AIR QUALITY AND GREENHOUSE GAS EMISSIONS IMPACT ANALYSIS

J90 SOUTH ENERGY STORAGE PROJECT

CITY OF LANCASTER

Lead Agency:

City of Lancaster
44933 Fern Avenue
Lancaster, CA 93534

Prepared by:

Vista Environmental
1021 Didrickson Way
Laguna Beach, CA 92651
949 510 5355
Greg Tonkovich, AICP

Project No. 22038

October 12, 2022

TABLE OF CONTENTS

1.0 Introduction 1

1.1 Purpose of Analysis and Study Objectives 1
1.2 Site Location and Study Area 1
1.3 Proposed Project Description 1
1.4 Executive Summary 6
1.5 Mitigation Measures for the Proposed Project 7

2.0 Air Pollutants 10

2.1 Criteria Pollutants and Ozone Precursors 10
2.2 Other Pollutants of Concern 12

3.0 Greenhouse Gases 14

3.1 Greenhouse Gases 14
3.2 Global Warming Potential 16
3.3 Greenhouse Gas Emissions Inventory 17

4.0 Air Quality Management 18

4.1 Federal – United States Environmental Protection Agency 18
4.2 State – California Air Resources Board 20
4.3 Regional – Antelope Valley Air Quality Management District 21
4.4 Local – City of Lancaster 22

5.0 Global Climate Change Management 23

5.1 Federal – United States Environmental Protection Agency 23
5.2 State 24
5.3 Regional – Antelope Valley Air Quality Management District 30
5.4 Local – City of Lancaster 30

6.0 Atmospheric Setting 32

6.1 Regional Climate 32
6.2 Local Climate 32
6.3 Monitored Local Air Quality 33

7.0 Modeling Parameters and Assumptions 36

7.1 CalEEMod Model Input Parameters 36

8.0 Thresholds of Significance 40

8.1 AVAQMD Significance Thresholds 40

9.0 Impact Analysis 41

9.1 CEQA Thresholds of Significance 41
9.2 Air Quality Compliance 41
9.3 Cumulative Net Increase in Non-Attainment Pollution 43
9.4 Sensitive Receptors 45

TABLE OF CONTENTS CONTINUED

9.5 Odor Emissions Adversely Affecting a Substantial Number of People 46
9.6 Generation of Greenhouse Gas Emissions 47
9.7 Greenhouse Gas Plan Consistency 48

10.0 References 50

APPENDICES

Appendix A – CalEEMod Model Annual Printouts

LIST OF FIGURES

Figure 1 – Project Location and Vicinity Map 8
Figure 2 – Proposed Site Plan 9

LIST OF TABLES

Table A – Project Equipment Details 4
Table B – Global Warming Potentials, Atmospheric Lifetimes and Abundances of GHGs 16
Table C – State and Federal Criteria Pollutant Standards 18
Table D – AVAQMD Attainment Status 19
Table E – Monthly Climate Data 33
Table F – Local Area Air Quality Monitoring Summary 34
Table G – CalEEMod Land Use Parameters 36
Table H – AVAQMD Significant Emissions Thresholds 40
Table I – Construction-Related Air Pollutant Emissions 43
Table J – Operations-Related Air Pollutant Emissions 43
Table K – Project Related Greenhouse Gas Annual Emissions 47
Table L – Consistency with the 2017 Scoping Plan 48

ACRONYMS AND ABBREVIATIONS

AB	Assembly Bill
AQMP	Air Quality Management Plan
AVAQMD	Antelope Valley Air Quality Management District
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
City	City of Lancaster
CO	Carbon monoxide
CO_2	Carbon dioxide
CO_2e	Carbon dioxide equivalent
CPUC	California Public Utilities Commission
DPM	Diesel particulate matter
EPA	Environmental Protection Agency
ºF	Fahrenheit
FTIP	Federal Transportation Improvement Program
GHG	Greenhouse gas
GWP	Global warming potential
HAP	Hazardous Air Pollutants
HFCs	Hydrofluorocarbons
IPCC	International Panel on Climate Change

LCFS	Low Carbon Fuel Standard
MDAB	Mojave Desert Air Basin
$MMTCO_2e$	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
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 J90 South Energy Storage 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 Antelope Valley Air Quality Management District (AVAQMD) 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 19.5-acre project site is located in the southwestern portion of the City of Lancaster (City) on the west side of 90th Street between W Avenue J (0.46 mile north of project site) and Avenue K (0.56 mile south of project site). The project site is currently undeveloped and is surrounded by vacant land. The Southern California Edison (SCE) Antelope Substation is located approximately 450 feet northwest of the project site. 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 a home that is located as near as 575 feet southeast of the project site and is located on the east side of 90th Street. The nearest school is Del Sur School, which is a K-8 school that is located as near as 2.5 miles north of the project site.

1.3 Proposed Project Description

The Project will be capable of charging and discharging (delivering) up to 400 MW of electricity supply and grid ancillary services for a 4-hour or longer duration. The major components of the Project are described below with additional detail provided in Table 1. Project battery and equipment suppliers will not be selected until after the Project is entitled and the Project equipment's exact dimensions, specifications and site layout will change depending on the technology selected. As such, the project design assumptions provided herein are intended to establish the maximum Project site footprint and environmental impacts which will allow for flexibility in final Project manufacturer selection, design, specifications, and equipment layout based on information from various equipment manufacturers that may be selected for the Project. All Project equipment, design of civil works, foundations and electrical work for the layout

selected will be permitted, constructed and operated pursuant to applicable federal, state and local codes and regulations. It is anticipated that The City would approve the Project with a Condition Use Permit (CUP).

Battery Enclosures: The Project will be comprised of battery modules installed in racks and housed within purpose-built outdoor enclosures. A typical battery enclosure will house hundreds of battery modules where each enclosure is typically capable of storing between 0.4 to 5.0 megawatt hours (MWh) of energy.

Each individual module within an enclosure is monitored and controlled to ensure safe and efficient operations, and every enclosure is equipped with integrated operational management systems and fire and safety systems such as heating ventilation and cooling (HVAC), gas, heat and smoke detection and alarms, and fire suppression, to ensure safe and efficient operations. The Project and its systems will be designed, constructed, and operated pursuant to the current California and local building code and California Fire Code requirements. The modules within each enclosure are accessed for maintenance from the outside via cabinet doors.

The dimensions of a typical BESS enclosure vary significantly between manufacturers and are arranged in repeated "blocks" across the site. System blocks may consist of a single large enclosure, one to twelve medium sized enclosures, or several dozen smaller enclosures set side-by-side to create banks of batteries with similar overall dimensions. Smaller enclosures typically closely spaced or mechanically attached at the time to construction installation, and larger enclosure placed in smaller groupings or individually. A typical example of an enclosure grouping would consist of four enclosures measuring approximately 20 feet long by 8 feet wide with a height of 10 feet. Smaller enclosures may be as small as 3.5 feet long by 5 feet wide by 8 feet tall while larger enclosures may measure over 50 feet long by 12 feet wide with a height of up to 15 feet. In some instances, enclosures may also be stacked two-high for a combined height of up to 35 feet. However, the number, size, layout, and capabilities of each enclosure will vary depending on the battery, enclosure manufacturer design, and BESS system manufacturer(s) selected for the Project. Regardless of the system manufacturer, the Project's developed footprint and overall capability will remain substantially the same. In some instances, the battery enclosures may also contain inverters, which convert low-voltage direct current (DC) to low-voltage alternating current (AC) (and vice-versa when charging).

Power Conversion System (PCS): For battery enclosures not containing an integrated inverter, low voltage DC cables will connect the battery enclosures to low profile, pad-mounted PCS inverter-transformers located adjacent to each enclosure. Inverters within the PCS convert electricity from low-voltage direct current (DC) to low-voltage alternating current (AC) when power is being taken (discharged) from the battery into the grid. The opposite occurs when charging the battery from the grid. A medium-voltage transformer within the PCS is used to convert the low-voltage AC current to medium-voltage AC current and vice versa.

Medium Voltage (MV) Transformers: As stated above, in some instances the inverter is contained within the battery enclosures and a stand-alone transformer is used instead of a PCS. In this instance, the MV Transformer equipment is connected directly to the battery enclosures via low-voltage AC wiring. MV Transformers will also be distributed throughout the site to convert medium-voltage AC current to low-voltage AC current to supply power to ancillary loads such as HVAC and lighting.

Outdoor Electrical Equipment: Additional MV transformers and other additional electrical equipment such as electrical cabinets and panels will be installed outside the BESS enclosures within the site area.

This equipment is smaller in size than the equipment listed above and is distributed through the site as needed based on the design parameters of the battery and power conversion equipment chosen. In addition, buried and/or above-grade cables will be placed throughout the site to connect power and communications to individual components and to the Project Substation. All outside electrical equipment will be housed in the appropriate National Electrical Manufacturers Association (NEMA) rated enclosures.

Project Substation: The Project's onsite substation will be a secure, separately fenced (chain link security fencing) area where high-voltage electrical equipment, switchgear cabinets, auxiliary transformers, meters and communications equipment are located, including the PDC (see below), and Main Power Transformer (MPT, or also referred to as the Battery Step Up Transformer (BSU) or Generator Step Up Transformer (GSU)), which steps up the medium-voltage from the PCS (inverter-transformers) and MV Transformers to the high voltage level of the transmission system, where it is then delivered it into the grid via the Project Gen-Tie (see below).

Power Distribution Center (PDC): The Project's PDC is an enclosure that houses and protects critical low- and medium-voltage electrical, life-safety, communications, and command equipment. Typically, the PDC is located near the MPT within an on-site switchyard.

Generation Tie-Line (Gen-Tie): A generation tie line (gen-tie line) and fiber optic cables will be constructed from the Project Substation into the Antelope Valley substation in either the 230-kV or 500-kV portion of the substation. Two routes are proposed as Options A and B. Option A will run northwest from the western boundary of the Project site for approximately .1 mile (454 feet) and onto SCE's existing substation property and into a bay position designated by SCE. Option B will head north along the west side of 90th Street, then west along the south side of W Avenue J for a total of approximately 1.25 miles and onto SCE's existing substation property and to a bay position designated by SCE. The portions of the line adjacent to the right-of-way are proposed within areas that include franchise rights for electrical transmission infrastructure.

Fire and Thermal Runaway Safety Equipment and Design Features: The facility will be designed with multiple scenarios in mind, including battery thermal runaway, electrical equipment fires and fires originating offsite. The Project battery energy storage systems, facilities and its UL-compliant equipment will include an integrated fire protection system designed to manage and prevent the risk of fire or thermal runaway leading to fire at the facility. In the unlikely situation that an event does occur, the facility equipment, systems and operational procedures are designed so that such an event does not propagate to surrounding batteries, cabinets or neighboring areas.

The Project will comply with all County and State codes and regulations related to health, fire and safety. Specifically, the Project will be required to comply with Chapter 1206 of the 2020 California Fire Code (or currently adopted version at the time of permitting). Chapter 1206 of the Fire Code applies to Stationary Electric Energy Storage Systems (ESS) and addresses development standards for design, installation, commission, operation, maintenance and decommissioning of these systems, including fire and safety equipment requirements to be approved by the fire code officials having jurisdiction over the Project with established performance standards for approval; equipment and system fire testing in accordance with nationally-adopted UL standards, stringent standards for commissioning, operation and maintenance, on-going inspection and testing, decommissioning, seismic and structural design, signage, security installations, fire detection and suppression systems, vegetation control and minimum setbacks from lot lines, roads, and adjacent buildings. Compliance with these advanced, nationally adopted standards are designed to ensure the site installation and operation of battery storage systems for operators, first

responders and neighboring community are safe. As a result of the implementation of these advanced standards, today BESS projects like the Project operate safely and efficiently throughout the state.

O&M Office and Storage Enclosures: The Project will install two modular enclosures on the Project Site, typically one 40-foot-long by 8-foot-wide prefabricated portable office contained within shipping container sized enclosure, and a second 40-foot-long by 8-foot-wide shipping container for equipment storage. The office container will include two small office spaces with a half-bath restroom for use by O&M personnel that will visit the site periodically.

Sewer/Septic Service: As the Project plans to include a small onsite O&M enclosure that includes a restroom and potable water supply, sanitary sewer service may be secured from the municipal sewer service lines located in 90th Street, a new onsite leach field, or holding tanks from which the waste will be periodically pumped and trucked off-site by a licensed septic pumping service. Final design of the sewer, leach field, or tank sewer system will be approved during the building permit process.

Water Service: The Project will secure municipal, domestic water supply from a commercial provider, as determined by the final design requirements of the site and availability of resources. If utilized for fire water, a tank or tanks will be erected adjacent to the site entrance to provide a sufficient quantity of water as agreed upon with the fire authority having jurisdiction. Potable water for drinking and/or hand washing will be supplied either via the municipal water system or an on-site storage tank.

Other Site Design Features: The Project includes other essential design features to ensure safety and efficiency as well as compliance with all building, fire, and health and safety regulations, including set-backs, fire-operations access roads, security fencing and lighting, and separation between equipment and other features. A drainage basin will be installed to retain stormwater on-site.

Table A – Project Equipment Details

Equipment	Description	Number of Units	Height
Battery Containers with Side Mounted A/C	Integrated battery, battery controls and ancillary equipment with HVAC.	Contained within the approximately 14 acres of battery containers	Up to 35 feet
Power Conversion System (PCS) Equipment (Inverters and Transformers)	Power conversion systems (PCS) inverters and LV-MV Transformer skid	Contained within the approximately 14-acre of battery energy storage system area	10 feet
PDC	Power Distribution Center - substation controls building	1 or 2; Contained within the approximately 2-acre project substation area	20 feet
MPT (aka GSU, step up transformer)	Main power high voltage transformer	2; Contained within the approximately 2-acre project substation area	30 feet
Auxiliary Transformers	MV-LV Auxiliary Transformers for equipment back-feed power	Up to 20; Contained within the approximately 14-acre of battery energy storage system area	10 feet

Equipment	Description	Number of Units	Height
Transmission Towers/Poles and Static Masts	Steel monopole or wood pole electrical transmission and/or lightning protection structures	Up to 25, depending on interconnection conditions	Up to 90 feet depending on interconnection and line crossing conditions, and lightning protection requirements
Other lighting, electrical, safety, communications, and security equipment	Various	Up to 100, contained within the 14-acre of battery energy storage system area	Switchgear cabinets and power distribution panels up to 10 feet; junction boxes and telephony equipment up to 8 feet
Perimeter Fence/Wall	An fence/wall no shorter than 6 feet and comprised of chain link fencing, concrete masonry unit, composite, or similar material with noise attenuation and security features and a single project gate surrounding the Project site	Approximately 2,600 linear feet	6-16 Feet
O&M Building	Prefabricated portable office contained within shipping container sized enclosures.	2; approximately 40-foot-long by 8-foot-wide	Up to 20 feet

Source: Project Applicant.

Construction of the proposed project is anticipated to start in the fourth quarter of 2024 and would last approximately 12 months. Additionally, up to 20,000 cubic yards of fill would be required to support construction of the Project. Project trips, or average daily trips (ADTs), associated with Project construction is estimated to include between 15 and 35 ADT for workers and equipment/materials deliveries, depending on the construction phase. In addition, approximately 100 haul trips are estimated over several days during Project site grading. It is estimated that the peak trips associated with the Project would be 75 ADT.

The Project will operate 24 hours per day, 7 days per week. The majority of operations will be performed remotely, however, it is estimated that maintenance will include two to four staff performing maintenance visits weekly and as needed. Structures will be provided onsite for storage and maintenance use during operation, including restroom facilities.

In addition to regularly scheduled maintenance, and as part of Project operations, augmentation of batteries and battery enclosures will be required. Depending on technology selection, augmentation could include replacement of batteries within enclosures and/or the phased installation of BESS enclosures throughout the life of the Project, beyond what is needed to be installed during the "beginning of life" up to the permitted footprint of the Project. In order to fully analyze potential impacts from the Project, all BESS enclosures that would be constructed and operated through the life of the Project have been included in the Project's planning and impact assessments.

1.4 Executive Summary

Standard Air Quality and GHG Regulatory Conditions

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

AVAQMD Rules

The following lists the AVAQMD 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; and
- Rule 442 Solvents – Establishes VOC content limits in 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?

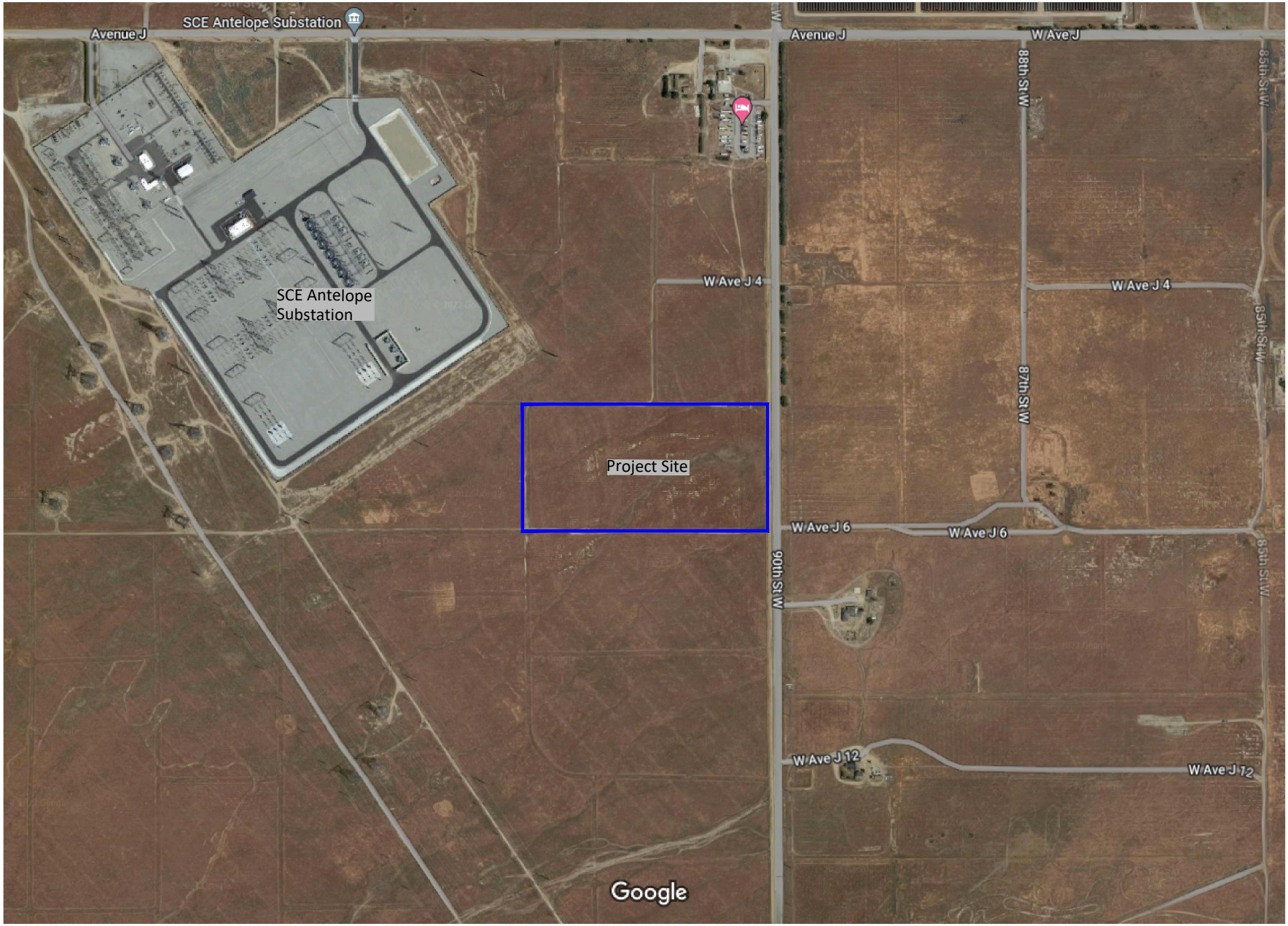
Less than significant impact.

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

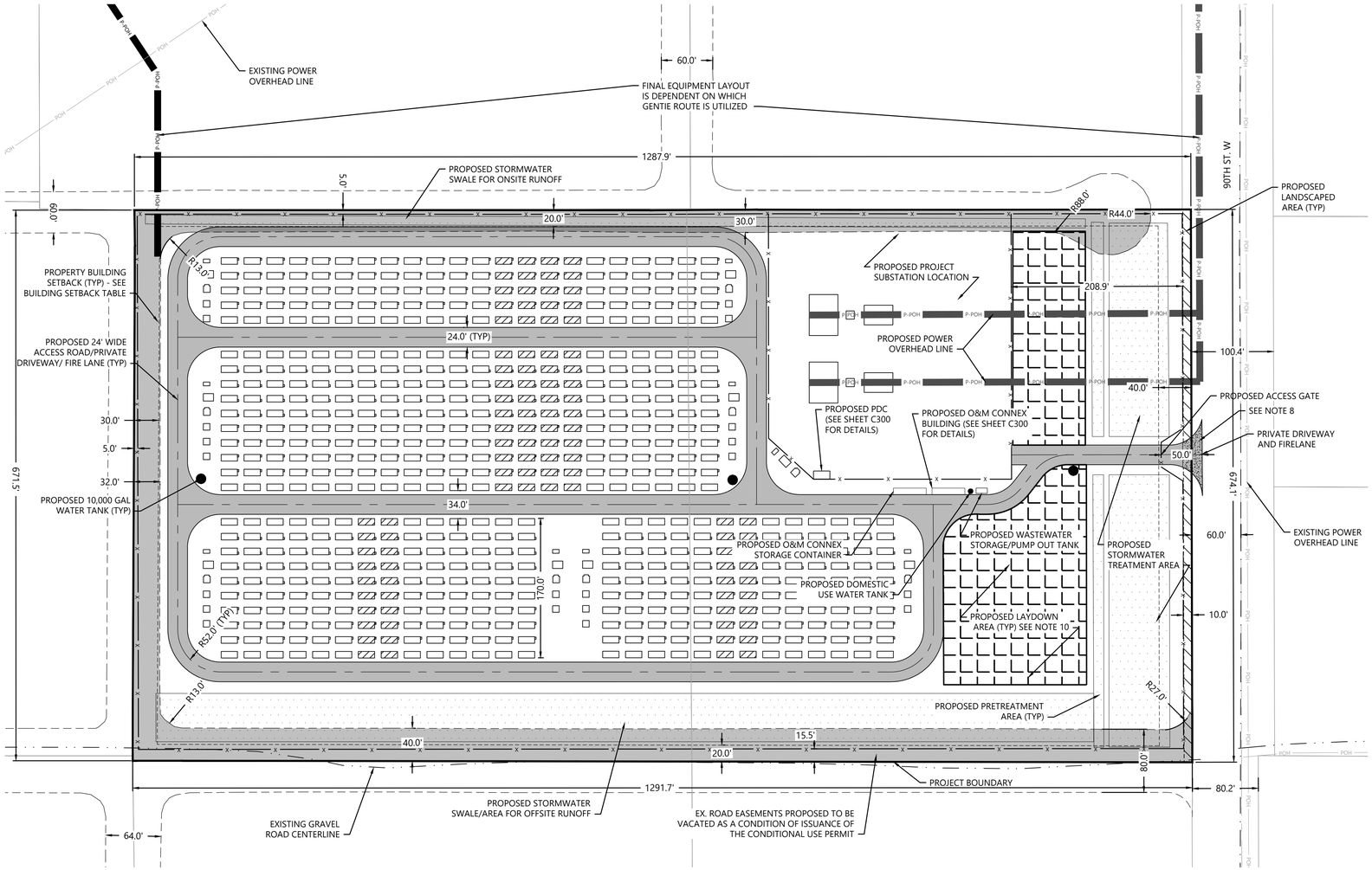
This analysis found that implementation of the State, AVAQMD, and City air quality and GHG emissions reductions regulations were adequate to limit criteria pollutants, toxic air contaminants, odors, and GHG emissions from the proposed project to less than significant levels. No mitigation measures are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



SOURCE: Google Maps.

VISTA ENVIRONMENTAL

Figure 1
Project Location and Vicinity Map



LEGEND:

- PROJECT BOUNDARY
- PROPERTY SETBACK
- PARCEL BOUNDARY
- SECTION LINE
- EX. OVERHEAD POWER
- EX. PAVED ROAD CENTERLINE
- EX. GRAVEL ROAD CENTERLINE
- EX. ROAD EASEMENTS
- EX. ROAD EASEMENTS PROPOSED TO BE VACATED AS A CONDITION OF ISSUANCE OF THE CONDITIONAL USE PERMIT
- PROPOSED PERIMETER CHAIN-LINK FENCE OR WALL
- PROPOSED 24 FT GRAVEL PRIVATE DRIVEWAY/FIRE LANE, ALL WEATHER DESIGN; MIN 95% SUBGRADE COMPACTION
- PROPOSED POWER OVERHEAD LINE - GENTIE ROUTE A
- PROPOSED POWER OVERHEAD LINE - GENTIE ROUTE B
- PROPOSED LAYDOWN AREA
- PROPOSED STORMWATER INFRASTRUCTURE
- PROPOSED 10,000 GAL FIRE WATER TANK
- PROPOSED LANDSCAPED AREA

NOTES:

1. THIS PLAN IS PRELIMINARY AND SUBJECT TO CHANGE.
2. FURTHER SITE DESIGN DETAILS ARE SUBJECT TO CITY OF LANCASTER AND CALIFORNIA STATE REQUIREMENTS.
3. FINAL EQUIPMENT LAYOUT IS DEPENDENT ON WHICH GENTIE ROUTE IS UTILIZED.
4. NO PARKING ON SITE, FACILITY IS UNMANNED. PERSONNEL MAKING PERIODIC VISITS WILL PARK IN VARIED LOCATIONS ALONG THE SITE ROADS TEMPORARILY, DEPENDING ON SITE ACTIVITY NECESSARY.
5. PROPOSED LIGHTING POLES AND LIGHTS SHALL ADHERE TO REQUIREMENTS OF THE CITY OF LANCASTER, CA.
6. PROJECT DOES NOT FALL WITHIN OR NEAR A FEMA FLOODPLAIN. FLOOD ZONE CLASSIFICATION: ZONE X-MINIMAL HAZARD.
7. PARCEL LINES, ROAD LINES AND EXISTING OVERHEAD POWER LINES SHOWN ARE BASED ON PUBLICLY AVAILABLE DATA.
8. DRIVEWAY WITHIN CITY OF LANCASTER RIGHT-OF-WAY TO BE PAVED.
9. WATER FOR FIRE AND DOMESTIC WATER TANKS SHALL BE TRUCKED TO SITE.
10. LAYDOWN AREA IS INTENDED FOR USE DURING CONSTRUCTION. IF PROPOSED LAYDOWN IS LEFT IN PLACE POST-CONSTRUCTION, DUST CONTROL MEASURES WILL BE IMPLEMENTED AS REQUIRED BY THE CITY OF LANCASTER. IF LAYDOWN IS REMOVED, THE AREA WILL BE STABILIZED AND RESTORED WITH VEGETATION, AS WELL AS FINISHED TO ENSURE POSITIVE DRAINAGE TOWARD TREATMENT AREAS IS MAINTAINED.
11. PROJECT PARCEL LINES AND BOUNDARY ARE BASED ON THE LA COUNTY TRACT MAP NO. 39252.
12. EXISTING ROAD EASEMENTS ARE BASED UPON A KMZ PROVIDED BY TERRA-GEN, LLC AND REPRESENTATIVE OF TITLE ROADS SHOWN IN LA COUNTY TRACT MAP NO 39252.
13. AT SITE ENTRANCE, HDPE OR POLYPROPYLENE PIPER OR DRAINAGE CROSSING, AS APPROVED IN DRIVEWAY PERMIT, SHALL BE INSTALLED.

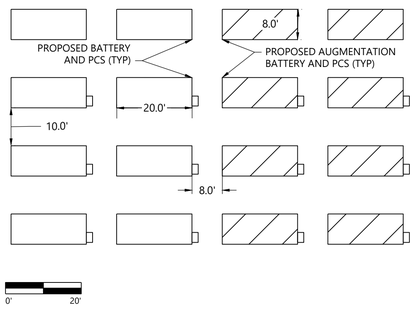
PROPOSED PROJECT ACREAGE	
PROJECT AREA	19.6 AC
SUBSTATION AREA	2.2 AC
PROPOSED STORMWATER INFRASTRUCTURE AREA	3.0 AC
BATTERY STORAGE AND AUXILIARY EQUIPMENT AREA	8.0 AC
ACCESS ROAD AREA	2.6 AC
LANDSCAPED BUFFER AREA	0.1 AC
OPEN SPACE (SETBACK/BUFFER AREA)	3.7 AC

PROPOSED PROJECT QUANTITIES	
PROPOSED PERIMETER WALL	3486 LF
PROPOSED SUBSTATION FENCE	910 LF
PROPOSED 24' WIDE ACCESS ROAD	4646 LF

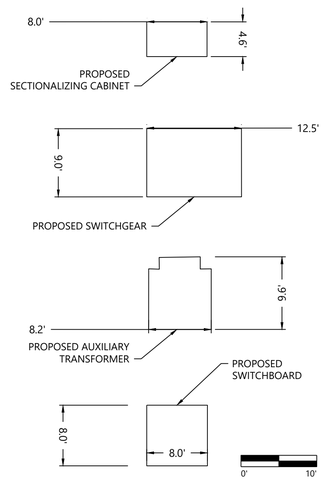
BUILDING SETBACK TABLE	
FRONT YARD	40'
SIDE YARD	20'
REAR YARD	30'

PER §17.08.060 OF LANCASTER, CA CITY ORDINANCE.

TYPICAL EQUIPMENT LAYOUT DETAIL



TYPICAL AUXILIARY EQUIPMENT DETAIL



Westwood

Phone (720) 531-8350
Toll Free (888) 937-5150
10170 Church Ranch Way, Suite #201
Westminster, CO 80021
westwoodps.com

Westwood Professional Services, Inc.

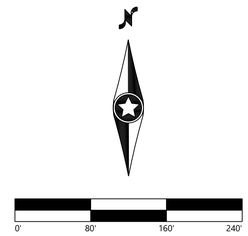
PREPARED FOR:

TERRA-GEN

J90 ESS, LLC
11455 EL CAMINO REAL SUITE 160
SAN DIEGO, CA 92130

REVISIONS:

#	DATE	COMMENT	BY	CHK	APR
A	12/09/2022	ISSUED FOR AHJ REVIEW	SB	AK	BM
B	01/17/2023	ISSUED FOR AHJ REVIEW	SB	AK	BM



J90 South Battery Energy Storage Project

Lancaster, California

Preliminary Site Plan

NOT FOR CONSTRUCTION

DATE: 01/17/2023

SHEET: C101

REV: B

M:\0056809.GIS_Civil\Rev Plan\0056809_SP.dwg, 1/17/2023 3:41 PM Alex Kircher

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.

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 B. The SAR GWPs are used in CARB's California inventory and Assembly Bill (AB) 32 Scoping Plan estimates.

Table B – 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 million metric tons of CO_2e emissions ($MMTCO_2e$) 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 C.

Table C – 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.
Respirable 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	
Fine Particulate Matter ($PM_{2.5}$)	12 µg/m³ / annual	35 µg/m³ / 24-hour 12 µg/m³ / annual	
Sulfates	25 µg/m³ / 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/m³ / 30-day	0.15 µg/m³ / 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 shown in Table D, the AVAQMD has been designated by EPA for the national standards as a non-attainment area for ozone. Currently, the AVAQMD is in attainment with the national ambient air quality standards for respirable particulate matter (PM10), fine particulate matter (PM2.5), carbon monoxide (CO), sulfur dioxide (SO_2), and nitrogen dioxide (NO_2).

Table D – AVAQMD Attainment Status

Pollutant	Federal Designation	State Designation
Ozone	Nonattainment	Nonattainment
Respirable Particulate Matter (PM10)	Unclassified/Attainment	Nonattainment
Fine Particulate Matter (PM2.5)	Unclassified/Attainment	Unclassified
Carbon Monoxide (CO)	Unclassified/Attainment	Attainment
Nitrogen Dioxide (NO_2)	Unclassified/Attainment	Attainment
Sulfur Dioxide (SO_2)	Unclassified/Attainment	Attainment
Lead	Unclassified/Attainment	Attainment
Sulfates	No Federal Standard	Attainment
Hydrogen Sulfide	No Federal Standard	Unclassified
Visibility Reducing Particles	No Federal Standard	Unclassified

Source: https://avaqmd.ca.gov/files/e0986ab83/AVAQMD+2017+Attainment+Status+Table.pdf

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 C. 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 AVAQMD has been designated by the CARB as a non-attainment area for ozone and PM10. Currently, the AVAQMD is in attainment with the ambient air quality standards for CO, PM2.5, 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 – Antelope Valley Air Quality Management District

The AVAQMD is the agency principally responsible for comprehensive air pollution control in the Los Angeles County portion of the MDAB. To that end, as a regional agency, the AVAQMD works directly with the County and incorporated communities as well as the military bases within the Antelope Valley to control air emissions within the Antelope Valley. The Los Angeles County portion of the MDAB was originally part of the South Coast Air Quality Management District (SCAQMD). On July 1, 1997, the Antelope Valley Air Pollution Control District (AVAPCD) was established and on January 1, 2002 this district was renamed to AVAQMD. As a successor district to the SCAQMD, the AVAQMD assumes the authorities and duties of the SCAQMD for the Antelope Valley.

As of July 1, 1997, the complete set of rules and regulations from the SCAQMD remained in effect pursuant to the statute upon formation of the AVAPCD, until the AVAPCD Governing Board amended or replaced the rules, which has been performed on a rule by rule basis and has been limiting certain rules where no emissions sources existed in the Antelope Valley or where the AVAPCD had no underlying statutory authority for the rule. The current AVAQMD rulebook, especially the prohibitory rules, remains the same as the SCAQMD rules of July 1, 1997. This set of rules and regulations represented the best available and most restrictive set of stationary source control measures available (AVAQMD, 2004).

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 AVAQMD prepared the *AVAQMD 2004 Ozone Attainment Plan (State and Federal)*, April 20, 2004. This Plan found that the existing rules and regulations were adequate to achieve the CAAQS and NAAQS by the earliest practicable date, not as a result of local reductions, but as a result of reductions occurring upwind in the South Coast Air Basin (AVAQMD, 2004)

On March 21, 2017, the AVAQMD adopted the *AVAQMD Federal 75 ppb Ozone Attainment Plan (Western Mojave Desert Nonattainment Area)*. This Plan was prepared to address all Federal attainment planning requirements for the 75 ppb federal 8-hour ozone standard. Through implementation of the Plan, the portion of the AVAQMD designated as a Federal 8-hour ozone nonattainment area will be in attainment of the 75 ppb ozone NAAQS by July 2027. In addition to the above attainment plans, the AVAQMD 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 - 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.

1. Do not allow any track out of material onto public roadways and remove all track out at the end of each workday.
2. Cover loaded haul vehicles while operating on public roads.
3. Use periodic watering on active sites and pre-water all areas prior to clearing and soil moving activities.
4. Apply nontoxic chemical stabilizers according to manufacturer specifications to all construction areas.
5. Replant all disturbed area as soon as practical.
6. 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 AVAQMD Rule 442.

4.4 Local – City of Lancaster

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

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. The 2019 Title 24 standards are the current standards in effect and on January 1, 2023 the 2022 Title 24 standards will be the required standards for new projects in California. As such, the proposed project will be required to be designed to meet the 2022 Title 24 standards.

According to the Title 24 Part 6 Fact Sheet, the CEC estimates that over 30 years the 2022 Title 24 standards will reduce 10 $MMTCO_2e$ of GHG emissions, which is equivalent to taking nearly 2.2 million cars off the road for a year. For single-family homes, the CEC estimates that the 2022 Title 24 changes from using natural gas furnaces to electric heat pumps to heat new homes and would reduce net CO_2 emissions by 16,230 $MTCO_2e$ per year, when compared to the 2019 Title 24 standards, which is equivalent of taking 3,641 gas cars off the road each year. The 2022 Title 24 standards will: (1) Increase onsite renewable energy generation; (2) Increases electric load flexibility to support grid reliability; (3) Reduces emissions from newly constructed buildings; (4) Reduces air pollution for improved public health; and (5) Encourages adoption of environmentally beneficial efficient electric technologies.

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

CCR Title 24, Part 11: *California Green Building Standards* (CalGreen Code) was developed in response to continued efforts to reduce GHG emissions associated with energy consumption. The CalGreen Code is also updated every three years and the current version is the 2019 CalGreen Code and the 2022 CalGreen Code will go into effect on January 1, 2023.

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

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

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

Senate Bill 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 million metric tons of CO2e ($MMTCO_2e$). The 2020 target of 431 $MMTCO_2e$ requires the reduction of 78 $MMTCO_2e$, or approximately 16 percent from the State's projected 2020 business as usual emissions of 509 $MMTCO_2e$ (CARB, 2014). Under AB 32, CARB was required to adopt regulations by January 1, 2011 to achieve reductions in GHGs to meet the 1990 cap by 2020. Early measures CARB took to lower GHG emissions included requiring operators of the largest industrial facilities that emit 25,000 metric tons of CO_2 in a calendar year to submit verification of GHG emissions by December 1, 2010. The CARB Board also approved nine discrete early action measures that include regulations affecting landfills, motor vehicle fuels, refrigerants in cars, port operations and other sources, all of which became enforceable on or before January 1, 2010.

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

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

Executive Order S-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 – Antelope Valley Air Quality Management District

The AVAQMD is the agency principally responsible for comprehensive air pollution control that includes GHG emissions in the Antelope Valley portion of the MDAB. To that end, as a regional agency, the AVAQMD works directly with the County and incorporated communities (including the City of Lancaster) as well as the military bases within the Antelope Valley to control GHG emissions within the Antelope Valley portion of the MDAB.

5.4 Local – City of Lancaster

Local jurisdictions, such as the City of Lancaster, have the authority and responsibility to reduce GHG emissions through their police power and decision-making authority. Specifically, the City is responsible for the assessment and mitigation of GHG emissions resulting from its land use decisions. In accordance with CEQA requirements and the CEQA review process, the City assesses the global climate change

potential of new development projects, requires mitigation of potentially significant global climate change impacts by conditioning discretionary permits, and monitors and enforces implementation of such mitigation.

6.0 ATMOSPHERIC SETTING

6.1 Regional Climate

The project site is located in the Mojave Desert Air Basin (MDAB). The MDAB encompasses about 21,480 square miles and includes the desert portions of San Bernardino County, Riverside County, Palo Verde Valley, and the cities of Palmdale and Lancaster in the Antelope Valley. 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.

6.2 Local Climate

The project site is located in the westernmost portion of the MDAB within the jurisdiction of the Antelope Valley Air Quality Management District (AVAQMD). The Antelope Valley is bordered in the northwest by the Tehachapi Mountains, separated from the Sierra Nevadas in the north by the Tehachapi Pass (3,800 feet elevation). The Antelope Valley is bordered in the south by the San Gabriel Mountains, bisected by Soledad Canyon (3,000 feet).

During the summer the Antelope Valley is generally influenced by a Pacific Subtropical High cell that sits off the coast, inhibiting cloud formation and encouraging daytime solar heating. The Antelope Valley is rarely influenced by cold air masses moving south from Canada and Alaska, as these frontal systems are weak and diffuse by the time they reach the desert. Most desert moisture arrives from infrequent warm, moist and unstable air masses from the south.

The temperature and precipitation levels for the Lancaster General William J Fox Airfield Monitoring Station, which is the nearest weather station to the project site with historical data are shown below in Table E. Table E shows that July is typically the warmest month and December 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 E – Monthly Climate Data

Month	Average Maximum Temperature (°F)	Average Minimum Temperature (°F)	Average Total Precipitation (inches)	Average Total Snow Fall (inches)
January	57.9	30.8	1.56	1.8
February	60.4	34.6	1.77	0.6
March	65.8	39.4	1.18	0.0
April	71.7	44.6	0.37	0.0
May	80.6	53.3	0.11	0.0
June	89.8	61.0	0.04	0.0
July	96.5	66.6	0.09	0.0
August	95.9	64.2	0.11	0.0
September	89.9	57.0	0.18	0.0
October	78.6	46.2	0.39	0.0
November	66.0	35.3	0.47	0.0
December	57.4	29.1	1.11	1.0
Annual	**75.9**	**46.8**	**7.38**	**3.4**

Source: https://wrcc.dri.edu/cgi-bin/cliMAIN.pl?ca4749

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 AVAQMD operates the Lancaster-43301 Division Street Monitoring Station (Lancaster Station) that is located approximately nine miles east of the project site at 43301 Division Street, Lancaster. The monitoring data is presented in Table F and shows the most recent three years of monitoring data from CARB.

Ozone

During the last three years, the State 1-hour concentration standard for ozone has been exceeded between zero and four days each year at the Lancaster Station. The State 8-hour ozone standard has been exceeded between four and 14 days each year over the last three years at the Lancaster Station. The Federal 8-hour ozone standard has been exceeded between three and 13 days each year over the last three years at the Lancaster 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 Lancaster Station did not record an exceedance of either the Federal or State 1-hour NO_2 standards for the last three years.

Table F – Local Area Air Quality Monitoring Summary

Pollutant (Standard)	Year[1] 2019	2020	2021
Ozone:			
Maximum 1-Hour Concentration (ppm)	0.096	0.099	0.086
Days > CAAQS (0.09 ppm)	**1**	**4**	0
Maximum 8-Hour Concentration (ppm)	0.081	0.083	0.079
Days > NAAQS (0.070 ppm)	**13**	**8**	**3**
Days > CAAQs (0.070 ppm)	**14**	**8**	**4**
Nitrogen Dioxide:			
Maximum 1-Hour Concentration (ppb)	49.8	51.5	46.1
Days > NAAQS (100 ppb)	0	0	0
Inhalable Particulates (PM10) :			
Maximum 24-Hour National Measurement (ug/m^3)	165.1	192.3	411.2
Days > NAAQS (150 ug/m^3)	2	1	1
Days > CAAQS (50 ug/m^3)	ND	ND	ND
Annual Arithmetic Mean (AAM) (ug/m^3)	22.5	30.6	29.6
Annual > NAAQS (50 ug/m^3)	No	No	No
Annual > CAAQS (20 ug/m^3)	**Yes**	**Yes**	**Yes**
Ultra-Fine Particulates (PM2.5):			
Maximum 24-Hour National Measurement (ug/m^3)	13.6	74.7	35.7
Days > NAAQS (35 ug/m^3)	0	**9**	**1**
Annual Arithmetic Mean (AAM) (ug/m^3)	6.1	9.2	8.1
Annual > NAAQS and CAAQS (12 ug/m^3)	No	No	No

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

[1] Data obtained from the Lancaster Station.

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

Particulate Matter

No data was collected at the Lancaster Station on the State 24-hour concentration standard for PM10. However, over the past three years the Federal 24-hour standard for PM10 has been exceeded between one and two days each year of the past three years at the Lancaster Station. The annual PM10 concentration at the Lancaster 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 zero and nine days each year over the past three years at the Lancaster Station. The annual PM2.5 concentrations at the Lancaster Station has not exceeded either the State or Federal standard for the last three years. There does not appear to be a noticeable trend for PM10 or PM2.5 in either maximum particulate concentrations or days of exceedances in the area. Particulate levels in the area are due to natural sources, grading operations, and motor vehicles.

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

7.0 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 Los Angeles 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 Los Angeles County, a Climate Zone of 9, utility company of Southern California Edison, and an opening year of 2025 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 would consist of development of an energy storage facility on a 19.5-acre project site. The proposed project's land use parameters that were entered into the CalEEMod model are shown in **Error! Reference source not found.**.

Table G – CalEEMod Land Use Parameters

Proposed Land Use	Land Use Subtype in CalEEMod	Land Use Size	Lot Acreage[1]
Battery Containers and Substation Areas	User Defined Industrial	12 Acres	12.00
Office	Office	0.64 TSF	0.01
Onsite Gravel Roads, Detention Basins, and Temporary Laydown & Parking Areas	Other Non-Asphalt Surfaces	7.49 Acres	7.49

Notes:
TSF = Thousand square feet
[1] Lot acreage calculated based on a total project site of 19.5 acres.

Construction Parameters

Construction activities have been modeled as starting in the fourth quarter of 2024 and taking approximately 12 months to complete. The following details the construction phases for the project as provided by the applicant:

- Installation of Best Management Practices (BMP's)
- Install temporary fencing, civil earthworks equipment staging, and mobilization
- Site preparation, mass grading and compaction and drainage infrastructure installation
- Additional equipment staging
- Trenching for electrical cables, wires, and conduits
- Install below-ground conduit banks and conduit and backfill of trenching
- Earthwork preparation of equipment foundations

- Pour-in-place concrete footings, pad foundations, and/or piers and install driven pilings
- Foundation backfill and site compaction (as necessary)
- Install PCS, power distribution systems, BESS, and pad-mounted transformers
- Pull cables and connect equipment
- Install above-ground utilities
- Placement of finished surface material
- Install safety features, permanent fencing, and security lighting
- Commissioning
- Restoration of disturbed areas and removal of BMP's

Since the CalEEMod model is limited in the types of construction phases that can be analyzed, the above construction phases were combined into the following construction phases that have been analyzed in the CalEEMod model:

1. Site Preparation (including grading, foundations and underground utilities),
2. Grading (including roads and pads and import of gravel for roads)
3. Building construction (including installation of all equipment and safety features)

Each phase analyzed in the CalEEMod was based on the worst-case subphase for construction equipment and worker and truck trips. The three phases analyzed by CalEEMod are detailed below.

Site Preparation

The site preparation phase that includes site preparation and grading activities as well as construction of foundations and installation of underground utilities. The site preparation phase was modeled as starting October, 2024 and would take 100 workdays to complete. Site Preparation of the project site is anticipated to require the import of up to 30,000 cubic yards of dirt to the project site. The CalEEMod model calculated that the imported dirt would generate a total of 3,750 haul truck trips, which equates to an average of 37.5 haul truck trips per day over the duration of the site preparation phase. In order to account for water truck emissions, six vendor trucks per day were added to the site preparation phase. The worker trips were set to 35 worker trips per day in order to match the average daily worker trips detailed in the Project Description.

The onsite equipment utilized during the site preparation phase was obtained by the applicant and would consist of one grader, one excavator, one crane, one compactor (analyzed as a roller), one forklift, one generator, one rubber tired dozer, one welder and one pile driver (analyzed as bore drill rig). All off-road equipment were modeled as operating 8 hours per day. The mitigation of water all exposed areas two times per day was chosen in order to account for the fugitive dust reduction that would occur through adhering to AVAQMD Rule 403, which requires that the Best Available Control Measures be utilized to reduce fugitive dust emissions.

Grading

The grading phase would consist of grading the onsite roads and pads. The grading phase was modeled as starting after completion of the site preparation phase and would take 60 working days to complete. Grading of the project site is anticipated to require the import of up to 12,000 cubic yards of rock for the roads to the project site. The CalEEMod model calculated that the imported dirt would generate a total

of 1,500 haul truck trips, which equates to an average of 25.0 haul truck trips per day over the duration of the grading phase. In order to account for water truck emissions, six vendor trucks per day were added to the grading phase. The worker trips were set to 35 worker trips per day in order to match the average daily worker trips detailed in the Project Description.

The onsite equipment utilized during the grading phase was obtained by the applicant and would consist of one compactor (roller), one grader, one plate compactor, one rubber tired dozer, one scraper, and one of either a tractor, loader, or backhoe.

Building Construction

The building construction phase would consist of installation of the PCS, power distribution systems, BESS, and pad-mounted transformers, above-ground utilities, placement of finished surface material, as well as installation of the safety features that include the permanent fencing, security lighting and testing and commissioning. The building construction phase was modeled as starting after completion of the grading phase and would take 100 working days to complete. The worker trips were set to 35 worker trips per day in order to match the average daily worker trips detailed in the Project Description. The vendor truck trips were based on the CalEEMod default trip rate of 73 trips per day and accounts for the delivery of equipment and material to the project site. The onsite equipment utilized during the grading phase was obtained by the applicant and would consist of one crane, two forklifts, 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. The proposed project will operate 24 hours per day/seven days per week. The majority of operations will be performed remotely, however, it is estimated that maintenance will include two to four staff performing maintenance visits weekly and as needed. As such, the trip generation rate was set to 8 daily trips, occurring once per week. 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. The electricity use was based on the CalEEMod default electricity usage rates for a project of this size. No other changes were made to the default energy use parameters in 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 0.6 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. According to the Project Description, operation of the project will utilize 0.3 acre feet of water per year, which equals 9,776 gallons per year that was entered into 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 AVAQMD Significance Thresholds

The *Antelope Valley AQMD California Environmental Quality Act (CEQA) and Federal Conformity Guidelines* (AVAQMD CEQA Guidelines), August 2016, outlines significance determination thresholds for CEQA analyses prepared within the AVAQMD jurisdiction. The AVAQMD CEQA 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:

- Generate total emissions (direct and indirect) in excess of the threshold given in Table H;
- Generates a violation of any ambient air quality standard when added to the local background;
- Does not conform with the applicable attainment or maintenance plan(s)[3];
- 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 AVAQMD significant emissions thresholds are shown in Table H. According to the AVAQMD CEQA 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 a multi-phased project (such as a 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 approximately 12 months, the annual threshold has been utilized for both short-term construction impact analysis and long-term operational impacts.

Table H – AVAQMD 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: http://avaqmd.ca.gov/files/e5b34d385/AV+CEQA+Guides+2016.pdf

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 AVAQMD Air Quality Management Plans (AQMPs). The Project Site is located within the Antelope Valley and is regulated by the AVAQMD. The 2004 and 2017 Ozone Attainment Plans set forth a comprehensive set of programs that will lead the Antelope Valley into compliance with Federal and State air quality standards. The control measures and related emission reduction estimates within Ozone Attainment Plans 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:

1. Demonstrating Project consistency with local land use plans and/or population projections (Criterion 1);
2. Demonstrating Project compliance with applicable AVAQMD Rules and Regulations (Criterion 2); and
3. 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 AVAQMD 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 City. The AVAQMD has incorporated these same demographic growth forecasts for various socioeconomic categories (e.g., population, housing, employment) into the AQMPs.

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 12 months), workers are not expected to relocate to the area with their families. Although, the majority of operations will be performed remotely, however, it is estimated that maintenance will include two to four staff performing maintenance visits weekly and as needed. 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 AVAQMD 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 AVAQMD Rules and Regulations.

The proposed project would be required to comply with all applicable AVAQMD Rules and Regulations. This would include AVAQMD Rules 401, 402, and 403 which control fugitive dust and other visible emissions from construction activities. Specifically AVAQMD 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 AVAQMD rules, and as such, would not conflict with applicable AVAQMD 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 AVAQMD 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 AVAQMD 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 AVAQMD thresholds of significance discussed above in Section 8.1.

Therefore, the proposed project would not delay the Antelope Valley's attainment goals for ozone 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 AVAQMD criteria pollutant emissions standards detailed above in Section 8.1.

Construction Emissions

Construction activities for the proposed project are anticipated to start in the fourth quarter of 2024 and would last approximately 12 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

	Pollutant Emissions[1] (tons per year)					
Construction Year	**VOC**	**NOx**	**CO**	**SO_2**	**PM10**	**PM2.5**
2024	0.09	0.99	0.74	<0.01	0.18	0.09
2025	0.14	1.60	1.24	<0.01	0.31	0.15
AVAQMD 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 AVAQMD Rule 403.
Source: CalEEMod Version 2020.4.0.

Table I shows that none of the analyzed criteria pollutants emissions would exceed the AVAQMD 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

	Pollutant Emissions (tons per year)					
Emissions Source	**VOC**	**NOx**	**CO**	**SO_2**	**PM10**	**PM2.5**
Area Sources[1]	0.64	0.00	<0.01	0.00	0.00	0.00
Energy Sources[2]	0.00	0.00	0.00	0.00	0.00	0.00
Mobile Sources[3]	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Total Emissions	**0.64**	**<0.01**	**<0.01**	**<0.01**	**<0.01**	**<0.01**
AVAQMD 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, 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 AVAQMD 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 AVAQMD'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:

- 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 C. 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.

- 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 0.14 tons per year of VOC and 1.60 tons per year of NOx and as shown above in Table J, operation of the proposed project would generate 0.64 tons per year of VOC and less than 0.01 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 AVAQMD CEQA 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 a home that located as near as 575 feet southeast of the project site and is located on the east side of 90th Street.

According to the AVAQMD CEQA 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:

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

The proposed project would consist of development of an energy storage 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 AVAQMD Rule 442 that limits VOC content in 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 an energy storage 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 an energy storage 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 the ability to store electricity that is generated from non-carbon sources that would replace existing carbon-powered electrical generation source

The AVAQMD shares responsibility with CARB for ensuring that all state and federal GHG standards are achieved and maintained within its jurisdiction. The AVAQMD CEQA Guidelines provides a project level significance threshold of 100,000 tons of CO_2e per year for both construction and operational activities. The AVAQMD 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 2024	222.26	0.04	0.01	226.92
Year 2025	387.97	0.07	0.02	396.81
Total Construction Emissions	610.23	0.12	0.04	623.73
Amortized Construction Emissions[1] (30 Years)	**20.34**	**<0.01**	**<0.01**	**20.79**
Operations				
Area Sources[2]	<0.01	0.00	0.00	<0.01
Energy[3]	1.42	<0.01	<0.01	1.43
Mobile Sources[4]	0.92	<0.01	<0.01	0.93
Solid Waste[5]	0.12	<0.01	0.00	0.30
Water and Wastewater[6]	0.03	<0.01	<0.01	0.04
Total Operational Emissions	**2.49**	**<0.01**	**<0.01**	**2.70**
Total Annual Emission (Construction & Operations)	**22.82**	**<0.01**	**<0.01**	**23.49**
AVAQMD 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 623.79 $MTCO_2e$, which equates to 20.79 $MTCO_2e$ per year, when amortized over 30 years. Table K also shows that operational activities would create 2.70 $MTCO_2e$ per year and when combined with the amortized

construction emissions, the proposed project would create a total of 23.49 $MTCO_2e$ per year, which is within the AVAQMD 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 City has not yet adopted a GHG reduction plan, the applicable plan is the CARB's 2017 Scoping Plan Update.

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 L, 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.

Table L – 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	**No Conflict.** As described above, occasional truck uses associated with the proposed project would be required to

Actions and Strategies	Proposed Project Consistency with Actions and Strategies
and equipment powered by renewable energy. Deploy over 100,000 zero-emission trucks and equipment by 2030.	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 K. Furthermore, the proposed project would comply with all applicable CARB and AVAQMD hydrofluorocarbon regulations. As such, the proposed project would not conflict with the SLCP reduction strategy.
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 23.49 $MTCO_2e$ 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.

As shown in Table L, the proposed project would be consistent with the 2017 CARB Scoping Plan and as detailed in Section 9.6, the proposed project would be in compliance with the AVAQMD's GHG emissions threshold. As such, the proposed project would not conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases. Impacts would be less than significant.

Level of Significance

Less than significant impact.

10.0 REFERENCES

Antelope Valley Air Quality Management District, *AVAQMD 2004 Ozone Attainment Plan (State and Federal),* April 20, 2004.

Antelope Valley Air Quality Management District, *AVAQMD Federal 75 ppb Ozone Attainment Plan (Western Mojave Desert Nonattainment Area),* March 21, 2017.

Antelope Valley Air Quality Management District, *Rule 401 Visible Emissions,* Readopted January 1, 2002.

Antelope Valley Air Quality Management District, *Rule 402 Nuisance, A*dopted April 7, 1976.

Antelope Valley Air Quality Management District, *Rule 403 Fugitive Dust,* Amended April 20, 2010.

Antelope Valley Air Quality Management District, *Rule 442 Usage of Solvents,* Amended November 15, 2005.

Breeze Software, *California Emissions Estimator Model* (CalEEMod) version 2020.4.0.

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.

City of Lancaster, *General Plan 2030 City of Lancaster*¸ July 14, 2009.

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.*

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

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

J-90 Energy Storage - Los Angeles-Mojave Desert County, Annual

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

J-90 Energy Storage

Los Angeles-Mojave Desert County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	0.64	1000sqft	0.01	640.00	0
User Defined Industrial	12.00	User Defined Unit	12.00	120,000.00	0
Other Non-Asphalt Surfaces	7.49	Acre	7.49	326,264.40	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	9			**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 Project Site 19.5 acres

Construction Phase - Construction schedule provided by applicant

Grading - Site Preparation - 30,000 cy import; Gravel Road Construction - 12,000 cy import

Off-road Equipment - Site Preparation: 1 Grader, 1 Excavator, 1 Compactor (Roller), 1 Crane, 1 Forklift, 1 Generator, 1 Rubber Tired Dozer, 1 Drill/Bore Rig, 1 Welder

Off-road Equipment - Grading - 1 Grader, 1 Ruber Tired Dozer, 1 Scraper, 1 Compactor (Roller), 1 Plate Compactor, 1 Tractor/Loader/Backhoe

Off-road Equipment - Building Construction - 1 Crane, 2 Forklifts, 1 Tractor/Loader/Backhoe

Trips and VMT - 35 worker trips per day all phases, 6 vendor trips per day added to Site Prep and Grading to account for water truck emissions

Vehicle Trips - Up to 8 daily trips one day per week

J-90 Energy Storage - Los Angeles-Mojave Desert County, Annual

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

Energy Use - Ntural Gas use set to zero

Water And Wastewater - Total water use - 0.03 acre-feet/year (9,776 gallons)

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

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	300.00	100.00
tblConstructionPhase	NumDays	30.00	60.00
tblConstructionPhase	NumDays	10.00	100.00
tblEnergyUse	NT24NG	0.39	0.00
tblEnergyUse	T24NG	9.92	0.00
tblGrading	MaterialImported	0.00	12,000.00
tblGrading	MaterialImported	0.00	30,000.00
tblLandUse	LandUseSquareFeet	0.00	120,000.00
tblLandUse	LotAcreage	0.00	12.00
tblOffRoadEquipment	LoadFactor	0.38	0.38
tblOffRoadEquipment	LoadFactor	0.41	0.41
tblOffRoadEquipment	LoadFactor	0.38	0.38
tblOffRoadEquipment	LoadFactor	0.29	0.29
tblOffRoadEquipment	LoadFactor	0.20	0.20
tblOffRoadEquipment	LoadFactor	0.50	0.50
tblOffRoadEquipment	LoadFactor	0.38	0.38
tblOffRoadEquipment	OffRoadEquipmentType		Plate Compactors
tblOffRoadEquipment	OffRoadEquipmentType		Excavators
tblOffRoadEquipment	OffRoadEquipmentType		Graders
tblOffRoadEquipment	OffRoadEquipmentType		Rollers
tblOffRoadEquipment	OffRoadEquipmentType		Cranes
tblOffRoadEquipment	OffRoadEquipmentType		Forklifts
tblOffRoadEquipment	OffRoadEquipmentType		Generator Sets
tblOffRoadEquipment	OffRoadEquipmentType		Bore/Drill Rigs

J-90 Energy Storage - Los Angeles-Mojave Desert County, Annual

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

tblOffRoadEquipment	OffRoadEquipmentType		Welders
tblOffRoadEquipment	OffRoadEquipmentType		Rollers
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblTripsAndVMT	VendorTripNumber	0.00	6.00
tblTripsAndVMT	VendorTripNumber	0.00	6.00
tblTripsAndVMT	WorkerTripNumber	23.00	35.00
tblTripsAndVMT	WorkerTripNumber	15.00	35.00
tblTripsAndVMT	WorkerTripNumber	188.00	35.00
tblVehicleTrips	ST_TR	2.21	12.50
tblVehicleTrips	SU_TR	0.70	0.00
tblVehicleTrips	WD_TR	9.74	0.00
tblWater	IndoorWaterUseRate	113,749.60	9,776.00
tblWater	OutdoorWaterUseRate	69,717.50	0.00

2.0 Emissions Summary

J-90 Energy Storage - Los Angeles-Mojave Desert County, Annual

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

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2024	0.0892	0.9859	0.7413	2.4400e-003	0.2854	0.0349	0.3202	0.1239	0.0325	0.1564	0.0000	222.2581	222.2581	0.0430	0.0120	226.9191
2025	0.1413	1.6023	1.2389	4.2200e-003	0.4795	0.0538	0.5333	0.1899	0.0498	0.2397	0.0000	387.9741	387.9741	0.0737	0.0235	396.8143
Maximum	**0.1413**	**1.6023**	**1.2389**	**4.2200e-003**	**0.4795**	**0.0538**	**0.5333**	**0.1899**	**0.0498**	**0.2397**	**0.0000**	**387.9741**	**387.9741**	**0.0737**	**0.0235**	**396.8143**

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					
2024	0.0892	0.9859	0.7413	2.4400e-003	0.1460	0.0349	0.1808	0.0606	0.0325	0.0931	0.0000	222.2579	222.2579	0.0430	0.0120	226.9190
2025	0.1413	1.6023	1.2389	4.2200e-003	0.2584	0.0538	0.3122	0.0972	0.0498	0.1470	0.0000	387.9738	387.9738	0.0737	0.0235	396.8140
Maximum	**0.1413**	**1.6023**	**1.2389**	**4.2200e-003**	**0.2584**	**0.0538**	**0.3122**	**0.0972**	**0.0498**	**0.1470**	**0.0000**	**387.9738**	**387.9738**	**0.0737**	**0.0235**	**396.8140**

J-90 Energy Storage - Los Angeles-Mojave Desert County, Annual

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

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**47.14**	**0.00**	**42.24**	**49.73**	**0.00**	**39.39**	**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	**10-1-2024**	**12-31-2024**	1.0688	1.0688
2	**1-1-2025**	**3-31-2025**	0.8970	0.8970
3	**4-1-2025**	**6-30-2025**	0.5384	0.5384
4	**7-1-2025**	**9-30-2025**	0.3010	0.3010
		Highest	1.0688	1.0688

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.6434	0.0000	1.8000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	3.6000e-004	3.6000e-004	0.0000	0.0000	3.8000e-004
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.4188	1.4188	1.2000e-004	1.0000e-005	1.4261
Mobile	5.0000e-004	5.3000e-004	4.7600e-003	1.0000e-005	1.0300e-003	1.0000e-005	1.0300e-003	2.7000e-004	1.0000e-005	2.8000e-004	0.0000	0.9198	0.9198	7.0000e-005	4.0000e-005	0.9340
Waste						0.0000	0.0000		0.0000	0.0000	0.1218	0.0000	0.1218	7.2000e-003	0.0000	0.3017
Water						0.0000	0.0000		0.0000	0.0000	3.1000e-003	0.0226	0.0257	3.2000e-004	1.0000e-005	0.0360
Total	**0.6439**	**5.3000e-004**	**4.9400e-003**	**1.0000e-005**	**1.0300e-003**	**1.0000e-005**	**1.0300e-003**	**2.7000e-004**	**1.0000e-005**	**2.8000e-004**	**0.1249**	**2.3615**	**2.4864**	**7.7100e-003**	**6.0000e-005**	**2.6982**

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	0.6434	0.0000	1.8000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	3.6000e-004	3.6000e-004	0.0000	0.0000	3.8000e-004
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.4188	1.4188	1.2000e-004	1.0000e-005	1.4261
Mobile	5.0000e-004	5.3000e-004	4.7600e-003	1.0000e-005	1.0300e-003	1.0000e-005	1.0300e-003	2.7000e-004	1.0000e-005	2.8000e-004	0.0000	0.9198	0.9198	7.0000e-005	4.0000e-005	0.9340
Waste						0.0000	0.0000		0.0000	0.0000	0.1218	0.0000	0.1218	7.2000e-003	0.0000	0.3017
Water						0.0000	0.0000		0.0000	0.0000	3.1000e-003	0.0226	0.0257	3.2000e-004	1.0000e-005	0.0360
Total	**0.6439**	**5.3000e-004**	**4.9400e-003**	**1.0000e-005**	**1.0300e-003**	**1.0000e-005**	**1.0300e-003**	**2.7000e-004**	**1.0000e-005**	**2.8000e-004**	**0.1249**	**2.3615**	**2.4864**	**7.7100e-003**	**6.0000e-005**	**2.6982**

	ROG	NOx	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	10/1/2024	2/17/2025	5	100	
2	Grading	Grading	2/18/2025	5/12/2025	5	60	
3	Building Construction	Building Construction	5/13/2025	9/29/2025	5	100	

J-90 Energy Storage - Los Angeles-Mojave Desert County, Annual

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

Acres of Grading (Site Preparation Phase): 100

Acres of Grading (Grading Phase): 120

Acres of Paving: 7.49

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	1	8.00	247	0.40
Grading	Plate Compactors	1	8.00	8	0.43
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Scrapers	1	8.00	367	0.48
Grading	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	2	8.00	89	0.20
Building Construction	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Site Preparation	Excavators	1	8.00	158	0.38
Site Preparation	Graders	1	8.00	187	0.41
Site Preparation	Rollers	1	8.00	80	0.38
Site Preparation	Cranes	1	8.00	231	0.29
Site Preparation	Forklifts	1	8.00	89	0.20
Site Preparation	Generator Sets	1	8.00	84	0.74
Site Preparation	Bore/Drill Rigs	1	8.00	221	0.50
Site Preparation	Welders	1	8.00	46	0.45
Grading	Rollers	1	8.00	80	0.38

Trips and VMT

J-90 Energy Storage - Los Angeles-Mojave Desert County, Annual

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

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	9	35.00	6.00	3,750.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	6	35.00	6.00	1,500.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	4	35.00	73.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

3.2 Site Preparation - 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					
Fugitive Dust					0.2535	0.0000	0.2535	0.1152	0.0000	0.1152	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0835	0.8049	0.6658	1.6100e-003		0.0337	0.0337		0.0314	0.0314	0.0000	139.9721	139.9721	0.0386	0.0000	140.9375
Total	**0.0835**	**0.8049**	**0.6658**	**1.6100e-003**	**0.2535**	**0.0337**	**0.2872**	**0.1152**	**0.0314**	**0.1467**	**0.0000**	**139.9721**	**139.9721**	**0.0386**	**0.0000**	**140.9375**

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

3.2 Site Preparation - 2024

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	2.5900e-003	0.1706	0.0441	7.1000e-004	0.0213	1.0300e-003	0.0223	5.8500e-003	9.8000e-004	6.8300e-003	0.0000	71.1579	71.1579	4.0100e-003	0.0113	74.6268
Vendor	2.2000e-004	8.3300e-003	2.9900e-003	4.0000e-005	1.3200e-003	4.0000e-005	1.3600e-003	3.8000e-004	4.0000e-005	4.2000e-004	0.0000	3.7351	3.7351	1.3000e-004	5.4000e-004	3.8986
Worker	2.8400e-003	2.0400e-003	0.0285	8.0000e-005	9.3000e-003	6.0000e-005	9.3600e-003	2.4700e-003	5.0000e-005	2.5200e-003	0.0000	7.3930	7.3930	2.1000e-004	1.9000e-004	7.4562
Total	**5.6500e-003**	**0.1810**	**0.0756**	**8.3000e-004**	**0.0319**	**1.1300e-003**	**0.0330**	**8.7000e-003**	**1.0700e-003**	**9.7700e-003**	**0.0000**	**82.2860**	**82.2860**	**4.3500e-003**	**0.0120**	**85.9816**

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					0.1141	0.0000	0.1141	0.0519	0.0000	0.0519	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0835	0.8049	0.6658	1.6100e-003		0.0337	0.0337		0.0314	0.0314	0.0000	139.9719	139.9719	0.0386	0.0000	140.9373
Total	**0.0835**	**0.8049**	**0.6658**	**1.6100e-003**	**0.1141**	**0.0337**	**0.1478**	**0.0519**	**0.0314**	**0.0833**	**0.0000**	**139.9719**	**139.9719**	**0.0386**	**0.0000**	**140.9373**

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

3.2 Site Preparation - 2024

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	2.5900e-003	0.1706	0.0441	7.1000e-004	0.0213	1.0300e-003	0.0223	5.8500e-003	9.8000e-004	6.8300e-003	0.0000	71.1579	71.1579	4.0100e-003	0.0113	74.6268
Vendor	2.2000e-004	8.3300e-003	2.9900e-003	4.0000e-005	1.3200e-003	4.0000e-005	1.3600e-003	3.8000e-004	4.0000e-005	4.2000e-004	0.0000	3.7351	3.7351	1.3000e-004	5.4000e-004	3.8986
Worker	2.8400e-003	2.0400e-003	0.0285	8.0000e-005	9.3000e-003	6.0000e-005	9.3600e-003	2.4700e-003	5.0000e-005	2.5200e-003	0.0000	7.3930	7.3930	2.1000e-004	1.9000e-004	7.4562
Total	**5.6500e-003**	**0.1810**	**0.0756**	**8.3000e-004**	**0.0319**	**1.1300e-003**	**0.0330**	**8.7000e-003**	**1.0700e-003**	**9.7700e-003**	**0.0000**	**82.2860**	**82.2860**	**4.3500e-003**	**0.0120**	**85.9816**

3.2 Site Preparation - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1571	0.0000	0.1571	0.0623	0.0000	0.0623	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0401	0.3793	0.3384	8.3000e-004		0.0154	0.0154		0.0144	0.0144	0.0000	72.1008	72.1008	0.0198	0.0000	72.5967
Total	**0.0401**	**0.3793**	**0.3384**	**8.3000e-004**	**0.1571**	**0.0154**	**0.1725**	**0.0623**	**0.0144**	**0.0767**	**0.0000**	**72.1008**	**72.1008**	**0.0198**	**0.0000**	**72.5967**

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

3.2 Site Preparation - 2025

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	1.3200e-003	0.0873	0.0230	3.6000e-004	0.0110	5.3000e-004	0.0115	3.0100e-003	5.1000e-004	3.5200e-003	0.0000	36.0044	36.0044	2.0900e-003	5.7200e-003	37.7618
Vendor	1.1000e-004	4.2700e-003	1.5100e-003	2.0000e-005	6.8000e-004	2.0000e-005	7.0000e-004	2.0000e-004	2.0000e-005	2.2000e-004	0.0000	1.8895	1.8895	7.0000e-005	2.7000e-004	1.9723
Worker	1.3700e-003	9.5000e-004	0.0137	4.0000e-005	4.7900e-003	3.0000e-005	4.8200e-003	1.2700e-003	3.0000e-005	1.3000e-003	0.0000	3.7156	3.7156	1.0000e-004	9.0000e-005	3.7460
Total	**2.8000e-003**	**0.0926**	**0.0382**	**4.2000e-004**	**0.0164**	**5.8000e-004**	**0.0170**	**4.4800e-003**	**5.6000e-004**	**5.0400e-003**	**0.0000**	**41.6095**	**41.6095**	**2.2600e-003**	**6.0800e-003**	**43.4801**

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					0.0707	0.0000	0.0707	0.0280	0.0000	0.0280	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0401	0.3793	0.3384	8.3000e-004		0.0154	0.0154		0.0144	0.0144	0.0000	72.1007	72.1007	0.0198	0.0000	72.5966
Total	**0.0401**	**0.3793**	**0.3384**	**8.3000e-004**	**0.0707**	**0.0154**	**0.0861**	**0.0280**	**0.0144**	**0.0424**	**0.0000**	**72.1007**	**72.1007**	**0.0198**	**0.0000**	**72.5966**

J-90 Energy Storage - Los Angeles-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 - 2025

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	1.3200e-003	0.0873	0.0230	3.6000e-004	0.0110	5.3000e-004	0.0115	3.0100e-003	5.1000e-004	3.5200e-003	0.0000	36.0044	36.0044	2.0900e-003	5.7200e-003	37.7618
Vendor	1.1000e-004	4.2700e-003	1.5100e-003	2.0000e-005	6.8000e-004	2.0000e-005	7.0000e-004	2.0000e-004	2.0000e-005	2.2000e-004	0.0000	1.8895	1.8895	7.0000e-005	2.7000e-004	1.9723
Worker	1.3700e-003	9.5000e-004	0.0137	4.0000e-005	4.7900e-003	3.0000e-005	4.8200e-003	1.2700e-003	3.0000e-005	1.3000e-003	0.0000	3.7156	3.7156	1.0000e-004	9.0000e-005	3.7460
Total	**2.8000e-003**	**0.0926**	**0.0382**	**4.2000e-004**	**0.0164**	**5.8000e-004**	**0.0170**	**4.4800e-003**	**5.6000e-004**	**5.0400e-003**	**0.0000**	**41.6095**	**41.6095**	**2.2600e-003**	**6.0800e-003**	**43.4801**

3.3 Grading - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.2450	0.0000	0.2450	0.1063	0.0000	0.1063	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0582	0.5841	0.4271	1.1000e-003		0.0236	0.0236		0.0218	0.0218	0.0000	95.8731	95.8731	0.0308	0.0000	96.6432
Total	**0.0582**	**0.5841**	**0.4271**	**1.1000e-003**	**0.2450**	**0.0236**	**0.2686**	**0.1063**	**0.0218**	**0.1280**	**0.0000**	**95.8731**	**95.8731**	**0.0308**	**0.0000**	**96.6432**

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

3.3 Grading - 2025

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	1.5600e-003	0.1028	0.0271	4.2000e-004	0.0129	6.2000e-004	0.0135	3.5400e-003	6.0000e-004	4.1400e-003	0.0000	42.3581	42.3581	2.4600e-003	6.7300e-003	44.4257
Vendor	2.0000e-004	7.5300e-003	2.6600e-003	3.0000e-005	1.2000e-003	4.0000e-005	1.2400e-003	3.5000e-004	4.0000e-005	3.8000e-004	0.0000	3.3345	3.3345	1.2000e-004	4.8000e-004	3.4806
Worker	2.4100e-003	1.6700e-003	0.0242	7.0000e-005	8.4600e-003	5.0000e-005	8.5000e-003	2.2500e-003	4.0000e-005	2.2900e-003	0.0000	6.5570	6.5570	1.7000e-004	1.7000e-004	6.6106
Total	**4.1700e-003**	**0.1120**	**0.0539**	**5.2000e-004**	**0.0226**	**7.1000e-004**	**0.0233**	**6.1400e-003**	**6.8000e-004**	**6.8100e-003**	**0.0000**	**52.2495**	**52.2495**	**2.7500e-003**	**7.3800e-003**	**54.5168**

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					0.1102	0.0000	0.1102	0.0478	0.0000	0.0478	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0582	0.5841	0.4271	1.1000e-003		0.0236	0.0236		0.0218	0.0218	0.0000	95.8730	95.8730	0.0308	0.0000	96.6431
Total	**0.0582**	**0.5841**	**0.4271**	**1.1000e-003**	**0.1102**	**0.0236**	**0.1339**	**0.0478**	**0.0218**	**0.0696**	**0.0000**	**95.8730**	**95.8730**	**0.0308**	**0.0000**	**96.6431**

J-90 Energy Storage - Los Angeles-Mojave Desert County, Annual

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

3.3 Grading - 2025

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	1.5600e-003	0.1028	0.0271	4.2000e-004	0.0129	6.2000e-004	0.0135	3.5400e-003	6.0000e-004	4.1400e-003	0.0000	42.3581	42.3581	2.4600e-003	6.7300e-003	44.4257
Vendor	2.0000e-004	7.5300e-003	2.6600e-003	3.0000e-005	1.2000e-003	4.0000e-005	1.2400e-003	3.5000e-004	4.0000e-005	3.8000e-004	0.0000	3.3345	3.3345	1.2000e-004	4.8000e-004	3.4806
Worker	2.4100e-003	1.6700e-003	0.0242	7.0000e-005	8.4600e-003	5.0000e-005	8.5000e-003	2.2500e-003	4.0000e-005	2.2900e-003	0.0000	6.5570	6.5570	1.7000e-004	1.7000e-004	6.6106
Total	**4.1700e-003**	**0.1120**	**0.0539**	**5.2000e-004**	**0.0226**	**7.1000e-004**	**0.0233**	**6.1400e-003**	**6.8000e-004**	**6.8100e-003**	**0.0000**	**52.2495**	**52.2495**	**2.7500e-003**	**7.3800e-003**	**54.5168**

3.4 Building Construction - 2025

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	0.0282	0.2789	0.2869	5.4000e-004		0.0126	0.0126		0.0116	0.0116	0.0000	47.5970	47.5970	0.0154	0.0000	47.9818
Total	**0.0282**	**0.2789**	**0.2869**	**5.4000e-004**		**0.0126**	**0.0126**		**0.0116**	**0.0116**	**0.0000**	**47.5970**	**47.5970**	**0.0154**	**0.0000**	**47.9818**

J-90 Energy Storage - Los Angeles-Mojave Desert County, Annual

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

3.4 Building Construction - 2025

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	3.9700e-003	0.1528	0.0540	6.9000e-004	0.0243	7.5000e-004	0.0251	7.0200e-003	7.2000e-004	7.7400e-003	0.0000	67.6159	67.6159	2.3600e-003	9.7400e-003	70.5780
Worker	4.0200e-003	2.7900e-003	0.0403	1.2000e-004	0.0141	8.0000e-005	0.0142	3.7400e-003	7.0000e-005	3.8200e-003	0.0000	10.9283	10.9283	2.9000e-004	2.8000e-004	11.0177
Total	**7.9900e-003**	**0.1556**	**0.0943**	**8.1000e-004**	**0.0384**	**8.3000e-004**	**0.0393**	**0.0108**	**7.9000e-004**	**0.0116**	**0.0000**	**78.5442**	**78.5442**	**2.6500e-003**	**0.0100**	**81.5957**

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	0.0282	0.2789	0.2869	5.4000e-004		0.0126	0.0126		0.0116	0.0116	0.0000	47.5969	47.5969	0.0154	0.0000	47.9818
Total	**0.0282**	**0.2789**	**0.2869**	**5.4000e-004**		**0.0126**	**0.0126**		**0.0116**	**0.0116**	**0.0000**	**47.5969**	**47.5969**	**0.0154**	**0.0000**	**47.9818**

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

3.4 Building Construction - 2025

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	3.9700e-003	0.1528	0.0540	6.9000e-004	0.0243	7.5000e-004	0.0251	7.0200e-003	7.2000e-004	7.7400e-003	0.0000	67.6159	67.6159	2.3600e-003	9.7400e-003	70.5780
Worker	4.0200e-003	2.7900e-003	0.0403	1.2000e-004	0.0141	8.0000e-005	0.0142	3.7400e-003	7.0000e-005	3.8200e-003	0.0000	10.9283	10.9283	2.9000e-004	2.8000e-004	11.0177
Total	**7.9900e-003**	**0.1556**	**0.0943**	**8.1000e-004**	**0.0384**	**8.3000e-004**	**0.0393**	**0.0108**	**7.9000e-004**	**0.0116**	**0.0000**	**78.5442**	**78.5442**	**2.6500e-003**	**0.0100**	**81.5957**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

J-90 Energy Storage - Los Angeles-Mojave Desert County, Annual

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

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	5.0000e-004	5.3000e-004	4.7600e-003	1.0000e-005	1.0300e-003	1.0000e-005	1.0300e-003	2.7000e-004	1.0000e-005	2.8000e-004	0.0000	0.9198	0.9198	7.0000e-005	4.0000e-005	0.9340
Unmitigated	5.0000e-004	5.3000e-004	4.7600e-003	1.0000e-005	1.0300e-003	1.0000e-005	1.0300e-003	2.7000e-004	1.0000e-005	2.8000e-004	0.0000	0.9198	0.9198	7.0000e-005	4.0000e-005	0.9340

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Office Building	0.00	8.00	0.00	2,731	2,731
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
User Defined Industrial	0.00	0.00	0.00		
Total	0.00	8.00	0.00	2,731	2,731

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
General Office Building	9.50	7.30	7.30	33.00	48.00	19.00	77	19	4
Other Non-Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
User Defined Industrial	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
General Office Building	0.542464	0.063735	0.188241	0.126899	0.023249	0.006239	0.010717	0.008079	0.000923	0.000604	0.024795	0.000702	0.003352
Other Non-Asphalt Surfaces	0.542464	0.063735	0.188241	0.126899	0.023249	0.006239	0.010717	0.008079	0.000923	0.000604	0.024795	0.000702	0.003352

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

User Defined Industrial	0.542464	0.063735	0.188241	0.126899	0.023249	0.006239	0.010717	0.008079	0.000923	0.000604	0.024795	0.000702	0.003352

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	1.4188	1.4188	1.2000e-004	1.0000e-005	1.4261
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	1.4188	1.4188	1.2000e-004	1.0000e-005	1.4261
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

J-90 Energy Storage - Los Angeles-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					
General Office Building	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
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**

J-90 Energy Storage - Los Angeles-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					
General Office Building	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
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**

J-90 Energy Storage - Los Angeles-Mojave Desert County, Annual

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			
General Office Building	8000	1.4188	1.2000e-004	1.0000e-005	1.4261
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000
Total		**1.4188**	**1.2000e-004**	**1.0000e-005**	**1.4261**

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			
General Office Building	8000	1.4188	1.2000e-004	1.0000e-005	1.4261
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000
Total		**1.4188**	**1.2000e-004**	**1.0000e-005**	**1.4261**

6.0 Area Detail

6.1 Mitigation Measures Area

J-90 Energy Storage - Los Angeles-Mojave Desert County, Annual

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

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.6434	0.0000	1.8000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	3.6000e-004	3.6000e-004	0.0000	0.0000	3.8000e-004
Unmitigated	0.6434	0.0000	1.8000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	3.6000e-004	3.6000e-004	0.0000	0.0000	3.8000e-004

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.1511					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.4923					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	2.0000e-005	0.0000	1.8000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	3.6000e-004	3.6000e-004	0.0000	0.0000	3.8000e-004
Total	**0.6434**	**0.0000**	**1.8000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**3.6000e-004**	**3.6000e-004**	**0.0000**	**0.0000**	**3.8000e-004**

J-90 Energy Storage - Los Angeles-Mojave Desert County, Annual

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

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.1511					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.4923					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	2.0000e-005	0.0000	1.8000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	3.6000e-004	3.6000e-004	0.0000	0.0000	3.8000e-004
Total	**0.6434**	**0.0000**	**1.8000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**3.6000e-004**	**3.6000e-004**	**0.0000**	**0.0000**	**3.8000e-004**

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	0.0257	3.2000e-004	1.0000e-005	0.0360
Unmitigated	0.0257	3.2000e-004	1.0000e-005	0.0360

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Office Building	0.009776 / 0	0.0257	3.2000e-004	1.0000e-005	0.0360
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
User Defined Industrial	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0257**	**3.2000e-004**	**1.0000e-005**	**0.0360**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Office Building	0.009776 / 0	0.0257	3.2000e-004	1.0000e-005	0.0360
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
User Defined Industrial	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0257**	**3.2000e-004**	**1.0000e-005**	**0.0360**

8.0 Waste Detail

8.1 Mitigation Measures Waste

J-90 Energy Storage - Los Angeles-Mojave Desert County, Annual

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	0.1218	7.2000e-003	0.0000	0.3017
Unmitigated	0.1218	7.2000e-003	0.0000	0.3017

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Office Building	0.6	0.1218	7.2000e-003	0.0000	0.3017
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000
Total		**0.1218**	**7.2000e-003**	**0.0000**	**0.3017**

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			
General Office Building	0.6	0.1218	7.2000e-003	0.0000	0.3017
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000
Total		**0.1218**	**7.2000e-003**	**0.0000**	**0.3017**

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