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# Appendix B: Air Quality, Greenhouse Gas, and Energy Impact Study

*Prepared by MD Acoustics*

**CEQ 220011**

*Salvador Solar*

*Union Energy Management Services*

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# **Noble Solar Project**

## **Air Quality, Greenhouse Gas, and Energy Impact Study**

### County of Riverside, CA

Prepared for:

Rich Malacoff  
**The Altum Group**  
72140 Magnesia Falls, Suite 1  
Rancho Mirage, CA 92270

Prepared by:

**MD Acoustics, LLC**  
Mike Dickerson, INCE; Tyler Klassen  
1197 Los Angeles Ave, Ste C-256  
Simi Valley, CA 93065

Date: 4/5/2022



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P) AZ - 602.774.1950

P) CA - 805.426.4477

[www.mdacoustics.com](http://www.mdacoustics.com)  
[info@mdacoustics.com](mailto:info@mdacoustics.com)

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## GLOSSARY OF TERMS

AQMP	Air Quality Management Plan
CAAQS	California Ambient Air Quality Standards
CARB	California Air Resources Board
CEQA	California Environmental Quality Act
CFCs	Chlorofluorocarbons
CH <sub>4</sub>	Methane
CNG	Compressed natural gas
CO	Carbon monoxide
CO <sub>2</sub>	Carbon dioxide
CO <sub>2</sub> e	Carbon dioxide equivalent
DPM	Diesel particulate matter
GHG	Greenhouse gas
HFCs	Hydrofluorocarbons
LST	Localized Significant Thresholds
MTCO <sub>2</sub> e	Metric tons of carbon dioxide equivalent
MMTCO <sub>2</sub> e	Million metric tons of carbon dioxide equivalent
NAAQS	National Ambient Air Quality Standards
NO <sub>x</sub>	Nitrogen Oxides
NO <sub>2</sub>	Nitrogen dioxide
N <sub>2</sub> O	Nitrous oxide
O <sub>3</sub>	Ozone
PFCs	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
PMI	Point of maximum impact
PPM	Parts per million
PPB	Parts per billion
RTIP	Regional Transportation Improvement Plan
RTP	Regional Transportation Plan
SCAQMD	South Coast Air Quality Management District
SF <sub>6</sub>	Sulfur hexafluoride
SIP	State Implementation Plan
SO <sub>x</sub>	Sulfur Oxides
SRA	Source/Receptor Area
SSAB	Salton Sea Air Basin
TAC	Toxic air contaminants
VOC	Volatile organic compounds
WRCC	Western Regional Climate Center

## 1.0 Introduction

### 1.1 Purpose of Analysis and Study Objectives

This air quality and greenhouse gas (GHG) analysis was prepared to evaluate whether the estimated criteria pollutants and GHG emissions generated from the project would cause a significant impact to the air resources in the project area. This assessment was conducted within the context of the California Environmental Quality Act (CEQA, California Public Resources Code Sections 21000, et seq.). The assessment is consistent with the methodology and emission factors endorsed by South Coast Air Quality Management District (SCAQMD), California Air Resource Board (CARB), and the United States Environmental Protection Agency (US EPA).

### 1.2 Project Summary

#### 1.2.1 Site Location

The project site is located near the southeast corner of Monterey Avenue and Ramon Road in Riverside County, California, as shown in Exhibit A. The site is currently zoned as Medium Density Residential and Rural Residential uses. The project will be seeking to zone as a W-2 Controlled Development Area. The Project borders vacant land on all sides with residential uses to the southwest.

#### 1.2.2 Project Description

The Project proposes the construction and operation of a 400-megawatt (MW) battery and 60-150 MW solar facility on 166 acres connecting into the Southern California (SCE) Mirage Substation located on the north side of Ramon Road. Exhibit B demonstrates the site plan for the project.

Construction activities within the Project area will consist of site preparation and solar facility building. Table 1 summarizes the land use description for the Project Site.

**Table 1: Land Use Summary**

Land Use	Unit Amount	Size Metric
Other Non-Asphalt Surfaces	166	Acres

#### 1.2.3 Sensitive Receptors

Sensitive receptors are considered land uses or other types of population groups that are more sensitive to air pollution than others due to their exposure. Sensitive population groups include children, the elderly, the acutely and chronically ill, and those with cardio-respiratory diseases. For CEQA purposes, a sensitive receptor would be a location where a sensitive individual could remain for 24-hours or longer, such as residences, hospitals, and schools (etc.).

The closest existing sensitive receptors (to the site area) are single-family residences 190 feet to the southwest of the project boundary.

### **1.3 Executive Summary of Findings and Mitigation Measures**

The following is a summary of the analysis results:

#### **Construction-Source Emissions**

Project construction-source emissions would not exceed applicable regional thresholds of significance established by the SCAQMD. For localized emissions, the project will not exceed applicable Localized Significance Thresholds (LSTs) established by the SCAQMD.

Project construction-source emissions would not conflict with the Basin Air Quality Management Plan (AQMP). As discussed herein, the project will comply with all applicable SCAQMD construction-source emission reduction rules and guidelines. Project construction source emissions would not cause or substantively contribute to violation of the California Ambient Air Quality Standards (CAAQS) or National Ambient Air Quality Standards (NAAQS).

Established requirements addressing construction equipment operations, and construction material use, storage, and disposal requirements act to minimize odor impacts that may result from construction activities. Moreover, construction-source odor emissions would be temporary, short-term, and intermittent in nature and would not result in persistent impacts that would affect substantial numbers of people. Potential construction-source odor impacts are therefore considered less-than-significant.

#### **Operational-Source Emissions**

The project operational-sourced emissions would not exceed applicable regional thresholds of significance established by the SCAQMD. Project operational-source emissions would not result in or cause a significant localized air quality impact as discussed in the Operations-Related Local Air Quality Impacts section of this report. Additionally, project-related traffic will not cause or result in CO concentrations exceeding applicable state and/or federal standards (CO “hotspots”). Project operational-source emissions would therefore not adversely affect sensitive receptors within the vicinity of the project.

Project operational-source emissions would not conflict with the Basin Air Quality Management Plan (AQMP). The project's emissions meet SCAQMD regional thresholds and will not result in a significant cumulative impact. The project does not propose any such uses or activities that would result in potentially significant operational-source odor impacts. Potential operational-source odor impacts are therefore considered less-than significant.

Project-related GHG emissions meet the County of Riverside Climate Action Plan (CAP) Update screening threshold of 3,000 metric tons of carbon dioxide equivalents (MTCO<sub>2</sub>e) per year and are also considered to be less than significant. The project also complies with the goals of the CARB Scoping Plan, AB-32, and SB-32.



## **Mitigation Measures**

### **A. Construction Measures**

*Adherence to SCAQMD Rule 403 and Rule 403.1 is required.*

No construction mitigation required.

### **B. Operational Measures to Reduce Greenhouse Gas Emissions**

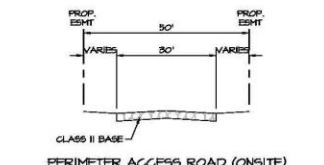
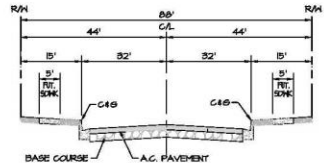
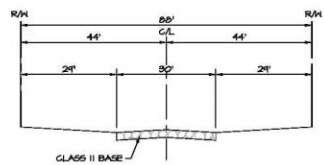
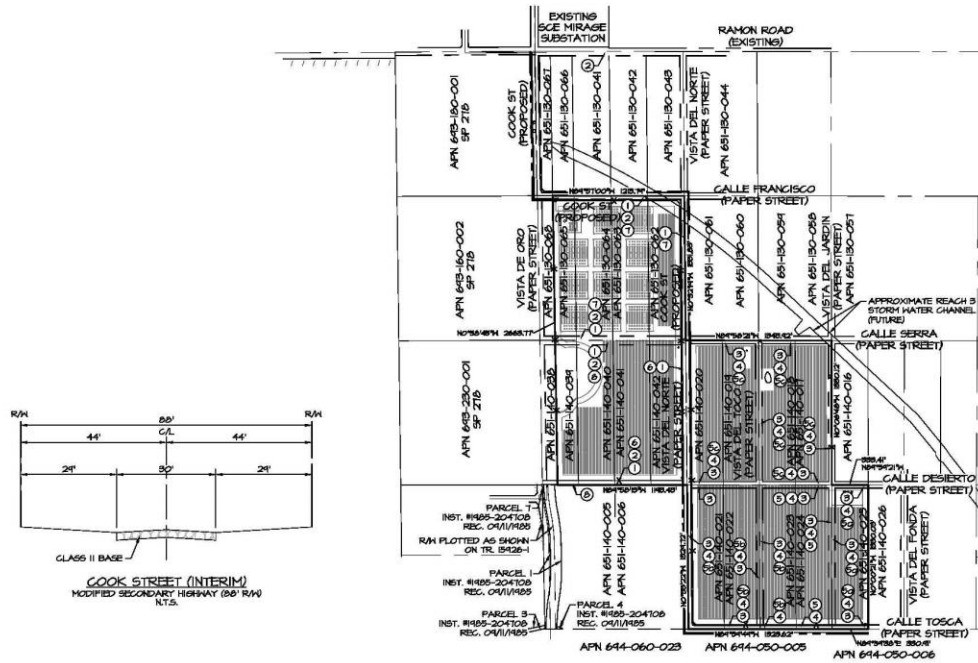
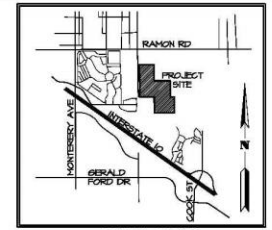
No operational mitigation required.

# Exhibit A Location Map



Exhibit B  
Site Plan

COUNTY OF RIVERSIDE, STATE OF CALIFORNIA  
**CONDITIONAL USE PERMIT NO.**  
LOCATED IN SECTION 21, T. 4 S., R. 6 E., S.B.M.



**PROJECT DESCRIPTION**  
A CHANGE OF ZONE FOR THE PROJECT PROPOSES TO MODIFY THE ENTIRE PROJECT SITE FROM SINGLE-FAMILY RESIDENTIAL ZONE (R-1) TO REGULATED DEVELOPMENT AREA (R-10). A CONDITIONAL USE PERMIT (CUP) AND DEVELOPMENT AGREEMENT (DA) PROPOSES THE DEVELOPMENT OF A HOUSHELD-WATTED (HW) BATTERY AND 40-150 MW UNMANNED SOLAR FACILITY AND ASSOCIATED IMPROVEMENTS ON A 166.4 ACRE SITE, LOCATED SOUTH OF RAMON ROAD AND EAST OF INTERSTATE 10 (I-10) IN THOUSAND PALMS IN THE UNINCORPORATED COUNTY OF RIVERSIDE. THE BATTERY FACILITY WOULD CONSIST OF 400 SELF-CONTAINED ONE-MH STORAGE BATTERIES BE INSTALLED ON ELEVATED METAL PLATFORMS. GRADING AND PAVING WOULD BE MINIMAL DUE TO USING ROAD BASE GRAVEL FOR ROAD. PHOTOVOLTAIC (PV) ROWS WOULD CONSIST OF 46 MODULES EACH, 2 X 4.8 SINGLE AXIS TRACKERS, DIGITAL PASSIVATED BATTERY REAR CELL (PERC) TECHNOLOGY.  
FIRE ACCESS WILL BE PROVIDED FROM RAMON ROAD TO THE PROJECT SITE. WATER SERVICES TO THE PROJECT SITE SHOULD BE PROVIDED BY COACHELLA VALLEY WATER DISTRICT (CVWD) VIA AN EXISTING WATER LINE BENEATH RAMON ROAD TO ENSURE SOLAR PANEL MAINTENANCE AND POTENTIAL LANDSCAPING CARE ALONG THE PERIMETER OF THE SITE. NO SEWAGE OR STORM DRAIN FACILITIES WOULD BE NEEDED FOR THE PROPOSED PROJECT. ALL PROJECT RUNOFF WOULD BE DRAINED VIA CONTOUR GRADING, WHICH WOULD MATCH THE HISTORICAL DRAINAGE PLAN OF THE SITE. A PUBLIC USE PERMIT (PUP) WOULD BE REQUIRED TO ALLOW FOR AN APPROXIMATELY 1400 FOOT POWER LINE EXTENSION FROM THE PROJECT SITE TO NORTH OF RAMON ROAD TO CONNECT TO THE SOUTHERN CALIFORNIA EDISON (SCE) MIRRAGE SUBSTATION NORTH OF RAMON ROAD.

**APPROXIMATE EARTHWORK QUANTITY ESTIMATE**  
CUT- 14,200 CU. YDS.  
FILL- 199,080 CU. YDS.  
SHRINKAGE- 28,150 CU. YDS.  
SUBSIDENCE- 10,040 CU. YDS.  
NET- 0 CU. YDS. (BALANCED)



- GENERAL INFORMATION**
- THOMAS BROS. MAP BOOK PAGE 706 GRID: 62, 65, 64, HD # 14.
  - PROJECT IS WITHIN THE WESTERN COACHELLA VALLEY AREA PLAN.
  - PROJECT IS NOT WITHIN A SPECIFIC PLAN.
  - PROJECT IS NOT WITHIN A COMMUNITY SERVICE AREA.
  - EASEMENTS OF RECORD ARE PLOTTED HEREON.
  - THERE IS AN EXISTING WELL ON THE PROPERTY. (PERMIT #003936) WELL TO REMAIN, PROTECT IN PLACE.
  - ALL SLOPES ARE 1:1 RATIO UNLESS OTHERWISE NOTED.
  - LAND IS NOT WITHIN A SPECIAL STUDIES ZONE.
  - LAND HAS MODERATE LIQUEFACTION POTENTIAL.
  - SUBSURFACE SEPTIC SEWAGE DISPOSAL IS NOT INTENDED.
  - NO EXISTING STRUCTURES OR BUILDINGS ON SITE.
  - THE PROJECT WILL COMPLY WITH NPDES REQUIREMENTS AS REQUIRED BY NPDES SUPPLEMENT #A (WHITEWATER WATERSHED).
  - FLOOD HAZARD AREA OF ALLUVAL FAN FLOODPLAIN (1-2 DEPTH), PER FEMA PANEL 0606361650 (EFFECTIVE DATE AUGUST 28, 2008).

**AREA SUMMARY**

PROPOSED	SQUARE FEET (SF)	ACREAGE (AC)
SOLAR PANELS	4,174,817	108.3
BATTERY FACILITY	994,945	22.6
ONSITE SUBSTATION	75,203	1.7
ONSITE PERIMETER ACCESS ROAD	744,301	16.4
NET AREA		51.2
CULTURAL AREA	208,018	4.6
ROW DEDICATION	409,126.7	9.3
GROSS AREA		165.2

- EASEMENT NOTES**
- AN EASEMENT SHOWN OR DEDICATED ON THE MAP OF RECORD OF SURVEY RECORDED NOVEMBER 23, 1954 AND ON FILE IN BOOK 22, PAGE 3, OF RECORD MAPS FOR ROADS, UTILITY AND INCIDENTAL PURPOSES.
  - AN OFFER OF DEDICATION FOR PUBLIC HIGHWAY AND INCIDENTAL PURPOSES, RECORDED OCTOBER 2, 1956 AS BOOK 180, PAGE 125 OF OFFICIAL RECORDS, TO COUNTY OF RIVERSIDE.
  - AN EASEMENT SHOWN OR DEDICATED ON THE MAP OF RECORD OF SURVEY RECORDED OCTOBER 16, 1956 AND ON FILE IN BOOK 25, PAGE 44, OF RECORD MAPS FOR ROADS, UTILITY AND INCIDENTAL PURPOSES.
  - AN OFFER OF DEDICATION FOR PUBLIC HIGHWAY AND INCIDENTAL PURPOSES, RECORDED OCTOBER 16, 1956 AS BOOK 187, PAGE 451 OF OFFICIAL RECORDS, TO COUNTY OF RIVERSIDE.
  - AN EASEMENT FOR ROADWAY AND PUBLIC PURPOSES TO BE USED IN COMMON WITH OTHERS AND INCIDENTAL PURPOSES, RECORDED MARCH 11, 1959 IN BOOK 2258 PAGE 240 ( 1 5 ) APRIL 18, 1959 AS INSTRUMENT NO. 28970 IN BOOK 2251, PAGE 460 ( 5A ) SEPTEMBER 24, 1954 AS INSTRUMENT NO. 8200 ( 1 39 ) AND MARCH 28, 1960 AS INSTRUMENT NO. 2715 IN BOOK 2869 PAGE 948 ( 1 3 ) ALL OF OFFICIAL RECORDS, IN FAVOR OF TITLE INSURANCE AND TRUST COMPANY.
  - AN EASEMENT FOR ROADWAY, PUBLIC UTILITIES TO BE USED IN COMMON WITH OTHERS AND INCIDENTAL PURPOSES, RECORDED MARCH 29, 1960 AS INSTRUMENT NO. 2714 IN BOOK 2869 PAGE 944 OF OFFICIAL RECORDS, IN FAVOR OF TITLE INSURANCE AND TRUST COMPANY.
  - AN EASEMENT FOR ROADWAY, PUBLIC UTILITIES TO BE USED IN COMMON WITH OTHERS AND INCIDENTAL PURPOSES, RECORDED FEBRUARY 14, 1964 AS INSTRUMENT NO. 2714 IN BOOK 3411 PAGE 4 OF OFFICIAL RECORDS, IN FAVOR OF TITLE INSURANCE AND TRUST COMPANY.
  - A 4.00' WIDE EASEMENT FOR SEWER, WATER, TELEPHONE AND POWER LINES AND FOR OTHER UTILITY AND FOR ROADWAY AND RIGHT-OF-WAY PURPOSES AND FOR INGRESS AND EGRESS AND INCORPORATED FURNISHED NUMBER 20, 1965 AS INSTRUMENT NO. 11526 OF OFFICIAL RECORDS.

**OWNER**  
THOUSAND PALMS 278, LLC  
P.O. BOX 12180  
PALM DESERT, CA 92262  
CONTACT: FRED NOBLE  
PHONE: (760) 323-4440  
FAX: (760) 351-7284

**APPLICANT**  
UNION ENERGY MANAGEMENT SERVICES, LLC  
2048 E. TANGHITT CANYON WAY  
PALM DESERT, CA 92262  
CONTACT: FRED NOBLE  
PHONE: (760) 323-4440  
FAX: (760) 351-7284

**SOILS ENGINEER**  
PETRA GEOSCIENCES, INC.  
42-240 GREEN HAY, SUITE E  
PALM DESERT, CA 92211  
CONTACT: ALAN PAGE, CES  
PHONE: (760) 340-5523  
FAX: (760) 340-5046

**ENGINEER REPRESENTATIVE**  
ALBERT A. PERRY ASSOCIATES  
3700 MCGRAW STREET  
RIVERSIDE, CA 92506  
CONTACT: SANDY GRANDELER  
PHONE: (951) 686-1070  
FAX: (951) 788-1256

**LEGAL REPRESENTATIVE**  
SALVADOR SOLAR

**LEGAL DESCRIPTION**  
PARCEL 1:  
PARCELS 21, 22, 23, 24, 25, 26, 27 AND 28, IN THE COUNTY OF RIVERSIDE, STATE OF CALIFORNIA, AS SHOWN ON THE RECORDS OF SURVEY, FILED IN BOOK 22, PAGE 3 OF RECORDS OF SURVEY, IN THE OFFICE OF THE COUNTY RECORDER OF SAID COUNTY.

EXCEPT THEREFROM THE WESTERLY 140.00 FEET OF SAID PARCELS 24 AND 28 AS CONVERTED TO SOUTHERN CALIFORNIA EDISON COMPANY BY THE DEED RECORDED AUGUST 1, 1944 AS INSTRUMENT NO. 170005, OFFICIAL RECORDS.

**PARCEL 1A:**  
AN EASEMENT FOR ROADWAY AND PUBLIC UTILITY PURPOSES TO BE USED IN COMMON WITH OTHERS OVER VARIOUS STRIPS OF LAND DESIGNATED AS LAND DESIGNATED AS "ROAD EASEMENTS" AS SHOWN ON THE RECORD OF SURVEY FILED IN BOOK 22, PAGE 3 OF RECORDS OF SURVEY, RIVERSIDE COUNTY RECORDS.

**PARCEL 2:**  
PARCELS 41, 42, 43, 44, 45, 46, 47, 48, AND 49, IN THE COUNTY OF RIVERSIDE, STATE OF CALIFORNIA, AS SHOWN ON THE RECORD OF SURVEY FILED IN BOOK 23, PAGE 44 OF RECORDS OF SURVEY, IN THE OFFICE OF THE COUNTY RECORDER OF SAID COUNTY.

**PARCEL 2A:**  
AN EASEMENT FOR ROADWAY AND PUBLIC UTILITY PURPOSES TO BE USED IN COMMON WITH OTHERS OVER VARIOUS STRIPS OF LAND DESIGNATED AS "ROAD EASEMENTS" AS SHOWN ON THE RECORD OF SURVEY FILED IN BOOK 23, PAGE 44 OF RECORDS OF SURVEY, RIVERSIDE COUNTY RECORDS.

**SHEET INDEX**  
SHEET NO. DESCRIPTION  
INDEX MAP  
2  
3-4  
CONCEPTUAL GRADING

<b>CONDITIONAL USE PERMIT NO.</b> SALVADOR SOLAR <b>INDEX MAP</b>		REG. NO. 2021-2238 SHEET 1 OF 4 SHEETS DRG. NO.
DATE: 1" = 500' DATE: 2/1/2023 DESIGNED: RB CHECKED: ABE DRAWN BY: RB	REGISTERED PROFESSIONAL ENGINEER  REGISTERED PROFESSIONAL ENGINEER CIVIL ENGINEERING 1718 MCGRAW STREET RIVERSIDE, CA 92506 PHONE: (951) 686-1070 FAX: (951) 788-1256	<b>CONDITIONAL USE PERMIT NO.</b> SALVADOR SOLAR <b>INDEX MAP</b>

PRELIMINARY

## **2.0 Regulatory Framework and Background**

### **2.1 Air Quality Regulatory Setting**

Air pollutants are regulated at the national, state, and air basin level; each agency has a different level of regulatory responsibility. The United States Environmental Protection Agency (EPA) regulates at the national level. The California Air Resources Board (ARB) regulates at the state level. The South Coast Air Quality Management District (SCAQMD) regulates at the air basin level.

#### **2.1.1 National and State**

The EPA is responsible for global, international, and interstate air pollution issues and policies. The EPA sets national vehicle and stationary source emission standards, oversees approval of all State Implementation Plans, provides research and guidance for air pollution programs, and sets National Air Quality Standards, also known as federal standards. There are six common air pollutants, called criteria pollutants, which were identified from the provisions of the Clean Air Act of 1970.

- Ozone
- Nitrogen Dioxide
- Lead
- Particulate Matter (PM10 and PM2.5)
- Carbon Monoxide
- Particulate Matter
- Sulfur Dioxide

The federal standards were set to protect public health, including that of sensitive individuals; thus, the standards continue to change as more medical research is available regarding the health effects of the criteria pollutants. Primary federal standards are the levels of air quality necessary, with an adequate margin of safety, to protect the public health.

A State Implementation Plan is a document prepared by each state describing existing air quality conditions and measures that will be followed to attain and maintain federal standards. The State Implementation Plan for the State of California is administered by the ARB, which has overall responsibility for statewide air quality maintenance and air pollution prevention. California's State Implementation Plan incorporates individual federal attainment plans for regional air districts—air district prepares their federal attainment plan, which sent to ARB to be approved and incorporated into the California State Implementation Plan. Federal attainment plans include the technical foundation for understanding air quality (e.g., emission inventories and air quality monitoring), control measures and strategies, and enforcement mechanisms. See <http://www.arb.ca.gov/research/aqs/aqs.htm> for additional information on criteria pollutants and air quality standards.

The federal and state ambient air quality standards are summarized in Table 2 and can also be found at <http://www.arb.ca.gov/research/aqs/aqs2.pdf>.

**Table 2: Ambient Air Quality Standards**

Pollutant	Averaging Time	California Standards <sup>1</sup>		National Standards <sup>2</sup>		
		Concentrations <sup>3</sup>	Method <sup>4</sup>	Primary <sup>3,5</sup>	Secondary <sup>3,6</sup>	Method <sup>7</sup>
Ozone (O <sub>3</sub> )	1-Hour	0.09 ppm	Ultraviolet Photometry	--	Same as Primary Standard	Ultraviolet Photometry
	8-Hour	0.070 ppm		0.070 ppm (147 µg/m <sup>3</sup> )		
Respirable Particulate Matter (PM <sub>10</sub> ) <sup>8</sup>	24-Hour	50 µg/m <sup>3</sup>	Gravimetric or Beta Attenuation	150 µg/m <sup>3</sup>	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	20 µg/m <sup>3</sup>		--		
Fine Particulate Matter (PM <sub>2.5</sub> ) <sup>8</sup>	24-Hour	--	--	35 µg/m <sup>3</sup>	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	12 µg/m <sup>3</sup>	Gravimetric or Beta Attenuation	12 µg/m <sup>3</sup>	15 µg/m <sup>3</sup>	
Carbon Monoxide (CO)	1-Hour	20 ppm (23 µg/m <sup>3</sup> )	Non-Dispersive Infrared Photometry (NDIR)	35 ppm (40 µg/m <sup>3</sup> )	--	Non-Dispersive Infrared Photometry (NDIR)
	8-Hour	9.0 ppm (10 µg/m <sup>3</sup> )		9 ppm (10 µg/m <sup>3</sup> )	--	
	8-Hour (Lake Tahoe)	6 ppm (7 µg/m <sup>3</sup> )		--	--	
Nitrogen Dioxide (NO <sub>2</sub> ) <sup>9</sup>	1-Hour	0.18 ppm (339 µg/m <sup>3</sup> )	Gas Phase Chemiluminescence	100 ppb (188 µg/m <sup>3</sup> )	--	Gas Phase Chemiluminescence
	Annual Arithmetic Mean	0.030 ppm (357 µg/m <sup>3</sup> )		0.053 ppm (100 µg/m <sup>3</sup> )	Same as Primary Standard	
Sulfur Dioxide (SO <sub>2</sub> ) <sup>10</sup>	1-Hour	0.25 ppm (655 µg/m <sup>3</sup> )	Ultraviolet Fluorescence	75 ppb (196 µg/m <sup>3</sup> )	--	Ultraviolet Fluorescence; Spectrophotometry (Pararosaniline Method)
	3-Hour	--		--	0.5 ppm (1300 µg/m <sup>3</sup> )	
	24-Hour	0.04 ppm (105 µg/m <sup>3</sup> )		0.14 ppm (for certain areas) <sup>10</sup>	--	
	Annual Arithmetic Mean	--		0.130 ppm (for certain areas) <sup>10</sup>	--	
Lead <sup>11,12</sup>	30 Day Average	1.5 µg/m <sup>3</sup>	Atomic Absorption	--	Same as Primary Standard	High Volume Sampler and Atomic Absorption
	Calendar Qtr	--		1.5 µg/m <sup>3</sup> (for certain areas) <sup>12</sup>		
	Rolling 3-Month Average	--		0.15 µg/m <sup>3</sup>		
Visibility Reducing Particles <sup>13</sup>	8-Hour	See footnote 13	Beta Attenuation and Transmittance through Filter Tape	No National Standards		
Sulfates	24-Hour	25 µg/m <sup>3</sup>	Ion Chromatography			
Hydrogen Sulfide	1-Hour	0.03 ppm (42 µg/m <sup>3</sup> )	Ultraviolet Fluorescence			
Vinyl Chloride <sup>11</sup>	24-Hour	0.01 ppm (26 µg/m <sup>3</sup> )	Gas Chromatography			

Notes:

- California standards for ozone, carbon monoxide (except 8-hour Lake Tahoe), sulfur dioxide (1 and 24 hour), nitrogen dioxide, and particulate matter (PM<sub>10</sub>, PM<sub>2.5</sub>, and visibility reducing particles), are values that are not to be exceeded. All others are not to be equaled or exceeded. California ambient air quality standards are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.
- National standards (other than ozone, particulate matter, and those based on annual arithmetic mean) are not to be exceeded more than once a year. The ozone standard is attained when the fourth highest 8-hour concentration measured at each site in a year, averaged over three years, is equal to or less than the standard. For PM<sub>10</sub>, the 24 hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 µg/m<sup>3</sup> is equal to or less than one. For PM<sub>2.5</sub>, the 24 hour standard is attained when 98 percent of the daily concentrations, averaged over three years, are equal to or less than the standard. Contact the U.S. EPA for further clarification and current national policies.
- Concentration expressed first in units in which it was promulgated. Equivalent units given in parentheses are based upon a reference temperature of 25°C and a reference pressure of 760 torr. Most measurements of air quality are to be corrected to a reference temperature of 25°C and a reference pressure of 760 torr; ppm in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.
- Any equivalent measurement method which can be shown to the satisfaction of the ARB to give equivalent results at or near the level of the air quality standard may be used.
- National Primary Standards: The levels of air quality necessary, with an adequate margin of safety to protect the public health.
- National Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.
- Reference method as described by the U.S. EPA. An "equivalent method" of measurement may be used but must have a "consistent relationship to the reference method" and must be approved by the U.S. EPA.

8. On December 14, 2012, the national annual PM2.5 primary standard was lowered from 15  $\mu\text{g}/\text{m}^3$  to 12.0  $\mu\text{g}/\text{m}^3$ . The existing national 24-hour PM2.5 standards (primary and secondary) were retained at 35  $\mu\text{g}/\text{m}^3$ , as was the annual secondary standard of 15  $\mu\text{g}/\text{m}^3$ . The existing 24-hour PM10 standards (primary and secondary) of 150  $\mu\text{g}/\text{m}^3$  also were retained. The form of the annual primary and secondary standards is the annual mean, averaged over 3 years.
9. To attain the 1-hour national standard, the 3-year average of the annual 98th percentile of the 1-hour daily maximum concentrations at each site must not exceed 100 ppb. Note that the national 1-hour standard is in units of parts per billion (ppb). California standards are in units of parts per million (ppm). To directly compare the national 1-hour standard to the California standards the units can be converted from ppb to ppm. In this case, the national standard of 100 ppb is identical to 0.100 ppm.
10. On June 2, 2010, a new 1-hour SO2 standard was established and the existing 24-hour and annual primary standards were revoked. To attain the 1-hour national standard, the 3-year average of the annual 99th percentile of the 1-hour daily maximum concentrations at each site must not exceed 75 ppb. The 1971 SO2 national standards (24-hour and annual) remain in effect until one year after an area is designated for the 2010 standard, except that in areas designated nonattainment for the 1971 standards, the 1971 standards remain in effect until implementation plans to attain or maintain the 2010 standards are approved.

Note that the 1-hour national standard is in units of parts per billion (ppb). California standards are in units of parts per million (ppm). To directly compare the 1-hour national standard to the California standard the units can be converted to ppm. In this case, the national standard of 75 ppb is identical to 0.075 ppm.

11. The ARB has identified lead and vinyl chloride as 'toxic air contaminants' with no threshold level of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants.
12. The national standard for lead was revised on October 15, 2008 to a rolling 3-month average. The 1978 lead standard (1.5  $\mu\text{g}/\text{m}^3$  as a quarterly average) remains in effect until one year after an area is designated for the 2008 standard, except that in areas designated nonattainment for the 1978 standard, the 1978 standard remains in effect until implementation plans to attain or maintain the 2008 standard are approved.
13. In 1989, the ARB converted both the general statewide 10-mile visibility standard and the Lake Tahoe 30-mile visibility standard to instrumental equivalents, which are "extinction of 0.23 per kilometer" and "extinction of 0.07 per kilometer" for the statewide and Lake Tahoe Air Basin standards, respectively.

Several pollutants listed in Table 2 are not addressed in this analysis. Analysis of lead is not included in this report because the project is not anticipated to emit lead. Visibility-reducing particles are not explicitly addressed in this analysis because particulate matter is addressed. The project is not expected to generate or be exposed to vinyl chloride because proposed project uses do not utilize the chemical processes that create this pollutant and there are no such uses in the project vicinity. The proposed project is not expected to cause exposure to hydrogen sulfide because it would not generate hydrogen sulfide in any substantial quantity.

### **2.1.2 South Coast Air Quality Management District**

The agency for air pollution control for the Salton Sea Air Basin (basin) is the South Coast Air Quality Management District (SCAQMD). SCAQMD is responsible for controlling emissions primarily from stationary sources. SCAQMD maintains air quality monitoring stations throughout the basin. SCAQMD, in coordination with the Southern California Association of Governments, is also responsible for developing, updating, and implementing the Air Quality Management Plan (AQMP) for the basin. An AQMP is a plan prepared and implemented by an air pollution district for a county or region designated as nonattainment of the federal and/or California ambient air quality standards. The term nonattainment area is used to refer to an air basin where one or more ambient air quality standards are exceeded.

Every three (3) years the SCAQMD prepares a new AQMP, updating the previous plan and having a 20-year horizon.

On March 23, 2017, CARB approved the 2016 AQMP. The 2016 AQMP is a regional blueprint for achieving the federal air quality standards and healthful air.

The 2016 AQMP includes both stationary and mobile source strategies to ensure that rapidly approaching attainment deadlines are met, that public health is protected to the maximum extent feasible, and that the region is not faced with burdensome sanctions if the Plan is not approved or if the NAAQS are not met on time. As with every AQMP, a comprehensive analysis of emissions, meteorology, atmospheric chemistry, regional growth projections, and the impact of existing control measures is updated with the latest data and methods. The most significant air quality challenge in the Basin is to reduce nitrogen oxide (NO<sub>x</sub>) emissions sufficiently to meet the upcoming ozone standard deadlines. The primary goal of the 2016 AQMP is to meet clean air standards and protect public health, including ensuring benefits to environmental justice and disadvantaged communities. Now that the plan has been approved by CARB, it has been forwarded to the U.S. Environmental Protection Agency for its review. If approved by EPA, the plan becomes federally enforceable.

South Coast AQMD has initiated the development of the 2022 AQMP to address the attainment of the 2015 8-hour ozone standard (70 ppb) for South Coast Air Basin and Coachella Valley. To support the development of mobile source strategies for the 2022 AQMP, South Coast AQMD, in conjunction with California Air Resources Board, has established Mobile Source Working Groups which are open to all interested parties.

### **South Coast Air Quality Management District Rules**

The AQMP for the basin establishes a program of rules and regulations administered by SCAQMD to obtain attainment of the state and federal standards. Some of the rules and regulations that apply to this Project include, but are not limited to, the following:

**SCAQMD Rule 402** prohibits a person from discharging from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance, or annoyance to any considerable number of persons 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.

**SCAQMD Rule 403** governs emissions of fugitive dust during construction and operation activities. Compliance with this rule is achieved through application of standard Best Management Practices, such as application of water or chemical stabilizers to disturbed soils, covering haul vehicles, restricting vehicle speeds on unpaved roads to 15 miles per hour, sweeping loose dirt from paved site access roadways, cessation of construction activity when winds exceed 25 mph, and establishing a permanent ground cover on finished sites.

Rule 403 requires that fugitive dust be controlled with best available control measures so that the presence of such dust does not remain visible in the atmosphere beyond the property line of the emission source. In addition, Rule 403 requires implementation of dust suppression techniques to prevent fugitive dust from creating a nuisance off site. Applicable suppression techniques are indicated below and include but are not limited to the following:

- Apply nontoxic chemical soil stabilizers according to manufacturers' specifications to all inactive construction areas (previously graded areas in active for 10 days or more).
- Water active sites at least three times daily.
- Cover all trucks hauling dirt, sand, soil, or other loose materials, or maintain at least 2 feet of freeboard in accordance with the requirements of California Vehicle Code (CVC) section 23114.
- Pave construction access roads at least 100 feet onto the site from the main road.
- Reduce traffic speeds on all unpaved roads to 15 mph or less.
- Suspension of all grading activities when wind speeds (including instantaneous wind gusts) exceed 25 mph.
- Bumper strips or similar best management practices shall be provided where vehicles enter and exit the construction site onto paved roads or wash off trucks and any equipment leaving the site each trip.
- Replanting disturbed areas as soon as practical.
- During all construction activities, construction contractors shall sweep on-site and off-site streets if silt is carried to adjacent public thoroughfares, to reduce the amount of particulate matter on public streets.

The project will be required to follow the guidelines set forth in Rule 403.

**SCAQMD Rule 403.1** is supplemental to Rule 403 and applies to fugitive dust sources in Coachella Valley. It establishes the requirement for a fugitive dust control plan for any active operation with a disturbed surface area of more than 5,000 square feet prior to earth-moving operations, as well as recordkeeping requirements and requirements for stabilizing bulk material deposits. The project will be required to submit a fugitive dust plan.

**SCAQMD Rule 1113** governs the sale, use, and manufacturing of architectural coating and limits the VOC content in paints and paint solvents. This rule regulates the VOC content of paints available during construction. Therefore, all paints and solvents used during construction and operation of project must comply with Rule 1113.

**Idling Diesel Vehicle Trucks** – Idling for more than 5 minutes in any one location is prohibited within California borders.

**Rule 2702.** The SCAQMD adopted Rule 2702 on February 6, 2009, which establishes a voluntary air quality investment program from which SCAQMD can collect funds from parties that desire certified GHG emission reductions, pool those funds, and use them to purchase or fund GHG emission reduction projects within two years, unless extended by the Governing Board. Priority will be given to projects that result in co-benefit emission reductions of GHG emissions and criteria or toxic air pollutants within environmental justice areas. Further, this voluntary program may compete with the cap-and-trade program identified for implementation in CARB's Scoping Plan, or a Federal cap and trade program.



### 2.1.3 Local

Local jurisdictions, such as the County of Riverside, have the authority and responsibility to reduce air pollution through their police power and decision-making authority. Specifically, the County are responsible for the assessment and mitigation of air emissions resulting from its land use decisions. The County are also responsible for the implementation of transportation control measures as outlined in the 2016 AQMP. Examples of such measures include bus turnouts, energy-efficient streetlights, and synchronized traffic signals. In accordance with CEQA requirements and the CEQA review process, the County assesses the air quality impacts of new development projects, requires mitigation of potentially significant air quality impacts by conditioning discretionary permits, and monitors and enforces implementation of such mitigation.

The County relies on the expertise of the SCAQMD and utilizes the SCAQMD CEQA Air Quality Handbook as the guidance document for the environmental review of plans and development proposals within its jurisdiction.

#### *County of Riverside General Plan*

The Air Quality Element of the County of Riverside General Plan summarizes air quality issues in the Basin, air quality-related plans and programs administered by federal, state, and special purpose agencies, and establishes goals and policies to improve air quality. These goals and policies in the Air Quality Element that relate to the proposed project include:

#### Multi-jurisdictional Cooperation:

- AQ 1.1 Promote and participate with regional and local agencies, both public and private, to protect and improve air quality.
- AQ 1.2 Support the Southern California Association of Government's (SCAG) Regional Growth Management Plan by developing intergovernmental agreements with appropriate governmental entities such as the Western Riverside Council of Governments (WRCOG), the Coachella Valley Association of Governments (CVAG), sanitation districts, water districts, and those subregional entities identified in the Regional Growth Management Plan.
- AQ 1.3 Participate in the development and update of those regional air quality management plans required under federal and state law, and meet all standards established for clean air in these plans.
- AQ 1.4 Coordinate with the SCAQMD and MDAQMD to ensure that all elements of air quality plans regarding reduction of air pollutant emissions are being enforced.
- AQ 1.5 Establish and implement air quality, land use and circulation measures that improve not only the County's environment but the entire regions.

- AQ 1.6 Establish a level playing field by working with local jurisdictions to simultaneously adopt policies similar to those in this Air Quality Element.
- AQ 1.7 Support legislation which promotes cleaner industry, clean fuel vehicles and more efficient burning engines and fuels.
- AQ 1.8 Support the introduction of federal, state or regional enabling legislation to permit the County to promote inventive air quality programs, which otherwise could not be implemented.
- AQ 1.9 Encourage, publicly recognize and reward innovative approaches that improve air quality.
- AQ 1.10 Work with regional and local agencies to evaluate the feasibility of implementing a system of charges (e.g., pollution charges, user fees, congestion pricing and toll roads) that requires individuals who undertake polluting activities to bear the economic cost of their actions where possible.
- AQ 1.11 Involve environmental groups, the business community, special interests, and the general public in the formulation and implementation of programs that effectively reduce airborne pollutants.

Sensitive Receptors:

- AQ 2.1 The County land use planning efforts shall assure that sensitive receptors are separated and protected from polluting point sources to the greatest extent possible.
- AQ 2.2 Require site plan designs to protect people and land uses sensitive to air pollution through the use of barriers and/or distance from emissions sources when possible.
- AQ 2.3 Encourage the use of pollution control measures such as landscaping, vegetation and other materials, which trap particulate matter or control pollution.

Stationary Pollution Sources:

- AQ 4.1 Encourage the use of building materials/methods which reduce emissions.
- AQ 4.2 Require the use of all feasible efficient heating equipment and other appliances, such as water heaters, swimming pool heaters, cooking equipment, refrigerators, furnaces and boiler units.
- AQ 4.3 Require centrally heated facilities to utilize automated time clocks or occupant sensors to control heating where feasible.
- AQ 4.5 Require stationary pollution sources to minimize the release of toxic pollutants through:

- Design features;
- Operating procedures;
- Preventive maintenance;
- Operator training; and
- Emergency response planning

- AQ 4.6 Require stationary air pollution sources to comply with applicable air district rules and control measures.
- AQ 4.7 To the greatest extent possible, require every project to mitigate any of its anticipated emissions which exceed allowable emissions as established by the SCAQMD, MDAQMD, SOCAB, the Environmental Protection Agency and the California Air Resources Board.
- AQ 4.8 Expand, as appropriate, measures contained in the County's Fugitive Dust Reduction Program for the Coachella Valley to the entire County.
- AQ 4.9 Require compliance with SCAQMD Rules 403 and 403.1, and support appropriate future measures to reduce fugitive dust emanating from construction sites.
- AQ 4.10 Coordinate with the SCAQMD and MDAQMD to create a communications plan to alert those conducting grading operations in the County of first, second, and third stage smog alerts, and when wind speeds exceed 25 miles per hour. During these instances all grading operations should be suspended.

Energy Efficiency and Conservation:

- AQ 5.1 Utilize source reduction, recycling and other appropriate measures to reduce the amount of solid waste disposed of in landfills.
- AQ 5.4 Encourage the incorporation of energy-efficient design elements, including appropriate site orientation and the use of shade and windbreak trees to reduce fuel consumption for heating and cooling.

Particulate Matter:

- AQ 15.1 Identify and monitor sources, enforce existing regulations, and promote stronger controls to reduce particulate matter.

Multi-jurisdictional Cooperation:

- AQ 16.1 Cooperate with local, regional, state and federal jurisdictions to better control particulate matter.

Control Measures:

- AQ 17.1 Reduce particulate matter from agriculture, construction, demolition, debris hauling, street cleaning, utility maintenance, railroad rights-of-way, and off-road vehicles to the extent possible.
- AQ 17.3 Identify and create a control plan for areas within the County prone to wind erosion of soil.
- AQ 17.4 Adopt incentives, regulations and/or procedures to manage paved and unpaved roads and parking lots so they produce the minimum practicable level of particulates.
- AQ 17.5 Adopt incentives and/or procedures to limit dust from agricultural lands and operations, where applicable.
- AQ 17.6 Reduce emissions from building materials and methods that generate excessive pollutants, through incentives and/or regulations.

## **2.2 Greenhouse Gas Regulatory Setting**

### **2.2.1 International**

Many countries around the globe have made an effort to reduce GHGs since climate change is a global issue.

**Intergovernmental Panel on Climate Change.** In 1988, the United Nations and the World Meteorological Organization established the Intergovernmental Panel on Climate Change to assess the scientific, technical and socio-economic information relevant to understanding the scientific basis of risk of human-induced climate change, its potential impacts, and options for adaptation and mitigation.

**United Nations.** The United States participates in the United Nations Framework Convention on Climate Change (UNFCCC) (signed on March 21, 1994). Under the Convention, governments gather and share information on greenhouse gas emissions, national policies, and best practices; launch national strategies for addressing greenhouse gas emissions and adapting to expected impacts, including the provision of financial and technological support to developing countries; and cooperate in preparing for adaptation to the impacts of climate change.

The 2014 UN Climate Change Conference in Lima Peru provided a unique opportunity to engage all countries to assess how developed countries are implementing actions to reduce emissions.

**Kyoto Protocol.** The Kyoto Protocol is a treaty made under the UNFCCC and was the first international agreement to regulate GHG emissions. It has been estimated that if the commitments outlined in the Kyoto Protocol are met, global GHG emissions could be reduced by an estimated 5 percent from 1990 levels during the first commitment period of 2008 – 2012 (UNFCCC 1997). On December 8, 2012, the Doha Amendment to the Kyoto Protocol was adopted. The amendment includes: New commitments for Annex I Parties to the Kyoto Protocol who agreed to take on commitments in a second commitment period from 2013 – 2020; a revised list of greenhouse gases (GHG) to be reported on by Parties in the

second commitment period; and Amendments to several articles of the Kyoto Protocol which specifically referenced issues pertaining to the first commitment period and which needed to be updated for the second commitment period.

## **2.2.2 National**

**Greenhouse Gas Endangerment.** On December 2, 2009, the EPA announced that GHGs threaten the public health and welfare of the American people. The EPA also states that GHG emissions from on-road vehicles contribute to that threat. The decision was based on *Massachusetts v. EPA* (Supreme Court Case 05-1120) which argued that GHGs are air pollutants covered by the Clean Air Act and that the EPA has authority to regulate those emissions.

**Clean Vehicles.** Congress first passed the Corporate Average Fuel Economy law in 1975 to increase the fuel economy of cars and light duty trucks. The law has become more stringent over time. On May 19, 2009, President Obama put in motion a new national policy to increase fuel economy for all new cars and trucks sold in the United States. On April 1, 2010, the EPA and the Department of Transportation's National Highway Safety Administration announced a joint final rule establishing a national program that would reduce greenhouse gas emissions and improve fuel economy for new cars and trucks sold in the United States.

The first phase of the national program would apply to passenger cars, light-duty trucks, and medium-duty passenger vehicles, covering model years 2012 through 2016. They require these vehicles to meet an estimated combined average emissions level of 250 grams of carbon dioxide per mile, equivalent to 35.5 miles per gallon if the automobile industry were to meet this carbon dioxide level solely through fuel economy improvements. Together, these standards would cut carbon dioxide emissions by an estimated 960 million metric tons and 1.8 billion barrels of oil over the lifetime of the vehicles sold under the program (model years 2012-2016). The second phase of the national program would involve proposing new fuel economy and greenhouse gas standards for model years 2017 – 2025 by September 1, 2011.

On October 25, 2010, the EPA and the U.S. Department of Transportation proposed the first national standards to reduce greenhouse gas emissions and improve fuel efficiency of heavy-duty trucks and buses. For combination tractors, the agencies are proposing engine and vehicle standards that begin in the 2014 model year and achieve up to a 20 percent reduction in carbon dioxide emissions and fuel consumption by the 2018 model year. For heavy-duty pickup trucks and vans, the agencies are proposing separate gasoline and diesel truck standards, which phase in starting in the 2014 model year and achieve up to a 10 percent reduction for gasoline vehicles and 15 percent reduction for diesel vehicles by 2018 model year (12 and 17 percent respectively if accounting for air conditioning leakage). Lastly, for vocational vehicles, the agencies are proposing engine and vehicle standards starting in the 2014 model year which would achieve up to a 10 percent reduction in fuel consumption and carbon dioxide emissions by 2018 model year.

Issued by NHTSA and EPA in March 2020 (published on April 30, 2020 and effective after June 29, 2020), the Safer Affordable Fuel-Efficient Vehicles Rule would maintain the CAFE and CO2 standards applicable in model year 2020 for model years 2021 through 2026. The estimated CAFE and CO2

standards for model year 2020 are 43.7 mpg and 204 grams of CO<sub>2</sub> per mile for passenger cars and 31.3 mpg and 284 grams of CO<sub>2</sub> per mile for light trucks, projecting an overall industry average of 37 mpg, as compared to 46.7 mpg under the standards issued in 2012. This Rule also excludes CO<sub>2</sub>-equivalent emission improvements associated with air conditioning refrigerants and leakage (and, optionally, offsets for nitrous oxide and methane emissions) after model year 2020.<sup>1</sup>

**Mandatory Reporting of Greenhouse Gases.** On January 1, 2010, the EPA started requiring large emitters of heat-trapping emissions to begin collecting GHG data under a new reporting system. Under the rule, suppliers of fossil fuels or industrial greenhouse gases, manufacturers of vehicles and engines, and facilities that emit 25,000 metric tons or more per year of greenhouse gas emissions are required to submit annual reports to the EPA.

**Climate Adaption Plan.** The EPA Plan identifies priority actions the Agency will take to incorporate considerations of climate change into its programs, policies, rules and operations to ensure they are effective under future climatic conditions. The following link provides more information on the EPA Plan: <https://www.epa.gov/arc-x/planning-climate-change-adaptation>

### **2.2.3 California**

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

The Energy Commission adopted 2008 Standards on April 23, 2008 and Building Standards Commission approved them for publication on September 11, 2008. These updates became effective on August 1, 2009. 2013, 2016, and 2019 standards have been approved and became effective July 1, 2014, January 1, 2016, and January 1, 2020, respectively.

**California Code of Regulations (CCR) Title 24, Part 11.** All buildings for which an application for a building permit is submitted on or after January 1, 2020 must follow the 2019 standards. Energy efficient buildings require less electricity; therefore, increased energy efficiency reduces fossil fuel consumption and decreases greenhouse gas emissions. The following links provide more information on Title 24, Part 11:

<https://www.dgs.ca.gov/BSC/Codes>

[https://www.energy.ca.gov/sites/default/files/2020-03/Title\\_24\\_2019\\_Building\\_Standards\\_FAQ\\_ada.pdf](https://www.energy.ca.gov/sites/default/files/2020-03/Title_24_2019_Building_Standards_FAQ_ada.pdf)

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<sup>1</sup> National Highway Traffic Safety Administration (NHTSA) and U.S. Environmental Protection Agency (USEPA), 2018. Federal Register / Vol. 83, No. 165 / Friday, August 24, 2018 / Proposed Rules, The Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule for Model Years 2021–2026 Passenger Cars and Light Trucks 2018. Available at: <https://www.gpo.gov/fdsys/pkg/FR-2018-08-24/pdf/2018-16820.pdf>.

**California Green Building Standards** On January 12, 2010, the State Building Standards Commission unanimously adopted updates to the California Green Building Standards Code, which went into effect on January 1, 2011. The Housing and Community Development (HCD) updated CALGreen through the 2015 Triennial Code Adoption Cycle, during the 2016 to 2017 fiscal year. During the 2019-2020 fiscal year, the Department of Housing and Community Development (HCD) updated CALGreen through the 2019 Triennial Code Adoption Cycle.

The Code is a comprehensive and uniform regulatory code for all residential, commercial and school buildings. CCR Title 24, Part 11: California Green Building Standards (Title 24) became effective in 2001 in response to continued efforts to reduce GHG emissions associated with energy consumption. CCR Title 24, Part 11 now require that new buildings reduce water consumption, employ building commissioning to increase building system efficiencies, divert construction waste from landfills, and install low pollutant-emitting finish materials. One focus of CCR Title 24, Part 11 is water conservation measures, which reduce GHG emissions by reducing electrical consumption associated with pumping and treating water. CCR Title 24, Part 11 has approximately 52 nonresidential mandatory measures and an additional 130 provisions for optional use. Some key mandatory measures for commercial occupancies include specified parking for clean air vehicles, a 20 percent reduction of potable water use within buildings, a 50 percent construction waste diversion from landfills, use of building finish materials that emit low levels of volatile organic compounds, and commissioning for new, nonresidential buildings over 10,000 square feet.

The 2019 CalGreen Code includes the following changes and/or additional regulations:

Single-family homes built with the 2019 standards will use about 7 percent less energy due to energy efficiency measures versus those built under the 2016 standards. Once rooftop solar electricity generation is factored in, homes built under the 2019 standards will use about 53 percent less energy than those under the 2016 standards. Nonresidential buildings will use about 30 percent less energy due mainly to lighting upgrades<sup>2</sup>.

HCD modified the best management practices for stormwater pollution prevention adding Section 5.106.2 for projects that disturb one or more acres of land. This section requires projects that disturb one acre or more of land or less than one acre of land but are part of a larger common plan of development or sale must comply with the post-construction requirement detailed in the applicable National Pollutant Discharge Elimination System (NPDES) General Permit for Stormwater Discharges Associated with Construction and Land Disturbance Activities issued by the State Water Resources Control Board. The NPDES permits require post-construction runoff (post-project hydrology) to match the preconstruction runoff pre-project hydrology) with installation of post-construction stormwater management measures.

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<sup>2</sup> [https://ww2.energy.ca.gov/title24/2019standards/documents/2018\\_Title\\_24\\_2019\\_Building\\_Standards\\_FAQ.pdf](https://ww2.energy.ca.gov/title24/2019standards/documents/2018_Title_24_2019_Building_Standards_FAQ.pdf)

HCD added sections 5.106.4.1.3 and 5.106.4.1.5 in regards to bicycle parking. Section 5.106.4.1.3 requires new buildings with tenant spaces that have 10 or more tenant-occupants, provide secure bicycle parking for 5 percent of the tenant-occupant vehicular parking spaces with a minimum of one bicycle parking facility. In addition, Section 5.106.4.1.5 states that acceptable bicycle parking facility for Sections 5.106.4.1.2 through 5.106.4.1.4 shall be convenient from the street and shall meeting one of the following: (1) covered, lockable enclosures with permanently anchored racks for bicycles; (2) lockable bicycle rooms with permanently anchored racks; or (3) lockable, permanently anchored bicycle lockers.

HCD amended section 5.106.5.3.5 allowing future charging spaces to qualify as designated parking for clean air vehicles.

HCD updated section 5.303.3.3 in regards to showerhead flow rates. This update reduced the flow rate to 1.8 GPM.

HCD amended section 5.304.1 for outdoor potable water use in landscape areas and repealed sections 5.304.2 and 5.304.3. The update requires nonresidential developments to comply with a local water efficient landscape ordinance or the current California Department of Water Resource's Model Water Efficient Landscape Ordinance (MWELO), whichever is more stringent. Some updates were also made in regards to the outdoor potable water use in landscape areas for public schools and community colleges.

HCD updated Section 5.504.5.3 in regards to the use of MERV filters in mechanically ventilated buildings. This update changed the filter use from MERV 8 to MERV 13.

The California Green Building Standards Code does not prevent a local jurisdiction from adopting a more stringent code as state law provides methods for local enhancements. The Code recognizes that many jurisdictions have developed existing construction and demolition ordinances, and defers to them as the ruling guidance provided they provide a minimum 50-percent diversion requirement. The code also provides exemptions for areas not served by construction and demolition recycling infrastructure. State building code provides the minimum standard that buildings need to meet in order to be certified for occupancy. Enforcement is generally through the local building official. The following link provides more on CalGreen Building Standards:

<http://www.bsc.ca.gov/Home/CALGreen.aspx>

**Executive Order S-3-05.** California Governor issued Executive Order S-3-05, GHG Emission, in June 2005, which established the following targets:

- By 2010, California shall reduce greenhouse gas emissions to 2000 levels;
- By 2020, California shall reduce greenhouse gas emissions to 1990 levels.
- By 2050, California shall 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.

**Executive Order S-01-07.** 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 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.

On April 23, 2009 CARB approved the proposed regulation to implement the low carbon fuel standard and began implementation on January 1, 2011. The low carbon fuel standard is anticipated to reduce GHG emissions by about 16 MMT per year by 2020. CARB approved some amendments to the LCFS in December 2011, which were implemented on January 1, 2013. In September 2015, the Board approved the re-adoption of the LCFS, which became effective on January 1, 2016, to address procedural deficiencies in the way the original regulation was adopted. In 2018, the Board approved amendments to the regulation, which included strengthening and smoothing the carbon intensity benchmarks through 2030 in-line with California's 2030 GHG emission reduction target enacted through SB 32, adding new crediting opportunities to promote zero emission vehicle adoption, alternative jet fuel, carbon capture and sequestration, and advanced technologies to achieve deep decarbonization in the transportation sector.

The LCFS is designed to encourage the use of cleaner low-carbon transportation fuels in California, encourage the production of those fuels, and therefore, reduce GHG emissions and decrease petroleum dependence in the transportation sector. Separate standards are established for gasoline and diesel fuels and the alternative fuels that can replace each. The standards are "back-loaded", with more reductions required in the last five years, than the first five years. This schedule allows for the development of advanced fuels that are lower in carbon than today's fuels and the market penetration of plug-in hybrid electric vehicles, battery electric vehicles, fuel cell vehicles, and flexible fuel vehicles. It is anticipated that compliance with the low carbon fuel standard will be based on a combination of both lower carbon fuels and more efficient vehicles.

Reformulated gasoline mixed with corn-derived ethanol at ten percent by volume 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 as appropriate. 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 for the low carbon fuel standard.

**SB 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 Resource 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 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 address GHG emissions. The CEQA Guidelines Amendments changed 14 sections of the CEQA Guidelines and incorporate GHG language throughout the Guidelines. However, no GHG emissions thresholds of significance are provided and no specific mitigation measures are 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 greenhouse gas 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 greenhouse gas 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 (EIRs) must specifically consider a project's energy use and energy efficiency potential.

**AB 32.** The California State Legislature enacted AB 32, the California Global Warming Solutions Act of 2006. AB 32 requires that greenhouse gases emitted in California be reduced to 1990 levels by the year 2020. "Greenhouse gases" as defined under AB 32 include carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride. ARB is the state agency charged with monitoring and regulating sources of greenhouse gases. AB 32 states the following:

Global warming poses a serious threat to the economic well-being, public health, natural resources, and the environment of California. The potential adverse impacts of global warming include the exacerbation of air quality problems, a reduction in the quality and supply of water to the state from the Sierra snowpack, a rise in sea levels resulting in the displacement of thousands of coastal businesses and residences, damage to marine ecosystems and the natural environment, and an increase in the incidences of infectious diseases, asthma, and other human health-related problems.

The ARB Board approved the 1990 greenhouse gas emissions level of 427 million metric tons of carbon dioxide equivalent (MMTCO<sub>2</sub>e) on December 6, 2007 (California Air Resources Board 2007). Therefore, emissions generated in California in 2020 are required to be equal to or less than 427 MMTCO<sub>2</sub>e. Emissions in 2020 in a “business as usual” scenario are estimated to be 596 MMTCO<sub>2</sub>e.

Under AB 32, the ARB published its Final Expanded List of Early Action Measures to Reduce Greenhouse Gas Emissions in California. Discrete early action measures are currently underway or are enforceable by January 1, 2010. The ARB has 44 early action measures that apply to the transportation, commercial, forestry, agriculture, cement, oil and gas, fire suppression, fuels, education, energy efficiency, electricity, and waste sectors. Of these early action measures, nine are considered discrete early action measures, as they are regulatory and enforceable by January 1, 2010. The ARB estimates that the 44 recommendations are expected to result in reductions of at least 42 MMTCO<sub>2</sub>e by 2020, representing approximately 25 percent of the 2020 target.

The ARB’s Climate Change Scoping Plan (Scoping Plan) contains measures designed to reduce the State’s emissions to 1990 levels by the year 2020 (California Air Resources Board 2008). The Scoping Plan identifies recommended measures for multiple greenhouse gas emission sectors and the associated emission reductions needed to achieve the year 2020 emissions target—each sector has a different emission reduction target. Most of the measures target the transportation and electricity sectors. As stated in the Scoping Plan, the key elements of the strategy for achieving the 2020 greenhouse gas target include:

- Expanding and strengthening existing energy efficiency programs as well as building and appliance standards;
- Achieving a statewide renewables energy mix of 33 percent;
- Developing a California cap-and-trade program that links with other Western Climate Initiative partner programs to create a regional market system;
- Establishing targets for transportation-related greenhouse gas emissions for regions throughout California and pursuing policies and incentives to achieve those targets;
- Adopting and implementing measures pursuant to existing State laws and policies, including California’s clean car standards, goods movement measures, and the Low Carbon Fuel Standard; and
- Creating targeted fees, including a public goods charge on water use, fees on high global warming potential gases, and a fee to fund the administrative costs of the State’s long-term commitment to AB 32 implementation.

In addition, the Scoping Plan differentiates between “capped” and “uncapped” strategies. “Capped” strategies are subject to the proposed cap-and-trade program. The Scoping Plan states that the inclusion of these emissions within the cap-and-trade program will help ensure that the year 2020 emission targets are met despite some degree of uncertainty in the emission reduction estimates for any individual measure. Implementation of the capped strategies is calculated to achieve a sufficient amount of reductions by 2020 to achieve the emission target contained in AB 32. “Uncapped” strategies that will not be subject to the cap-and-trade emissions caps and requirements are provided as a margin of safety by accounting for additional greenhouse gas emission reductions.<sup>4</sup>

**Senate Bill 100.** Senate Bill 100 (SB 100) requires 100 percent of total retail sales of electricity in California to come from eligible renewable energy resources and zero-carbon resources by December 31, 2045. SB 100 was adopted September 2018.

The interim thresholds from prior Senate Bills and Executive Orders would also remain in effect. These include Senate Bill 1078 (SB 1078), which requires retail sellers of electricity, including investor-owned utilities and community choice aggregators, to provide at least 20 percent of their supply from renewable sources by 2017. Senate Bill 107 (SB 107) which changed the target date to 2010. Executive Order S-14-08, which was signed on November 2008 and expanded the State’s Renewable Energy Standard to 33 percent renewable energy by 2020. Executive Order S-21-09 directed the CARB to adopt regulations by July 31, 2010 to enforce S-14-08. Senate Bill X1-2 codifies the 33 percent renewable energy requirement by 2020.

**SB 375.** Senate Bill 375 (SB 375) was adopted September 2008 and aligns regional transportation planning efforts, regional GHG emission reduction targets, and land use and housing allocation. SB 375 requires Metropolitan Planning Organizations (MPO) to adopt a sustainable communities strategy (SCS) or alternate planning strategy (APS) that will prescribe land use allocation in that MPOs Regional Transportation Plan (RTP). CARB, in consultation with each MPO, will provide each affected region with reduction targets for GHGs emitted by passenger cars and light trucks in the region for the years 2020 and 2035. These reduction targets will be updated every eight years but can be updated every four years if advancements in emissions technologies affect the reduction strategies to achieve the targets. CARB is also charged with reviewing each MPO’s sustainable communities strategy or alternate planning strategy for consistency with its assigned targets.

The proposed project is located within the Southern California Association of Governments (SCAG), which has authority to develop the SCS or APS. For the SCAG region, the targets set by CARB are at eight percent below 2005 per capita GHG emissions levels by 2020 and 13 percent below 2005 per capita GHG emissions levels by 2035. On April 4, 2012, SCAG adopted the 2012-2035 Regional Transportation Plan / Sustainable Communities Strategy (RTP/SCS), which meets the CARB emission reduction requirements.

On September 3, 2020, SCAG’s Regional Council approved and fully adopted the Connect SoCal (2020–2045 Regional Transportation Plan/Sustainable Communities Strategy), and the addendum to the Connect SoCal Program Environmental Impact Report. Connect SoCal is a long-range visioning plan that builds upon and expands land use and transportation strategies established over several planning

cycles to increase mobility options and achieve a more sustainable growth pattern. Connect SoCal outlines more than \$638 billion in transportation system investments through 2045. Connect SoCal is supported by a combination of transportation and land use strategies that help the region achieve state greenhouse gas emission reduction goals and federal Clean Air Act requirements, preserve open space areas, improve public health and roadway safety, support our vital goods movement industry and utilize resources more efficiently. By integrating the Forecasted Development Pattern with a suite of financially constrained transportation investments, Connect SoCal can reach the regional target of reducing greenhouse gases, or GHGs, from autos and light-duty trucks by 8 percent per capita by 2020, and 19 percent by 2035 (compared to 2005 levels).

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

**Assembly Bill 939, Assembly Bill 341, and Senate Bill 1374.** Assembly Bill 939 (AB 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. AB 341 requires at least 75 percent of generated waste be source reduced, recycled, or composted by the year 2020. 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.

**Executive Order S-13-08.** Executive Order S-13-08 indicates that “climate change in California during the next century is expected to shift precipitation patterns, accelerate sea level rise and increase temperatures, thereby posing a serious threat to California’s economy, to the health and welfare of its population and to its natural resources.” Pursuant to the requirements in the order, the 2009 California Climate Adaptation Strategy (California Natural Resource Agency 2009) was adopted, which is the “... first statewide, multi-sector, region-specific, and information-based climate change in California, identifying and exploring strategies to adapt to climate change, and specifying a direction for future research.

**Executive Order B-30-15.** Executive Order B-30-15, establishing a new interim statewide greenhouse gas emission reduction target to reduce greenhouse gas emissions to 40 percent below 1990 levels by 2030, was signed by Governor Brown in April 2015.

**Executive Order B-29-15.** Executive Order B-29-15, mandates a statewide 25% reduction in potable water usage and was signed into law on April 1, 2015.

**Executive Order B-37-16.** Executive Order B-37-16, continuing the State’s adopted water reduction, was signed into law on May 9, 2016. The water reduction builds off the mandatory 25% reduction called for in EO B-29-15.

Executive Order N-79-20. Executive Order N-79-20 was signed into law on September 23, 2020 and mandates 100 percent of in-state sales of new passenger cars and trucks be zero-emission by 2035; 100 percent of medium- and heavy-duty vehicles in the state be zero-emission vehicles by 2045 for all operations where feasible and by 2035 for drayage trucks; and to transition to 100 percent zero-emission off-road vehicles and equipment by 2035 where feasible.

## **2.2.4 South Coast Air Quality Management District**

The Project is within the Salton Sea Air Basin, which is under the jurisdiction of the South Coast Air Quality Management District (SCAQMD). SCAQMD Regulation XXVII currently includes three rules:

- The purpose of Rule 2700 is to define terms and post global warming potentials.
- The purpose of Rule 2701, SoCal Climate Solutions Exchange, is to establish a voluntary program to encourage, quantify, and certify voluntary, high quality certified greenhouse gas emission reductions in the SCAQMD.
- Rule 2702, Greenhouse Gas Reduction Program, was adopted on February 6, 2009. The purpose of this rule is to create a Greenhouse Gas Reduction Program for greenhouse gas emission reductions in the SCAQMD. The SCAQMD will fund projects through contracts in response to requests for proposals or purchase reductions from other parties.

### *SCAQMD Threshold Development*

The SCAQMD has established recommended significance thresholds for greenhouse gases for local lead agency consideration (“SCAQMD draft local agency threshold”). SCAQMD has published a five-tiered draft GHG threshold which includes a 10,000 metric ton of CO<sub>2</sub>e per year for stationary/industrial sources and 3,000 metric tons of CO<sub>2</sub>e per year significance threshold for residential/commercial projects (South Coast Air Quality Management District 2010c). Tier 3 is anticipated to be the primary tier by which the SCAQMD will determine significance for projects. The Tier 3 screening level for stationary sources is based on an emission capture rate of 90 percent for all new or modified projects. A 90-percent emission capture rate means that 90 percent of total emissions from all new or modified stationary source projects would be subject to CEQA analysis. The 90-percent capture rate GHG significance screening level in Tier 3 for stationary sources was derived using the SCAQMD’s annual Emissions Reporting Program.

The current draft thresholds consist of the following tiered approach:

- Tier 1 consists of evaluating whether or not the project qualifies for any applicable exemption under CEQA.
- Tier 2 consists of determining whether or not the project is consistent with a greenhouse gas reduction plan. If a project is consistent with a qualifying local greenhouse gas reduction plan, it does not have significant greenhouse gas emissions.
- Tier 3 consists of screening values, which the lead agency can choose but must be consistent. A project’s construction emissions are averaged over 30 years and are added to a project’s

operational emissions. If a project's emissions are under one of the following screening thresholds, then the project is less than significant:

- All land use types: 3,000 MTCO<sub>2</sub>e per year
- Based on land use types: residential is 3,500 MTCO<sub>2</sub>e per year; commercial is 1,400 MTCO<sub>2</sub>e per year; and mixed use is 3,000 MTCO<sub>2</sub>e per year
- Tier 4 has the following options:
  - Option 1: Reduce emissions from business as usual by a certain percentage; this percentage is currently undefined
  - Option 2: Early implementation of applicable AB 32 Scoping Plan measures
  - Option 3: Year 2020 target for service populations (SP), which includes residents and employees: 4.8 MTCO<sub>2</sub>e/SP/year for projects and 6.6 MTCO<sub>2</sub>e/SP/year for plans;
  - Option 3, 2035 target: 3.0 MTCO<sub>2</sub>e/SP/year for projects and 4.1 MTCO<sub>2</sub>e/SP/year for plans
- Tier 5 involves mitigation offsets to achieve target significance threshold.

## **2.2.5 Local**

### *County of Riverside Climate Action Plan*

The County of Riverside's Climate Action Plan Update (CAP) was completed in November 2019. The CAP Update describes Riverside County's GHG emissions for the year 2017, projects how these emissions will increase into 2020, 2030, and 2050, and includes strategies to reduce emissions to a level consistent with the State of California's emissions reduction targets. The CAP Update sets a target to reduce community-wide GHG emission emissions by 15 percent from 2008 levels by 2020, 49 percent by 2030, and 83 percent by 2050.

Appendix D of the Riverside County CAP Update also states that project's that do not exceed the CAP's screening threshold of 3,000 MTCO<sub>2</sub>e per year are considered to have less than significant GHG emissions and are in compliance with the County's CAP Update. Therefore, to determine whether the project's GHG emissions are significant, this analysis uses the County of Riverside CAP Update screening threshold of 3,000 MTCO<sub>2</sub>e per year for all land use types. Projects that do not exceed emissions of 3,000 MTCO<sub>2</sub>e per year are also required to include the following efficiency measures:

- Energy efficiency matching or exceeding the Title 24 requirements in effect as of January 2017, and
- Water conservation measures that matches the California Green Building Code in effect as of January 2017.

Projects that exceed emissions of 3,000 MTCO<sub>2</sub>e per year are also required to use Screening Tables. Projects that garner at least 100 points will be consistent with the reduction quantities anticipated in the County's CAP Update. Consistent with CEQA Guidelines, such projects would be determined to have a less than significant individual and cumulative impact for GHG emissions. Those projects that do not garner 100 points using the Screening Tables will need to provide additional analysis to determine the significance of GHG emissions.

In order to meet the state-wide efficiency metric targets, the CAP must demonstrate that it can reduce community-wide emissions to 6.6 MT CO<sub>2</sub>e/SP (or 944,737 MT CO<sub>2</sub>e total based on an estimated 2020 service population of 143,142) by 2020 and 4.4 MT CO<sub>2</sub>e/SP (or 1,334,243 MT CO<sub>2</sub>e based on an estimated 2030 service population of 303,237) by 2030.

Therefore, to determine whether the project's GHG emissions are significant, this analysis uses the County of Riverside CAP Update and SCAQMD draft local agency tier 3 screening threshold of 3,000 MTCO<sub>2</sub>e.

The project will be subject to the latest requirements of the California Green Building and Title 24 Energy Efficiency Standards (currently 2019) which would reduce project-related greenhouse gas emissions.



## **3.0 Setting**

### **3.1 Existing Physical Setting**

The project site is located in the County of Riverside, which is part of the Salton Sea Air Basin (SSAB). The middle part of Riverside County (between San Geronio Pass and Joshua Tree National Monument), belongs in the Salton Sea Air Basin (SSAB), along with Imperial County. The SSAB portion of Riverside County is separated from the South Coast Air Basin region by the San Jacinto Mountains and from the Mojave Desert Air Basin to the east by the Little San Bernardino Mountains.

#### **3.1.1 Local Climate and Meteorology**

During the summer, the SSAB is generally influenced by a Pacific Subtropical High Cell that sits off the coast, inhibiting cloud formation and encouraging daytime solar heating. The SSAB is rarely influenced by cold air masses moving south from Canada and Alaska, as these 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 SSAB averages between three and seven inches of precipitation per year.

The Coachella Valley is a geographically and meteorologically unique area wholly contained within the Salton Sea Air Basin. The region is currently impacted by significant air pollution levels caused by the transport of pollutants from coastal air basins to the west, primarily ozone, and locally generated PM10. The mountains surrounding the region isolate the Valley from coastal influences and create a hot and dry low-lying desert (see Table 3). As the desert heats up it draws cooler coastal air through the narrow San Geronio Pass, generating strong and sustained winds that cross the fluvial (water caused) and aeolian (wind) erosion zones in the Valley. These strong winds suspend and transport large quantities of sand and dust, reducing visibility, damaging property, and constituting a significant health threat.

The temperature and precipitation levels for the City of Palm Springs, closest monitoring station to the project site, are in Table 3. Table 3 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. Almost all the annual rainfall comes from the fringes of mid-latitude storms from late November to early April, with summers being almost completely dry.

<Table 3, next page>

**Table 3: Meteorological Summary**

Month	Temperature (°F)		Average Precipitation (inches)
	Average High	Average Low	
January	69.6	42.1	1.14
February	73.6	45.3	1.02
March	79.4	48.6	0.59
April	86.9	54	0.17
May	94.4	60.2	0.05
June	103.1	66.7	0.06
July	108.3	74.8	0.2
August	106.9	74.2	0.3
September	101.8	67.9	0.34
October	91.6	59.2	0.26
November	78.7	48.8	0.47
December	70.1	42.1	0.93
<b>Annual Average</b>	<b>88.7</b>	<b>57</b>	<b>5.53</b>
Notes:			
<sup>1</sup> Source: <a href="https://wrcc.dri.edu/cgi-bin/cliMAIN.pl?caplms+sca">https://wrcc.dri.edu/cgi-bin/cliMAIN.pl?caplms+sca</a>			

### 3.1.2 Local Air Quality

The SCAQMD is divided into 38 air-monitoring areas with a designated ambient air monitoring station representative of each area. The project site is located in the County of Riverside in the Coachella Valley (Area 30). The nearest air monitoring station to the project site is the Palm Springs – Fire Station (Palm Springs Station) approximately 10 miles northwest of the site. However, this location does not provide all ambient weather data. Therefore, additional data was pulled from the SCAQMD historical data for the Coachella Valley Area (Area 30) for both sulfur dioxide and carbon monoxide to provide the existing levels. Table 4 presents the monitored pollutant levels within the vicinity. However, it should be noted that due to the air monitoring station distance from the project site, recorded air pollution levels at the air monitoring station reflect with varying degrees of accuracy, local air quality conditions at the project site.

<Table 4, next page>

**Table 4: Local Area Air Quality Levels from Palm Springs Air Monitoring Station<sup>1</sup>**

Pollutant (Standard) <sup>2</sup>	Year		
	2018	2019	2020
<b>Ozone:</b>			
Maximum 1-Hour Concentration (ppm)	0.111	0.100	0.119
Days > CAAQS (0.09 ppm)	<b>11</b>	<b>5</b>	<b>9</b>
Maximum 8-Hour Concentration (ppm)	0.099	0.084	0.094
Days > NAAQS (0.07 ppm)	<b>56</b>	<b>34</b>	<b>49</b>
Days > CAAQS (0.070 ppm)	<b>58</b>	<b>39</b>	<b>53</b>
<b>Carbon Monoxide:</b>			
Maximum 1-Hour Concentration (ppm)	1.1	1.3	0.8
Days > NAAQS (20 ppm)	0	0	0
Maximum 8-Hour Concentration (ppm)	0.8	0.7	0.5
Days > NAAQS (9 ppm)	0	0	0
<b>Nitrogen Dioxide:</b>			
Maximum 1-Hour Concentration (ppm)	0.043	0.041	0.047
Days > NAAQS (0.25 ppm)	0	0	0
<b>Sulfur Dioxide:<sup>3</sup></b>			
Maximum 1-Hour Concentration (ppm)	-	-	-
Days > CAAQS (0.25 ppm)	-	-	-
<b>Inhalable Particulates (PM10):</b>			
Maximum 24-Hour Concentration (ug/m <sup>3</sup> )	422.3	75.6	129.8
Days > NAAQS (150 ug/m <sup>3</sup> )	2	0	*
Days > CAAQS (50 ug/m <sup>3</sup> )	0	6	*
Annual Average (ug/m <sup>3</sup> )	22.9	20.7	23.2
Annual > NAAQS (50 ug/m <sup>3</sup> )	No	No	No
Annual > CAAQS (20 ug/m <sup>3</sup> )	<b>Yes</b>	<b>Yes</b>	<b>Yes</b>
<b>Ultra-Fine Particulates (PM2.5):</b>			
Maximum 24-Hour Concentration (ug/m <sup>3</sup> )	30.2	15.5	23.9
Days > NAAQS (35 ug/m <sup>3</sup> )	<b>0</b>	<b>0</b>	<b>0</b>
Annual Average (ug/m <sup>3</sup> )	6	6	6.4
Annual > NAAQS (15 ug/m <sup>3</sup> )	No	No	No
Annual > CAAQS (12 ug/m <sup>3</sup> )	No	No	No

<sup>1</sup> Source: obtained from <https://www.aqmd.gov/home/air-quality/air-quality-data-studies/historical-data-by-year> and /or <https://www.arb.ca.gov/adam/topfour/topfour1.php>.

<sup>2</sup> CAAQS = California Ambient Air Quality Standard; NAAQS = National Ambient Air Quality Standard; ppm = parts per million

<sup>3</sup> No data available.

The monitoring data presented in Table 4 shows that ozone is the air pollutant of primary concern in the project area, which are detailed below.

### Ozone

During the 2018 to 2020 monitoring period, the State 1-hour concentration standard for ozone has been exceeded between five and eleven days each year at the Palm Springs Station. The State 8-hour ozone standard has been exceeded between 39 and 58 days each year over the past three years at the Palm Springs Station. The Federal 8-hour ozone standard has been exceeded between 34 and 56 days each year over the past three years at the Palm Springs 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<sub>2</sub>, 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 the SCAQMD contribute to the ozone levels experienced at the monitoring station, with the more significant areas being those directly upwind.

### **Carbon Monoxide**

CO is another important pollutant that is due mainly to motor vehicles. During the 2018 to 2020 monitoring period, the Federal 1-hour and 8-hour concentration standards for CO were not exceeded.

### **Nitrogen Dioxide**

During the 2018 to 2020 monitoring period, the Federal 1-hour concentration standard for Nitrogen Dioxide has not been exceeded.

### **Sulfur Dioxide**

The Coachella Valley Area did not have SO<sub>2</sub> data available for the last three years.

### **Particulate Matter**

During the 2018 to 2020 monitoring period, the Palm Springs Station recorded two days of exceedance of the Federal 24-hour PM<sub>10</sub> concentration standard and an exceedance in the State PM<sub>10</sub> annual average standard.

During the same period, the Palm Springs Station did not record an exceedance of the Federal 24-hour standard for PM<sub>2.5</sub>.

According to the EPA, some people are much more sensitive than others to breathing fine particles (PM<sub>10</sub> and PM<sub>2.5</sub>). 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 PM<sub>10</sub> and PM<sub>2.5</sub>. 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.

### **3.1.3 Attainment Status**

The EPA and the ARB designate air basins where ambient air quality standards are exceeded as “nonattainment” areas. If standards are met, the area is designated as an “attainment” area. If there is inadequate or inconclusive data to make a definitive attainment designation, they are considered “unclassified.” National nonattainment areas are further designated as marginal, moderate, serious, severe, or extreme as a function of deviation from standards. Each standard has a different definition, or ‘form’ of what constitutes attainment, based on specific air quality statistics. For example, the Federal 8-hour CO standard is not to be exceeded more than once per year; therefore, an area is in

attainment of the CO standard if no more than one 8-hour ambient air monitoring values exceeds the threshold per year. In contrast, the federal annual PM<sub>2.5</sub> standard is met if the three-year average of the annual average PM<sub>2.5</sub> concentration is less than or equal to the standard. Table 5 lists the attainment status for the criteria pollutants in the basin.

**Table 5: Coachella Valley Portion of the Salton Sea Air Basin Attainment Status**

<b>Pollutant</b>	<b>Averaging Time</b>	<b>National Standards<sup>1</sup></b>	<b>Attainment Date<sup>2</sup></b>	<b>California Standards<sup>2</sup></b>
1979 1-Hour Ozone <sup>3</sup>	1-Hour (0.12 ppm)	Attainment	11/15/2007 (Attained 12/31/2013)	Nonattainment
	1-Hour (0.09 ppm)	-	-	Nonattainment
2015 8-Hour Ozone <sup>4</sup>	8-Hour (0.070 ppm)	Pending - Expect Nonattainment (Severe)	Pending	Nonattainment
2008 8-Hour Ozone <sup>4</sup>	8-Hour (0.075 ppm)	Nonattainment (Severe-15)	7/20/2027	-
1997 8-Hour Ozone <sup>4</sup>	8-Hour (0.08 ppm)	Nonattainment (Severe-15)	6/15/2019	-
CO	1-Hour (20 ppm) 8-hour (9.0 ppm)	-	-	Attainment
	1-Hour (35 ppm) 8-Hour (9 ppm)	Unclassifiable/ Attainment	N/A (attained)	-
NO <sub>2</sub> <sup>7</sup>	1-hour (0.18 ppm) Annual (0.03 ppm)	-	-	Attainment
	1-Hour (100 ppb) Annual (0.053 ppm)	Unclassifiable/ Attainment	N/A (attained)	-
SO <sub>2</sub> <sup>8</sup>	1-Hour (0.25 ppm) 24-Hour (0.04 ppm)	-	-	Attainment
	1-Hour (75 ppb) 24-Hour (0.14 ppm) Annual (0.03 ppm)	Designations Pending Unclassifiable/ Attainment	N/A Unclassifiable/Attainment	-
PM <sub>10</sub> <sup>6</sup>	24-Hour (50 µg/m <sup>3</sup> ) Annual (20 50 µg/m <sup>3</sup> )	-	-	Nonattainment
	24-Hour (150 µg/m <sup>3</sup> )	Nonattainment (Serious)	12/31/2006	-
PM <sub>2.5</sub> <sup>5</sup>	Annual (12.0 µg/m <sup>3</sup> )	-	-	Attainment
	24-Hour (35 µg/m <sup>3</sup> )	Unclassifiable/ Attainment	N/A (attained)	-
Lead	3-Months Rolling (0.15 µg/m <sup>3</sup> )	Unclassifiable/ Attainment	Unclassifiable/Attainment	Attainment

**Notes:**

<sup>1</sup> Obtained from 2016 AQMP, SCAQMD, 2016. EPA often only declares Nonattainment areas; everywhere else is listed as Unclassified/Attainment or Unclassifiable.

<sup>2</sup> A design value below the NAAQS for data through the full year or smog season prior to the attainment date is typically required for attainment demonstration.

<sup>3</sup> The 1979 1-hour ozone NAAQS (0.12 ppm) was revoked, effective 6/15/05; the Southeast Desert Modified Air Quality Management Area, including the Coachella Valley, had not timely attained this standard by the 11/15/07 "severe-17" deadline, based on 2005-2007 data; on 8/25/14, U.S. EPA proposed a clean data finding based on 2011-2013 data and a determination of attainment for the former 1-hour ozone NAAQS for the Southeast Desert nonattainment area; this rule was finalized by U.S. EPA on 4/15/15, effective 5/15/15, and included preliminary 2014 data

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

<sup>5</sup> The annual PM<sub>2.5</sub> standard was revised on 1/15/13, effective 3/18/13, from 15 to 12 µg/m<sup>3</sup>

<sup>6</sup> The annual PM<sub>10</sub> standard was revoked, effective 12/18/06; the 24-hour PM<sub>10</sub> NAAQS attainment deadline was 12/31/2006; the Coachella Valley Attainment Re-designation Request and PM<sub>10</sub> Maintenance Plan was postponed by U.S. EPA pending additional monitoring and analysis in the southeastern Coachella Valley

<sup>7</sup> New 1-hour NO<sub>2</sub> NAAQS became effective 8/2/10; attainment designations 1/20/12; annual NO<sub>2</sub> NAAQS retained

<sup>8</sup> The 1971 Annual and 24-hour SO<sub>2</sub> NAAQS were revoked, effective 8/23/10; however, these 1971 standards will remain in effect until one year after U.S. EPA promulgates area designations for the 2010 SO<sub>2</sub> 1-hour standard; final area designations expected by 12/31/2020 with SSAB expected to be designated Unclassifiable/Attainment

## 3.2 Greenhouse Gases

Constituent gases of the Earth's atmosphere, called atmospheric greenhouse gases (GHG), play a critical role in the Earth's radiation amount by trapping infrared radiation emitted from the Earth's surface, which otherwise would have escaped to space. Prominent greenhouse gases contributing to this process include carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>), ozone, water vapor, nitrous oxide (N<sub>2</sub>O), 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. Transportation is responsible for 41 percent of the State's greenhouse gas emissions, followed by electricity generation. Emissions of CO<sub>2</sub> and nitrous oxide (NO<sub>2</sub>) are byproducts of fossil fuel combustion. Methane, a potent greenhouse gas, results from off-gassing associated with agricultural practices and landfills. Sinks of CO<sub>2</sub>, where CO<sub>2</sub> is stored outside of the atmosphere, include uptake by vegetation and dissolution into the ocean. Table 6 provides a description of each of the greenhouse gases and their global warming potential.

Additional information is available: <https://www.arb.ca.gov/cc/inventory/data/data.htm>

<Table 6, next page>

**Table 6: Description of Greenhouse Gases**

Greenhouse Gas	Description and Physical Properties	Sources
Nitrous oxide	Nitrous oxide (N <sub>2</sub> O), also known as laughing gas is a colorless gas. It has a lifetime of 114 years. Its global warming potential is 298.	Microbial processes in soil and water, fuel combustion, and industrial processes. In addition to agricultural sources, some industrial processes (nylon production, nitric acid production) also emit N <sub>2</sub> O.
Methane	Methane (CH <sub>4</sub> ) is a flammable gas and is the main component of natural gas. It has a lifetime of 12 years. Its global warming potential is 25.	A natural source of CH <sub>4</sub> is from the decay of organic matter. Methane is extracted from geological deposits (natural gas fields). Other sources are from the decay of organic material in landfills, fermentation of manure, and cattle farming.
Carbon dioxide	Carbon dioxide (CO <sub>2</sub> ) is an odorless, colorless, natural greenhouse gas. Carbon dioxide's global warming potential is 1. The concentration in 2005 was 379 parts per million (ppm), which is an increase of about 1.4 ppm per year since 1960.	Natural sources include decomposition of dead organic matter; respiration of bacteria, plants, animals, and fungus; evaporation from oceans; and volcanic outgassing. Anthropogenic sources are from burning coal, oil, natural gas, and wood.
Chlorofluorocarbons	CFCs are nontoxic, nonflammable, insoluble, and chemically unreactive in the troposphere (the level of air at the earth's surface). They are gases formed synthetically by replacing all hydrogen atoms in methane or methane with chlorine and/or fluorine atoms. Global warming potentials range from 3,800 to 8,100.	Chlorofluorocarbons were synthesized in 1928 for use as refrigerants, aerosol propellants, and cleaning solvents. They destroy stratospheric ozone, therefore their production was stopped as required by the Montreal Protocol.
Hydrofluorocarbons	Hydrofluorocarbons (HFCs) are a group of greenhouse gases containing carbon, chlorine, and at least one hydrogen atom. Global warming potentials range from 140 to 11,700.	Hydrofluorocarbons are synthetic manmade chemicals used as a substitute for chlorofluorocarbons in applications such as automobile air conditioners and refrigerants.
Perfluorocarbons	Perfluorocarbons (PFCs) have stable molecular structures and only break down by ultraviolet rays about 60 kilometers above the Earth's surface. They have a lifetime 10,000 to 50,000 years. They have a global warming potential range of 6,200 to 9,500.	Two main sources of perfluorocarbons are primary aluminum production and semiconductor manufacturing.
Sulfur hexafluoride	Sulfur hexafluoride (SF <sub>6</sub> ) is an inorganic, odorless, colorless, and nontoxic, nonflammable gas. It has a lifetime of 3,200 years. It has a high global warming potential, 23,900.	This gas is manmade and used for insulation in electric power transmission equipment, in the magnesium industry, in semiconductor manufacturing, and as a tracer gas for leak detection.
Notes: 1. Sources: Intergovernmental Panel on Climate Change 2014a and Intergovernmental Panel on Climate Change 2014b. <a href="https://www.ipcc.ch/publications_and_data/ar4/wg1/en/ch2s2-10-2.html">https://www.ipcc.ch/publications_and_data/ar4/wg1/en/ch2s2-10-2.html</a>		

## **4.0 Modeling Parameters and Assumptions**

### **4.1 Construction**

Typical emission rates from construction activities were obtained from 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 southwestern portion of Riverside County for construction-related employee vehicle trips and the OFFROAD2011 computer program to calculate emission rates for heavy truck 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. Using CalEEMod, the peak daily air pollutant emissions were calculated and presented below. These emissions represent the highest level of emissions for each of the construction phases in terms of air pollutant emissions.

The analysis assesses the emissions associated with the construction of the proposed project as indicated in Table 1. Per the project owner, the proposed project is anticipated to open in 2023. The phases of the construction activities which have been analyzed below are: 1) site preparation and 2) solar facility building. For details on construction modeling and construction equipment for each phase, please see Appendix A.

The project will be required to comply with existing SCAQMD rules for the reduction of fugitive dust emissions. SCAQMD Rule 403 establishes these procedures. Compliance with this rule is achieved through application of standard best management practices in construction and operation activities, such as application of water or chemical stabilizers to disturbed soils, managing haul road dust by application of water, covering haul vehicles, restricting vehicle speeds on unpaved roads to 15 mph, sweeping loose dirt from paved site access roadways, cessation of construction activity when winds exceed 25 mph and establishing a permanent, stabilizing ground cover on finished sites. In addition, projects that disturb 50 acres or more of soil or move 5,000 cubic yards of materials per day are required to submit a Fugitive Dust Control Plan or a Large Operation Notification Form to SCAQMD. Based on the size of the Project area (approximately 6.96 acres) and the fact that the project won't export more than 5,000 cubic yards of material a day a Fugitive Dust Control Plan or Large Operation Notification would not be required.

SCAQMD's Rule 403 minimum requirements require that the application of the best available dust control measures are used for all grading operations and include the application of water or other soil stabilizers in sufficient quantity to prevent the generation of visible dust plumes. Compliance with Rule 403 would require the use of water trucks during all phases where earth moving operations would occur. Compliance with Rule 403 is required.

### **4.2 Operations**

Operational or long-term emissions occur over the life of the Project. Both mobile and area sources generate operational emissions. Area source emissions arise from consumer product usage, heaters



that consume natural gas, gasoline-powered landscape equipment, and architectural coatings (painting). Mobile source emissions from motor vehicles are the largest single long-term source of air pollutants from the operation of the Project. Small amounts of emissions would also occur from area sources such as the consumption of natural gas for heating, hearths, from landscaping emissions, and consumer product usage. The operational emissions were estimated using the latest version of CalEEMod.

As this project will not be manned, operational emissions will primarily consist of maintenance and cleaning as well as associated trips generated.

### **Mobile Sources**

Mobile sources include emissions from the additional vehicle miles generated from the proposed project. The vehicle trips associated with the proposed project are based upon the trip generation rates given in the Traffic Scoping Agreement (Integrated Engineering Group) which uses the ITE 10<sup>th</sup> Trip Generation Manual.

The program then applies the emission factors for each trip which is provided by the EMFAC2017 model to determine the vehicular traffic pollutant emissions. The CalEEMod default trip lengths were used in this analysis. Please see CalEEMod output comments sections in Appendix A and B for details.

### **Area Sources**

Area sources include emissions from consumer products, landscape equipment and architectural coatings. Landscape maintenance includes fuel combustion emissions from equipment such as lawn mowers, rototillers, shredders/grinders, blowers, trimmers, chain saws, and hedge trimmers, as well as air compressors, generators, and pumps.

### **Energy Usage**

2020.4.0 CalEEMod defaults were utilized.

## **4.3 Localized Construction Analysis**

The SCAQMD has published a “Fact Sheet for Applying CalEEMod to Localized Significance Thresholds” (South Coast Air Quality Management District 2011b). CalEEMod calculates construction emissions based on the number of equipment hours and the maximum daily disturbance activity possible for each piece of equipment. In order to compare CalEEMod reported emissions against the localized significance threshold lookup tables, the CEQA document should contain in its project design features or its mitigation measures the following parameters:

1. The off-road equipment list (including type of equipment, horsepower, and hours of operation) assumed for the day of construction activity with maximum emissions.
2. The maximum number of acres disturbed on the peak day.
3. Any emission control devices added onto off-road equipment.
4. Specific dust suppression techniques used on the day of construction activity with maximum emissions.

The construction equipment showing the equipment associated with the maximum area of disturbance is shown in Table 7.

**Table 7: Construction Equipment Assumptions<sup>1</sup>**

Activity	Equipment	Number	Acres/8hr-day	Total Acres
Site Preparation	Rubber Tired Dozers	3	0.5	1.5
	Tractors/Loaders/Backhoes	4	0.5	2.0
<b>Total Per Phase</b>				3.5
Notes: <sup>1</sup> Source: CalEEMod output and South Coast AQMD, Fact Sheet for Applying CalEEMod to Localized Significance Thresholds. <a href="http://www.aqmd.gov/docs/default-source/ceqa/handbook/localized-significance-thresholds/caleemod-guidance.pdf?sfvrsn=2">http://www.aqmd.gov/docs/default-source/ceqa/handbook/localized-significance-thresholds/caleemod-guidance.pdf?sfvrsn=2</a>				

As shown in Table 7, the maximum number of acres disturbed in a day would be 3.5 acres during grading.

The local air quality emissions from construction were analyzed using the SCAQMD’s Mass Rate Localized Significant Threshold Look-up Tables and the methodology described in Localized Significance Threshold Methodology, prepared by SCAQMD, revised July 2008. The Look-up Tables were developed by the SCAQMD in order to readily determine if the daily emissions of CO, NOx, PM10, and PM2.5 from the proposed project could result in a significant impact to the local air quality. The emission thresholds were based on the Coachella Valley source receptor area (SRA 30) and a disturbance of 2 acres per day, the closest threshold while remaining conservative, at a distance of 50 meters (164 feet).

#### 4.4 Localized Operational Analysis

For operational emissions, the screening tables for a disturbance area of 2 acres per day, to be conservative, and a distance of 50 meters were used to determine significance. The tables were compared to the project’s onsite operational emissions.

## **5.0 Thresholds of Significance**

### **5.1 Air Quality Thresholds of Significance**

#### **5.1.1 CEQA Guidelines for Air Quality**

The CEQA Guidelines define a significant effect on the environment as “a substantial, or potentially substantial, adverse change in the environment.” To determine if a project would have a significant impact on air quality, the type, level, and impact of emissions generated by the project must be evaluated.

The following air quality significance thresholds are contained in Appendix G of the CEQA Guidelines. A significant impact would occur if the project would:

- a) Conflict with or obstruct implementation of the applicable air quality plan;
- b) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable national or state ambient air quality standard;
- c) Expose sensitive receptors to substantial pollutant concentrations; or
- d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people.

While the final determination of whether a project is significant is within the purview of the Lead Agency pursuant to Section 15064(b) of the CEQA Guidelines, SCAQMD recommends that its quantitative air pollution thresholds be used to determine the significance of project emissions. If the Lead Agency finds that the project has the potential to exceed these air pollution thresholds, the project should be considered to have significant air quality impacts. There are daily emission thresholds for construction and operation of a proposed project in the basin.

#### **5.1.2 Regional Significance Thresholds for Construction Emissions**

The following CEQA significance thresholds for construction emissions are established for the Basin:

- 75 pounds per day (lbs/day) of VOC
- 100 lbs/day of NO<sub>x</sub>
- 550 lbs/day of CO
- 150 lbs/day of PM<sub>10</sub>
- 55 lbs/day of PM<sub>2.5</sub>
- 150 lbs/day of SO<sub>2</sub>

Projects in the basin with construction-related emissions that exceed any of the emission thresholds are considered to be significant under SCAQMD guidelines.

### 5.1.3 Regional Significance Thresholds for Operational Emissions

The daily operational emissions significance thresholds for the basin are as follows:

- 55 pounds per day (lbs/day) of VOC
- 55 lbs/day of NO<sub>x</sub>
- 550 lbs/day of CO
- 150 lbs/day of PM<sub>10</sub>
- 55 lbs/day of PM<sub>2.5</sub>
- 150 lbs/day of SO<sub>2</sub>

**Local Microscale Concentration Standards** The significance of localized project impacts under CEQA depends on whether ambient CO levels in the vicinity of the project are above or below State and federal CO standards. If ambient levels are below the standards, a project is considered to have a significant impact if project emissions result in an exceedance of one or more of these standards. If ambient levels already exceed a State or federal standard, project emissions are considered significant if they increase 1-hour CO concentrations by 1.0 ppm or more or 8-hour CO concentrations by 0.45 ppm or more. The following are applicable local emission concentration standards for CO:

- California State 1-hour CO standard of 20.0 ppm
- California State 8-hour CO standard of 9.0 ppm

### 5.1.4 Thresholds for Localized Significance

Project-related construction air emissions may have the potential to exceed the State and Federal air quality standards in the project vicinity, even though these pollutant emissions may not be significant enough to create a regional impact to the Salton Sea Air Basin. In order to assess local air quality impacts the SCAQMD has developed Localized Significant Thresholds (LSTs) to assess the project-related air emissions in the project vicinity. The SCAQMD has also provided Final Localized Significant Threshold Methodology (LST Methodology), June 2003, which details the methodology to analyze local air emission impacts. The Localized Significant Threshold Methodology found that the primary emissions of concern are NO<sub>2</sub>, CO, PM<sub>10</sub>, and PM<sub>2.5</sub>.

The emission thresholds were calculated based on the Coachella Valley source receptor area (SRA 30) and a disturbance of 2 acres per day, to be conservative, at a distance of 50 meters (164 feet), for construction and 2 acres a day, to be conservative, for screening of localized operational emissions.

## 5.2 Greenhouse Gas Thresholds of Significance

### 5.2.1 CEQA Guidelines for Greenhouse Gas

CEQA Guidelines define a significant effect on the environment as “a substantial, or potentially substantial, adverse change in the environment.” To determine if a project would have a significant impact on greenhouse gases, the type, level, and impact of emissions generated by the project must be evaluated.

The following greenhouse gas significance thresholds are contained in Appendix G of the CEQA Guidelines, which were amendments adopted into the Guidelines on March 18, 2010, pursuant to SB 97. A significant impact would occur if the project would:

- (a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment; or
- (b) Conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases.

However, despite this, currently neither the CEQA statutes, OPR guidelines, nor the draft proposed changes to the CEQA Guidelines prescribe thresholds of significance or a particular methodology for performing an impact analysis; as with most environmental topics, significance criteria are left to the judgment and discretion of the Lead Agency. As previously discussed (Section 2.2.4 of this report), SCAQMD has drafted interim GHG thresholds and the County of Riverside CAP Update has adopted a GHG threshold. The County of Riverside CAP Update screening threshold of 3,000 metric tons per year of CO<sub>2</sub>e was used in this analysis.

### **5.3 Toxic Air Contaminants**

The threshold for toxic air contaminants (TACs) has a maximum incremental cancer risk of 10 per million and a non-cancer (acute and chronic) hazard index of 1.0 or greater. An exceedance to these values would be considered a significant impact.

## 6.0 Air Quality Emissions Impact

### 6.1 Construction Air Quality Emissions Impact

The latest version of CalEEMod was used to estimate the onsite and offsite construction emissions. The emissions incorporate Rule 402 and 403. Rule 402 and 403 (fugitive dust) are not considered mitigation measures as the project by default is required to incorporate these rules during construction.

#### 6.1.1 Regional Construction Emissions

The construction emissions for the project would not exceed the SCAQMD’s daily emission thresholds at the regional level as demonstrated in Table 8, and therefore would be considered less than significant.

**Table 8: Regional Significance - Construction Emissions (pounds/day)**

Activity	Pollutant Emissions (pounds/day)					
	VOC	NOx	CO	SO <sub>2</sub>	PM10	PM2.5
<b>Site Preparation</b>						
On-Site <sup>2</sup>	3.17	33.08	19.70	0.04	9.28	5.42
Off-Site <sup>3</sup>	0.07	0.05	0.72	0.00	0.20	0.05
<b>Total</b>	<b>3.24</b>	<b>33.13</b>	<b>20.42</b>	<b>0.04</b>	<b>9.48</b>	<b>5.48</b>
<b>Solar Facility Construction</b>						
On-Site <sup>2</sup>	2.38	22.94	20.25	0.04	1.17	1.10
Off-Site <sup>3</sup>	0.33	2.83	3.27	0.02	1.10	0.33
<b>Total</b>	<b>2.72</b>	<b>25.77</b>	<b>23.53</b>	<b>0.05</b>	<b>2.27</b>	<b>1.42</b>
<b>SCAQMD Thresholds</b>	<b>75</b>	<b>100</b>	<b>550</b>	<b>150</b>	<b>150</b>	<b>55</b>
<b>Exceeds Thresholds</b>	No	No	No	No	No	No
Notes:						
<sup>1</sup> Source: CalEEMod Version 2020.4.0						
<sup>2</sup> On-site emissions from equipment operated on-site that is not operated on public roads.						
<sup>3</sup> Off-site emissions from equipment operated on public roads.						
<sup>4</sup> Construction, architectural coatings and paving phases may overlap.						

#### 6.1.2 Localized Construction Emissions

The data provided in Table 9 shows that none of the analyzed criteria pollutants would exceed the local emissions thresholds at the nearest sensitive receptors. Therefore, a less than significant local air quality impact would occur from construction of the proposed project.

**Table 9: Localized Significance – Construction**

Phase	On-Site Pollutant Emissions (pounds/day) <sup>1</sup>			
	NOx	CO	PM10	PM2.5
Site Preparation	33.08	19.70	9.28	5.42
Solar Facility Construction	22.94	20.25	1.17	1.10
<b>SCAQMD Threshold for 50 meters (164 feet) or less<sup>2</sup></b>	<b>225</b>	<b>1,931</b>	<b>22</b>	<b>7</b>
Notes:				
<sup>1</sup> Source: Calculated from CalEEMod and SCAQMD’s Mass Rate Look-up Tables for two acres, to be conservative, in Coachella Valley Source Receptor Area (SRA 30). Project will disturb a maximum of 3.5 acres per day (see Table 7).				
<sup>2</sup> The nearest sensitive receptor is located 57 meters southwest; therefore, the 50-meter threshold has been used.				

### **6.1.3 Construction-Related Human Health Impacts**

Regarding health effects related to criteria pollutant emissions, the applicable significance thresholds are established for regional compliance with the state and federal ambient air quality standards, which are intended to protect public health from both acute and long-term health impacts, depending on the potential effects of the pollutant. Because regional and local emissions of criteria pollutants during construction of the project would be below the applicable thresholds, it would not contribute to long-term health impacts related to nonattainment of the ambient air quality standards. Therefore, significant adverse acute health impacts as a result of project construction are not anticipated.

### **6.1.4 Odors**

Potential sources that may emit odors during construction activities include the application of materials such as asphalt pavement. The objectionable odors that may be produced during the construction process are of short-term in nature, occurring only during construction hours for the 23-month construction duration, and the odor emissions are expected cease upon the drying or hardening of the odor producing materials. Diesel exhaust and VOCs would be emitted during construction of the project, which are objectionable to some; however, emissions would disperse rapidly from the project site and therefore should not reach an objectionable level at the nearest sensitive receptors. Due to the short-term nature and limited amounts of odor producing materials being utilized, no significant impact related to odors would occur during construction of the proposed project.

The SCAQMD recommends that odor impacts be addressed in a qualitative manner. Such an analysis shall determine whether the project would result in excessive nuisance odors, as defined under the California Code of Regulations and Section 41700 of the California Health and Safety Code, and thus would constitute a public nuisance related to air quality.

Potential sources that may emit odors during the on-going operations of the proposed project would include odor emissions from vehicle emissions. Due to the distance of the nearest receptors from the project site and through compliance with SCAQMD's Rule 402 no significant impact related to odors would occur during the on-going operations of the proposed project.

### **6.1.5 Construction-Related Toxic Air Contaminant Impact**

The greatest potential for toxic air contaminant emissions would be related to diesel particulate emissions associated with heavy equipment operations during construction of the proposed project. The Office of Environmental Health Hazard Assessment (OEHHA) has issued the Air Toxic Hot Spots Program Risk Assessment Guidelines and Guidance Manual for the Preparation of Health Risk Assessments, February 2015 to provide a description of the algorithms, recommended exposure variates, cancer and noncancer health values, and the air modeling protocols needed to perform a health risk assessment (HRA) under the Air Toxics Hot Spots Information and Assessment Act of 1987. Hazard identification includes identifying all substances that are evaluated for cancer risk and/or non-cancer acute, 8-hour, and chronic health impacts. In addition, identifying any multi-pathway substances that present a cancer risk or chronic non-cancer hazard via non-inhalation routes of exposure.

Given the relatively limited number of heavy-duty construction equipment and construction schedule, the proposed project would not result in a long-term substantial source of toxic air containment emissions and corresponding individual cancer risk. Furthermore, construction-based particulate matter (PM) emissions (including diesel exhaust emissions) do not exceed any local or regional thresholds. Therefore, no significant short-term toxic air contaminant impacts would occur during construction of the proposed project.

## 6.2 Operational Air Quality Emissions Impact

### 6.2.1 Regional Operational Emissions

The operations-related criteria air quality impacts created by the proposed project have been analyzed through the use of CalEEMod model. The operating emissions were based on year 2023, which is the anticipated opening year for the project per the Traffic Scoping Agreement (Integrated Engineering Group). The summer and winter emissions created by the proposed project’s long-term operations were calculated and the highest emissions from either summer or winter are summarized in Table 10.

**Table 10: Regional Significance - Unmitigated Operational Emissions (lbs/day)**

Activity	Pollutant Emissions (pounds/day) <sup>1</sup>					
	VOC	NOx	CO	SO2	PM10	PM2.5
Area Sources <sup>2</sup>	3.11	0.00	0.02	0.00	0.00	0.00
Energy Usage <sup>3</sup>	0.00	0.00	0.00	0.00	0.00	0.00
Mobile Sources <sup>4</sup>	0.01	0.00	0.02	0.00	0.00	0.00
<b>Total Emissions</b>	<b>3.12</b>	<b>0.00</b>	<b>0.04</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
SCAQMD Thresholds	<b>55</b>	<b>55</b>	<b>550</b>	<b>150</b>	<b>150</b>	<b>55</b>
Exceeds Threshold?	No	No	No	No	No	No
Notes:						
<sup>1</sup> Source: CalEEMod Version 2020.4.0						
<sup>2</sup> Area sources consist of emissions from consumer products, architectural coatings, and landscaping equipment.						
<sup>3</sup> Energy usage consists of emissions from on-site natural gas usage.						
<sup>4</sup> Mobile sources consist of emissions from vehicles and road dust.						

Table 10 provides the project's unmitigated operational emissions. Table 10 shows that the project does not exceed the SCAQMD daily emission threshold and regional operational emissions are considered to be less than significant.

### 6.2.2 Localized Operational Emissions

Table 11 shows the calculated emissions for the proposed operational activities compared with appropriate LSTs. The LST analysis only includes on-site sources; however, the CalEEMod software outputs do not separate on-site and off-site emissions for mobile sources. For a worst-case scenario assessment, the emissions shown in Table 11 include all on-site project-related stationary sources and



10% of the project-related new mobile sources.<sup>3</sup> This percentage is an estimate of the amount of project-related new vehicle traffic that will occur on-site.

**Table 11: Localized Significance – Unmitigated Operational Emissions**

On-Site Emission Source	On-Site Pollutant Emissions (pounds/day) <sup>1</sup>			
	NOx	CO	PM10	PM2.5
Area Sources <sup>2</sup>	0.00	0.02	0.00	0.00
Energy Usage <sup>3</sup>	0.00	0.00	0.00	0.00
On-Site Vehicle Emissions <sup>4</sup>	0.00	0.00	0.00	0.00
<b>Total Emissions</b>	<b>0.00</b>	<b>0.02</b>	<b>0.00</b>	<b>0.00</b>
<b>SCAQMD Threshold for 50 meters (164 feet)<sup>5</sup></b>	<b>225</b>	<b>1,931</b>	<b>6</b>	<b>2</b>
Exceeds Threshold?	No	No	No	No

Notes:  
<sup>1</sup> Source: Calculated from CalEEMod and SCAQMD’s Mass Rate Look-up Tables for two acres, to be conservative, in Coachella Valley Source Receptor Area (SRA 30). Project will disturb a maximum of 3.5 acres per day (see Table 7).  
<sup>2</sup> Area sources consist of emissions from consumer products, architectural coatings, and landscaping equipment.  
<sup>3</sup> Energy usage consists of emissions from generation of electricity and on-site natural gas usage.  
<sup>4</sup> On-site vehicular emissions based on 1/10 of the gross vehicular emissions and road dust.  
<sup>5</sup> The nearest sensitive receptor is located 55 meters east; therefore, the 50-meter threshold has been used.

Table 11 indicates that the local operational emission would not exceed the LST thresholds at the nearest sensitive receptors, located adjacent to the project. Therefore, the project will not result in significant Localized Operational emissions.

### 6.2.3 Operations-Related Human Health Impacts

As stated previously, regarding health effects related to criteria pollutant emissions, the applicable significance thresholds are established for regional compliance with the state and federal ambient air quality standards, which are intended to protect public health from both acute and long-term health impacts, depending on the potential effects of the pollutant. Because regional and local emissions of criteria pollutants during operation of the project would be below the applicable thresholds, it would not contribute to long-term health impacts related to nonattainment of the ambient air quality standards. Therefore, significant adverse acute health impacts as a result of project operation are not anticipated.

### 6.3 CO Hot Spot Emissions

CO is the pollutant of major concern along roadways because the most notable source of CO is motor vehicles. For this reason, CO concentrations are usually indicative of the local air quality generated by a

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<sup>3</sup> The project site is approximately 0.5 miles in length at its longest point; therefore the on-site mobile source emissions represent approximately 1/14th of the shortest CalEEMod default distance of 6.9 miles. Therefore, to be conservative, 1/10th the distance (dividing the mobile source emissions by 10) was used to represent the portion of the overall mobile source emissions that would occur on-site.

roadway network and are used as an indicator of potential local air quality impacts. Local air quality impacts can be assessed by comparing future without and with project CO levels to the State and Federal CO standards which were presented in above in Section 5.0.

To determine if the proposed project could cause emission levels in excess of the CO standards discussed above in Section 5.0, a sensitivity analysis is typically conducted to determine the potential for CO “hot spots” at a number of intersections in the general project vicinity. Because of reduced speeds and vehicle queuing, “hot spots” potentially can occur at high traffic volume intersections with a Level of Service E or worse.

Micro-scale air quality emissions have traditionally been analyzed in environmental documents where the air basin was a non-attainment area for CO. However, the SCAQMD has demonstrated in the CO attainment redesignation request to EPA that there are no “hot spots” anywhere in the air basin, even at intersections with much higher volumes, much worse congestion, and much higher background CO levels than anywhere in Riverside County. If the worst-case intersections in the air basin have no “hot spot” potential, any local impacts will be below thresholds.

Traffic analysis from Integrated Engineering Group (2022) showed that the project would generate 498 average daily trips. The 1992 Federal Attainment Plan for Carbon Monoxide (1992 CO Plan) showed that an intersection which has a daily traffic volume of approximately 100,000 vehicles per day would not violate the CO standard. The volume of traffic at project buildout would be well below 100,000 vehicles and below the necessary volume to even get close to causing a violation of the CO standard. Therefore, no CO “hot spot” modeling was performed and no significant long-term air quality impact is anticipated to local air quality with the on-going use of the proposed project.

## **6.4 Cumulative Regional Air Quality Impacts**

Cumulative projects include local development as well as general growth within the project area. However, as with most development, the greatest source of emissions is from mobile sources, which travel well out of the local area. Therefore, from an air quality standpoint, the cumulative analysis would extend beyond any local projects and when wind patterns are considered, would cover an even larger area. Accordingly, the cumulative analysis for the project’s air quality must be generic by nature.

The project area is out of attainment for both ozone and PM10 particulate matter. Construction and operation of cumulative projects will further degrade the local air quality, as well as the air quality of the Salton Sea Air Basin. The greatest cumulative impact on the quality of regional air cell will be the incremental addition of pollutants mainly from increased traffic from residential, commercial, and industrial development and the use of heavy equipment and trucks associated with the construction of these projects. Air quality will be temporarily degraded during construction activities that occur separately or simultaneously. However, in accordance with the SCAQMD methodology, projects that do not exceed the SCAQMD criteria or can be mitigated to less than criteria levels are not significant and do not add to the overall cumulative impact. The project does not exceed any of the thresholds of significance and therefore is considered less than significant.

## **6.5 Air Quality Compliance**

The California Environmental Quality Act (CEQA) requires a discussion of any inconsistencies between a proposed project and applicable General Plans and Regional Plans (CEQA Guidelines Section 15125). The regional plan that applies to the proposed project includes the SCAQMD Air Quality Management Plan (AQMP). Therefore, this section discusses any potential inconsistencies of the proposed project with the AQMP.

The purpose of this discussion is to set forth the issues regarding consistency with the assumptions and objectives of the AQMP and discuss whether the proposed project would interfere with the region's ability to comply with Federal and State air quality standards. If the decision-makers determine that the proposed project is inconsistent, the lead agency may consider project modifications or inclusion of mitigation to eliminate the inconsistency.

The SCAQMD CEQA Handbook states that "New or amended General Plan Elements (including land use zoning and density amendments), Specific Plans, and significant projects must be analyzed for consistency with the AQMP." Strict consistency with all aspects of the plan is usually not required. A proposed project should be considered to be consistent with the AQMP if it furthers one or more policies and does not obstruct other policies. The SCAQMD CEQA Handbook identifies two key indicators of consistency:

- (1) Whether the project will result in an increase in the frequency or severity of existing air quality violations or cause or contribute to new violations, or delay timely attainment of air quality standards or the interim emission reductions specified in the AQMP.
- (2) Whether the project will exceed the assumptions in the AQMP in 2016 or increments based on the year of project buildout and phase.

Both of these criteria are evaluated in the following sections.

### **A. Criterion 1 - Increase in the Frequency or Severity of Violations**

Based on the air quality modeling analysis contained in this Air Analysis Section, short-term construction impacts will not result in significant impacts based on the SCAQMD regional and local thresholds of significance. This Air Analysis also found that, long-term operations impacts will not result in significant impacts based on the SCAQMD local and regional thresholds of significance.

Therefore, the proposed project is not projected to contribute to the exceedance of any air pollutant concentration standards and is found to be consistent with the AQMP for the first criterion.

### **B. Criterion 2 - Exceed Assumptions in the AQMP?**

Consistency with the AQMP assumptions is determined by performing an analysis of the proposed project with the assumptions in the AQMP. The emphasis of this criterion is to ensure that the analyses conducted for the proposed project are based on the same forecasts as the AQMP. The 2016-2040 Regional Transportation/Sustainable Communities Strategy, prepared by SCAG, 2016, includes chapters on: the challenges in a changing region, creating a plan for our future, and the road to greater

mobility and sustainable growth. These chapters currently respond directly to federal and state requirements placed on SCAG. Local governments are required to use these as the basis of their plans for purposes of consistency with applicable regional plans under CEQA. For this project, the County of Riverside General Plan defines the assumptions that are represented in the AQMP.

The proposed project has a current land use classification of Medium Density and Rural Residential in the County of Riverside. The proposed project is to develop the site with a solar facility. The project is seeking to zone the site as W-2 Controlled Development Area in order to be consistent with the land use designation.

Based on the above, the proposed project will not result in an inconsistency with the SCAQMD AQMP. Therefore, a less than significant impact will occur.

## 7.0 Greenhouse Gas Impact Analysis

### 7.1 Construction Greenhouse Gas Emissions Impact

The greenhouse gas emissions from project construction equipment and worker vehicles are shown in Table 12. The emissions are from all phases of construction. The total construction emissions amortized over a period of 30 years are estimated at 16.66 metric tons of CO<sub>2</sub>e per year. Annual CalEEMod output calculations are provided in Appendix B.

**Table 12: Construction Greenhouse Gas Emissions**

Activity	Emissions (MTCO <sub>2</sub> e) <sup>1</sup>		
	Onsite	Offsite	Total
Site Preparation	202.26	9.47	211.73
Grading	575.70	297.09	872.79
<b>Total</b>	777.96	306.56	1,084.52
<b>Averaged over 30 years<sup>2</sup></b>	25.93	10.22	36.15

Notes:  
<sup>1</sup> MTCO<sub>2</sub>e=metric tons of carbon dioxide equivalents (includes carbon dioxide, methane and nitrous oxide).  
<sup>2</sup> The emissions are averaged over 30 years because the average is added to the operational emissions, pursuant to SCAQMD.  
 \* CalEEMod output (Appendix B)

### 7.2 Operational Greenhouse Gas Emissions Impact

Operational emissions occur over the life of the project. The operational emissions for the project are 737.64 metric tons of CO<sub>2</sub>e per year (see Table 13). Furthermore, as shown in Table 13, the project’s total emissions (with incorporation of construction related GHG emissions) would be 754.64 metric tons of CO<sub>2</sub>e per year. These emissions do not exceed the County of Riverside CAP Update and SCAQMD screening threshold of 3,000 metric tons of CO<sub>2</sub>e per year. Therefore, the project's GHG emissions are considered to be less than significant.

<Table 13 next page>

**Table 13: Opening Year Unmitigated Project-Related Greenhouse Gas Emissions**

Category	Greenhouse Gas Emissions (Metric Tons/Year) <sup>1</sup>					
	Bio-CO2	NonBio-CO <sub>2</sub>	CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O	CO <sub>2</sub> e
Area Sources <sup>2</sup>	0.00	0.00	0.00	0.00	0.00	0.00
Energy Usage <sup>3</sup>	0.00	0.00	0.00	0.00	0.00	0.00
Mobile Sources <sup>4</sup>	0.00	0.15	0.15	0.00	0.00	0.17
Solid Waste <sup>5</sup>	0.00	0.00	0.00	0.00	0.00	0.00
Water <sup>6</sup>	0.00	0.10	0.10	0.00	0.00	0.10
Construction <sup>7</sup>	0.00	35.66	35.66	0.01	0.00	36.15
<b>Total Emissions</b>	0.00	35.91	35.91	0.01	0.00	<b>36.43</b>
<b>County of Riverside CAP and SCAQMD Draft Screening Threshold</b>						<b>3,000</b>
<b>Exceeds Threshold?</b>						<b>No</b>
Notes:						
<sup>1</sup> Source: CalEEMod Version 2020.4.0						
<sup>2</sup> Area sources consist of GHG emissions from consumer products, architectural coatings, and landscape equipment.						
<sup>3</sup> Energy usage consist of GHG emissions from electricity and natural gas usage.						
<sup>4</sup> Mobile sources consist of GHG emissions from vehicles.						
<sup>5</sup> Solid waste includes the CO <sub>2</sub> and CH <sub>4</sub> emissions created from the solid waste placed in landfills.						
<sup>6</sup> Water includes GHG emissions from electricity used for transport of water and processing of wastewater.						
<sup>7</sup> Construction GHG emissions based on a 30 year amortization rate.						

### 7.3 Greenhouse Gas Plan Consistency

The proposed project would have the potential to conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of GHGs. As stated previously, the County of Riverside has adopted a Climate Action Plan; therefore, the project and its GHG emissions have been compared to the goals of the County of Riverside CAP Update.

#### *Consistency with the County of Riverside CAP Update*

Per the County’s CAP Update, the County adopted its first CAP in 2015 which set a target to reduce emissions back to 1990 levels by the year 2020 as recommended in the AB 32 Scoping Plan. Furthermore, the goals and supporting measures within the County’s CAP Update are proposed to reflect and ensure compliance with changes in the local and State policies and regulations such as SB 32 and California’s 2017 Climate Change Scoping Plan. Therefore, compliance with the County’s CAP in turn reflects consistency with the goals of the CARB Scoping Plan, Assembly Bill (AB) 32 and Senate Bill (SB) 32.

Appendix D of the Riverside County CAP Update also states that project's that do not exceed the CAP's screening threshold of 3,000 MTCO<sub>2</sub>e per year are considered to have less than significant GHG emissions and are in compliance with the County's CAP Update. According to the County's CAP Update, projects that do not exceed emissions of 3,000 MTCO<sub>2</sub>e per year are also required to include the following efficiency measures:

- Energy efficiency matching or exceeding the Title 24 requirements in effect as of January 2017, and

- Water conservation measures that matches the California Green Building Code in effect as of January 2017.

As stated above, the GHG emissions generated by the proposed project would not exceed the County of Riverside CAP Update screening threshold of 3,000 metric tons per year of CO<sub>2</sub>e.

## 8.0 Energy Analysis

Information from the CalEEMod 2020.4.0 Daily and Annual Outputs contained in the air quality and greenhouse gas analyses above was utilized for this analysis. The CalEEMod outputs detail project related construction equipment, transportation energy demands, and facility energy demands.

### 8.1 Construction Energy Demand

#### 8.1.1 Construction Equipment Fuel Estimates

Using the CalEEMod data input, the project’s construction phase would consume electricity and fossil fuels as a single energy demand, that is, once construction is completed their use would cease. CARB’s 2017 Emissions Factors Tables show that on average aggregate fuel consumption (gasoline and diesel fuel) would be approximately 18.5 hp-hr-gal.<sup>4</sup> As presented in Table 14 below, project construction activities would consume an estimated 85,358 gallons of diesel fuel.

**Table 14: Construction Equipment Fuel Consumption Estimates**

Phase	Number of Days	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor	HP hrs/day	Total Fuel Consumption (gal diesel fuel) <sup>1,2</sup>
Site Preparation	120	Rubber Tired Dozers	3	8	247	0.4	2,371	15,381
	120	Tractors/Loaders/Backhoes	4	8	97	0.37	1,148	7,450
Solar Facility Construction	375	Cranes	1	7	231	0.29	469	9,505
	375	Forklifts	3	8	89	0.2	427	8,659
	375	Generator Sets	1	8	84	0.74	497	10,080
	375	Graders	1	6	187	0.41	460	9,325
	375	Tractors/Loaders/Backhoes	3	7	97	0.37	754	15,278
	375	Trenchers	1	8	78	0.5	312	6,324
	375	Welders	1	8	46	0.45	166	3,357
<b>CONSTRUCTION FUEL DEMAND (gallons of diesel fuel)</b>								<b>85,358</b>

Notes:

<sup>1</sup>Using Carl Moyer Guidelines Table D-21 Fuel consumption rate factors (bhp-hr/gal) for engines less than 750 hp.

(Source: [https://www.arb.ca.gov/msprog/moyer/guidelines/2017gl/2017\\_gl\\_appendix\\_d.pdf](https://www.arb.ca.gov/msprog/moyer/guidelines/2017gl/2017_gl_appendix_d.pdf))

<sup>2</sup>Discrepancies are due to rounding.

<sup>4</sup> Aggregate fuel consumption rate for all equipment was estimated at 18.5 hp-hr/day (from CARB’s 2017 Emissions Factors Tables and fuel consumption rate factors as shown in Table D-21 of the Moyer Guidelines: [https://www.arb.ca.gov/msprog/moyer/guidelines/2017gl/2017\\_gl\\_appendix\\_d.pdf](https://www.arb.ca.gov/msprog/moyer/guidelines/2017gl/2017_gl_appendix_d.pdf)).



### 8.1.2 Construction Worker Fuel Estimates

It is assumed that all construction worker trips are from light duty autos (LDA) along area roadways. With respect to estimated VMT, the construction worker trips would generate an estimated 362,502 VMT. Vehicle fuel efficiencies for construction workers were estimated in the air quality and greenhouse gas analysis using information generated using CARB’s EMFAC model (see Appendix C for details). Table 15 shows that an estimated 11,713 gallons of fuel would be consumed for construction worker trips.

**Table 15: Construction Worker Fuel Consumption Estimates**

Phase	Number of Days	Worker Trips/Day	Trip Length (miles) <sup>1</sup>	Vehicle Miles Traveled	Average Vehicle Fuel Economy (mpg)	Estimated Fuel Consumption (gallons) <sup>2</sup>
Site Preparation	120	18	14.7	31,752	30.95	1,026
Solar Facility Construction	375	60	14.7	330,750	30.95	10,687
<b>Total Construction Worker Fuel Consumption</b>						<b>11,713</b>

Notes:

<sup>1</sup>Assumptions for the worker trip length and vehicle miles traveled are consistent with CalEEMod 2020.4.0 defaults.

<sup>2</sup>Discrepancies are due to rounding.

### 8.1.3 Construction Vendor/Hauling Fuel Estimates

Tables 16 and 17 show the estimated fuel consumption for vendor and hauling during building construction and architectural coating. With respect to estimated VMT, the vendor and hauling trips would generate an estimated 155,250 VMT. For the architectural coatings it is assumed that the contractors would be responsible for bringing coatings and equipment with them in their light duty vehicles.<sup>5</sup> Tables 16 and 17 show that an estimated 16,838 gallons of fuel would be consumed for vendor and hauling trips. It is anticipated there will be no hauling trips for this project.

<Tables 16 & 17, next page>

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<sup>5</sup> Vendors delivering construction material or hauling debris from the site during grading would use medium to heavy duty vehicles with an average fuel consumption of 9.22 mpg for medium heavy-duty trucks and 6.74 mpg for heavy heavy-duty trucks (see Appendix C for details).

**Table 16: Construction Vendor Fuel Consumption Estimates (MHD Trucks)<sup>1</sup>**

Phase	Number of Days	Vendor Trips/Day	Trip Length (miles)	Vehicle Miles Traveled	Average Vehicle Fuel Economy (mpg)	Estimated Fuel Consumption (gallons)
Site Preparation	120	0	6.9	0	9.22	0
Solar Facility Construction	375	60	6.9	155,250	9.22	16,838
<b>Total Vendor Fuel Consumption</b>						<b>16,838</b>

Notes:

<sup>1</sup> Assumptions for the vendor trip length and vehicle miles traveled are consistent with CalEEMod 2020.4.0 defaults.

**Table 17: Construction Hauling Fuel Consumption Estimates (HHD Trucks)<sup>1</sup>**

Phase	Number of Days	Hauling Trips/Day	Trip Length (miles)	Vehicle Miles Traveled	Average Vehicle Fuel Economy (mpg)	Estimated Fuel Consumption (gallons)
Site Preparation	120	0	20	0	6.74	0
Solar Facility Construction	375	0	20	0	6.74	0
<b>Total Construction Hauling Fuel Consumption</b>						<b>0</b>

Notes:

<sup>1</sup> Assumptions for the hauling trip length and vehicle miles traveled are consistent with CalEEMod 2020.40 defaults.

### 8.1.4 Construction Energy Efficiency/Conservation Measures

Construction equipment used over the approximately 23-month construction phase would conform to CARB regulations and California emissions standards and is evidence of related fuel efficiencies. In addition, the CARB Airborne Toxic Control Measure limits idling times of construction vehicles to no more than five minutes, thereby minimizing unnecessary and wasteful consumption of fuel due to unproductive idling of construction equipment. Furthermore, the project has been designed in compliance with California’s Energy Efficiency Standards and 2019 CALGreen Standards.

Construction of the proposed solar facility would require the typical use of energy resources. There are no unusual project characteristics or construction processes that would require the use of equipment that would be more energy intensive than is used for comparable activities; or equipment that would not conform to current emissions standards (and related fuel efficiencies). Equipment employed in construction of the project would therefore not result in inefficient wasteful, or unnecessary consumption of fuel.

## 8.2 Operational Energy Demand

Energy consumption in support of or related to project operations would include transportation energy demands (energy consumed by employee and patron vehicles accessing the project site) and facilities energy demands (energy consumed by building operations and site maintenance activities).

### 8.2.1 Transportation Fuel Consumption

The largest source of operational energy use would be vehicle operation of maintenance workers, estimated at four trips per month. The site is located in an urbanized area just in close proximity to transit stops. Using the CalEEMod output, it is assumed that an average trip for autos were assumed to be 16.6 miles, light trucks were assumed to travel an average of 6.9 miles, and 3- 4-axle trucks were assumed to travel an average of 8.4 miles<sup>6</sup>. To show a worst-case analysis, it was assumed that vehicles would operate 365 days per year. Table 18 shows the worst-case estimated annual fuel consumption for all classes of vehicles from autos to heavy-heavy trucks.<sup>7</sup> Table 18 shows that a maximum of 594 gallons of fuel would be consumed per year for the operation of the proposed project.

**Table 18: Estimated Vehicle Operations Fuel Consumption**

Vehicle Type	Vehicle Mix	Number of Vehicles	Average Trip (miles) <sup>1</sup>	Daily VMT	Average Fuel Economy (mpg)	Total Gallons per Day	Total Annual Fuel Consumption (gallons)
Light Auto	Automobile	2	16.6	33	31.82	1.04	381
Light Truck	Automobile	0	6.69	0	27.16	0.00	0
Light Truck	Automobile	1	6.69	7	25.6	0.26	95
Medium Truck	Automobile	1	6.69	7	20.81	0.32	117
Light Heavy Truck	2-Axle Truck	0	8.4	0	13.81	0.00	0
Light Heavy Truck 10,000 lbs +	2-Axle Truck	0	8.4	0	14.18	0.00	0
Medium Heavy Truck	3-Axle Truck	0	8.4	0	9.58	0.00	0
Heavy Heavy Truck	4-Axle Truck	0	8.4	0	7.14	0.00	0
<b>Total</b>		<b>4</b>	<b>--</b>	<b>47</b>	<b>18.76</b>	<b>1.63</b>	<b>--</b>
<b>Total Annual Fuel Consumption</b>							<b>594</b>

Notes:

<sup>1</sup>The trip generation assessment, the project is to generate 82 total net new trips after reduction of existing uses. Default CalEEMod vehicle fleet mix utilized.

<sup>3</sup>Based on the size of the site and relative location, trips were assumed to be local rather than regional.

Trip generation generated by the proposed project are consistent with other similar uses of similar scale and configuration as reflected in the Transportation Analysis (Integrated Engineering Group, 2022). That is, the proposed project does not propose uses or operations that would inherently result in excessive and wasteful vehicle trips, nor associated excess and wasteful vehicle energy consumption. Therefore, project transportation energy consumption would not be considered inefficient, wasteful, or otherwise unnecessary.

<sup>6</sup> CalEEMod default distance for H-W (home-work) or C-W (commercial-work) is 16.6 miles; 6.9 miles for H-S (home-shop) or C-C (commercial-customer); and 8.4 miles for H-O (home-other) or C-O (commercial-other).

<sup>7</sup> Average fuel economy based on aggregate mileage calculated in EMFAC 2017 for opening year (2023). See Appendix C for EMFAC output.

## **8.2.2 Facility Energy Demands (Electricity and Natural Gas)**

No electricity or natural gas will be required for the operation of the project as it is a solar facility.

## **8.3 Renewable Energy and Energy Efficiency Plan Consistency**

Regarding federal transportation regulations, the project site is located in an already developed area. Access to/from the project site is from existing roads. These roads are already in place so the project would not interfere with, nor otherwise obstruct intermodal transportation plans or projects that may be proposed pursuant to the ISTEA because SCAG is not planning for intermodal facilities in the project area.

Regarding the State's Energy Plan and compliance with Title 24 CCR energy efficiency standards, the applicant is required to comply with the California Green Building Standard Code requirements for energy efficient buildings and appliances as well as utility energy efficiency programs implemented by the SCE and Southern California Gas Company.

Regarding the State's Renewable Energy Portfolio Standards, the project would be required to meet or exceed the energy standards established in the California Green Building Standards Code, Title 24, Part 11 (CALGreen). CalGreen Standards require that new buildings reduce water consumption, employ building commissioning to increase building system efficiencies, divert construction waste from landfills, and install low pollutant-emitting finish materials.

## **9.0 References**

The following references were used in the preparing this analysis.

### **California Air Pollution Control Officers Association**

2009 Health Risk Assessments for Proposed Land Use Projects

### **California Air Resources Board**

2008 Resolution 08-43

2008 Recommended Approaches for Setting Interim Significance Thresholds for Greenhouse Gases under the California Environmental Quality Act

2008 ARB Recommended Interim Risk Management Policy for Inhalation-Based Residential Cancer Risk – Frequently Asked Questions

2008 Climate Change Scoping Plan, a framework for change.

2011 Supplement to the AB 32 Scoping Plan Functional Equivalent Document

2014 First Update to the Climate Change Scoping Plan, Building on the Framework Pursuant to AB32, the California Global Warming Solutions Act of 2006. May.

2018 Historical Air Quality, Top 4 Summary

### **County of Riverside**

2015 County of Riverside General Plan. December 8.

2019 County of Riverside Climate Action Plan Update. November.

### **Governor’s Office of Planning and Research**

2008 CEQA and Climate: Addressing Climate Change Through California Environmental Quality Act (CEQA) Review

2009 CEQA Guideline Sections to be Added or Amended

### **Integrated Engineering Group**

2022 Scoping Agreement for Traffic Study. January.

### **Office of Environmental Health Hazard Assessment**

2015 Air Toxics Hot Spots Program Risk Assessment Guidelines

**South Coast Air Quality Management District**

- 1993 CEQA Air Quality Handbook
- 2005 Rule 403 Fugitive Dust
- 2007 2007 Air Quality Management Plan
- 2008 Final Localized Significance Threshold Methodology, Revised
- 2011 Appendix A Calculation Details for CalEEMod
- 2012 Final 2012 Air Quality Management Plan
- 2016 Final 2016 Air Quality Management Plan

## **Appendix A:**

CalEEMod Daily Emission Output

Noble Solar - Riverside-Mojave Desert SCAQMD County, Summer

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

**Noble Solar**

**Riverside-Mojave Desert SCAQMD County, Summer**

**1.0 Project Characteristics**

**1.1 Land Usage**

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Non-Asphalt Surfaces	166.00	Acre	166.00	7,230,960.00	0

**1.2 Other Project Characteristics**

<b>Urbanization</b>	Urban	<b>Wind Speed (m/s)</b>	2.6	<b>Precipitation Freq (Days)</b>	28
<b>Climate Zone</b>	10			<b>Operational Year</b>	2023
<b>Utility Company</b>	Southern California Edison				
<b>CO2 Intensity (lb/MWhr)</b>	390.98	<b>CH4 Intensity (lb/MWhr)</b>	0.033	<b>N2O Intensity (lb/MWhr)</b>	0.004

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

- Project Characteristics -
- Land Use -
- Construction Phase - Construction estimate
- Off-road Equipment - Additional equipment estimate
- Trips and VMT - Per traffic study
- Vehicle Trips - Assumed maximum of 4 operational trips per day
- Water And Wastewater - Panel washing
- Construction Off-road Equipment Mitigation - Per SCAQMD Rule 403.1
- Waste Mitigation -
- Off-road Equipment -



## Noble Solar - Riverside-Mojave Desert SCAQMD County, Summer

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

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	3,100.00	375.00
tblOffRoadEquipment	OffRoadEquipmentType		Graders
tblOffRoadEquipment	OffRoadEquipmentType		Trenchers
tblTripsAndVMT	VendorTripNumber	1,185.00	60.00
tblTripsAndVMT	WorkerTripNumber	3,037.00	60.00
tblVehicleTrips	CC_TTP	0.00	50.00
tblVehicleTrips	CNW_TTP	0.00	25.00
tblVehicleTrips	CW_TTP	0.00	25.00
tblVehicleTrips	ST_TR	0.00	0.03
tblVehicleTrips	SU_TR	0.00	0.03
tblVehicleTrips	WD_TR	0.00	0.03
tblWater	OutdoorWaterUseRate	0.00	50,000.00

**2.0 Emissions Summary**

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Noble Solar - Riverside-Mojave Desert SCAQMD County, Summer

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

**2.1 Overall Construction (Maximum Daily Emission)**

**Unmitigated Construction**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2022	3.2411	33.1295	23.5278	0.0523	19.8582	1.6136	21.4718	10.1558	1.4845	11.6403	0.0000	5,140.0377	5,140.0377	1.1968	0.1869	5,218.2641
2023	2.4939	23.2035	23.1138	0.0517	1.0550	1.0573	2.1123	0.2885	0.9880	1.2765	0.0000	5,078.3990	5,078.3990	0.8942	0.1784	5,153.9005
<b>Maximum</b>	<b>3.2411</b>	<b>33.1295</b>	<b>23.5278</b>	<b>0.0523</b>	<b>19.8582</b>	<b>1.6136</b>	<b>21.4718</b>	<b>10.1558</b>	<b>1.4845</b>	<b>11.6403</b>	<b>0.0000</b>	<b>5,140.0377</b>	<b>5,140.0377</b>	<b>1.1968</b>	<b>0.1869</b>	<b>5,218.2641</b>

**Mitigated Construction**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2022	3.2411	33.1295	23.5278	0.0523	7.8674	1.6136	9.4810	3.9933	1.4845	5.4778	0.0000	5,140.0377	5,140.0377	1.1968	0.1869	5,218.2641
2023	2.4939	23.2035	23.1138	0.0517	1.0550	1.0573	2.1123	0.2885	0.9880	1.2765	0.0000	5,078.3990	5,078.3990	0.8942	0.1784	5,153.9005
<b>Maximum</b>	<b>3.2411</b>	<b>33.1295</b>	<b>23.5278</b>	<b>0.0523</b>	<b>7.8674</b>	<b>1.6136</b>	<b>9.4810</b>	<b>3.9933</b>	<b>1.4845</b>	<b>5.4778</b>	<b>0.0000</b>	<b>5,140.0377</b>	<b>5,140.0377</b>	<b>1.1968</b>	<b>0.1869</b>	<b>5,218.2641</b>

## Noble Solar - Riverside-Mojave Desert SCAQMD County, Summer

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

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	57.34	0.00	50.84	59.00	0.00	47.71	0.00	0.00	0.00	0.00	0.00	0.00

Noble Solar - Riverside-Mojave Desert SCAQMD County, Summer

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

**2.2 Overall Operational**

**Unmitigated Operational**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	3.1137	1.5000e-004	0.0170	0.0000		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005		0.0363	0.0363	1.0000e-004		0.0387
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	9.5400e-003	4.3900e-003	0.0244	1.0000e-005	0.0000	2.0000e-005	2.0000e-005	0.0000	2.0000e-005	2.0000e-005		0.9147	0.9147	5.5000e-004	3.2000e-004	1.0244
<b>Total</b>	<b>3.1233</b>	<b>4.5400e-003</b>	<b>0.0414</b>	<b>1.0000e-005</b>	<b>0.0000</b>	<b>8.0000e-005</b>	<b>8.0000e-005</b>	<b>0.0000</b>	<b>8.0000e-005</b>	<b>8.0000e-005</b>		<b>0.9511</b>	<b>0.9511</b>	<b>6.5000e-004</b>	<b>3.2000e-004</b>	<b>1.0632</b>

**Mitigated Operational**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	3.1137	1.5000e-004	0.0170	0.0000		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005		0.0363	0.0363	1.0000e-004		0.0387
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	9.5400e-003	4.3900e-003	0.0244	1.0000e-005	0.0000	2.0000e-005	2.0000e-005	0.0000	2.0000e-005	2.0000e-005		0.9147	0.9147	5.5000e-004	3.2000e-004	1.0244
<b>Total</b>	<b>3.1233</b>	<b>4.5400e-003</b>	<b>0.0414</b>	<b>1.0000e-005</b>	<b>0.0000</b>	<b>8.0000e-005</b>	<b>8.0000e-005</b>	<b>0.0000</b>	<b>8.0000e-005</b>	<b>8.0000e-005</b>		<b>0.9511</b>	<b>0.9511</b>	<b>6.5000e-004</b>	<b>3.2000e-004</b>	<b>1.0632</b>

Noble Solar - Riverside-Mojave Desert SCAQMD County, Summer

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

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
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	2/1/2022	7/18/2022	5	120	
2	Solar Facility Construction	Building Construction	7/19/2022	12/25/2023	5	375	

**Acres of Grading (Site Preparation Phase): 180**

**Acres of Grading (Grading Phase): 0**

**Acres of Paving: 166**

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

**OffRoad Equipment**

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Solar Facility Construction	Cranes	1	7.00	231	0.29
Solar Facility Construction	Forklifts	3	8.00	89	0.20
Solar Facility Construction	Generator Sets	1	8.00	84	0.74
Solar Facility Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Solar Facility Construction	Welders	1	8.00	46	0.45
Solar Facility Construction	Graders	1	6.00	187	0.41
Solar Facility Construction	Trenchers	1	8.00	78	0.50

Noble Solar - Riverside-Mojave Desert SCAQMD County, Summer

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

**Trips and VMT**

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Solar Facility Construction	11	60.00	60.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

**3.1 Mitigation Measures Construction**

Water Exposed Area

**3.2 Site Preparation - 2022**

**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					19.6570	0.0000	19.6570	10.1025	0.0000	10.1025			0.0000			0.0000
Off-Road	3.1701	33.0835	19.6978	0.0380		1.6126	1.6126		1.4836	1.4836		3,686.0619	3,686.0619	1.1922		3,715.8655
<b>Total</b>	<b>3.1701</b>	<b>33.0835</b>	<b>19.6978</b>	<b>0.0380</b>	<b>19.6570</b>	<b>1.6126</b>	<b>21.2696</b>	<b>10.1025</b>	<b>1.4836</b>	<b>11.5860</b>		<b>3,686.0619</b>	<b>3,686.0619</b>	<b>1.1922</b>		<b>3,715.8655</b>

Noble Solar - Riverside-Mojave Desert SCAQMD County, Summer

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

**3.2 Site Preparation - 2022**

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0709	0.0460	0.7176	1.8300e-003	0.2012	1.0000e-003	0.2022	0.0534	9.2000e-004	0.0543		186.0370	186.0370	4.6100e-003	4.5800e-003	187.5158
<b>Total</b>	<b>0.0709</b>	<b>0.0460</b>	<b>0.7176</b>	<b>1.8300e-003</b>	<b>0.2012</b>	<b>1.0000e-003</b>	<b>0.2022</b>	<b>0.0534</b>	<b>9.2000e-004</b>	<b>0.0543</b>		<b>186.0370</b>	<b>186.0370</b>	<b>4.6100e-003</b>	<b>4.5800e-003</b>	<b>187.5158</b>

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					7.6662	0.0000	7.6662	3.9400	0.0000	3.9400			0.0000			0.0000
Off-Road	3.1701	33.0835	19.6978	0.0380		1.6126	1.6126		1.4836	1.4836	0.0000	3,686.0619	3,686.0619	1.1922		3,715.8655
<b>Total</b>	<b>3.1701</b>	<b>33.0835</b>	<b>19.6978</b>	<b>0.0380</b>	<b>7.6662</b>	<b>1.6126</b>	<b>9.2788</b>	<b>3.9400</b>	<b>1.4836</b>	<b>5.4235</b>	<b>0.0000</b>	<b>3,686.0619</b>	<b>3,686.0619</b>	<b>1.1922</b>		<b>3,715.8655</b>

Noble Solar - Riverside-Mojave Desert SCAQMD County, Summer

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

**3.2 Site Preparation - 2022**

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0709	0.0460	0.7176	1.8300e-003	0.2012	1.0000e-003	0.2022	0.0534	9.2000e-004	0.0543		186.0370	186.0370	4.6100e-003	4.5800e-003	187.5158
<b>Total</b>	<b>0.0709</b>	<b>0.0460</b>	<b>0.7176</b>	<b>1.8300e-003</b>	<b>0.2012</b>	<b>1.0000e-003</b>	<b>0.2022</b>	<b>0.0534</b>	<b>9.2000e-004</b>	<b>0.0543</b>		<b>186.0370</b>	<b>186.0370</b>	<b>4.6100e-003</b>	<b>4.5800e-003</b>	<b>187.5158</b>

**3.3 Solar Facility Construction - 2022**

**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.3813	22.9385	20.2537	0.0353		1.1739	1.1739		1.0968	1.0968		3,362.2422	3,362.2422	0.8732		3,384.0732
<b>Total</b>	<b>2.3813</b>	<b>22.9385</b>	<b>20.2537</b>	<b>0.0353</b>		<b>1.1739</b>	<b>1.1739</b>		<b>1.0968</b>	<b>1.0968</b>		<b>3,362.2422</b>	<b>3,362.2422</b>	<b>0.8732</b>		<b>3,384.0732</b>



Noble Solar - Riverside-Mojave Desert SCAQMD County, Summer

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

**3.3 Solar Facility Construction - 2022**

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0976	2.5372	0.8822	0.0109	0.3843	0.0366	0.4209	0.1107	0.0350	0.1457		1,157.6720	1,157.6720	0.0123	0.1717	1,209.1383
Worker	0.2365	0.1532	2.3919	6.1000e-003	0.6707	3.3400e-003	0.6740	0.1779	3.0800e-003	0.1809		620.1235	620.1235	0.0154	0.0153	625.0526
<b>Total</b>	<b>0.3341</b>	<b>2.6904</b>	<b>3.2741</b>	<b>0.0170</b>	<b>1.0550</b>	<b>0.0399</b>	<b>1.0949</b>	<b>0.2885</b>	<b>0.0381</b>	<b>0.3266</b>		<b>1,777.7955</b>	<b>1,777.7955</b>	<b>0.0276</b>	<b>0.1869</b>	<b>1,834.1909</b>

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.3813	22.9385	20.2537	0.0353		1.1739	1.1739		1.0968	1.0968	0.0000	3,362.2422	3,362.2422	0.8732		3,384.0732
<b>Total</b>	<b>2.3813</b>	<b>22.9385</b>	<b>20.2537</b>	<b>0.0353</b>		<b>1.1739</b>	<b>1.1739</b>		<b>1.0968</b>	<b>1.0968</b>	<b>0.0000</b>	<b>3,362.2422</b>	<b>3,362.2422</b>	<b>0.8732</b>		<b>3,384.0732</b>

Noble Solar - Riverside-Mojave Desert SCAQMD County, Summer

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

**3.3 Solar Facility Construction - 2022**

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0976	2.5372	0.8822	0.0109	0.3843	0.0366	0.4209	0.1107	0.0350	0.1457		1,157.6720	1,157.6720	0.0123	0.1717	1,209.1383
Worker	0.2365	0.1532	2.3919	6.1000e-003	0.6707	3.3400e-003	0.6740	0.1779	3.0800e-003	0.1809		620.1235	620.1235	0.0154	0.0153	625.0526
<b>Total</b>	<b>0.3341</b>	<b>2.6904</b>	<b>3.2741</b>	<b>0.0170</b>	<b>1.0550</b>	<b>0.0399</b>	<b>1.0949</b>	<b>0.2885</b>	<b>0.0381</b>	<b>0.3266</b>		<b>1,777.7955</b>	<b>1,777.7955</b>	<b>0.0276</b>	<b>0.1869</b>	<b>1,834.1909</b>

**3.3 Solar Facility Construction - 2023**

**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.2070	21.1078	20.1056	0.0353		1.0371	1.0371		0.9688	0.9688		3,363.0512	3,363.0512	0.8691		3,384.7791
<b>Total</b>	<b>2.2070</b>	<b>21.1078</b>	<b>20.1056</b>	<b>0.0353</b>		<b>1.0371</b>	<b>1.0371</b>		<b>0.9688</b>	<b>0.9688</b>		<b>3,363.0512</b>	<b>3,363.0512</b>	<b>0.8691</b>		<b>3,384.7791</b>

Noble Solar - Riverside-Mojave Desert SCAQMD County, Summer

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

**3.3 Solar Facility Construction - 2023**

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0676	1.9602	0.8071	0.0105	0.3843	0.0171	0.4014	0.1107	0.0163	0.1270		1,111.6260	1,111.6260	0.0113	0.1643	1,160.8604
Worker	0.2192	0.1355	2.2012	5.9000e-003	0.6707	3.1500e-003	0.6738	0.1779	2.9000e-003	0.1808		603.7218	603.7218	0.0138	0.0141	608.2611
<b>Total</b>	<b>0.2868</b>	<b>2.0957</b>	<b>3.0083</b>	<b>0.0164</b>	<b>1.0550</b>	<b>0.0202</b>	<b>1.0752</b>	<b>0.2885</b>	<b>0.0192</b>	<b>0.3077</b>		<b>1,715.3478</b>	<b>1,715.3478</b>	<b>0.0251</b>	<b>0.1784</b>	<b>1,769.1214</b>

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.2070	21.1078	20.1056	0.0353		1.0371	1.0371		0.9688	0.9688	0.0000	3,363.0512	3,363.0512	0.8691		3,384.7791
<b>Total</b>	<b>2.2070</b>	<b>21.1078</b>	<b>20.1056</b>	<b>0.0353</b>		<b>1.0371</b>	<b>1.0371</b>		<b>0.9688</b>	<b>0.9688</b>	<b>0.0000</b>	<b>3,363.0512</b>	<b>3,363.0512</b>	<b>0.8691</b>		<b>3,384.7791</b>

Noble Solar - Riverside-Mojave Desert SCAQMD County, Summer

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

**3.3 Solar Facility Construction - 2023**

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0676	1.9602	0.8071	0.0105	0.3843	0.0171	0.4014	0.1107	0.0163	0.1270		1,111.626 0	1,111.626 0	0.0113	0.1643	1,160.860 4
Worker	0.2192	0.1355	2.2012	5.9000e-003	0.6707	3.1500e-003	0.6738	0.1779	2.9000e-003	0.1808		603.7218	603.7218	0.0138	0.0141	608.2611
<b>Total</b>	<b>0.2868</b>	<b>2.0957</b>	<b>3.0083</b>	<b>0.0164</b>	<b>1.0550</b>	<b>0.0202</b>	<b>1.0752</b>	<b>0.2885</b>	<b>0.0192</b>	<b>0.3077</b>		<b>1,715.347 8</b>	<b>1,715.347 8</b>	<b>0.0251</b>	<b>0.1784</b>	<b>1,769.121 4</b>

Noble Solar - Riverside-Mojave Desert SCAQMD County, Summer

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

**4.0 Operational Detail - Mobile**

**4.1 Mitigation Measures Mobile**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	9.5400e-003	4.3900e-003	0.0244	1.0000e-005	0.0000	2.0000e-005	2.0000e-005	0.0000	2.0000e-005	2.0000e-005		0.9147	0.9147	5.5000e-004	3.2000e-004	1.0244
Unmitigated	9.5400e-003	4.3900e-003	0.0244	1.0000e-005	0.0000	2.0000e-005	2.0000e-005	0.0000	2.0000e-005	2.0000e-005		0.9147	0.9147	5.5000e-004	3.2000e-004	1.0244

**4.2 Trip Summary Information**

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Other Non-Asphalt Surfaces	4.98	4.98	4.98		
Total	4.98	4.98	4.98		

**4.3 Trip Type Information**

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Other Non-Asphalt Surfaces	16.60	8.40	6.90	25.00	50.00	25.00	0	0	0

**4.4 Fleet Mix**

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

Noble Solar - Riverside-Mojave Desert SCAQMD County, Summer

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

**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	lb/day										lb/day					
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
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

**5.2 Energy by Land Use - NaturalGas**

**Unmitigated**

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
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
<b>Total</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>

Noble Solar - Riverside-Mojave Desert SCAQMD County, Summer

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

**5.2 Energy by Land Use - NaturalGas**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
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
<b>Total</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>

**6.0 Area Detail**

**6.1 Mitigation Measures Area**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	3.1137	1.5000e-004	0.0170	0.0000		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005		0.0363	0.0363	1.0000e-004		0.0387
Unmitigated	3.1137	1.5000e-004	0.0170	0.0000		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005		0.0363	0.0363	1.0000e-004		0.0387

Noble Solar - Riverside-Mojave Desert SCAQMD County, Summer

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

**6.2 Area by SubCategory**

**Unmitigated**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.5509					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	2.5612					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.5700e-003	1.5000e-004	0.0170	0.0000		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005		0.0363	0.0363	1.0000e-004		0.0387
<b>Total</b>	<b>3.1137</b>	<b>1.5000e-004</b>	<b>0.0170</b>	<b>0.0000</b>		<b>6.0000e-005</b>	<b>6.0000e-005</b>		<b>6.0000e-005</b>	<b>6.0000e-005</b>		<b>0.0363</b>	<b>0.0363</b>	<b>1.0000e-004</b>		<b>0.0387</b>



Noble Solar - Riverside-Mojave Desert SCAQMD County, Summer

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

**6.2 Area by SubCategory**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.5509					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	2.5612					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.5700e-003	1.5000e-004	0.0170	0.0000		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005		0.0363	0.0363	1.0000e-004		0.0387
<b>Total</b>	<b>3.1137</b>	<b>1.5000e-004</b>	<b>0.0170</b>	<b>0.0000</b>		<b>6.0000e-005</b>	<b>6.0000e-005</b>		<b>6.0000e-005</b>	<b>6.0000e-005</b>		<b>0.0363</b>	<b>0.0363</b>	<b>1.0000e-004</b>		<b>0.0387</b>

**7.0 Water Detail**

**7.1 Mitigation Measures Water**

Noble Solar - Riverside-Mojave Desert SCAQMD County, Summer

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

**8.0 Waste Detail**

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**8.1 Mitigation Measures Waste**

Institute Recycling and Composting Services

**9.0 Operational Offroad**

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

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**Fire Pumps and Emergency Generators**

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

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

Equipment Type	Number
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**11.0 Vegetation**

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Noble Solar - Riverside-Mojave Desert SCAQMD County, Winter

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

**Noble Solar**

**Riverside-Mojave Desert SCAQMD County, Winter**

**1.0 Project Characteristics**

**1.1 Land Usage**

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Non-Asphalt Surfaces	166.00	Acre	166.00	7,230,960.00	0

**1.2 Other Project Characteristics**

<b>Urbanization</b>	Urban	<b>Wind Speed (m/s)</b>	2.6	<b>Precipitation Freq (Days)</b>	28
<b>Climate Zone</b>	10			<b>Operational Year</b>	2023
<b>Utility Company</b>	Southern California Edison				
<b>CO2 Intensity (lb/MWhr)</b>	390.98	<b>CH4 Intensity (lb/MWhr)</b>	0.033	<b>N2O Intensity (lb/MWhr)</b>	0.004

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

- Project Characteristics -
- Land Use -
- Construction Phase - Construction estimate
- Off-road Equipment - Additional equipment estimate
- Trips and VMT - Per traffic study
- Vehicle Trips - Assumed maximum of 4 operational trips per day
- Water And Wastewater - Panel washing
- Construction Off-road Equipment Mitigation - Per SCAQMD Rule 403.1
- Waste Mitigation -
- Off-road Equipment -

Noble Solar - Riverside-Mojave Desert SCAQMD County, Winter

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

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	3,100.00	375.00
tblOffRoadEquipment	OffRoadEquipmentType		Graders
tblOffRoadEquipment	OffRoadEquipmentType		Trenchers
tblTripsAndVMT	VendorTripNumber	1,185.00	60.00
tblTripsAndVMT	WorkerTripNumber	3,037.00	60.00
tblVehicleTrips	CC_TTP	0.00	50.00
tblVehicleTrips	CNW_TTP	0.00	25.00
tblVehicleTrips	CW_TTP	0.00	25.00
tblVehicleTrips	ST_TR	0.00	0.03
tblVehicleTrips	SU_TR	0.00	0.03
tblVehicleTrips	WD_TR	0.00	0.03
tblWater	OutdoorWaterUseRate	0.00	50,000.00

**2.0 Emissions Summary**

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Noble Solar - Riverside-Mojave Desert SCAQMD County, Winter

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

**2.1 Overall Construction (Maximum Daily Emission)**

**Unmitigated Construction**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2022	3.2364	33.1312	23.1083	0.0517	19.8582	1.6136	21.4718	10.1558	1.4845	11.6403	0.0000	5,082.881 1	5,082.881 1	1.1967	0.1876	5,161.303 9
2023	2.4751	23.3273	22.7272	0.0511	1.0550	1.0574	2.1123	0.2885	0.9881	1.2766	0.0000	5,024.462 2	5,024.462 2	0.8940	0.1792	5,100.218 3
<b>Maximum</b>	<b>3.2364</b>	<b>33.1312</b>	<b>23.1083</b>	<b>0.0517</b>	<b>19.8582</b>	<b>1.6136</b>	<b>21.4718</b>	<b>10.1558</b>	<b>1.4845</b>	<b>11.6403</b>	<b>0.0000</b>	<b>5,082.881 1</b>	<b>5,082.881 1</b>	<b>1.1967</b>	<b>0.1876</b>	<b>5,161.303 9</b>

**Mitigated Construction**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2022	3.2364	33.1312	23.1083	0.0517	7.8674	1.6136	9.4810	3.9933	1.4845	5.4778	0.0000	5,082.881 1	5,082.881 1	1.1967	0.1876	5,161.303 9
2023	2.4751	23.3273	22.7272	0.0511	1.0550	1.0574	2.1123	0.2885	0.9881	1.2766	0.0000	5,024.462 2	5,024.462 2	0.8940	0.1792	5,100.218 3
<b>Maximum</b>	<b>3.2364</b>	<b>33.1312</b>	<b>23.1083</b>	<b>0.0517</b>	<b>7.8674</b>	<b>1.6136</b>	<b>9.4810</b>	<b>3.9933</b>	<b>1.4845</b>	<b>5.4778</b>	<b>0.0000</b>	<b>5,082.881 1</b>	<b>5,082.881 1</b>	<b>1.1967</b>	<b>0.1876</b>	<b>5,161.303 9</b>

## Noble Solar - Riverside-Mojave Desert SCAQMD County, Winter

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

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	57.34	0.00	50.84	59.00	0.00	47.71	0.00	0.00	0.00	0.00	0.00	0.00

Noble Solar - Riverside-Mojave Desert SCAQMD County, Winter

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

**2.2 Overall Operational**

**Unmitigated Operational**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	3.1137	1.5000e-004	0.0170	0.0000		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005		0.0363	0.0363	1.0000e-004		0.0387
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	7.2900e-003	4.6500e-003	0.0278	1.0000e-005	0.0000	2.0000e-005	2.0000e-005	0.0000	2.0000e-005	2.0000e-005		0.9298	0.9298	6.3000e-004	3.3000e-004	1.0444
<b>Total</b>	<b>3.1210</b>	<b>4.8000e-003</b>	<b>0.0448</b>	<b>1.0000e-005</b>	<b>0.0000</b>	<b>8.0000e-005</b>	<b>8.0000e-005</b>	<b>0.0000</b>	<b>8.0000e-005</b>	<b>8.0000e-005</b>		<b>0.9661</b>	<b>0.9661</b>	<b>7.3000e-004</b>	<b>3.3000e-004</b>	<b>1.0831</b>

**Mitigated Operational**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	3.1137	1.5000e-004	0.0170	0.0000		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005		0.0363	0.0363	1.0000e-004		0.0387
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	7.2900e-003	4.6500e-003	0.0278	1.0000e-005	0.0000	2.0000e-005	2.0000e-005	0.0000	2.0000e-005	2.0000e-005		0.9298	0.9298	6.3000e-004	3.3000e-004	1.0444
<b>Total</b>	<b>3.1210</b>	<b>4.8000e-003</b>	<b>0.0448</b>	<b>1.0000e-005</b>	<b>0.0000</b>	<b>8.0000e-005</b>	<b>8.0000e-005</b>	<b>0.0000</b>	<b>8.0000e-005</b>	<b>8.0000e-005</b>		<b>0.9661</b>	<b>0.9661</b>	<b>7.3000e-004</b>	<b>3.3000e-004</b>	<b>1.0831</b>

Noble Solar - Riverside-Mojave Desert SCAQMD County, Winter

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

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
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	2/1/2022	7/18/2022	5	120	
2	Solar Facility Construction	Building Construction	7/19/2022	12/25/2023	5	375	

**Acres of Grading (Site Preparation Phase): 180**

**Acres of Grading (Grading Phase): 0**

**Acres of Paving: 166**

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

**OffRoad Equipment**

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Solar Facility Construction	Cranes	1	7.00	231	0.29
Solar Facility Construction	Forklifts	3	8.00	89	0.20
Solar Facility Construction	Generator Sets	1	8.00	84	0.74
Solar Facility Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Solar Facility Construction	Welders	1	8.00	46	0.45
Solar Facility Construction	Graders	1	6.00	187	0.41
Solar Facility Construction	Trenchers	1	8.00	78	0.50



Noble Solar - Riverside-Mojave Desert SCAQMD County, Winter

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

**Trips and VMT**

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Solar Facility Construction	11	60.00	60.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

**3.1 Mitigation Measures Construction**

Water Exposed Area

**3.2 Site Preparation - 2022**

**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					19.6570	0.0000	19.6570	10.1025	0.0000	10.1025			0.0000			0.0000
Off-Road	3.1701	33.0835	19.6978	0.0380		1.6126	1.6126		1.4836	1.4836		3,686.0619	3,686.0619	1.1922		3,715.8655
<b>Total</b>	<b>3.1701</b>	<b>33.0835</b>	<b>19.6978</b>	<b>0.0380</b>	<b>19.6570</b>	<b>1.6126</b>	<b>21.2696</b>	<b>10.1025</b>	<b>1.4836</b>	<b>11.5860</b>		<b>3,686.0619</b>	<b>3,686.0619</b>	<b>1.1922</b>		<b>3,715.8655</b>

Noble Solar - Riverside-Mojave Desert SCAQMD County, Winter

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

**3.2 Site Preparation - 2022**

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0663	0.0477	0.5816	1.6600e-003	0.2012	1.0000e-003	0.2022	0.0534	9.2000e-004	0.0543		168.5113	168.5113	4.5800e-003	4.6800e-003	170.0216
<b>Total</b>	<b>0.0663</b>	<b>0.0477</b>	<b>0.5816</b>	<b>1.6600e-003</b>	<b>0.2012</b>	<b>1.0000e-003</b>	<b>0.2022</b>	<b>0.0534</b>	<b>9.2000e-004</b>	<b>0.0543</b>		<b>168.5113</b>	<b>168.5113</b>	<b>4.5800e-003</b>	<b>4.6800e-003</b>	<b>170.0216</b>

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					7.6662	0.0000	7.6662	3.9400	0.0000	3.9400			0.0000			0.0000
Off-Road	3.1701	33.0835	19.6978	0.0380		1.6126	1.6126		1.4836	1.4836	0.0000	3,686.0619	3,686.0619	1.1922		3,715.8655
<b>Total</b>	<b>3.1701</b>	<b>33.0835</b>	<b>19.6978</b>	<b>0.0380</b>	<b>7.6662</b>	<b>1.6126</b>	<b>9.2788</b>	<b>3.9400</b>	<b>1.4836</b>	<b>5.4235</b>	<b>0.0000</b>	<b>3,686.0619</b>	<b>3,686.0619</b>	<b>1.1922</b>		<b>3,715.8655</b>

Noble Solar - Riverside-Mojave Desert SCAQMD County, Winter

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

**3.2 Site Preparation - 2022**

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0663	0.0477	0.5816	1.6600e-003	0.2012	1.0000e-003	0.2022	0.0534	9.2000e-004	0.0543		168.5113	168.5113	4.5800e-003	4.6800e-003	170.0216
<b>Total</b>	<b>0.0663</b>	<b>0.0477</b>	<b>0.5816</b>	<b>1.6600e-003</b>	<b>0.2012</b>	<b>1.0000e-003</b>	<b>0.2022</b>	<b>0.0534</b>	<b>9.2000e-004</b>	<b>0.0543</b>		<b>168.5113</b>	<b>168.5113</b>	<b>4.5800e-003</b>	<b>4.6800e-003</b>	<b>170.0216</b>

**3.3 Solar Facility Construction - 2022**

**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.3813	22.9385	20.2537	0.0353		1.1739	1.1739		1.0968	1.0968		3,362.2422	3,362.2422	0.8732		3,384.0732
<b>Total</b>	<b>2.3813</b>	<b>22.9385</b>	<b>20.2537</b>	<b>0.0353</b>		<b>1.1739</b>	<b>1.1739</b>		<b>1.0968</b>	<b>1.0968</b>		<b>3,362.2422</b>	<b>3,362.2422</b>	<b>0.8732</b>		<b>3,384.0732</b>

Noble Solar - Riverside-Mojave Desert SCAQMD County, Winter

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

**3.3 Solar Facility Construction - 2022**

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0935	2.6730	0.9161	0.0109	0.3843	0.0367	0.4210	0.1107	0.0351	0.1457		1,158.9346	1,158.9346	0.0121	0.1720	1,210.4921
Worker	0.2209	0.1591	1.9385	5.5200e-003	0.6707	3.3400e-003	0.6740	0.1779	3.0800e-003	0.1809		561.7043	561.7043	0.0153	0.0156	566.7386
<b>Total</b>	<b>0.3143</b>	<b>2.8320</b>	<b>2.8546</b>	<b>0.0165</b>	<b>1.0550</b>	<b>0.0400</b>	<b>1.0950</b>	<b>0.2885</b>	<b>0.0382</b>	<b>0.3267</b>		<b>1,720.6389</b>	<b>1,720.6389</b>	<b>0.0273</b>	<b>0.1876</b>	<b>1,777.2307</b>

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.3813	22.9385	20.2537	0.0353		1.1739	1.1739		1.0968	1.0968	0.0000	3,362.2422	3,362.2422	0.8732		3,384.0732
<b>Total</b>	<b>2.3813</b>	<b>22.9385</b>	<b>20.2537</b>	<b>0.0353</b>		<b>1.1739</b>	<b>1.1739</b>		<b>1.0968</b>	<b>1.0968</b>	<b>0.0000</b>	<b>3,362.2422</b>	<b>3,362.2422</b>	<b>0.8732</b>		<b>3,384.0732</b>

Noble Solar - Riverside-Mojave Desert SCAQMD County, Winter

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

**3.3 Solar Facility Construction - 2022**

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0935	2.6730	0.9161	0.0109	0.3843	0.0367	0.4210	0.1107	0.0351	0.1457		1,158.9346	1,158.9346	0.0121	0.1720	1,210.4921
Worker	0.2209	0.1591	1.9385	5.5200e-003	0.6707	3.3400e-003	0.6740	0.1779	3.0800e-003	0.1809		561.7043	561.7043	0.0153	0.0156	566.7386
<b>Total</b>	<b>0.3143</b>	<b>2.8320</b>	<b>2.8546</b>	<b>0.0165</b>	<b>1.0550</b>	<b>0.0400</b>	<b>1.0950</b>	<b>0.2885</b>	<b>0.0382</b>	<b>0.3267</b>		<b>1,720.6389</b>	<b>1,720.6389</b>	<b>0.0273</b>	<b>0.1876</b>	<b>1,777.2307</b>

**3.3 Solar Facility Construction - 2023**

**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.2070	21.1078	20.1056	0.0353		1.0371	1.0371		0.9688	0.9688		3,363.0512	3,363.0512	0.8691		3,384.7791
<b>Total</b>	<b>2.2070</b>	<b>21.1078</b>	<b>20.1056</b>	<b>0.0353</b>		<b>1.0371</b>	<b>1.0371</b>		<b>0.9688</b>	<b>0.9688</b>		<b>3,363.0512</b>	<b>3,363.0512</b>	<b>0.8691</b>		<b>3,384.7791</b>

Noble Solar - Riverside-Mojave Desert SCAQMD County, Winter

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

**3.3 Solar Facility Construction - 2023**

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0626	2.0789	0.8343	0.0105	0.3843	0.0171	0.4014	0.1107	0.0164	0.1270		1,114.3848	1,114.3848	0.0111	0.1648	1,163.7766
Worker	0.2055	0.1406	1.7874	5.3500e-003	0.6707	3.1500e-003	0.6738	0.1779	2.9000e-003	0.1808		547.0262	547.0262	0.0137	0.0144	551.6627
<b>Total</b>	<b>0.2681</b>	<b>2.2194</b>	<b>2.6217</b>	<b>0.0159</b>	<b>1.0550</b>	<b>0.0203</b>	<b>1.0752</b>	<b>0.2885</b>	<b>0.0193</b>	<b>0.3078</b>		<b>1,661.4110</b>	<b>1,661.4110</b>	<b>0.0249</b>	<b>0.1792</b>	<b>1,715.4392</b>

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.2070	21.1078	20.1056	0.0353		1.0371	1.0371		0.9688	0.9688	0.0000	3,363.0512	3,363.0512	0.8691		3,384.7791
<b>Total</b>	<b>2.2070</b>	<b>21.1078</b>	<b>20.1056</b>	<b>0.0353</b>		<b>1.0371</b>	<b>1.0371</b>		<b>0.9688</b>	<b>0.9688</b>	<b>0.0000</b>	<b>3,363.0512</b>	<b>3,363.0512</b>	<b>0.8691</b>		<b>3,384.7791</b>

Noble Solar - Riverside-Mojave Desert SCAQMD County, Winter

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

**3.3 Solar Facility Construction - 2023**

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0626	2.0789	0.8343	0.0105	0.3843	0.0171	0.4014	0.1107	0.0164	0.1270		1,114.3848	1,114.3848	0.0111	0.1648	1,163.7766
Worker	0.2055	0.1406	1.7874	5.3500e-003	0.6707	3.1500e-003	0.6738	0.1779	2.9000e-003	0.1808		547.0262	547.0262	0.0137	0.0144	551.6627
<b>Total</b>	<b>0.2681</b>	<b>2.2194</b>	<b>2.6217</b>	<b>0.0159</b>	<b>1.0550</b>	<b>0.0203</b>	<b>1.0752</b>	<b>0.2885</b>	<b>0.0193</b>	<b>0.3078</b>		<b>1,661.4110</b>	<b>1,661.4110</b>	<b>0.0249</b>	<b>0.1792</b>	<b>1,715.4392</b>

Noble Solar - Riverside-Mojave Desert SCAQMD County, Winter

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

**4.0 Operational Detail - Mobile**

**4.1 Mitigation Measures Mobile**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	7.2900e-003	4.6500e-003	0.0278	1.0000e-005	0.0000	2.0000e-005	2.0000e-005	0.0000	2.0000e-005	2.0000e-005		0.9298	0.9298	6.3000e-004	3.3000e-004	1.0444
Unmitigated	7.2900e-003	4.6500e-003	0.0278	1.0000e-005	0.0000	2.0000e-005	2.0000e-005	0.0000	2.0000e-005	2.0000e-005		0.9298	0.9298	6.3000e-004	3.3000e-004	1.0444

**4.2 Trip Summary Information**

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Other Non-Asphalt Surfaces	4.98	4.98	4.98		
Total	4.98	4.98	4.98		

**4.3 Trip Type Information**

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Other Non-Asphalt Surfaces	16.60	8.40	6.90	25.00	50.00	25.00	0	0	0

**4.4 Fleet Mix**

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



Noble Solar - Riverside-Mojave Desert SCAQMD County, Winter

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

**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	lb/day										lb/day					
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
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

**5.2 Energy by Land Use - NaturalGas**

**Unmitigated**

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
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
<b>Total</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>

Noble Solar - Riverside-Mojave Desert SCAQMD County, Winter

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

**5.2 Energy by Land Use - NaturalGas**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
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
<b>Total</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>

**6.0 Area Detail**

**6.1 Mitigation Measures Area**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	3.1137	1.5000e-004	0.0170	0.0000		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005		0.0363	0.0363	1.0000e-004		0.0387
Unmitigated	3.1137	1.5000e-004	0.0170	0.0000		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005		0.0363	0.0363	1.0000e-004		0.0387

Noble Solar - Riverside-Mojave Desert SCAQMD County, Winter

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

**6.2 Area by SubCategory**

**Unmitigated**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.5509					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	2.5612					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.5700e-003	1.5000e-004	0.0170	0.0000		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005		0.0363	0.0363	1.0000e-004		0.0387
<b>Total</b>	<b>3.1137</b>	<b>1.5000e-004</b>	<b>0.0170</b>	<b>0.0000</b>		<b>6.0000e-005</b>	<b>6.0000e-005</b>		<b>6.0000e-005</b>	<b>6.0000e-005</b>		<b>0.0363</b>	<b>0.0363</b>	<b>1.0000e-004</b>		<b>0.0387</b>

Noble Solar - Riverside-Mojave Desert SCAQMD County, Winter

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

**6.2 Area by SubCategory**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.5509					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	2.5612					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.5700e-003	1.5000e-004	0.0170	0.0000		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005		0.0363	0.0363	1.0000e-004		0.0387
<b>Total</b>	<b>3.1137</b>	<b>1.5000e-004</b>	<b>0.0170</b>	<b>0.0000</b>		<b>6.0000e-005</b>	<b>6.0000e-005</b>		<b>6.0000e-005</b>	<b>6.0000e-005</b>		<b>0.0363</b>	<b>0.0363</b>	<b>1.0000e-004</b>		<b>0.0387</b>

**7.0 Water Detail**

**7.1 Mitigation Measures Water**

Noble Solar - Riverside-Mojave Desert SCAQMD County, Winter

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

**8.0 Waste Detail**

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**8.1 Mitigation Measures Waste**

Institute Recycling and Composting Services

**9.0 Operational Offroad**

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

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**Fire Pumps and Emergency Generators**

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

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

Equipment Type	Number
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**11.0 Vegetation**

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## **Appendix B:**

CalEEMod Annual Emission Output

Noble Solar - Riverside-Mojave Desert SCAQMD County, Annual

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

**Noble Solar**

**Riverside-Mojave Desert SCAQMD County, Annual**

**1.0 Project Characteristics**

**1.1 Land Usage**

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Non-Asphalt Surfaces	166.00	Acre	166.00	7,230,960.00	0

**1.2 Other Project Characteristics**

<b>Urbanization</b>	Urban	<b>Wind Speed (m/s)</b>	2.6	<b>Precipitation Freq (Days)</b>	28
<b>Climate Zone</b>	10			<b>Operational Year</b>	2023
<b>Utility Company</b>	Southern California Edison				
<b>CO2 Intensity (lb/MWhr)</b>	390.98	<b>CH4 Intensity (lb/MWhr)</b>	0.033	<b>N2O Intensity (lb/MWhr)</b>	0.004

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

- Project Characteristics -
- Land Use -
- Construction Phase - Construction estimate
- Off-road Equipment - Additional equipment estimate
- Trips and VMT - Per traffic study
- Vehicle Trips - Assumed maximum of 4 operational trips per day
- Water And Wastewater - Panel washing
- Construction Off-road Equipment Mitigation - Per SCAQMD Rule 403.1
- Waste Mitigation -
- Off-road Equipment -

## Noble Solar - Riverside-Mojave Desert SCAQMD County, Annual

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

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	3,100.00	375.00
tblOffRoadEquipment	OffRoadEquipmentType		Graders
tblOffRoadEquipment	OffRoadEquipmentType		Trenchers
tblTripsAndVMT	VendorTripNumber	1,185.00	60.00
tblTripsAndVMT	WorkerTripNumber	3,037.00	60.00
tblVehicleTrips	CC_TTP	0.00	50.00
tblVehicleTrips	CNW_TTP	0.00	25.00
tblVehicleTrips	CW_TTP	0.00	25.00
tblVehicleTrips	ST_TR	0.00	0.03
tblVehicleTrips	SU_TR	0.00	0.03
tblVehicleTrips	WD_TR	0.00	0.03
tblWater	OutdoorWaterUseRate	0.00	50,000.00

**2.0 Emissions Summary**

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Noble Solar - Riverside-Mojave Desert SCAQMD County, Annual

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

**2.1 Overall Construction**

**Unmitigated Construction**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2022	0.3538	3.5210	2.5988	5.4700e-003	1.2531	0.1690	1.4221	0.6262	0.1566	0.7828	0.0000	485.0527	485.0527	0.1138	0.0104	490.9946
2023	0.3158	2.9836	2.9195	6.5600e-003	0.1329	0.1353	0.2683	0.0364	0.1265	0.1629	0.0000	584.7310	584.7310	0.1038	0.0208	593.5285
<b>Maximum</b>	<b>0.3538</b>	<b>3.5210</b>	<b>2.9195</b>	<b>6.5600e-003</b>	<b>1.2531</b>	<b>0.1690</b>	<b>1.4221</b>	<b>0.6262</b>	<b>0.1566</b>	<b>0.7828</b>	<b>0.0000</b>	<b>584.7310</b>	<b>584.7310</b>	<b>0.1138</b>	<b>0.0208</b>	<b>593.5285</b>

**Mitigated Construction**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2022	0.3538	3.5210	2.5988	5.4700e-003	0.5336	0.1690	0.7027	0.2565	0.1566	0.4131	0.0000	485.0522	485.0522	0.1138	0.0104	490.9941
2023	0.3158	2.9836	2.9195	6.5600e-003	0.1329	0.1353	0.2683	0.0364	0.1265	0.1629	0.0000	584.7305	584.7305	0.1038	0.0208	593.5280
<b>Maximum</b>	<b>0.3538</b>	<b>3.5210</b>	<b>2.9195</b>	<b>6.5600e-003</b>	<b>0.5336</b>	<b>0.1690</b>	<b>0.7027</b>	<b>0.2565</b>	<b>0.1566</b>	<b>0.4131</b>	<b>0.0000</b>	<b>584.7305</b>	<b>584.7305</b>	<b>0.1138</b>	<b>0.0208</b>	<b>593.5280</b>

Noble Solar - Riverside-Mojave Desert SCAQMD 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
Percent Reduction	0.00	0.00	0.00	0.00	51.91	0.00	42.56	55.80	0.00	39.10	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	2-1-2022	4-30-2022	1.1560	1.1560
2	5-1-2022	7-31-2022	1.1578	1.1578
3	8-1-2022	10-31-2022	0.9327	0.9327
4	11-1-2022	1-31-2023	0.9058	0.9058
5	2-1-2023	4-30-2023	0.8190	0.8190
6	5-1-2023	7-31-2023	0.8443	0.8443
7	8-1-2023	9-30-2023	0.5598	0.5598
		Highest	1.1578	1.1578

Noble Solar - Riverside-Mojave Desert SCAQMD County, Annual

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

**2.2 Overall Operational**

**Unmitigated Operational**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.5682	2.0000e-005	2.1200e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	4.1200e-003	4.1200e-003	1.0000e-005	0.0000	4.3900e-003
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	1.3400e-003	8.3000e-004	4.9600e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1524	0.1524	1.0000e-004	5.0000e-005	0.1711
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0985	0.0985	1.0000e-005	0.0000	0.0990
<b>Total</b>	<b>0.5695</b>	<b>8.5000e-004</b>	<b>7.0800e-003</b>	<b>0.0000</b>	<b>0.0000</b>	<b>1.0000e-005</b>	<b>1.0000e-005</b>	<b>0.0000</b>	<b>1.0000e-005</b>	<b>1.0000e-005</b>	<b>0.0000</b>	<b>0.2550</b>	<b>0.2550</b>	<b>1.2000e-004</b>	<b>5.0000e-005</b>	<b>0.2745</b>

Noble Solar - Riverside-Mojave Desert SCAQMD County, Annual

**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	0.5682	2.0000e-005	2.1200e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	4.1200e-003	4.1200e-003	1.0000e-005	0.0000	4.3900e-003
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	1.3400e-003	8.3000e-004	4.9600e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1524	0.1524	1.0000e-004	5.0000e-005	0.1711
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0985	0.0985	1.0000e-005	0.0000	0.0990
<b>Total</b>	<b>0.5695</b>	<b>8.5000e-004</b>	<b>7.0800e-003</b>	<b>0.0000</b>	<b>0.0000</b>	<b>1.0000e-005</b>	<b>1.0000e-005</b>	<b>0.0000</b>	<b>1.0000e-005</b>	<b>1.0000e-005</b>	<b>0.0000</b>	<b>0.2550</b>	<b>0.2550</b>	<b>1.2000e-004</b>	<b>5.0000e-005</b>	<b>0.2745</b>

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
<b>Percent Reduction</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>

**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	2/1/2022	7/18/2022	5	120	
2	Solar Facility Construction	Building Construction	7/19/2022	12/25/2023	5	375	

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

**Acres of Grading (Site Preparation Phase): 180**

**Acres of Grading (Grading Phase): 0**

**Acres of Paving: 166**

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

**OffRoad Equipment**

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Solar Facility Construction	Cranes	1	7.00	231	0.29
Solar Facility Construction	Forklifts	3	8.00	89	0.20
Solar Facility Construction	Generator Sets	1	8.00	84	0.74
Solar Facility Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Solar Facility Construction	Welders	1	8.00	46	0.45
Solar Facility Construction	Graders	1	6.00	187	0.41
Solar Facility Construction	Trenchers	1	8.00	78	0.50

**Trips and VMT**

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Solar Facility Construction	11	60.00	60.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

**3.1 Mitigation Measures Construction**

Water Exposed Area

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

**3.2 Site Preparation - 2022**

**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					1.1794	0.0000	1.1794	0.6062	0.0000	0.6062	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1902	1.9850	1.1819	2.2800e-003		0.0968	0.0968		0.0890	0.0890	0.0000	200.6363	200.6363	0.0649	0.0000	202.2586
<b>Total</b>	<b>0.1902</b>	<b>1.9850</b>	<b>1.1819</b>	<b>2.2800e-003</b>	<b>1.1794</b>	<b>0.0968</b>	<b>1.2762</b>	<b>0.6062</b>	<b>0.0890</b>	<b>0.6952</b>	<b>0.0000</b>	<b>200.6363</b>	<b>200.6363</b>	<b>0.0649</b>	<b>0.0000</b>	<b>202.2586</b>

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.7800e-003	2.9400e-003	0.0368	1.0000e-004	0.0119	6.0000e-005	0.0119	3.1500e-003	6.0000e-005	3.2100e-003	0.0000	9.3865	9.3865	2.5000e-004	2.6000e-004	9.4702
<b>Total</b>	<b>3.7800e-003</b>	<b>2.9400e-003</b>	<b>0.0368</b>	<b>1.0000e-004</b>	<b>0.0119</b>	<b>6.0000e-005</b>	<b>0.0119</b>	<b>3.1500e-003</b>	<b>6.0000e-005</b>	<b>3.2100e-003</b>	<b>0.0000</b>	<b>9.3865</b>	<b>9.3865</b>	<b>2.5000e-004</b>	<b>2.6000e-004</b>	<b>9.4702</b>

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

**3.2 Site Preparation - 2022**

**Mitigated Construction 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					0.4600	0.0000	0.4600	0.2364	0.0000	0.2364	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1902	1.9850	1.1819	2.2800e-003		0.0968	0.0968		0.0890	0.0890	0.0000	200.6361	200.6361	0.0649	0.0000	202.2584
<b>Total</b>	<b>0.1902</b>	<b>1.9850</b>	<b>1.1819</b>	<b>2.2800e-003</b>	<b>0.4600</b>	<b>0.0968</b>	<b>0.5567</b>	<b>0.2364</b>	<b>0.0890</b>	<b>0.3254</b>	<b>0.0000</b>	<b>200.6361</b>	<b>200.6361</b>	<b>0.0649</b>	<b>0.0000</b>	<b>202.2584</b>

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.7800e-003	2.9400e-003	0.0368	1.0000e-004	0.0119	6.0000e-005	0.0119	3.1500e-003	6.0000e-005	3.2100e-003	0.0000	9.3865	9.3865	2.5000e-004	2.6000e-004	9.4702
<b>Total</b>	<b>3.7800e-003</b>	<b>2.9400e-003</b>	<b>0.0368</b>	<b>1.0000e-004</b>	<b>0.0119</b>	<b>6.0000e-005</b>	<b>0.0119</b>	<b>3.1500e-003</b>	<b>6.0000e-005</b>	<b>3.2100e-003</b>	<b>0.0000</b>	<b>9.3865</b>	<b>9.3865</b>	<b>2.5000e-004</b>	<b>2.6000e-004</b>	<b>9.4702</b>

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

**3.3 Solar Facility Construction - 2022**

**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1417	1.3648	1.2051	2.1000e-003		0.0699	0.0699		0.0653	0.0653	0.0000	181.4854	181.4854	0.0471	0.0000	182.6638
<b>Total</b>	<b>0.1417</b>	<b>1.3648</b>	<b>1.2051</b>	<b>2.1000e-003</b>		<b>0.0699</b>	<b>0.0699</b>		<b>0.0653</b>	<b>0.0653</b>	<b>0.0000</b>	<b>181.4854</b>	<b>181.4854</b>	<b>0.0471</b>	<b>0.0000</b>	<b>182.6638</b>

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	5.6700e-003	0.1585	0.0534	6.5000e-004	0.0226	2.1800e-003	0.0247	6.5100e-003	2.0800e-003	8.5900e-003	0.0000	62.5170	62.5170	6.6000e-004	9.2800e-003	65.2979
Worker	0.0125	9.7200e-003	0.1216	3.4000e-004	0.0392	2.0000e-004	0.0394	0.0104	1.8000e-004	0.0106	0.0000	31.0275	31.0275	8.3000e-004	8.6000e-004	31.3042
<b>Total</b>	<b>0.0182</b>	<b>0.1682</b>	<b>0.1750</b>	<b>9.9000e-004</b>	<b>0.0618</b>	<b>2.3800e-003</b>	<b>0.0642</b>	<b>0.0169</b>	<b>2.2600e-003</b>	<b>0.0192</b>	<b>0.0000</b>	<b>93.5445</b>	<b>93.5445</b>	<b>1.4900e-003</b>	<b>0.0101</b>	<b>96.6021</b>



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

**3.3 Solar Facility Construction - 2022**

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1417	1.3648	1.2051	2.1000e-003		0.0699	0.0699		0.0653	0.0653	0.0000	181.4852	181.4852	0.0471	0.0000	182.6636
<b>Total</b>	<b>0.1417</b>	<b>1.3648</b>	<b>1.2051</b>	<b>2.1000e-003</b>		<b>0.0699</b>	<b>0.0699</b>		<b>0.0653</b>	<b>0.0653</b>	<b>0.0000</b>	<b>181.4852</b>	<b>181.4852</b>	<b>0.0471</b>	<b>0.0000</b>	<b>182.6636</b>

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	5.6700e-003	0.1585	0.0534	6.5000e-004	0.0226	2.1800e-003	0.0247	6.5100e-003	2.0800e-003	8.5900e-003	0.0000	62.5170	62.5170	6.6000e-004	9.2800e-003	65.2979
Worker	0.0125	9.7200e-003	0.1216	3.4000e-004	0.0392	2.0000e-004	0.0394	0.0104	1.8000e-004	0.0106	0.0000	31.0275	31.0275	8.3000e-004	8.6000e-004	31.3042
<b>Total</b>	<b>0.0182</b>	<b>0.1682</b>	<b>0.1750</b>	<b>9.9000e-004</b>	<b>0.0618</b>	<b>2.3800e-003</b>	<b>0.0642</b>	<b>0.0169</b>	<b>2.2600e-003</b>	<b>0.0192</b>	<b>0.0000</b>	<b>93.5445</b>	<b>93.5445</b>	<b>1.4900e-003</b>	<b>0.0101</b>	<b>96.6021</b>

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

**3.3 Solar Facility Construction - 2023**

**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2825	2.7018	2.5735	4.5200e-003		0.1328	0.1328		0.1240	0.1240	0.0000	390.5163	390.5163	0.1009	0.0000	393.0394
<b>Total</b>	<b>0.2825</b>	<b>2.7018</b>	<b>2.5735</b>	<b>4.5200e-003</b>		<b>0.1328</b>	<b>0.1328</b>		<b>0.1240</b>	<b>0.1240</b>	<b>0.0000</b>	<b>390.5163</b>	<b>390.5163</b>	<b>0.1009</b>	<b>0.0000</b>	<b>393.0394</b>

**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	8.3200e-003	0.2633	0.1049	1.3400e-003	0.0485	2.1900e-003	0.0507	0.0140	2.0900e-003	0.0161	0.0000	129.2164	129.2164	1.3100e-003	0.0191	134.9428
Worker	0.0249	0.0185	0.2411	7.0000e-004	0.0844	4.0000e-004	0.0848	0.0224	3.7000e-004	0.0228	0.0000	64.9983	64.9983	1.6000e-003	1.7000e-003	65.5463
<b>Total</b>	<b>0.0333</b>	<b>0.2818</b>	<b>0.3460</b>	<b>2.0400e-003</b>	<b>0.1329</b>	<b>2.5900e-003</b>	<b>0.1355</b>	<b>0.0364</b>	<b>2.4600e-003</b>	<b>0.0389</b>	<b>0.0000</b>	<b>194.2147</b>	<b>194.2147</b>	<b>2.9100e-003</b>	<b>0.0208</b>	<b>200.4891</b>

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

**3.3 Solar Facility Construction - 2023**

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2825	2.7018	2.5735	4.5200e-003		0.1328	0.1328		0.1240	0.1240	0.0000	390.5159	390.5159	0.1009	0.0000	393.0389
<b>Total</b>	<b>0.2825</b>	<b>2.7018</b>	<b>2.5735</b>	<b>4.5200e-003</b>		<b>0.1328</b>	<b>0.1328</b>		<b>0.1240</b>	<b>0.1240</b>	<b>0.0000</b>	<b>390.5159</b>	<b>390.5159</b>	<b>0.1009</b>	<b>0.0000</b>	<b>393.0389</b>

**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	8.3200e-003	0.2633	0.1049	1.3400e-003	0.0485	2.1900e-003	0.0507	0.0140	2.0900e-003	0.0161	0.0000	129.2164	129.2164	1.3100e-003	0.0191	134.9428
Worker	0.0249	0.0185	0.2411	7.0000e-004	0.0844	4.0000e-004	0.0848	0.0224	3.7000e-004	0.0228	0.0000	64.9983	64.9983	1.6000e-003	1.7000e-003	65.5463
<b>Total</b>	<b>0.0333</b>	<b>0.2818</b>	<b>0.3460</b>	<b>2.0400e-003</b>	<b>0.1329</b>	<b>2.5900e-003</b>	<b>0.1355</b>	<b>0.0364</b>	<b>2.4600e-003</b>	<b>0.0389</b>	<b>0.0000</b>	<b>194.2147</b>	<b>194.2147</b>	<b>2.9100e-003</b>	<b>0.0208</b>	<b>200.4891</b>

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4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	1.3400e-003	8.3000e-004	4.9600e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1524	0.1524	1.0000e-004	5.0000e-005	0.1711
Unmitigated	1.3400e-003	8.3000e-004	4.9600e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1524	0.1524	1.0000e-004	5.0000e-005	0.1711

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Other Non-Asphalt Surfaces	4.98	4.98	4.98		
Total	4.98	4.98	4.98		

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Other Non-Asphalt Surfaces	16.60	8.40	6.90	25.00	50.00	25.00	0	0	0

4.4 Fleet Mix

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

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

**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	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
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



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

**5.3 Energy by Land Use - Electricity**

**Unmitigated**

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
<b>Total</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>

**Mitigated**

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
<b>Total</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>

**6.0 Area Detail**

**6.1 Mitigation Measures Area**

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

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.5682	2.0000e-005	2.1200e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	4.1200e-003	4.1200e-003	1.0000e-005	0.0000	4.3900e-003
Unmitigated	0.5682	2.0000e-005	2.1200e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	4.1200e-003	4.1200e-003	1.0000e-005	0.0000	4.3900e-003

**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	0.1006					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.4674					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	2.0000e-004	2.0000e-005	2.1200e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	4.1200e-003	4.1200e-003	1.0000e-005	0.0000	4.3900e-003
<b>Total</b>	<b>0.5682</b>	<b>2.0000e-005</b>	<b>2.1200e-003</b>	<b>0.0000</b>		<b>1.0000e-005</b>	<b>1.0000e-005</b>		<b>1.0000e-005</b>	<b>1.0000e-005</b>	<b>0.0000</b>	<b>4.1200e-003</b>	<b>4.1200e-003</b>	<b>1.0000e-005</b>	<b>0.0000</b>	<b>4.3900e-003</b>



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**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	0.1006					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.4674					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	2.0000e-004	2.0000e-005	2.1200e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	4.1200e-003	4.1200e-003	1.0000e-005	0.0000	4.3900e-003
<b>Total</b>	<b>0.5682</b>	<b>2.0000e-005</b>	<b>2.1200e-003</b>	<b>0.0000</b>		<b>1.0000e-005</b>	<b>1.0000e-005</b>		<b>1.0000e-005</b>	<b>1.0000e-005</b>	<b>0.0000</b>	<b>4.1200e-003</b>	<b>4.1200e-003</b>	<b>1.0000e-005</b>	<b>0.0000</b>	<b>4.3900e-003</b>

**7.0 Water Detail**

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**7.1 Mitigation Measures Water**

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**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	0.0985	1.0000e-005	0.0000	0.0990
Unmitigated	0.0985	1.0000e-005	0.0000	0.0990

**7.2 Water by Land Use**

**Unmitigated**

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Other Non-Asphalt Surfaces	0 / 0.05	0.0985	1.0000e-005	0.0000	0.0990
<b>Total</b>		<b>0.0985</b>	<b>1.0000e-005</b>	<b>0.0000</b>	<b>0.0990</b>

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

**7.2 Water by Land Use**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Other Non-Asphalt Surfaces	0 / 0.05	0.0985	1.0000e-005	0.0000	0.0990
<b>Total</b>		<b>0.0985</b>	<b>1.0000e-005</b>	<b>0.0000</b>	<b>0.0990</b>

**8.0 Waste Detail**

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**8.1 Mitigation Measures Waste**

Institute Recycling and Composting Services

Category/Year

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

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

**8.2 Waste by Land Use**

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
<b>Total</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
<b>Total</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>

**9.0 Operational Offroad**

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Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
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**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

**10.0 Stationary Equipment**

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**Fire Pumps and Emergency Generators**

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

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

Equipment Type	Number
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**11.0 Vegetation**

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## **Appendix C:**

EMFAC2017 Output

Calendar Year: 2022

Season: Annual

Vehicle Classification: EMFAC2007 Categories

Units: miles/day for VMT, trips/day for Trips, tons/day for Emissions, 1000 gallons/day for Fuel Consumption

Region	Calendar Year	Vehicle CaModel Year	Speed	Fuel	Population Trips	Fuel Consumption	Fuel Consumption	Total Fuel Consumption	VMT	Total VMT	Miles Per Gallon	Vehicle Class			
South Coast AQMD	2022	HHDT	Aggregate	Aggregate	Gasoline	77.82251	1557.073	1.914672095	1914.672095	1984478.157	7970.981	13381402.09	6.74	HHD	
South Coast AQMD	2022	HHDT	Aggregate	Aggregate	Diesel	108362	1118617	1982.563485	1982563.485		13373431				
South Coast AQMD	2022	LDA	Aggregate	Aggregate	Gasoline	6542832	30915701	8178.144259	8178144.259	8226568.36	2.52E+08	254602375.4	30.95	LDA	
South Coast AQMD	2022	LDA	Aggregate	Aggregate	Diesel	58937.5	279973.4	48.42410045	48424.10045		2358230				
South Coast AQMD	2022	LDA	Aggregate	Aggregate	Electricity	127532.6	637025.4	0	0		5177709				
South Coast AQMD	2022	LDT1	Aggregate	Aggregate	Gasoline	736905.6	3399512	1031.447408	1031447.408	1031847.287	27300896	27309932.68	26.47	LDT1	
South Coast AQMD	2022	LDT1	Aggregate	Aggregate	Diesel	387.1571	1348.408	0.39987912	399.8791198		9037.122				
South Coast AQMD	2022	LDT1	Aggregate	Aggregate	Electricity	5339.042	26794.47	0	0		221507.4				
South Coast AQMD	2022	LDT2	Aggregate	Aggregate	Gasoline	2246303	10535910	3436.155557	3436155.557	3453207.618	84740129	85348125.78	24.72	LDT2	
South Coast AQMD	2022	LDT2	Aggregate	Aggregate	Diesel	14234.59	70193.22	17.05206088	17052.06088		607996.5				
South Coast AQMD	2022	LDT2	Aggregate	Aggregate	Electricity	22589.96	114302.6	0	0		734756.1				
South Coast AQMD	2022	LHDT1	Aggregate	Aggregate	Gasoline	175903.1	2620694	598.0685493	598068.5493	821513.5103	6298251	11115258.37	13.53	LHDT1	
South Coast AQMD	2022	LHDT1	Aggregate	Aggregate	Diesel	119380.7	1501659	223.444961	223444.961		4817007				
South Coast AQMD	2022	LHDT2	Aggregate	Aggregate	Gasoline	30009.92	447103.1	113.5150695	113515.0695	209067.0531	1040649	2902289.397	13.88	LHDT2	
South Coast AQMD	2022	LHDT2	Aggregate	Aggregate	Diesel	47335.63	595422.7	95.55198358	95551.98358		1861640				
South Coast AQMD	2022	MCY	Aggregate	Aggregate	Gasoline	295960.1	591920.2	56.92214589	56922.14589	56922.14589	2072370	2072370.126	36.41	MCY	
South Coast AQMD	2022	MDV	Aggregate	Aggregate	Gasoline	1579640	7302407	2793.799561	2793799.561	2842944.316	55888916	57233722.8	20.13	MDV	
South Coast AQMD	2022	MDV	Aggregate	Aggregate	Diesel	33348.92	163526.3	49.14475473	49144.75473		1344806				
South Coast AQMD	2022	MDV	Aggregate	Aggregate	Electricity	11658.48	59625.3	0	0		391944.3				
South Coast AQMD	2022	MH	Aggregate	Aggregate	Gasoline	35097.75	3511.179	64.70410395	64704.10395	76270.38211	333282.4	455641.5746	5.97	MH	
South Coast AQMD	2022	MH	Aggregate	Aggregate	Diesel	12758.81	1275.881	11.56627815	11566.27815		122359.2				
South Coast AQMD	2022	MHDT	Aggregate	Aggregate	Gasoline	25445.41	509111.8	269.2842176	269284.2176	1009568.488	1367743	9307083.084	9.22	MHDT	
South Coast AQMD	2022	MHDT	Aggregate	Aggregate	Diesel	123310	1231988	740.28427	740284.27		7939340				
South Coast AQMD	2022	OBUS	Aggregate	Aggregate	Gasoline	5959.443	119236.5	49.67589796	49675.89796	88138.04214	250653.5	576603.5972	6.54	OBUS	
South Coast AQMD	2022	OBUS	Aggregate	Aggregate	Diesel	4274.499	41607.39	38.46214418	38462.14418		325950.1				
South Coast AQMD	2022	SBUS	Aggregate	Aggregate	Gasoline	2630.829	10523.32	11.7605267	11760.5267	39328.1885	107369.8	316915.9173	8.06	SBUS	
South Coast AQMD	2022	SBUS	Aggregate	Aggregate	Diesel	6631.313	76524.43	27.5676618	27567.6618		209546.1				
South Coast AQMD	2022	UBUS	Aggregate	Aggregate	Gasoline	952.146	3808.584	18.40085629	18400.85629	18647.65249	89256	90734.08386	4.87	UBUS	
South Coast AQMD	2022	UBUS	Aggregate	Aggregate	Diesel	14.14142	56.56567	0.246796198	246.7961984		1478.086				
South Coast AQMD	2022	UBUS	Aggregate	Aggregate	Electricity	17.11694	68.46776	0	0		1343.185				

Source: EMFAC2017 (v1.0.3) Emissions Inventory

Region Type: Air District

Region: South Coast AQMD

Calendar Year: 2023

Season: Annual

Vehicle Classification: EMFAC2007 Categories

Units: miles/day for VMT, trips/day for Trips, tons/day for Emissions, 1000 gallons/day for Fuel Consumption

Region	Calendar Yr	Vehicle Cat	Model Year	Speed	Fuel	Population	VMT	Trips	Fuel Consumption	Fuel Consumption	Total Fuel Consumption	VMT	Total VMT	Miles Per Gallon	Vehicle Class
South Coas	2023	HHDT	Aggregate	Aggregate	Gasoline	75.10442936	8265.097	1502.689	1.936286145	1936.286145		1913466.474	8265.097	13656273.03	7.14 <b>HHD</b>
South Coas	2023	HHDT	Aggregate	Aggregate	Diesel	109818.6753	13648008	1133618	1911.530188	1911530.188		13648008			
South Coas	2023	LDA	Aggregate	Aggregate	Gasoline	6635002.295	2.53E+08	31352477	7971.24403	7971244.03		8020635.698	2.53E+08	255180358.3	31.82 <b>LDA</b>
South Coas	2023	LDA	Aggregate	Aggregate	Diesel	62492.97958	2469816	297086.6	49.3916685	49391.6685		2469816			
South Coas	2023	LDA	Aggregate	Aggregate	Electricity	150700.3971	6237106	751566	0	0		6237106			
South Coas	2023	LDT1	Aggregate	Aggregate	Gasoline	758467.6481	27812996	3504563	1023.913006	1023913.006		1024279.466	27812996	27821405.09	27.16 <b>LDT1</b>
South Coas	2023	LDT1	Aggregate	Aggregate	Diesel	360.7799144	8408.618	1256.88	0.366459477	366.4594769		8408.618			
South Coas	2023	LDT1	Aggregate	Aggregate	Electricity	7122.93373	303507.5	35798.19	0	0		303507.5			
South Coas	2023	LDT2	Aggregate	Aggregate	Gasoline	2285150.139	85272416	10723315	3338.798312	3338798.312		3356536.438	85272416	85922778.34	25.60 <b>LDT2</b>
South Coas	2023	LDT2	Aggregate	Aggregate	Diesel	15594.68309	650362.8	76635.83	17.73812611	17738.12611		650362.8			
South Coas	2023	LDT2	Aggregate	Aggregate	Electricity	28809.63735	917592.8	145405.4	0	0		917592.8			
South Coas	2023	LHDT1	Aggregate	Aggregate	Gasoline	174910.3847	6216643	2605904	583.3851736	583385.1736		811563.1022	6216643	11211395.79	13.81 <b>LHDT1</b>
South Coas	2023	LHDT1	Aggregate	Aggregate	Diesel	125545.0822	4994753	1579199	228.1779285	228177.9285		4994753			
South Coas	2023	LHDT2	Aggregate	Aggregate	Gasoline	30102.75324	1034569	448486.2	111.5753864	111575.3864		209423.5025	1034569	2969599.008	14.18 <b>LHDT2</b>
South Coas	2023	LHDT2	Aggregate	Aggregate	Diesel	50003.13116	1935030	628976.5	97.84811618	97848.11618		1935030			
South Coas	2023	MCY	Aggregate	Aggregate	Gasoline	305044.5141	2104624	610089	57.849018	57849.018		57849.018	2104624	2104623.657	36.38 <b>MCY</b>
South Coas	2023	MDV	Aggregate	Aggregate	Gasoline	1589862.703	55684188	7354860	2693.883526	2693883.526		2744536.341	55684188	57109879.73	20.81 <b>MDV</b>
South Coas	2023	MDV	Aggregate	Aggregate	Diesel	36128.1019	1425691	176566.9	50.65281491	50652.81491		1425691			
South Coas	2023	MDV	Aggregate	Aggregate	Electricity	16376.67653	537591.7	83475.95	0	0		537591.7			
South Coas	2023	MH	Aggregate	Aggregate	Gasoline	34679.50542	330042.9	3469.338	63.26295123	63262.95123		74893.26955	330042.9	454344.9436	6.07 <b>MH</b>
South Coas	2023	MH	Aggregate	Aggregate	Diesel	13122.69387	124302	1312.269	11.63031832	11630.31832		124302			
South Coas	2023	MHDT	Aggregate	Aggregate	Gasoline	25624.3151	1363694	512691.3	265.2060557	265206.0557		989975.6425	1363694	9484317.768	9.58 <b>MHDT</b>
South Coas	2023	MHDT	Aggregate	Aggregate	Diesel	122124.488	8120623	1221858	724.7695868	724769.5868		8120623			
South Coas	2023	OBUS	Aggregate	Aggregate	Gasoline	5955.291639	245774	119153.5	48.07750689	48077.50689		86265.88761	245774	579743.8353	6.72 <b>OBUS</b>
South Coas	2023	OBUS	Aggregate	Aggregate	Diesel	4286.940093	333969.8	41558.29	38.18838072	38188.38072		333969.8			
South Coas	2023	SBUS	Aggregate	Aggregate	Gasoline	2783.643068	112189.6	11134.57	12.19474692	12194.74692		39638.85935	112189.6	323043.5203	8.15 <b>SBUS</b>
South Coas	2023	SBUS	Aggregate	Aggregate	Diesel	6671.825716	210853.9	76991.94	27.44411242	27444.11242		210853.9			
South Coas	2023	UBUS	Aggregate	Aggregate	Gasoline	957.7686184	89782.63	3831.074	17.62416327	17624.16327		17863.66378	89782.63	91199.2533	5.11 <b>UBUS</b>
South Coas	2023	UBUS	Aggregate	Aggregate	Diesel	13.00046095	1416.622	52.00184	0.239500509	239.5005093		1416.622			
South Coas	2023	UBUS	Aggregate	Aggregate	Electricity	16.11693886	1320.163	64.46776	0	0		1320.163			