.3000e-004	0.0156	4.3300e-003	6.0000e-004	4.9300e-003	0.0000	41.2618	41.2618	1.0700e-003	6.1000e-003	43.1050
Worker	0.1298	0.0912	1.1273	3.0400e-003	0.3590	1.8600e-003	0.3609	0.0954	1.7200e-003	0.0971	0.0000	282.3764	282.3764	8.7900e-003	8.2700e-003	285.0614
Total	**0.1324**	**0.1773**	**1.1614**	**3.4600e-003**	**0.3740**	**2.4900e-003**	**0.3765**	**0.0997**	**2.3200e-003**	**0.1020**	**0.0000**	**323.6382**	**323.6382**	**9.8600e-003**	**0.0144**	**328.1664**

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

3.6 BESS and Substation Construction - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0563	0.4748	0.4785	8.7000e-004		0.0216	0.0216		0.0206	0.0206	0.0000	73.6649	73.6649	0.0155	0.0000	74.0531
Total	**0.0563**	**0.4748**	**0.4785**	**8.7000e-004**		**0.0216**	**0.0216**		**0.0206**	**0.0206**	**0.0000**	**73.6649**	**73.6649**	**0.0155**	**0.0000**	**74.0531**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.2900e-003	0.0431	0.0171	2.1000e-004	7.5000e-003	3.1000e-004	7.8200e-003	2.1700e-003	3.0000e-004	2.4700e-003	0.0000	20.6309	20.6309	5.4000e-004	3.0500e-003	21.5525
Worker	0.0649	0.0456	0.5636	1.5200e-003	0.1795	9.3000e-004	0.1804	0.0477	8.6000e-004	0.0485	0.0000	141.1882	141.1882	4.3900e-003	4.1400e-003	142.5307
Total	**0.0662**	**0.0887**	**0.5807**	**1.7300e-003**	**0.1870**	**1.2400e-003**	**0.1883**	**0.0499**	**1.1600e-003**	**0.0510**	**0.0000**	**161.8191**	**161.8191**	**4.9300e-003**	**7.1900e-003**	**164.0832**

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

3.6 BESS and Substation Construction - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0563	0.4748	0.4785	8.7000e-004		0.0216	0.0216		0.0206	0.0206	0.0000	73.6648	73.6648	0.0155	0.0000	74.0530
Total	**0.0563**	**0.4748**	**0.4785**	**8.7000e-004**		**0.0216**	**0.0216**		**0.0206**	**0.0206**	**0.0000**	**73.6648**	**73.6648**	**0.0155**	**0.0000**	**74.0530**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.2900e-003	0.0431	0.0171	2.1000e-004	7.5000e-003	3.1000e-004	7.8200e-003	2.1700e-003	3.0000e-004	2.4700e-003	0.0000	20.6309	20.6309	5.4000e-004	3.0500e-003	21.5525
Worker	0.0649	0.0456	0.5636	1.5200e-003	0.1795	9.3000e-004	0.1804	0.0477	8.6000e-004	0.0485	0.0000	141.1882	141.1882	4.3900e-003	4.1400e-003	142.5307
Total	**0.0662**	**0.0887**	**0.5807**	**1.7300e-003**	**0.1870**	**1.2400e-003**	**0.1883**	**0.0499**	**1.1600e-003**	**0.0510**	**0.0000**	**161.8191**	**161.8191**	**4.9300e-003**	**7.1900e-003**	**164.0832**

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

3.6 BESS and Substation Construction - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0527	0.4447	0.4744	8.7000e-004		0.0190	0.0190		0.0181	0.0181	0.0000	73.6678	73.6678	0.0154	0.0000	74.0520
Total	**0.0527**	**0.4447**	**0.4744**	**8.7000e-004**		**0.0190**	**0.0190**		**0.0181**	**0.0181**	**0.0000**	**73.6678**	**73.6678**	**0.0154**	**0.0000**	**74.0520**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.2600e-003	0.0435	0.0168	2.1000e-004	7.5000e-003	3.1000e-004	7.8100e-003	2.1700e-003	3.0000e-004	2.4600e-003	0.0000	20.3471	20.3471	5.2000e-004	3.0100e-003	21.2556
Worker	0.0603	0.0406	0.5264	1.4800e-003	0.1795	9.0000e-004	0.1804	0.0477	8.2000e-004	0.0485	0.0000	138.1795	138.1795	3.9900e-003	3.8400e-003	139.4238
Total	**0.0615**	**0.0840**	**0.5432**	**1.6900e-003**	**0.1870**	**1.2100e-003**	**0.1882**	**0.0499**	**1.1200e-003**	**0.0510**	**0.0000**	**158.5265**	**158.5265**	**4.5100e-003**	**6.8500e-003**	**160.6794**

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

3.6 BESS and Substation Construction - 2024

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0527	0.4447	0.4744	8.7000e-004		0.0190	0.0190		0.0181	0.0181	0.0000	73.6677	73.6677	0.0154	0.0000	74.0519
Total	**0.0527**	**0.4447**	**0.4744**	**8.7000e-004**		**0.0190**	**0.0190**		**0.0181**	**0.0181**	**0.0000**	**73.6677**	**73.6677**	**0.0154**	**0.0000**	**74.0519**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.2600e-003	0.0435	0.0168	2.1000e-004	7.5000e-003	3.1000e-004	7.8100e-003	2.1700e-003	3.0000e-004	2.4600e-003	0.0000	20.3471	20.3471	5.2000e-004	3.0100e-003	21.2556
Worker	0.0603	0.0406	0.5264	1.4800e-003	0.1795	9.0000e-004	0.1804	0.0477	8.2000e-004	0.0485	0.0000	138.1795	138.1795	3.9900e-003	3.8400e-003	139.4238
Total	**0.0615**	**0.0840**	**0.5432**	**1.6900e-003**	**0.1870**	**1.2100e-003**	**0.1882**	**0.0499**	**1.1200e-003**	**0.0510**	**0.0000**	**158.5265**	**158.5265**	**4.5100e-003**	**6.8500e-003**	**160.6794**

4.0 Operational Detail - Mobile

Vidal Solar Project - San Bernardino-Mojave Desert County, Annual

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

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive 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	0.0116	0.0178	0.1162	2.5000e-004	0.0265	2.1000e-004	0.0267	7.0800e-003	1.9000e-004	7.2700e-003	0.0000	23.8900	23.8900	1.4100e-003	1.2200e-003	24.2887
Unmitigated	0.0116	0.0178	0.1162	2.5000e-004	0.0265	2.1000e-004	0.0267	7.0800e-003	1.9000e-004	7.2700e-003	0.0000	23.8900	23.8900	1.4100e-003	1.2200e-003	24.2887

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Refrigerated Warehouse-No Rail	24.06	24.06	24.06	70,255	70,255
User Defined Industrial	0.00	0.00	0.00		
Total	24.06	24.06	24.06	70,255	70,255

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Other Non-Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Other Non-Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Refrigerated Warehouse-No	9.50	7.30	7.30	59.00	0.00	41.00	92	5	3
User Defined Industrial	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0

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

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Other Non-Asphalt Surfaces	0.540566	0.056059	0.172680	0.136494	0.026304	0.007104	0.011680	0.017449	0.000554	0.000251	0.025076	0.000954	0.004830
Refrigerated Warehouse-No Rail	0.540566	0.056059	0.172680	0.136494	0.026304	0.007104	0.011680	0.017449	0.000554	0.000251	0.025076	0.000954	0.004830
User Defined Industrial	0.540566	0.056059	0.172680	0.136494	0.026304	0.007104	0.011680	0.017449	0.000554	0.000251	0.025076	0.000954	0.004830

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	1,380.9560	1,380.9560	0.1166	0.0141	1,388.0801
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	1,380.9560	1,380.9560	0.1166	0.0141	1,388.0801
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Vidal Solar Project - San Bernardino-Mojave Desert County, Annual

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

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Refrigerated Warehouse-No Rail	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
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Vidal Solar Project - San Bernardino-Mojave Desert County, Annual

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

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Refrigerated Warehouse-No Rail	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
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

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

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Refrigerated Warehouse-No Rail	7.78681e+006	1,380.9560	0.1166	0.0141	1,388.0801
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000
Total		**1,380.9560**	**0.1166**	**0.0141**	**1,388.0801**

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

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Refrigerated Warehouse-No Rail	7.78681e+006	1,380.9560	0.1166	0.0141	1,388.0801
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000
Total		**1,380.9560**	**0.1166**	**0.0141**	**1,388.0801**

6.0 Area Detail

6.1 Mitigation Measures Area

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

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	4.1928	7.0000e-005	7.8300e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005	0.0000	0.0153	0.0153	4.0000e-005	0.0000	0.0163
Unmitigated	4.1928	7.0000e-005	7.8300e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005	0.0000	0.0153	0.0153	4.0000e-005	0.0000	0.0163

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	1.3864					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	2.8057					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	7.2000e-004	7.0000e-005	7.8300e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005	0.0000	0.0153	0.0153	4.0000e-005	0.0000	0.0163
Total	**4.1928**	**7.0000e-005**	**7.8300e-003**	**0.0000**		**3.0000e-005**	**3.0000e-005**		**3.0000e-005**	**3.0000e-005**	**0.0000**	**0.0153**	**0.0153**	**4.0000e-005**	**0.0000**	**0.0163**

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

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	1.3864					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	2.8057					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	7.2000e-004	7.0000e-005	7.8300e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005	0.0000	0.0153	0.0153	4.0000e-005	0.0000	0.0163
Total	**4.1928**	**7.0000e-005**	**7.8300e-003**	**0.0000**		**3.0000e-005**	**3.0000e-005**		**3.0000e-005**	**3.0000e-005**	**0.0000**	**0.0153**	**0.0153**	**4.0000e-005**	**0.0000**	**0.0163**

7.0 Water Detail

7.1 Mitigation Measures Water

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

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.0158	0.0000	0.0000	0.0158
Unmitigated	0.0158	0.0000	0.0000	0.0158

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Refrigerated Warehouse-No Rail	0 / 0.008	0.0158	0.0000	0.0000	0.0158
User Defined Industrial	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0158**	**0.0000**	**0.0000**	**0.0158**

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

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Refrigerated Warehouse-No Rail	0 / 0.008	0.0158	0.0000	0.0000	0.0158
User Defined Industrial	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0158**	**0.0000**	**0.0000**	**0.0158**

8.0 Waste Detail

8.1 Mitigation Measures Waste

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

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	5.7406	0.3393	0.0000	14.2221
Unmitigated	5.7406	0.3393	0.0000	14.2221

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Refrigerated Warehouse-No Rail	28.28	5.7406	0.3393	0.0000	14.2221
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000
Total		**5.7406**	**0.3393**	**0.0000**	**14.2221**

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

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Refrigerated Warehouse-No Rail	28.28	5.7406	0.3393	0.0000	14.2221
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000
Total		**5.7406**	**0.3393**	**0.0000**	**14.2221**

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

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

User Defined Equipment

Equipment Type	Number

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

11.0 Vegetation