



**Fifth Standard Solar Project Complex  
Draft Environmental Impact Report**

No. 7257

State Clearinghouse No. 2017091038

February 2020

Prepared for:

The County of Fresno,  
Department of Public Works and  
Planning  
Development Services and Capital  
Projects Division  
2220 Tulare St. Suite A, Fresno, CA  
93721

Prepared by:

Stantec Consulting Services Inc.  
7502 N. Colonial Avenue, Suite 101  
Fresno, CA 93711





# Table of Contents

Executive Summary .....	ES-1
ES.1 Project Location.....	ES-1
ES.2 Summary of Proposed Project .....	ES-1
ES.3 Areas of Controversy/Issues To Be Resolved .....	ES-3
ES.4 Alternatives to the Proposed Project.....	ES-3
ES.5 Summary of Impacts and Mitigation Measures.....	ES-4
ES.6 Review of the Draft EIR .....	ES-32
Acronyms and Abbreviations .....	i
1.0 Introduction.....	1-1
1.1 Purpose.....	1-1
1.2 Project Overview .....	1-1
1.3 Lead Agency Determination .....	1-2
1.4 Scope of the Draft EIR .....	1-2
1.5 Organization of the Draft EIR .....	1-4
1.6 Public Review and Comment .....	1-6
2.0 Project Description .....	2-1
2.1 Project Overview .....	2-1
2.2 Location.....	2-1
2.3 Existing Conditions .....	2-4
2.4 Project Purpose and Need.....	2-12
2.5 Project Objectives and Approvals.....	2-12
2.6 Project Facilities.....	2-13
2.7 Construction Schedule .....	2-22
2.8 Water Requirements and Waste Generation .....	2-28
2.9 Operation and Maintenance.....	2-30
2.10 Decommissioning and Site Reclamation .....	2-32

2.11 Intended Uses of This Draft EIR ..... 2-33

3.0 Alternatives to the Proposed Project ..... 3-1

3.1 Introduction ..... 3-1

3.2 Requirements for the Consideration of Alternatives ..... 3-1

3.3 Methodology and Screening Criteria..... 3-4

3.4 Alternatives Considered and Rejected From Further Consideration..... 3-7

3.5 Alternatives Considered ..... 3-12

4.0 Environmental Impact Analysis..... 4-1

4.1 Aesthetics ..... 4.1-1

4.2 Agriculture ..... 4.2-1

4.3 Air Quality ..... 4.3-1

4.4 Biological Resources ..... 4.4-1

4.5 Cultural Resources ..... 4.5-1

4.6 Geology and Soils ..... 4.6-1

4.7 Greenhouse Gas Emissions ..... 4.7-1

4.8 Hazards and Hazardous Materials..... 4.8-1

4.9 Hydrology and Water Quality ..... 4.9-1

4.10 Land Use and Planning ..... 4.10-1

4.11 Mineral Resources ..... 4.11-1

4.12 Noise..... 4.12-1

4.13 Public Services ..... 4.13-1

4.14 Transportation..... 4.14-1

4.15 Tribal Cultural Resources..... 4.15-1

4.16 Utilities and Service Systems..... 4.16-1

4.17 Wildfire..... 4.17-1

4.18 Energy ..... 4.18-1

5.0 Comparison of Alternatives ..... 5-1

5.1	Introduction.....	5-1
5.2	Project Objectives.....	5-2
5.3	Alternative 1 – No Project.....	5-2
5.4	Alternative 2 – Reduced Acreage Alternative .....	5-6
5.5	Alternative 3 – Site-West Alternative .....	5-12
5.6	Conclusion .....	5-18
5.7	Environmentally Superior Alternative.....	5-27
6.0	Effects Found Not To Be Significant .....	6-1
7.0	Other CEQA Considerations.....	7-1
7.1	Growth-Inducing Impacts.....	7-1
7.2	Significant and Unavoidable Impacts .....	7-3
7.3	Significant Irreversible Environmental Changes.....	7-3
7.4	Significant Effects that Cannot be Avoided .....	7-5
8.0	List of Preparers and Organizations Consulted .....	8-1
9.0	References .....	9-1
	Figure Coordination System Source Data .....	9-13

## List of Figures

Figure 2-1: Project Vicinity.....	2-3
Figure 2-2: Project Site – Conceptual Plan .....	2-5
Figure 2-3: Representative Site Photographs .....	2-6
Figure 2-4: Representative Site Photographs .....	2-7
Figure 2-5: Existing Land Use.....	2-8
Figure 2-6: Substation Lay Out Drawing.....	2-18
Figure 2-7: Substation Elevation.....	2-19
Figure 3.0-1: Potential Alternative Sites Within 5 Miles of Gates Substation .....	3-9
Figure 3.0-2: Reduced Acreage Alternative .....	3-13
Figure 3.0-3: Site-West Alternative.....	3-15
Figure 4.0-1: Cumulative Impact Analysis Projects.....	4-10
Figure 4.1-1: Project Site and Key Observation Points .....	4.1-6
Figure 4.1-2: Key Observation Point 1 .....	4.1-7
Figure 4.1-3: Key Observation Point 2 .....	4.1-9

Figure 4.1-4: Key Observation Point 3.....	4.1-11
Figure 4.1-5: Key Observation Point 4.....	4.1-12
Figure 4.6-1: Soils Map.....	4.6-6
Figure 4.7-1: 2017 Greenhouse Gas Emissions by Scoping Plan Sector and Sub-Sector Categories .....	4.7-9
Figure 4.8-1: Recognized Environmental Conditions.....	4.8-10
Figure 4.12-1: Noise Sensitive Receptor Locations .....	4.12-12

## List of Tables

Table ES-1: Executive Summary of Impacts and Mitigation Measures .....	ES-5
Table 2-1: Fresno County Assessor Parcel Numbers.....	2-2
Table 2-2: Project Site Crop History.....	2-4
Table 2-3: Project Site Well Capacity .....	2-11
Table 2-4: Construction Phasing and Construction-Related Employment.....	2-25
Table 2-5: Onsite Equipment and Vehicle Use by Phase.....	2-26
Table 2-6: Estimated Project Water Use.....	2-29
Table 4-1: Environmental Issue Abbreviations .....	4-2
Table 4-2: Solar Facility Guidelines.....	4-3
Table 4-3: Geographic Scope of Cumulative Impact and Method of Evaluation .....	4-7
Table 4-4: List of Related Projects.....	4-9
Table 4.2-1: California LESA Model Scoring Thresholds.....	4.2-9
Table 4.2-2: California LESA Model Scoring Results for the Project Site.....	4.2-10
Table 4.2-3: Williamson Act Contract Cancellation Findings .....	4.2-12
Table 4.3-1: National and California Ambient Air Quality Standards .....	4.3-2
Table 4.3-2: Existing Air Quality .....	4.3-14
Table 4.3-3: SJVAPCD State and Federal Attainment Status.....	4.3-15
Table 4.3-4: Air Quality Thresholds of Significance for Criteria Air Pollutants .....	4.3-17
Table 4.3-5: Unmitigated Construction Emissions Summary .....	4.3-22
Table 4.3-6: Mitigated Construction Emissions Summary.....	4.3-23
Table 4.3-7: Unmitigated Operation Emissions Summary .....	4.3-24
Table 4.5-1: Cultural Resources in or Within One-Half Mile of the Project Site .....	4.5-8
Table 4.7-1: Total Project Annual Greenhouse Gas Emissions .....	4.7-12
Table 4.8-1: Listings of Nearby Sites with Potential to Impact Property .....	4.8-6
Table 4.8-2: Site Reconnaissance Operations.....	4.8-7
Table 4.10-1: General Plan Consistency Analysis.....	4.10-6
Table 4.12-1: Representative Noise Sources.....	4.12-2
Table 4.12-2: Frequently Used Noise Descriptors .....	4.12-3
Table 4.12-3: Vibration Source Levels for Construction Equipment .....	4.12-4
Table 4.12-4: Guideline Vibration Annoyance Potential Criteria.....	4.12-5
Table 4.12-5: Guideline Vibration Damage Potential Criteria .....	4.12-6
Table 4.12-6: Fresno County Exterior Noise Level Standards .....	4.12-8
Table 4.12-7: Noise and Land Use Compatibility Matrix .....	4.12-9
Table 4.12-8: Reference Construction Equipment Noise Levels.....	4.12-13
Table 4.12-9: Construction Noise Levels at Existing Land Uses.....	4.12-14

Table 4.12-10: Predicted Traffic Noise Increases from Haul and Work Trips along Local Roadways.....	4.12-15
Table 4.12-11: Tracker System Operational Noise Levels at Nearest Existing Land Use, Located 1,100 Feet from Project Boundary .....	4.12-16
Table 4.14-1: Level of Service Descriptions .....	4.14-4
Table 4.16-1: Project Site Well Capacity.....	4.16-4
Table 5-1: Project Alternative Impacts Comparison.....	5-18
Table 5-2: Project Alternatives Comparison to Project Objectives .....	5-25

## List of Appendices\*

Appendix A: Notice of Preparation and Responses and Notice of Completion & Environmental Document Transmittal

Appendix B: Land Evaluation Site Assessment

Appendix C: Air Quality and Greenhouse Gas Evaluation Technical Report

Appendix D: Biological Resources Technical Report

Appendix E: Cultural Resources Survey Report

Appendix F: Paleontological Resources Survey Report

Appendix G: Phase 1 Environmental Site Assessment

Appendix H: Noise Technical Report

Appendix I: Traffic Study Report

\*Appendices provided under separate cover

**This page left intentionally blank.**

## Acronyms and Abbreviations

$\mu\text{g}/\text{m}^3$	micrograms per cubic meter
A	Absent
AB	Assembly Bill
AC	alternating current
AE	Exclusive Agricultural
AE-20	Exclusive Agricultural with a minimum lot size of 20 acres
AE-40	Exclusive Agricultural with a minimum lot size of 40 acres
af	acre-feet
air basin	San Joaquin Valley Air Basin
amsl	above mean sea level
APCO	Air Pollution Control Officer
APLIC	Avian Power Line Interaction Committee
APN	Assessor's Parcel Number
Applicant	RWE Solar Development, LLC (formerly known as EC&R Solar Development, LLC)
AQMP	Air Quality Management Plan
AST	aboveground storage tank
ASTM	ASTM International
Basin Plan	Water Quality Control Plan for the Tulare Lake Basin
BCC	Birds of Conservation Concern
bgs	below ground surface
BMP	Best Management Practice
BPS	Best Performance Standards
$^{\circ}\text{C}$	degrees Celsius
CAA	Clean Air Act
CAAQS	California Ambient Air Quality Standards
CAFE	Corporate Average Fuel Economy
CAISO	California Independent System Operator
CalEEMod	California Emissions Estimator Model (version 2016.3.2)
CAL FIRE	California Department of Forestry and Fire Protection
Cal/OSHA	California Division of Occupational Safety and Health Administration

Caltrans	California Department of Transportation
CAPCOA	California Air Pollution Control Officer's Association
CARB	California Air Resources Board
CBC	California Building Code
CCAP	Climate Change Action Plan
CCR	California Code of Regulations
CDFW	California Department of Fish and Wildlife
CEC	California Energy Commission
CEQA	California Environmental Quality Act
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CESA	California Endangered Species Act
CF <sub>4</sub>	perfluoromethane
C <sub>2</sub> F <sub>6</sub>	perfluoroethane
C <sub>3</sub> F <sub>8</sub>	perfluoropropane
C <sub>4</sub> F <sub>10</sub>	perfluorobutane
C <sub>4</sub> F <sub>8</sub>	perfluorocyclobutane
C <sub>5</sub> F <sub>12</sub>	perfluoropentane
C <sub>6</sub> F <sub>14</sub>	perfluorohexane
CFR	Code of Federal Regulations
C <sub>2</sub> H <sub>3</sub> Cl	vinyl chloride
CH <sub>4</sub>	methane
cm	centimeter
CNDDB	California Natural Diversity Database
CNEL	community noise equivalent level
CNPPA	California Native Plant Protection Act
CO	carbon monoxide
CO <sub>2</sub>	carbon dioxide
CO <sub>2</sub> e	carbon dioxide equivalent
Control Plan	<i>Water Quality Control Plan for the Tulare Lake Basin</i>
County	Fresno County
CPUC	California Public Utility Commission
CREC	controlled recognized environmental conditions
CRHR	California Register of Historic Resources
CRPR	California Rare Plant Rank
c-Si	crystalline and amorphous silicon



CUP	Conditional Use Permit
CVP	Central Valley Project
CWA	Clean Water Act
CWHRS	California Wildlife Habitat Relationship System
dB	decibel
dBA	A-weighted decibel
DC	direct current
DGR	dryland grain crops
DOC	California Department of Conservation
DOGGR	Division of Oil, Gas, and Geothermal Resources
DOT	U.S. Department of Transportation
DPM	diesel particulate matter
DTSC	Department of Toxic Substance Control
DWR	California Department of Water Resources
EDD	Employment Development Department
EDR	Environmental Data Resources, Inc.
EIR	Environmental Impact Report
EMF	Electric and Magnetic Fields
EPA	U.S. Environmental Protection Agency
EPS	Emissions Performance Standard
ESA	Environmental Science Associates
°F	degrees Fahrenheit
Farmland	Prime Farmland, Unique Farmland, or Farmland of Statewide Importance
FCFPD	Fresno County Fire Protection District
FEMA	Federal Emergency Management Agency
FESA	Federal Endangered Species Act
FHWA	Federal Highway Administration
FIRM	Flood Insurance Rate Map
FMMP	Farmland Mapping and Monitoring Program
FR	Federal Register
Fresno COG	Fresno Council of Governments
FSO	Fresno County Sherriff's Office
FTA	Federal Transit Administration
g	Acceleration due to Earth's gravity, equivalent to g-force
GC	Government Code

gen-tie	generation tie
GHG	greenhouse gas
gpm	gallons per minute
GPS	global positioning system
GSA	Groundwater Sustainability Agency
GSP	Groundwater Sustainability Plan
H <sub>2</sub> S	hydrogen sulfide
HAP	hazardous air pollutant
HCP	habitat conservation plan
HFC	hydrofluorocarbon
hp	horsepower
HP	Habitat Present
HREC	historical recognized environmental conditions
HSWA	Hazardous and Solid Waste Act
HVAC	heating, ventilation, and air conditioning
Hz	hertz
I	Wind Erodibility Index
I-5	Interstate 5
IEEE	Institute of Electrical and Electronics Engineers
in/sec	inches per second
IPaC	USFWS Information Planning and Conservation System
IRF	irrigated row and field crops
KOP	Key Observation Point
kV	kilovolt
kW	kilowatt
L	Low
LCD	liquid crystal display
L <sub>dn</sub>	day and night A-weighted noise level
L <sub>eq</sub>	equivalent continuous sound level
LESA	Land Evaluation and Site Assessment
L <sub>max</sub>	instantaneous maximum sound level
LOS	level of service
LSAA	Lake and Streambed Alteration Agreement
L <sub>xx</sub>	percentile-exceeded sound level
MBTA	Migratory Bird Treaty Act
mg/m <sup>3</sup>	milligrams per cubic meter

M&I	Municipal and Industrial
min/hr	minutes per hour
MLD	Most Likely Descendant
MMBTU/year	Million British Thermal Units per year
MMI	Modified Mercalli Intensity
MMRP	Mitigation Monitoring and Reporting Plan
MRDS	Mineral Resources Data System
MRZ	Mineral Resource Zone
MRZ-2	Mineral Resource Zone 2
m/s	meters per second
MTCO <sub>2e</sub>	Metric tons of CO <sub>2</sub> equivalent
MW	megawatt
MW <sub>ac</sub>	megawatt alternating current
MWh	megawatt hour
NAAQS	national ambient air quality standards
NAHC	Native American Heritage Commission
NCCP	Natural Community Conservation Plan
NCP	National Contingency Plan
NEMA	National Electrical Manufacturers Association
NERC	North American Energy Reliability Corporation
NHM	Natural History Museum of Los Angeles County
NHTSA	National Highway Traffic Safety Administration
NMFS	National Marine Fisheries Service
NO	nitric oxide
N <sub>2</sub> O	nitrous oxide
NO <sub>2</sub>	nitrogen dioxide
NOC	Notice of Completion
NOD	Notice of Determination
NOI	Notice of Intent
NOP	Notice of Preparation
NO <sub>x</sub>	nitrogen oxide
NPDES	National Pollutant Discharge Elimination Service
NPL	National Priorities List
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
NWI	National Wetlands Inventory
O <sub>3</sub>	ozone

OEHHA	California Office of Environmental Health Hazard Assessment
O&M	Operations and Maintenance
OSHA	Occupational Safety and Health Administration
P	Present
Pb	lead
PCB	polychlorinated biphenyl
PFC	perfluorinated chemical
PGA	peak ground acceleration
PG&E	Pacific Gas and Electric
PM	particulate matter
PM <sub>2.5</sub>	particulate matter less than 2.5 micrometers
PM <sub>10</sub>	particulate matter less than 10 micrometers
POI	Point of Interconnection
Porter-Cologne Act	Porter-Cologne Water Quality Control Act
POU	publicly owned utility
PPA	power purchase agreements
ppm	parts per million
ppmv	parts per million by volume
PPV	peak particle velocity
PPVref	reference peak particle velocity
PRC	Public Resources Code
proposed project	Fifth Standard Solar Facility Project Complex
PSHA	probabilistic seismic hazard assessment
PV	photovoltaic
PVC	polyvinyl chloride
Qa	Quaternary alluvium
RCRA	Resource Conservation and Recovery Act of 1976
REC	recognized environmental conditions
Recovery Act	American Recovery and Reinvestment Act of 2009
Recovery Plan	Recovery Plan for Upland Species of the San Joaquin Valley
Reporting Rule	Greenhouse Gas Reporting Rule
ROG	reactive organic gas
RPS	California Renewable Portfolio Standard
RTP	regional transportation plan
RWQCB	Regional Water Quality Control Board

SB	Senate Bill
SCADA	Supervisory Control and Data Acquisition
SCS	sustainable communities strategy
SF <sub>6</sub>	sulfur hexafluoride
SGMA	Sustainable Groundwater Management Act
SIP	state implementation plan
SJVAPCD	San Joaquin Valley Air Pollution Control District
SO <sub>2</sub>	sulfur dioxide
SO <sub>4</sub>	sulfates
Solar Guidelines	Solar Facility Guidelines
SO <sub>x</sub>	sulfur oxides
SPCC	Spill Prevention, Control, and Countermeasure
SR	State Route
SSJVIC	Southern San Joaquin Valley Information Center
Stantec	Stantec Consulting Services Inc.
State Water Board	State Water Resources Control Board
SWPPP	Stormwater Pollution Prevention Plan
TAC	toxic air contaminant
tons/acre/year	tons per acre per year
torr	Torricelli
TSP	tubular steel pole
UCMP	University of California Museum of Paleontology
UL	Underwriters Laboratory
Unclassified CUP	unclassified conditional use permits
USACE	U.S. Army Corps of Engineers
USA North	Underground Service Alert North
USBR	U.S. Bureau of Reclamation
USC	U.S. Code
USDA	U.S. Department of Agriculture
USDOJ	U.S. Department of the Interior
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
UV	ultraviolet
v/c	volume-to-capacity
VDE	visible dust emissions
VERA	Voluntary Emission Reduction Agreement
VMT	Vehicle miles traveled

VOC	volatile organic compound
Warren-Alquist Act	Warren-Alquist Energy Resources Conservation and Development Act
W/m <sup>2</sup>	watts per square meter
WDR	Waste Discharge Requirement
WWD	Westlands Water District
WQCP	Water Quality Control Plan
WWTF	Wastewater Treatment Facility

## EXECUTIVE SUMMARY

### ES.1 PROJECT LOCATION

The project site is in unincorporated Fresno County, approximately 2 miles east of Interstate 5 (I-5) and approximately 13 miles east of Coalinga. Lassen Avenue (California State Route [SR] 269) borders the eastern side of the property and is the only paved road adjacent to the project site. Trinity Avenue, Tractor Avenue, and Phelps Avenue intersect the project site, but are not improved roads. Nearby communities include Huron (1.5 miles north), Avenal (9 miles south), Kettleman City (12 miles southeast), and Coalinga (13 miles west).

### ES.2 SUMMARY OF PROPOSED PROJECT

The RWE Solar Development, LLC (formerly known as EC&R Solar Development, LLC) (Applicant) has applied to the Fresno County Department of Public Works and Planning for three Unclassified Conditional Use Permits (CUPs) (CUP Application Nos. 3562, 3563, and 3564) to construct, operate, maintain, and decommission a 150-megawatt (MW) solar photovoltaic (PV) generation facility, an up to 20-MW solar PV generation facility, and an up to 100-MW energy storage facility. The Fifth Standard Solar Facility Project Complex (proposed project) includes PV electricity-generating facilities, a battery storage facility, and associated infrastructure. The proposed project is located on several contiguous parcels (project site), totaling approximately 1,600 acres in unincorporated Fresno County. A new generation-tie (gen-tie) line would be constructed to connect the solar and storage components of the proposed project to Pacific Gas and Electric's (PG&E's) adjacent Gates Substation (point of interconnect). The anticipated lifetime of the proposed project would be 35 years and would be decommissioned once operations of the facility cease. The final lease agreement is anticipated to occur by 2022 with a lease term of 35 years. The CUP would tentatively have an end date of August 2057. The lease agreement would include an option for renewal, in which case a new land use permit subject to the County's review and approval would need to be obtained.

The proposed project includes three separate components, which are summarized here and described in more detail in Section 2, Project Description:

- Unclassified CUP Application No. 3562 Fifth Standard Solar Facility: a 150-MW PV solar energy generation facility that is anticipated to require up to 1,400 acres of the site. A 230-kilovolt (kV) project gen-tie line would be constructed from the southwest portion of this site to the point of interconnect. The gen-tie line would consist of a 0.3-mile aboveground power line.
- Unclassified CUP Application No. 3563 Stonecrop Solar Facility: a 20-MW PV solar energy generation facility that would be located adjacent to the Fifth Standard Solar Facility and would require less than 200 acres of the site.
- Unclassified CUP Application No. 3564 Blackbriar Battery Storage Facility: an up to 100-MW battery storage facility that would be located adjacent to the Fifth Standard Solar Facility and the Stonecrop Solar Facility and would require less than 5 acres of the site.

## ES.2.1 Project Objectives and Approvals

### Objectives

The proposed objectives for the project are as follows:

- Construct and operate a solar PV power-generating facility capable of producing up to 170 megawatts alternating current in a cost competitive manner.
- Interconnect directly to the California Independent System Operator (CAISO) high-voltage electrical transmission system (grid) to the Gates Substation.
- Assist California utilities in meeting their obligations under California's Renewable Portfolio Standard Program, including 60% of retail sales from renewable sources by the end of 2030.
- Assist California utilities in meeting their obligations under the California Public Utilities Commission's (CPUC's) Energy Storage Framework and Design Program, including procurement targets of 1,325 MW by 2020, by providing up to 100 MW of storage capacity.
- Provide renewable-energy-related and diversified job opportunities and training that will help reduce local unemployment and benefit the local economy.

### Approvals

The Applicant has applied to the Fresno County Department of Public Works and Planning for three Unclassified Conditional Use Permits (CUPs Application Nos. 3562, 3563, and 3564) to construct, operate, maintain, and decommission the proposed project.

The following permits and approvals are required for the proposed project. Additional permits and approvals may also be required:

- Fresno County Building Permits and Right of Way Encroachment Permit;
- Model Water Efficiency Landscaping Ordinance;
- Central Valley Regional Water Quality Control Board (RWQCB) National Pollutant Discharge Elimination System (NPDES) Permit and Report of Waste Discharge;
- San Joaquin Valley Air Pollution Control District (SJVAPCD) Regulation VIII, Dust Control Plan;
- SJVAPCD Rule 9510, Indirect Source Review,
- Fresno County Grading Permit; and
- California Department of Transportation (Caltrans) Encroachment Permit.

### Responsible and Trustee Agencies

Under the California Environmental Quality Act (CEQA), a Responsible Agency is a public agency other than the Lead Agency that has responsibility to carry out or approve a project



(Public Resource Code Section 21069). A Trustee Agency is a state agency that has jurisdiction by law over natural resources that are held in trust for the people of the State of California (Public Resource Code Section 21070).

The following agencies may serve as responsible and trustee agencies:

- California Department of Fish and Wildlife (CDFW);
- Central Valley RWQCB;
- SJVAPCD;
- California Public Utilities Commission; and
- Pacific Gas & Electric.

### **ES.3 AREAS OF CONTROVERSY/ISSUES TO BE RESOLVED**

The following are potential areas of controversy over the project:

- Conversion of agricultural lands;
- Conflicts with Williamson Act Contracts; and
- Conflicts with General Plan Land Use Goals and Policies and Fresno County Zoning Ordinance.

Table ES-1, Executive Summary of Impacts and Mitigation Measures, summarizes the detailed discussion contained in Section 4, Environmental Impact Analysis, of this Draft Environmental Impact Report (EIR).

### **ES.4 ALTERNATIVES TO THE PROPOSED PROJECT**

The project alternatives and their potential impacts are discussed in Section 3, Alternatives, and Section 5, Comparison of Alternatives, respectively, of this EIR. As authorized under CEQA, the alternatives are discussed in less detail than the project. The No Project Alternative reflects a reasonably foreseeable view of the project site's future use.

#### **No Project Alternative (Alternative 1)**

CEQA Guidelines Section 15126.6(e)(1) requires that the No Project Alternative be described and analyzed "to allow decision makers to compare the impacts of approving the project with the impacts of not approving the project." The no project analysis is required to discuss "the existing conditions at the time the notice of preparation is published ... as well as what would be reasonably expected to occur in the foreseeable future if the project were not approved, based on current plans and consistent with available infrastructure and community services" (Section 15126.6(e)(2)).

The No Project Alternative assumes that no development would occur on the project site. The project site would remain in agricultural production with a crop of growing tomatoes planted with wheat or would remain partially fallow due to site constraints including, poor groundwater quality and overdraft, and unavailability of surface water. In addition, cancellation of Williamson Act Contracts, and conversion of Prime Farmlands would not be required.

### Reduced Acreage Alternative (Alternative 2)

The Reduced Acreage Alternative would be like the proposed project in all aspects except that, under this alternative, the Stonecrop facility would not be constructed, and the footprint of the Fifth Standard facility would be reduced. The total MW capacity at the project site would be reduced by 20 MW, and the project footprint would be reduced by approximately 317 acres.

Elimination of the Stonecrop facility would allow the total footprint to be reduced by approximately 317 acres. In addition, the 150-MW Fifth Standard facility would be redesigned to do the following: a) utilize PV modules rated at a higher watt class, and b) reduce the spacing between tracker rows. The Reduced Acreage Alternative boundary would include assessor's parcel numbers (APNs) 075-060-52S, 075-070-35S, 075-060-15S, 075-070-01S, 075-070-33S, 075-070-32S, 075-070-34S. This would effectively remove the northern half-section of land—or one-fifth of the project site—from the footprint, reducing the project size from 1,595 to approximately 1,278 acres, a total reduction of 317 acres.

### Site-West Alternative (Alternative 3)

The Site-West Alternative would relocate the project to Site-West, which consists of three noncontiguous parcels totaling 1,019.69 acres and is located approximately 4 miles west of the project site on both sides of Interstate 5. Site-West is not under an active Williamson Act Contract.

## ES.5 SUMMARY OF IMPACTS AND MITIGATION MEASURES

Table ES-1, Executive Summary of Impacts and Mitigation Measures, summarizes the potential environmental effects of the proposed project, the recommended Mitigation Measures, if applicable, and the level of significance after mitigation. Per CEQA Section 15093, should the project be approved as proposed, any impact noted in the summary as “significant” after mitigation would require the adoption of a statement of overriding considerations.

Additionally, CEQA requires public agencies to establish a monitoring report program for the purpose of ensuring compliance with those Mitigation Measures adopted as conditions of approval to mitigate or avoid significant environmental impacts identified in an EIR. A Mitigation Monitoring and Reporting Program (MMRP), incorporating the Mitigation Measures set forth in this document, will be adopted at the time of certification of the Final EIR.

Table ES-1: Executive Summary of Impacts and Mitigation Measures

Impacts	Mitigation Measures	Level of Significance After Mitigation
<b>Section 4.1 – Aesthetics</b>		
<b>Impact AES-1</b> The proposed project would not have a substantial adverse effect on a scenic vista.	No mitigation is necessary.	Less Than Significant Impact.
<b>Impact AES-2</b> The proposed project would not substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway.	No mitigation is necessary.	Less Than Significant Impact.
<b>Impact AES-3</b> The proposed project would not substantially degrade the existing visual character or quality of public views of the site and its surroundings.	No mitigation is necessary.	Less Than Significant Impact.
<b>Impact AES-4</b> The proposed project would not create a new source of substantial light or glare which would adversely affect day or nighttime views in the area.	<b>MM AES-1: Lighting.</b> All outdoor lighting shall be hooded, directed downward, and permanently maintained to not shine towards adjacent properties and roads.	Less Than Significant Impact with Mitigation Incorporated.
<b>Section 4.2 – Agriculture</b>		
<b>Impact AG-1</b> The proposed project would convert Prime, Unique, or Farmland of Statewide Importance to a non-agricultural use.	<p><b>MM AG-1: Reclamation Plan.</b> Prior to any ground-disturbing activity, the Applicant shall enter into a Reclamation Agreement to implement a Reclamation Plan for each Conditional Use Permit for restoration of agricultural land. The Plan shall include the following standards:</p> <ul style="list-style-type: none"> <li>Final reclamation actions shall require that agricultural land be returned to a fertility level equivalent to that level</li> </ul>	Significant and Unavoidable Impact.

Impacts	Mitigation Measures	Level of Significance After Mitigation
	<p>required to support crops recommended by an agricultural consultant through consultation with the County.</p> <ul style="list-style-type: none"> <li>Revegetation fertility level success shall be achieved when the productive capability of the revegetated area is equivalent to or exceeds, for two equivalent crop years, that of the pre-project condition or any similar crop production in the region, as determined by an agricultural consultant or as compared to the baseline onsite agricultural production, as determined by the County.</li> </ul>	
<p><b>Impact AG-2</b> The proposed project would conflict with existing zoning for agricultural use or a Williamson Act contract.</p>	<p>There is no mitigation available to address the cancellation of the Williamson Act Contracts</p>	<p>Significant and Unavoidable Impact.</p>
<p><b>Impact AG-3</b> The proposed project would involve other changes in the existing environment that, due to their location or nature, could result in conversion of Farmland to non-agricultural use.</p>	<p>There are no Mitigation Measures available to address this impact.</p>	<p>Significant and Unavoidable Impact.</p>
<p><b>Section 4.3 – Air Quality</b></p>		
<p><b>Impact AQ-1</b> The proposed project would not conflict with or obstruct implementation of the applicable air quality plan.</p>	<p><b>MM AIR-1: Air Quality Best Management Practices (BMPs).</b> During construction and decommissioning, the following measures shall be implemented:</p> <ul style="list-style-type: none"> <li>Ozone precursor emissions from mobile construction equipment shall be controlled by maintaining equipment engines in good condition and in proper tune per manufacturers’ specifications. Equipment maintenance records and equipment design specification data sheets shall be kept onsite during construction.</li> </ul>	<p>Less Than Significant Impact with Mitigation Incorporated.</p>

Impacts	Mitigation Measures	Level of Significance After Mitigation
	<ul style="list-style-type: none"> <li>• Electricity from power poles shall be used whenever practicable instead of temporary diesel- or gasoline-powered generators to reduce the associated emissions.</li> <li>• To reduce construction vehicle (truck) idling while waiting to enter or exit the site, the contractor shall submit a traffic control plan pursuant to Mitigation Measure TRA-1 that will describe in detail safe detours to prevent traffic congestion to the best of the project's ability, and provide temporary traffic control measures during construction activities that will allow both construction and on-street traffic to move with less than 5-minute idling times.</li> <li>• Construction equipment will use only California-certified diesel or gasoline fuels.</li> <li>• The Applicant will use construction equipment that is at the Tier 4 interim emission level for equipment less than or equal to 81 horsepower and Tier 3 engines for all other equipment.</li> </ul> <p><b>MM AIR-2: Voluntary Emission Reduction Agreement (VERA).</b></p> <ol style="list-style-type: none"> <li>a. The developer shall enter into a Voluntary Emission Reduction Agreement (VERA) with the San Joaquin Valley Air Pollution Control District (SVAPCD) or stagger the construction periods for the three facilities to avoid a significant impact. Proof of payment to the SVAPCD shall be provided prior to issuance of grading permits for construction.</li> <li>b. Twelve months prior to initiation of decommissioning activities, the Applicant shall prepare additional analysis to determine air quality impacts from the proposed decommissioning activities. If the emissions will exceed the SVAPCD thresholds of significance, the Applicant</li> </ol>	

Impacts	Mitigation Measures	Level of Significance After Mitigation
	shall enter into a new VERA with the SJVAPCD to offset the decommissioning emissions below the thresholds of significance.	
<p><b>Impact AQ-2</b> The proposed project would not result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard.</p>	<p><b>MM AIR-1: Air Quality Best Management Practices (BMPs).</b>  <b>MM AIR-2: Voluntary Emission Reduction Agreement (VERA).</b></p>	<p>Less Than Significant Impact with Mitigation Incorporated.</p>
<p><b>Impact AQ-3</b> The proposed project would not expose sensitive receptors to substantial pollutant concentrations.</p>	<p><b>MM AIR-1: Air Quality Best Management Practices (BMPs).</b>  <b>MM AIR-2: Voluntary Emission Reduction Agreement (VERA).</b></p>	<p>Less Than Significant Impact with Mitigation Incorporated.</p>
<p><b>Section 4.4 –Biological Resources</b></p>		
<p><b>Impact BIO-1</b> The proposed project would not have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service.</p>	<p><b>MM BIO-1: General Measures for the Avoidance and Protection of Biological Resources.</b> During construction, operation and maintenance, and decommissioning of the facility, the operator or contractor shall implement the following general avoidance and protective measures to protect San Joaquin kit fox and other special-status wildlife species:</p> <ul style="list-style-type: none"> <li>The operator shall limit the areas of disturbance. Parking areas, new roads, staging, storage, excavation, and disposal site locations shall be confined to the smallest areas possible. All proposed impact areas, including solar fields, staging areas, access routes, and disposal or temporary placement of spoils, shall be delineated with stakes and/or flagging prior to construction to avoid special-status species where possible. Construction-</li> </ul>	<p>Less Than Significant Impact with Mitigation Incorporated.</p>

Impacts	Mitigation Measures	Level of Significance After Mitigation
	<p>related activities, vehicles, and equipment outside of the impact zone shall be avoided.</p> <ul style="list-style-type: none"> <li>• These areas shall be flagged, and disturbance activities, vehicles, and equipment shall be confined to these flagged areas.</li> <li>• Spoils shall be stockpiled in disturbed areas that lack native vegetation. Best Management Practices (BMPs) shall be employed to prevent erosion in accordance with the project's approved Stormwater Pollution Prevention Plan (SWPPP). All detected erosion shall be remedied within two (2) days of discovery or as described in the SWPPP.</li> <li>• To prevent inadvertent entrapment of wildlife during construction, all excavated, steep-walled holes or trenches with a 2-foot or greater depth shall be covered with plywood or similar materials at the close of each working day or provided with one or more escape ramps constructed of earth fill or wooden planks. Before such holes or trenches are filled, they shall be thoroughly inspected by the approved biological monitor for trapped animals. If trapped animals are observed, escape ramps or structures shall be installed immediately to allow escape. If a listed species is trapped, the U.S. Fish and Wildlife Service (USFWS) and/or California Department of Fish and Wildlife (CDFW) shall be contacted immediately.</li> <li>• All construction pipes, culverts, or similar structures with a 4-inch or greater diameter that are stored at a construction site for one or more overnight periods shall be thoroughly inspected for special-status wildlife or nesting birds before the pipe is subsequently buried, capped, or otherwise used or moved in any way. If an</li> </ul>	



Impacts	Mitigation Measures	Level of Significance After Mitigation
	<p>animal is discovered inside a pipe, that section of pipe shall not be moved until the Lead Biologist has been consulted and the animal has either moved from the structure on its own accord or until the animal has been captured and relocated by the Lead Biologist.</p> <ul style="list-style-type: none"> <li>• Vehicles and equipment parked on the sites shall have the ground beneath the vehicle or equipment inspected for the presence of wildlife prior to moving.</li> <li>• Vehicular traffic shall use existing routes of travel.</li> <li>• Cross-country vehicle and equipment use outside of the project properties shall be prohibited.</li> <li>• A speed limit of 20 miles per hour shall be enforced within all construction areas.</li> <li>• A long-term trash abatement program shall be established for construction, operations, and decommissioning and submitted to the County. Trash and food items shall be contained in closed containers and removed daily to reduce the attractiveness to wildlife such as common raven (<i>Corvus corax</i>), coyote (<i>Canis latrans</i>), and feral dogs.</li> <li>• Workers shall be prohibited from bringing pets and firearms to the project site and from feeding wildlife in the vicinity.</li> <li>• Intentional killing or collection of any wildlife species shall be prohibited.</li> </ul> <p><b>MM BIO-2: Reduce Construction-related Impacts to Nesting Birds.</b> Ensure that active nests of raptors and other special-status nesting birds are not affected as a result of the proposed project.</p> <p>If construction work is scheduled to take place outside of the avian nesting season (September 16 through January 31), no action would be required to protect nesting birds. If any</p>	



Impacts	Mitigation Measures	Level of Significance After Mitigation
	<p>activities that could harm birds or their nests (e.g., clearing temporary workspaces; staging or stockpiling machinery or supplies; parking vehicles, equipment, or trailers; grading or leveling; creating stockpiles of dirt or gravel; or any activity that could cover existing habitat or disrupt surface soils) occur during the avian nesting season (February 1 through September 15), the following measures shall be implemented to avoid impacts on nesting raptors and other protected and common birds:</p> <ul style="list-style-type: none"> <li>• No more than 14 days prior to construction, a qualified wildlife biologist shall conduct preconstruction surveys of all construction sites to determine if birds or nests are present. Surveys may be phased as construction is phased, so that each section is surveyed no more than 14 days prior to the start of construction in that area.</li> <li>• If active nests are found during preconstruction surveys, a no-disturbance buffer shall be created around nests until it is determined that all young have fledged or until the recognized nesting season has ended (i.e., September 15 annually). The size of any employed buffers will vary based on the species that is nesting, the status of the nest, site conditions, and work to be completed during the active period of the nest. All buffers will be appropriately sized, based on USFWS published recommendations to avoid take to the nest. The size of the buffer zones and types of construction activities restricted in these areas could be further modified during construction in coordination with CDFW and shall be based on the existing level of noise and human disturbance on the project site.</li> <li>• If preconstruction surveys indicate that nests are inactive, or potential habitat is unoccupied during the</li> </ul>	

Impacts	Mitigation Measures	Level of Significance After Mitigation
	<p>construction period, no further action is required. Trees and shrubs within the construction footprint determined to be unoccupied by nesting birds or that are outside the no-disturbance buffer for active nests could be removed.</p> <p><b>MM BIO-3: Reduce Potential for Avian Collisions with Power Lines.</b> Avian Power Line Interaction Committee (APLIC) Guidelines in accordance with <i>Reducing Avian Collisions with Power Lines: The State of the Art in 2012</i> (APLIC 2012) will be incorporated into the power line design to minimize the likelihood of avian electrocutions. Transmission lines and all electrical components shall be designed, installed, and maintained in accordance with APLIC guidance to reduce the likelihood of large bird electrocutions and collisions (APLIC 2012).</p> <p><b>MM BIO-4: Reduce Avian Collisions with Photovoltaic Array.</b></p> <ul style="list-style-type: none"> <li>Visual deterrents to encourage bird avoidance of the project site will be installed. These deterrents will be made of a material that is both reflective and highly visible, such that the material reflects ambient light and is stimulated by air movement. The effect of such installation will create the visual impression of continuous and varied movement, which has been shown as an avian deterrent in agricultural applications. An example of the types of material that could be used includes reflective tape. Within 30 days after project commissioning, materials will be installed in 50-acre blocks within the solar facility on a 3-month trial basis to examine panel performance issues. Following the initial 3-month period, visual deterrents will either be adjusted to reduce performance issues and reexamined on continuing 3-month basis, or if adjustments are not</li> </ul>	

Impacts	Mitigation Measures	Level of Significance After Mitigation
	<p>deemed necessary to improve panel performance, deployed on the remainder of the site and maintained for the life of the project or until determined infeasible (based on the definition of “feasible” in California Environmental Quality Act (CEQA) Guidelines Section 15364) or ineffective by the project owner in consultation with CDFW and the County.</p> <ul style="list-style-type: none"> <li>• Panels shall include, if feasible, a light-colored, ultraviolet (UV)-reflective, or otherwise nonpolarizing outline, frame, grid, or border, which has been shown to substantially reduce panel attractiveness to aquatic insects, which in turn would reduce the attractiveness of the panels to birds that feed on the aquatic insects (Horvath et al. 2010) in order to reduce avian mortality by avoiding collisions with panel faces (NFWFL 2014).</li> </ul>	
<p><b>Impact BIO-2</b> The proposed project would not have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service.</p>	<p>No mitigation is necessary.</p>	<p>No Impact.</p>
<p><b>Impact BIO-3</b> The proposed project would not have a substantial adverse effect on federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means.</p>	<p>No mitigation is necessary.</p>	<p>No Impact.</p>
<p><b>Impact BIO-4</b> The proposed would not interfere substantially with the movement of any native resident or migratory fish or wildlife species or with</p>	<p><b>MM BIO-5 Reduce Impacts to Nocturnal Wildlife from Lighting.</b></p>	<p>Less Than Significant Impact</p>

Impacts	Mitigation Measures	Level of Significance After Mitigation
<p>established native resident or migratory wildlife corridors or impede the use of wildlife nursery sites.</p>	<ul style="list-style-type: none"> <li>No lighting shall be placed near or oriented towards any transmission lines running through the project site to avoid affecting wildlife that may use this area for nighttime movement.</li> <li>Narrow spectrum bulbs shall be used to limit the range of species affected by project lighting.</li> </ul>	<p>with Mitigation Incorporated.</p>
<p><b>Impact BIO-5</b> The proposed project would not conflict with local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.</p>	<p>No mitigation is necessary.</p>	<p>No Impact.</p>
<p><b>Impact BIO-6</b> The proposed project would not conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plans.</p>	<p>No mitigation is necessary.</p>	<p>No Impact</p>
<p><b>Section 4.5 – Cultural Resources</b></p>		
<p><b>Impact CUL-1</b> The proposed project would not cause a substantial adverse change in the significance of a historical resource pursuant to Section 15064.5.</p>	<p><b>MM CUL-1: Retain a Qualified Archaeologist:</b> The Applicant/contractor shall retain a qualified archaeologist, defined as an archaeologist meeting the Secretary of the Interior’s Standards for professional archaeology (USDOI 2017a), to carry out all Mitigation Measures related to archaeological and historical resources prior to the issuance of demolition or grading permits. The Applicant shall ensure that the qualified archaeologist has conducted a Cultural Resources Awareness Training for all construction personnel working on the proposed project. The training shall include an overview of potential cultural resources that could be encountered during ground disturbing activities to facilitate worker recognition, avoidance, and subsequent</p>	<p>Less Than Significant Impact with Mitigation Incorporated.</p>

Impacts	Mitigation Measures	Level of Significance After Mitigation
	<p>immediate notification to the qualified archaeologist for further evaluation and action, as appropriate, and penalties for unauthorized artifact collecting or intentional disturbance of archaeological resources. The qualified archaeologist shall conduct construction worker archaeological resources sensitivity training prior to the start of ground-disturbing activities. In the event that construction is phased, additional trainings shall be conducted for all new construction personnel. The training sessions shall focus on the recognition of the types of archaeological resources that could be encountered at the project site and the procedures to be followed if they are found. Documentation shall be retained demonstrating that all construction personnel attended the training.</p> <p><b>MM CUL-2: Inadvertent Discovery of Archaeological Resources or Tribal Cultural Resources:</b> If prehistoric or historic-era cultural resources are encountered during the course of grading or construction, all ground-disturbing activities within 50 feet of the find shall cease. The qualified archaeologist shall evaluate the significance of the resources and recommend appropriate treatment measures. Per California Environmental Quality Act (CEQA) Guidelines Section 15126.4(b)(3)(A), project redesign and preservation in place shall be the preferred means to avoid impacts to significant archaeological sites. Consistent with CEQA Guidelines Section 15126.4(b)(3)(C), if it is demonstrated that resources cannot be avoided, the qualified archaeologist shall develop additional treatment measures in consultation with Fresno County, which may include data recovery or other appropriate measures. Fresno County shall consult with appropriate Native American representatives in determining appropriate treatment for</p>	

Impacts	Mitigation Measures	Level of Significance After Mitigation
	<p>unearthed cultural resources if the resources are prehistoric or Native American in nature. Archaeological materials recovered during any investigation shall be curated at an accredited curatorial facility. The qualified archaeologist shall prepare a report documenting evaluation and/or additional treatment of the resource. A copy of the report shall be provided to Fresno County and to the Southern San Joaquin Valley Information Center. Construction can recommence based on direction of the qualified archaeologist.</p>	
<p><b>Impact CUL-2</b> The proposed project would not cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5.</p>	<p><b>MM CUL-1: Retain a Qualified Archaeologist.</b> <b>MM CUL-2: Inadvertent Discovery of Archaeological Resources or Tribal Cultural Resources.</b></p>	<p>Less Than Significant Impact with Mitigation Incorporated.</p>
<p><b>Impact CUL-3</b> The proposed project would not disturb any human remains, including those interred outside of formal cemeteries.</p>	<p><b>MM CUL-3: Inadvertent Discovery of Unmarked Burials.</b> If human remains are uncovered during project construction, the project operator shall immediately halt work within 50 feet of the find, contact the Fresno County Coroner to evaluate the remains, and follow the procedures and protocols set forth in CEQA Guidelines Section 15064.4 (e)(1). If the County Coroner determines that the remains are Native American in origin, the Native American Heritage Commission (NAHC) will be notified, in accordance with Health and Safety Code Section 7050.5(c), and Public Resources Code (PRC) 5097.98 (as amended by Assembly Bill 2641). The NAHC shall designate a Most Likely Descendant (MLD) for the remains per PRC Section 5097.98, and the landowner shall ensure that the immediate vicinity, according to generally accepted cultural or archaeological standards or practices, where the Native American human remains are located, is not damaged or</p>	<p>Less Than Significant Impact with Mitigation Incorporated.</p>

Impacts	Mitigation Measures	Level of Significance After Mitigation
	<p>disturbed by further development activity until the landowner has discussed and conferred, as prescribed in PRC Section 5097.98 with the MLD regarding their recommendations for the disposition of the remains, taking into account the possibility of multiple human remains.</p>	
<p><b>Section 4.6 – Geology and Soils</b></p>		
<p><b>Impact GEO-1</b> The proposed project would not expose people or structures to potential substantial adverse effects, including the risk of loss, injury or death involving:</p> <ul style="list-style-type: none"> <li>i. Strong seismic ground shaking.</li> <li>ii. Seismic-related ground failure, including liquefaction.</li> <li>iii. Landslides.</li> </ul>	<p>No mitigation is necessary.</p>	<p>Less Than Significant Impact.</p>
<p><b>Impact GEO-2</b> The proposed project would not result in substantial soil erosion or the loss of topsoil.</p>	<p><b>MM AG-1: Reclamation Plan.</b> <b>MM AIR-3: Dust Control Plan.</b></p>	<p>Less Than Significant Impact with Mitigation Incorporated.</p>
<p><b>Impact GEO-3</b> The proposed project would not be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse.</p>	<p>No mitigation is necessary.</p>	<p>Less Than Significant Impact.</p>
<p><b>Impact GEO-4</b> The proposed project would not be located on expansive soil, as defined in Table 18-</p>	<p>No mitigation is necessary.</p>	<p>Less Than Significant Impact.</p>



Impacts	Mitigation Measures	Level of Significance After Mitigation
<p>1-B of the Uniform Building Code (1994), creating substantial risks to life or property.</p> <p><b>Impact GEO-5</b> The proposed project would not directly or indirectly destroy a unique paleontological resource or site or unique geologic feature</p>	<p><b>MM GEO-1: Retain a Qualified Paleontologist.</b> A qualified paleontologist, defined as one meeting the Society of Vertebrate Paleontology Standards (the “Qualified Paleontologist”) shall be retained prior to the issuance of grading permits. The Qualified Paleontologist shall provide technical and compliance oversight of all work as it relates to paleontological resources, attend the project kick-off meeting and project progress meetings on a regular basis, and report to the site in the event that potential paleontological resources are encountered.</p> <p><b>MM GEO-2: Pre-construction Training.</b> The Qualified Paleontologist shall conduct Paleontological Resources Awareness Training for all construction personnel. This may be conducted in conjunction with the archaeological resources training. The training shall include an overview of potential paleontological resources that could be encountered during ground-disturbing activities to facilitate worker recognition, avoidance, and subsequent immediate notification to the Qualified Paleontologist for further evaluation and action, as appropriate; and penalties for unauthorized collecting or intentional disturbance of paleontological resources. A sign-in sheet shall be completed and retained to demonstrate attendance at the awareness training. In the event that construction crews are phased, additional trainings shall be conducted for new construction personnel. The training session shall focus on the recognition of the types of paleontological resources that could be encountered within the project site and the procedures to be followed if they are found. Documentation</p>	<p>Less Than Significant Impact with Mitigation Incorporated.</p>



Impacts	Mitigation Measures	Level of Significance After Mitigation
	<p>shall be retained demonstrating that all construction personnel attended the training.</p> <p><b>MM GEO-3: Inadvertent Discovery of Paleontological Resources.</b> If a paleontological resource is found, all ground-disturbing activities within 50 feet of the find shall immediately cease. The Qualified Paleontologist shall evaluate the significance of the resources and recommend appropriate treatment measures. At each fossil locality, field data forms shall be used to record pertinent geological data, stratigraphic sections shall be measured, and appropriate sediment samples shall be collected and submitted for analysis. Any fossils encountered and recovered shall be catalogued and donated to a public, nonprofit institution with a research interest in the materials, such as the Natural History Museum of Los Angeles County. Accompanying notes, maps, and photographs shall also be filed at the repository. The Qualified Paleontologist shall prepare a report documenting evaluation and/or additional treatment of the resource. The report shall be filed with the County and with the repository.</p> <p>Full-time paleontological resources monitoring shall be conducted for all ground-disturbing activities occurring in older Quaternary alluvium or the Tulare Formation, which is estimated to occur at or below approximately 10 feet in depth. Paleontological resources monitoring shall be performed by a qualified paleontological monitor (or cross-trained archaeological/paleontological monitor) under the direction of the Qualified Paleontologist. Monitors shall have the authority to temporarily halt or divert work away from exposed fossils to recover the fossil specimens. Any significant fossils collected during proposed project-related excavations shall be prepared to the point of identification</p>	

Impacts	Mitigation Measures	Level of Significance After Mitigation
	and curated into an accredited repository with retrievable storage. Monitors shall prepare daily logs detailing the types of activities and soils observed and any discoveries. The Qualified Paleontologist shall prepare a final monitoring and mitigation report to document the results of the monitoring effort.	
<b>Section 4.7 – Greenhouse Gas Emissions</b>		
<p><b>Impact GHG-1</b> The proposed project would not generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment.</p>	<p><b>Mitigation Measure GHG-1: Greenhouse Gas Reduction Measures.</b> In order to further reduce greenhouse gas emissions, the Developer shall:</p> <ul style="list-style-type: none"> <li>• Prior to the start of construction, develop and implement a program encouraging construction workers to carpool or use public transportation for travel to and from construction sites.</li> <li>• Implement a construction waste recycling program with the objective of recycling at least 65% of the project waste (by weight), pursuant to the California Green Building Standards Code. This is discussed further in Section 4.16, Utilities.</li> <li>• Minimize welding and cutting by requiring the use of compression of mechanical applications where practical and within standards.</li> </ul> <p><b>Mitigation Measure GHG-2: Circuit Breakers.</b> All breakers used for this project will have a manufacturer-guaranteed sulfur hexafluoride (SF<sub>6</sub>) leakage rate of 0.5% per year or less.</p>	<p>Less Than Significant Impact with Mitigation Incorporated.</p>
<p><b>Impact GHG-2</b> The proposed project would not conflict with an applicable plan, policy or regulation</p>	<p><b>Mitigation Measure GHG-1: Greenhouse Gas Reduction Measures.</b> <b>Mitigation Measure GHG-2: Circuit Breakers.</b></p>	<p>Less Than Significant Impact</p>

Impacts	Mitigation Measures	Level of Significance After Mitigation
<p>adopted for the purpose of reducing the emissions of greenhouse gases.</p>		<p>with Mitigation Incorporated.</p>
<p><b>Section 4.8 – Hazards and Hazardous Materials</b></p>		
<p><b>Impact HAZ-1</b> The proposed project would not create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials.</p>	<p>No mitigation is necessary.</p>	<p>Less Than Significant Impact.</p>
<p><b>Impact HAZ-2</b> The proposed project would not create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the hazardous materials into the environment.</p>	<p><b>MM HAZ-1: Broken Photovoltaic Module Detection and Handling Plan.</b> Prior to the issuance of construction permits, the Applicant shall prepare and implement a broken photovoltaic (PV) module detection and handling plan. The plan shall describe the Applicant’s method for identifying, handling, and disposing of PV modules that may break, chip, or crack at some point during the proposed project’s life cycle. The proposed methods shall be compliant with applicable law and protective of human health and the environment. The plan shall have but not be limited to the following elements:</p> <ul style="list-style-type: none"> <li>● <b>Worker Health and Safety Provisions and Handling Protocol.</b> This protocol shall address isolating workers from hazardous materials during the recovery of broken PV panels and shall include, but not be limited to the following requirements: <ul style="list-style-type: none"> <li>○ Workers shall wear gloves during the handling of broken pieces of PV panels to prevent cuts.</li> <li>○ If broken pieces are separated from the PV panel, the pieces shall be collected, and the areal extent of the collected pieces shall be compared to the broken</li> </ul> </li> </ul>	<p>Less Than Significant Impact with Mitigation Incorporated.</p>

Impacts	Mitigation Measures	Level of Significance After Mitigation
<p><b>Impact HAZ-3</b> The proposed project would not be located on a site that is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a</p>	<p>area on the PV panel to ensure that all the pieces have been accounted for.</p> <ul style="list-style-type: none"> <li>○ The broken pieces shall be placed in drums, sealed boxes, puncture-proof bags, or equivalent containers so as to prevent the broken pieces from tearing the containers and being rereleased into the environment.</li> <li>● <b>Timing of removal.</b> The PV panels shall be inspected for breakage prior to each PV panel washing event. In the event that broken PV panels are discovered, the broken PV panels and any pieces shall be removed prior to washing any adjacent PV panels.</li> <li>● <b>Recycling or disposal requirements.</b> If available, broken panels shall be sent to a PV panel manufacturing facility licensed for the recycling of PV panels; if recycling is unavailable, the broken panels shall be sent to a landfill licensed to receive broken PV panels. The plan shall identify the likely facility to receive broken panels.</li> </ul> <p>The plan shall be submitted to the County for review and approval and shall be distributed to all construction crew members and temporary and permanent employees prior to construction and operation of the proposed project. All available data from the panel manufacturer(s) regarding materials used and safety procedures and concerns shall be appended to the plan to assist the County with identifying potential hazards and abatement measures.</p>	<p>Less Than Significant Impact.</p>

Impacts	Mitigation Measures	Level of Significance After Mitigation
<p>result, it would not create a significant hazard to the public or the environment.</p>		
<p><b>Impact HAZ-4</b> The proposed project would not impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.</p>	<p>No mitigation is necessary.</p>	<p>Less Than Significant Impact.</p>
<p><b>Impact HAZ-5</b> The proposed project would not expose people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands.</p>	<p><b>MM HAZ-2: Fire Protection Plan.</b> The Applicant shall prepare a Fire Protection Plan prior to issuance of construction permits. The Fire Protection Plan shall include but not be limited to the following measures:</p> <ul style="list-style-type: none"> <li>• Internal combustion engines, stationary and mobile, shall be equipped with spark arresters in good working order.</li> <li>• All personnel shall be trained in fire safety practices relevant to their duties.</li> <li>• All construction and maintenance personnel shall be trained and equipped to extinguish small fires.</li> <li>• Work crews shall have fire-extinguishing equipment on hand, as well as emergency numbers and cell phones or other means of contacting the Fire Department.</li> <li>• Security gates shall be approved by the Fire Department and shall include the installation of a key switch or padlock, whichever is most appropriate.</li> <li>• Smoking shall be prohibited while operating equipment and shall be limited to paved or graveled areas or areas cleared of all vegetation. Smoking shall be prohibited within 30 feet of any combustible material storage area (including fuels, gases, and solvents). Smoking shall be prohibited in any location during a Red Flag Warning</li> </ul>	<p>Less Than Significant Impact with Mitigation Incorporated.</p>

Impacts	Mitigation Measures	Level of Significance After Mitigation
	issued by the National Weather Service for the project area.	
<b>Section 4.9 – Hydrology and Water Quality</b>		
<b>Impact HYD-1</b> The proposed project would not violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality.	No mitigation is necessary.	Less Than Significant Impact.
<b>Impact HYD-2</b> The proposed project would not substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin.	No mitigation is necessary.	Less Than Significant Impact.
<b>Impact HYD-3.</b> The proposed project would not substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river through the addition of impervious surfaces, in a manner which would <ul style="list-style-type: none"> <li>i. Result in substantial erosion or siltation on- or offsite;</li> <li>ii. Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite;</li> <li>iii. Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or</li> <li>iv. Impede or redirect flood flows?</li> </ul>	No mitigation is necessary.	Less Than Significant Impact.

Impacts	Mitigation Measures	Level of Significance After Mitigation
<p><b>Impact HYD-4</b> The proposed project would not conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan.</p>	<p>No mitigation is necessary.</p>	<p>Less Than Significant Impact.</p>
<p><b>Section 4.10 – Land Use and Planning</b></p>		
<p><b>Impact LUP-1</b> The proposed project would cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect.</p>	<p><b>MM AG-1: Reclamation Plan.</b></p>	<p>Significant and Unavoidable Impact.</p>
<p><b>Section 4.11 - Mineral Resources</b></p>		
<p><b>Impact MIN-1</b> The proposed project would not result in the loss of availability of a known mineral resource classified MRZ-2 by the State Geologist that would be of value to the region and the residents of the state.</p>	<p>No mitigation is necessary.</p>	<p>No Impact.</p>
<p><b>Impact MIN-2</b> The proposed project would not result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan.</p>	<p>No mitigation is necessary.</p>	<p>No Impact.</p>
<p><b>Section 4.12 – Noise</b></p>		
<p><b>Impact NOI-1</b> The proposed project would not result in the generation of a substantial temporary or permanent increase in noise levels in the vicinity of the project in excess of standards established in</p>	<p><b>MM NOI-1: Stationary Construction Equipment.</b> All stationary equipment shall be placed so that emitted noise is directed away from sensitive receptors nearest to the project site during construction and decommissioning activities.</p>	<p>Less Than Significant Impact with Mitigation Incorporated.</p>



Impacts	Mitigation Measures	Level of Significance After Mitigation
<p>the local general plan or noise ordinance, or applicable standards of other agencies.</p>	<p><b>MM NOI-2: Equipment Staging Areas.</b> Equipment staging shall be located in areas as far as feasible from noise-sensitive receptors nearest to the project site during all project construction and decommissioning activities.  <b>MM NOI-3: Construction and Decommissioning Equipment.</b> All construction and decommissioning equipment shall be equipped with manufacturer-approved mufflers and baffles.  <b>MM NOI-4: Construction and Decommissioning Hours.</b> During all project construction and decommissioning, all noise-producing construction-related activities shall be limited to the hours of 6:00 AM to 9:00 PM, Monday through Friday, and to the hours of 7:00 AM to 5:00 PM on Saturdays and Sundays.</p>	
<p><b>Impact NOI-2</b> The proposed project would not result in the generation of excessive groundborne vibration or groundborne noise levels.</p>	<p>No mitigation is necessary.</p>	<p>Less Than Significant Impact.</p>
<p><b>Section 4.13 – Public Services</b></p>		
<p><b>Impact PUB-1.</b> The proposed project would not result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities or a need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives.</p>	<p>No mitigation is necessary.</p>	<p>Less Than Significant Impact.</p>



Impacts	Mitigation Measures	Level of Significance After Mitigation
<p><b>Section 4.14 – Transportation and Traffic</b></p> <p><b>Impact TRA-1</b> The proposed project would not conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities.</p>	<p><b>MM TRA-1: Construction and Decommissioning Traffic Control and Management Plan.</b> Prior to issuance of construction permits, building permits, or encroachment permits, the Applicant and/or its construction contractors shall prepare and submit a traffic control and management plan to Fresno County Department Public Works and Planning and the California Department of Transportation (Caltrans) District 6 office for approval. The traffic control and management plan shall be prepared in accordance with both the California’s Manual on Uniform Traffic Control Divisions and Work Area Traffic Control Handbook and must include but not be limited to the following items:</p> <ul style="list-style-type: none"> <li>• Specify timing of deliveries of heavy equipment and building materials.</li> <li>• Direct construction traffic with a flagger.</li> <li>• Place temporary signage, lighting, and traffic control devices, if required, including but not limited to appropriate signage along access routes to indicate the presence of heavy vehicles and construction traffic.</li> <li>• Ensure access for emergency vehicles to the project site.</li> <li>• Maintain access to adjacent property.</li> <li>• Specify both construction-related vehicle travel and oversize-load haul routes, minimize construction traffic during the AM and PM peak hours, and avoid residential neighborhoods to the maximum extent feasible.</li> <li>• Obtain all necessary permits from the appropriate agencies for work within the road right-of-way or use of oversized/overweight vehicles, which may require California Highway Patrol or a pilot car escort.</li> </ul>	<p>Less Than Significant Impact with Mitigation Incorporated.</p>

Impacts	Mitigation Measures	Level of Significance After Mitigation
	<ul style="list-style-type: none"> <li>• Submit plans for any work on the proposed intersection improvements on Lassen Avenue at the site access driveways to the County and Caltrans District 6 for review and approval prior to the issuance of any encroachment or road improvement permit for the work.</li> <li>• Clean or remove any material that is deposited onto the roadways as soon as possible and at least prior to the end of each working day.</li> <li>• Obtain any access easements from private property owners necessary to perform required repair work.</li> </ul> <p><b>MM-TRA-2: Preconstruction and Pre-Decommissioning Road Survey Report.</b> A preconstruction report and a pre-decommissioning report shall be prepared by a qualified registered engineer to include a detailed analysis of road suitability to accommodate haul trucks during project construction. The report shall be submitted to the Fresno County Department of Public Works and Planning. Prior to initiating the preconstruction or decommissioning report, the proposed methodology shall be presented to the Fresno County Department of Public Works and Planning for review and approval. Improvements to existing roads may be necessary based on the findings of the report.</p> <p><b>MM TRA-3: Road Repair Agreement.</b> Prior to the start of construction, enter into a secured agreement with the County to ensure that the proposed project contributes its fair-share portion towards repairs of any County roads that are impacted by this project. The scope of impacts shall be determined in consultation with the County of Fresno and Caltrans District 6.</p>	

Impacts	Mitigation Measures	Level of Significance After Mitigation
<p><b>Impact TRA-2</b> The proposed project would not conflict with or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b).</p>	<p>No mitigation is necessary.</p>	<p>Less Than Significant Impact.</p>
<p><b>Impact TRA-3</b> The proposed project would not substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).</p>	<p><b>MM TRA-1: Construction and Decommissioning Traffic Control and Management Plan.</b>  <b>MM-TRA-2: Preconstruction and Pre-Decommissioning Road Survey Report.</b>  <b>MM-TRA-3: Road Repair Agreement</b></p>	<p>Less Than Significant Impact with Mitigation Incorporated.</p>
<p><b>Impact TRA-4</b> The proposed project would not result in inadequate emergency access.</p>	<p><b>MM TRA-1: Construction and Decommissioning Traffic Control and Management Plan.</b></p>	<p>Less Than Significant Impact with Mitigation Incorporated.</p>
<p><b>Section 4.15 – Tribal Cultural Resources</b></p>		
<p><b>Impact TRI-1</b> The proposed project would not cause a substantial adverse change in the significance of a tribal cultural resource listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or by the lead agency pursuant to criteria set forth in Public Resources Code Section 5024.1(c).</p>	<p><b>MM CUL-1: Retain a Qualified Archaeologist.</b>  <b>MM CUL-2: Inadvertent Discovery of Archaeological Resources or Tribal Cultural Resources.</b></p>	<p>Less Than Significant Impact with Mitigation Incorporated.</p>

Impacts	Mitigation Measures	Level of Significance After Mitigation
<b>Section 4.16 – Utilities and Service Systems</b>		
<p><b>Impact USS-1</b> The proposed project would not result in the relocation or construction of new or expanded water, wastewater treatment or stormwater drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects.</p>	<p>No mitigation is necessary.</p>	<p>Less Than Significant Impact.</p>
<p><b>Impact USS-2</b> The proposed project would have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry, and multiple dry years.</p>	<p>No mitigation is necessary.</p>	<p>Less Than Significant Impact.</p>
<p><b>Impact USS-3</b> The proposed project would not generate solid waste in excess of state or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals.</p>	<p>No mitigation is necessary.</p>	<p>Less Than Significant Impact.</p>
<p><b>Impact USS-4</b> The proposed project would comply with federal, state, and local management and reduction statutes and regulations related to solid waste.</p>	<p>No mitigation is necessary.</p>	<p>Less Than Significant Impact.</p>
<b>Section 4.17 – Wildfire</b>		
<p><b>Impact WF-1</b> The proposed project would not substantially impair an adopted emergency response plan or emergency evacuation plan.</p>	<p>No mitigation is necessary.</p>	<p>Less Than Significant Impact.</p>

Impacts	Mitigation Measures	Level of Significance After Mitigation
<p><b>Impact WF-2</b> The proposed project would not exacerbate wildfire risks, and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire due to slope, prevailing winds, and other factors.</p>	<p>No mitigation is necessary.</p>	<p>No Impact.</p>
<p><b>Impact WF-3</b> The proposed project would not require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment.</p>	<p><b>MM HAZ-2: Fire Protection Plan.</b></p>	<p>Less Than Significant Impact with Mitigation Incorporated.</p>
<p><b>Impact WF-4</b> The proposed project would not expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes.</p>	<p>No mitigation is necessary.</p>	<p>No Impact.</p>
<p><b>Section 4.18 – Energy</b></p>		
<p><b>Impact EN-1</b> The proposed project would not result in potentially significant environmental impacts due to wasteful, inefficient, or unnecessary consumption of energy resources during project construction or operation.</p>	<p>No mitigation is necessary.</p>	<p>Less Than Significant Impact.</p>
<p><b>Impact EN-2</b> The proposed project would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency.</p>	<p>No mitigation is necessary.</p>	<p>No Impact.</p>

## ES.6 REVIEW OF THE DRAFT EIR

This Draft EIR is available to tribes, federal, state, and local agencies and to interested individuals who may wish to review and comment on the report. An electronic copy of the Draft EIR and reference materials relied upon in its drafting will be provided via the County's website: <http://www.co.fresno.ca.us/EIR>.

Printed or CD copies of the Draft EIR will be available to check out at each of the locations listed below. CDs will contain copies of the reference materials cited and relied upon in the analysis.

- Fresno County Public Works and Planning Department, 2220 Tulare Street, Suite A  
Fresno, CA 93721
- Fresno County Main Library, Reference Department, 2420 Mariposa Street, Fresno, CA  
93721
- Fresno County Library Huron Branch Library, 36050 O Street, Huron, CA 93234

Written comments may be submitted to the County during a 45-day public review period. Written comments on this Draft EIR will be accepted via regular mail and email and at a public meeting that will be noticed under separate cover. All comments received will be addressed in a response to comments document, which together with this Draft EIR will constitute the Final EIR for the proposed project.

## 1.0 INTRODUCTION

### 1.1 PURPOSE

The purpose of this Draft Environmental Impact Report (EIR) is to analyze the potential environmental impacts of the Fifth Standard Solar Facility Project Complex (proposed project), indicate ways to reduce or avoid potential environmental impacts, and identify alternatives to the proposed project that would meet most of the project objectives while reducing potential environmental impacts. This Draft EIR has been prepared pursuant to the California Environmental Quality Act (CEQA) Guidelines (14 California Code of Regulations [CCR] 1500 et seq.). Additionally, this Draft EIR discloses the proposed project's environmental effects, including those that cannot be avoided, growth-inducing effects, effects found not to be significant, and cumulative impacts. CEQA requires that each public agency mitigate or avoid the significant environmental effects of a project it approves or implements whenever feasible.

The analysis documented in this Draft EIR is based on information submitted to the Lead Agency, Fresno County (County), bolstered by information from independent resource-specific technical studies, reviews, and research conducted by the Draft EIR preparers. The purpose of this Draft EIR is not to recommend approval or denial of the proposed project, but rather to inform the Lead Agency's decision whether to approve or to deny the project. The Lead Agency may approve a proposed project even if it would result in significant and unavoidable environmental impacts.

### 1.2 PROJECT OVERVIEW

RWE Solar Development, LLC (formerly known as EC&R Solar Development, LLC) (Applicant) is proposing to construct, operate, maintain, and decommission a 150-megawatt (MW) solar photovoltaic (PV) generation facility, an up to 20-MW solar PV generation facility, and an up to 100-MW energy storage facility on approximately 1,600 acres in southwest unincorporated Fresno County, California. The project site is approximately 2 miles east of Interstate 5 (I-5) and approximately 1.5 miles south of the City of Huron.

The four key components of the proposed project are:

- **Fifth Standard Solar Facility:** a 150-MW photovoltaic (PV) solar energy generation facility that is anticipated to require up to 1,400 acres of the site. A 230-kilovolt project generation tie (gen-tie) line would be constructed from the southwest portion of this site to the point of interconnection. The gen-tie line would consist of a 0.3-mile aboveground power line.
- **Stonecrop Solar Facility:** a 20-MW PV solar energy generation facility that would be located adjacent to the Fifth Standard Solar facility and would require less than 200 acres of the site.
- **Blackbriar Battery Storage Facility:** an up to 100-MW battery storage facility that would be located adjacent to the Fifth Standard Solar Facility and the Stonecrop Solar Facility and would require less than 5 acres of the site.

A complete description of the proposed project and its components is provided in Section 2.0, Project Description, of this Draft EIR.

### **1.3 LEAD AGENCY DETERMINATION**

The County is designated the Lead Agency for the proposed project. CEQA Guidelines Section 15367 defines the Lead Agency as "...the public agency, which has the principal responsibility for carrying out or approving a project." Other public agencies may use this document in their decision-making or permitting processes.

This Draft EIR was prepared by the County with technical assistance provided by Stantec Consulting Services Inc. (Stantec), an environmental consulting firm. Prior to public review, this Draft EIR was reviewed and evaluated by staff at the Fresno County Planning Department; the Draft EIR reflects the independent judgment and analysis of the County, as required by CEQA.

### **1.4 SCOPE OF THE DRAFT EIR**

#### **1.4.1 Notice of Preparation**

On September 15, 2017, the County published and distributed a Notice of Preparation (NOP) to advise interested local, regional, and state agencies; nearby neighbors; and the public that an EIR would be prepared for the proposed project. The NOP solicited both written and oral comments on the EIR's scope during the 30-day comment period ending October 16, 2017. Additionally, the NOP presented the background, purpose, description, location, and potential issues to be addressed in the EIR and contact information for additional information regarding the proposed project. During the scoping period, interested parties were encouraged to submit written comments on the scope of issues to be included in the EIR for the proposed project. Appendix A to this Draft EIR contains the scoping report, which includes a copy of the NOP, documents from the public scoping meeting on September 27, 2017, a detailed description of all written comments received, and copies of the written comments.

#### **1.4.2 Environmental Issues Determined Not To Be Significant**

Pursuant to CEQA, the discussion of the potential effects on the physical environment is focused on those impacts that may be significant or potentially significant. CEQA allows the Lead Agency to limit the details of discussion of the environmental effects that are not considered potentially significant (Public Resources Code [PRC] Section 21100, CCR Sections 15126.2[a] and 15128). CEQA requires that the discussion of any significant effects on the environment be limited to substantial or potentially substantial adverse changes in the physical conditions of the affected area, as defined in PRC Section 21060.5 (statutory definition of "environment"). Effects dismissed in an analysis as clearly insignificant and unlikely to occur need not be discussed further in the Draft EIR unless the Lead Agency subsequently receives information inconsistent with the finding that certain impacts are unlikely to occur (CCR Section 15143).

As part of the NOP scoping process, it was determined that implementation of the proposed project would result in no impact to the following environmental topic areas:

- Population and Housing



- Recreation

With the exception of a cursory impact discussion in Section 6.0, Effects Found Not To Be Significant, these environmental resources areas are not discussed further in this Draft EIR.

In addition, certain subjects within various topical areas were determined not to be significant. Other potentially significant issues are analyzed within these topical areas; however, the following issues are not analyzed:

- Forest land zoning and conversion (Section 4.2, Agriculture)
- Odors (Section 4.3, Air Quality)
- Rupture of a known earthquake fault (Section 4.6, Geology and Soils)
- Soils incapable of supporting alternative wastewater systems (Section 4.6, Geology and Soils)
- Emission of hazardous materials within one-quarter mile of an existing or proposed school (Section 4.8, Hazards and Hazardous Materials)
- Airports and private airstrips (Section 4.8, Hazards and Hazardous Materials)
- Inundation by seiche, tsunami, or mudflow (Section 4.9, Hydrology and Water Quality)
- Division of an established community (Section 4.10, Land Use and Planning)
- Aviation noise (Section 4.12, Noise)
- New or physically altered governmental facilities, including, schools, parks, and other public facilities (Section 4.13, Public Services)
- Wastewater treatment capacity (Section 4.16, Utilities and Service Systems)

An explanation of why each of the issues above was determined not to be significant is provided in Section 6.0, Effects Found Not To Be Significant.

### **1.4.3 Effects Determined to Be Potentially Significant**

The NOP found the following resource areas may contain potentially significant environmental issues that would require further analysis in the Draft EIR. In accordance with Appendix G of the CEQA Guidelines, the following resource areas are evaluated in this Draft EIR:

- Aesthetics
- Agriculture
- Air quality
- Biological resources
- Cultural resources
- Geology and soils
- Greenhouse gases
- Hazards and hazardous materials
- Hydrology and water quality
- Land use and planning
- Minerals
- Noise
- Public services
- Transportation
- Tribal cultural resources
- Utilities and service systems
- Energy
- Wildfire

The environmental analysis for each of these resource areas is provided in Section 4.0, Environmental Impact Analysis.

## 1.5 ORGANIZATION OF THE DRAFT EIR

This Draft EIR is arranged into the following sections, which contain the contents of an EIR as required by CEQA Guidelines Sections 15120 through 15132.

**Executive Summary.** The Executive Summary section provides a summary of the proposed project and the project alternatives, including a summary of project impacts, recommended mitigation measures, and the level of significance after mitigation for each environmental issue.

**Section 1.0: Introduction.** The Introduction section provides an overview of the proposed project and the CEQA process and describes the purpose, scope, and components of this Draft EIR.

**Section 2.0: Project Description.** The Project Description section provides a detailed description of the proposed project, including the location and project characteristics. The intended uses of this Draft EIR, project background, project objectives, and required project approvals are also addressed.

**Section 3.0: Discussion of Alternatives.** Provides a comparison between the impacts associated with the proposed project and the alternatives that were evaluated. This section also discusses the alternatives that were considered and deemed to be infeasible.

**Section 4.0: Environmental Impact Analysis.** The Environmental Impact Analysis section analyzes the environmental effects of the proposed project. Impacts are organized into major environmental topic areas. Each topic area includes a description of the regulatory setting, environmental setting, significance criteria, project impacts, mitigation measures, and level of significance after mitigation. This section also addresses the cumulative impacts and alternative impacts for each resource. The specific environmental topic areas that are addressed in Section 4.0, Environmental Impact Analysis, include the following:

- Section 4.1, Aesthetics
- Section 4.2, Agriculture
- Section 4.3, Air Quality
- Section 4.4, Biological Resources
- Section 4.5, Cultural Resources
- Section 4.6, Geology and Soils
- Section 4.7, Greenhouse Gas Emissions
- Section 4.8, Hazards and Hazardous Materials
- Section 4.9, Hydrology and Water Quality
- Section 4.10, Land Use and Planning
- Section 4.11, Mineral Resources
- Section 4.12, Noise
- Section 4.13, Public Services
- Section 4.14, Transportation
- Section 4.15, Tribal Cultural Resources
- Section 4.16, Utilities and Service Systems

- Section 4.17, Wildfire
- Section 4.18, Energy

**Section 5.0: Comparison of Alternatives.** The Comparison of Alternatives section provides decision-makers and the public with a reasonable number of feasible project alternatives that could attain most of the proposed project's objectives, while avoiding or reducing any of the proposed project's significant adverse environmental effects.

**Section 6.0: Effects Found Not To Be Significant.** The Effects Found Not To Be Significant section provides a summary of project impacts that have been determined, through preparation of the NOP, to result in less than significant impacts or no impacts.

**Section 7.0: Other CEQA Considerations.** The Other CEQA Considerations section provides a summary of significant environmental effects, including unavoidable, irreversible, and growth-inducing impacts.

**Section 8.0: List of Preparers.** The List of Preparers section provides a list of the individuals who contributed to the preparation of this Draft EIR. This section also includes a listing of the Lead Agency personnel and technical consultants used to prepare the Draft EIR.

**Section 9.0: References.** List of references used to prepare the Draft EIR.

**Appendices.** The appendices contain the NOP (including comments) and technical studies prepared to support the analyses and conclusions in this Draft EIR.

### 1.5.1 Documents Prepared for the Proposed Project

The following technical studies and analyses were prepared for the proposed project:

- Fifth Standard Solar Project Complex Air Quality and Greenhouse Gas Evaluation Technical Report, Environmental Science Associates [ESA], September 2016
- Fifth Standard Solar Project Complex Biological Resources Technical Report, ESA, September 2016
- Fifth Standard Solar Project Complex Cultural Resources Survey Report, ESA, June 2017
- Fifth Standard Solar Project Complex Paleontological Resources Survey Report, ESA, June 2017
- Fifth Standard Solar Project Complex Phase I Environmental Site Assessment, Stantec, December 2017
- Fifth Standard Solar Project Complex Noise Technical Report, ESA, August 2019
- Fifth Standard Solar Project Complex Traffic Study Report, ESA, July 2017

These technical studies have been reviewed and incorporated into this Draft EIR as needed to support the environmental impact analysis.

## 1.6 PUBLIC REVIEW AND COMMENT

### 1.6.1 Public Comment on the Draft EIR

Upon completion of this Draft EIR, the County filed a Notice of Completion (NOC) with the State Office of Planning and Research to begin the public review period (PRC Section 21161). Concurrent with the filing of the NOC, this Draft EIR has been distributed to responsible and trustee agencies, other affected agencies, surrounding cities, and interested parties, as well as all parties requesting a copy of the Draft EIR in accordance with PRC 21092(b)(3). During the public review period, the Draft EIR, including the technical appendices, is available for review at the County of Fresno Public Works and Planning Department in Fresno, California, and online at <http://www.co.fresno.ca.us/EIR>.

Written comments may be submitted to the County during the 45-day public review period, which starts on February 7, 2020, and ends on March 23, 2020. Written comments on this Draft EIR will be accepted via regular mail and email and should be addressed to:

Fresno County Department of Public Works and Planning  
Attention: Christina Monfette  
2220 Tulare Street, 6th Floor  
Fresno, California 93721  
CMonfette@FresnoCountyCA.gov

All comments received will be addressed in a response to comments document that, together with this Draft EIR, will constitute the Final EIR for the proposed project. Written responses to all environmental issues raised will be made available for review by the commenting agencies at least 10 days prior to any public hearing on the proposed project, at which the certification of the Final EIR will be considered. Comments received and the responses to comments will be included as part of the record for consideration by decision makers for the proposed project.

### 1.6.2 Effectively Commenting on an EIR

Readers are invited to review and comment on the adequacy and completeness of this Draft EIR in describing the potential impacts of the proposed project, the level of significance, the mitigation measures being proposed to reduce or avoid those impacts, and the project alternatives being considered. The most effective comments are those that focus on the adequacy and completeness of the environmental analysis and that are supported by factual evidence. Comments that focus on whether the proposed project should be approved or denied are not comments on the adequacy of this Draft EIR.

### 1.6.3 Final EIR

After the end of the review period, the County will review the comments received, prepare written responses to those comments, make any related revisions to the Draft EIR, and publish the Final EIR.

The Final EIR will be considered at a separate publicly noticed meeting with the Fresno County Planning Commission. If the proposed project is approved, CEQA requires the County to adopt

findings describing how each of the significant impacts identified in the EIR is being mitigated. CEQA requires that a Lead Agency shall neither approve nor implement a project, as proposed, unless the significant environmental impacts have been reduced to an acceptable level. An acceptable level is defined as eliminating, avoiding, or substantially lessening significant environmental effects to below a level of significance. The findings will describe the reasons for why significant unavoidable impacts, if any, cannot be mitigated. The findings will also describe the reasons for why the project alternatives that were analyzed in the EIR have not been adopted.

If the Lead Agency approves a project even though significant impacts identified in the Final EIR cannot be fully mitigated, the Lead Agency must state in writing the reasons for its action. In such a case, findings and a Statement of Overriding Considerations must be included in the record of project approval and mentioned in the Notice of Determination (NOD). Lastly, the County will adopt a Mitigation Monitoring and Reporting Plan (MMRP), which describes how the proposed project will ensure that the required Mitigation Measures will be carried out.

**This page left intentionally blank.**

## 2.0 PROJECT DESCRIPTION

### 2.1 PROJECT OVERVIEW

The RWE Solar Development, LLC (formerly known as EC&R Solar Development, LLC) (Applicant) has applied to the Fresno County Department of Public Works and Planning for three Unclassified Conditional Use Permits (CUPs) (CUP Application Nos. 3562, 3563, and 3564) to construct, operate, maintain, and decommission a 150-megawatt (MW) solar photovoltaic (PV) generation facility, an up to 20-MW solar PV generation facility, and an up to 100-MW energy storage facility. The Fifth Standard Solar Facility Project Complex (proposed project) includes PV electricity-generating facilities, a battery storage facility, and associated infrastructure. The proposed project is located on several contiguous parcels (project site), totaling approximately 1,600 acres<sup>1</sup> in unincorporated Fresno County. A new generation-tie (gen-tie) line would be constructed to connect the solar and storage components of the proposed project to Pacific Gas and Electric's (PG&E's) adjacent Gates Substation (point of interconnect).

The proposed project includes three separate components, which are summarized here and described below:

- Unclassified CUP Application No. 3562 Fifth Standard Solar Facility: a 150-MW PV solar energy generation facility that is anticipated to require up to 1,400 acres of the site. A 230-kilovolt (kV) project gen-tie line would be constructed from the southwest portion of this site to the point of interconnect. The gen-tie line would consist of a 0.3-mile aboveground power line.
- Unclassified CUP Application No. 3563 Stonecrop Solar Facility: a 20-MW PV solar energy generation facility that would be located adjacent to the Fifth Standard Solar Facility and would require less than 200 acres of the site.
- Unclassified CUP Application No. 3564 Blackbriar Battery Storage Facility: an up to 100-MW battery storage facility that would be located adjacent to the Fifth Standard Solar Facility and the Stonecrop Solar Facility and would require less than 5 acres of the site.

The proposed project would operate year-round to generate electricity from the PV facilities during daylight hours and dispatch additional electricity during either daylight or non-daylight hours, depending on the application of the energy storage portion of the proposed project.

### 2.2 LOCATION

The project site is located in unincorporated Fresno County, approximately 2 miles east of Interstate 5 (I-5), and approximately 13 miles east of Coalinga (Figure 2-1). Lassen Avenue

---

<sup>1</sup> The project acreage is reported as 1,600 acres, while the crop acreage is reported as 1,588 acres due to land dedicated to right-of-way for Lassen Avenue. Both acreages are correct, but the 1,600 acres is carried forward for analysis in the document.

(California State Route [SR] 269) borders the eastern side of the property and is the only paved road in the immediate vicinity of the project site. Trinity Avenue, Tractor Avenue, and Phelps Avenue intersect the project site, but are not improved roads. Nearby communities include Huron (1.5 miles north), Avenal (9 miles south), Kettleman City (12 miles southeast), and Coalinga (13 miles west).

Surrounding land uses include farmland, the PG&E Gates Substation, and two nearby solar generating facilities (Gates Solar and West Gates Solar) (Figure 2-1). The Gates Substation is located on an adjacent parcel; the substation itself is approximately 0.34 mile southwest of the project site. The existing West Gates Solar facility is adjacent to the Gates Substation, 0.5 mile southwest of the project site. The Gates Solar facility is located to the north and immediately adjacent to the project site. Interstate-5 (I-5) is located approximately 2 miles west of the project site. The Pleasant Valley Ecological Reserve is located on the other side of I-5, 6 miles west of the project site (CDFW 2017a). The New Coalinga Municipal Airport is located approximately 9 miles west of the project site, and the nearest private airport is the Stone Land Company Airport, located approximately 6.6 miles southeast of the project site. A private airstrip is located approximately 0.5 mile north of the project site, on the northwest corner of Gale and Trinity.

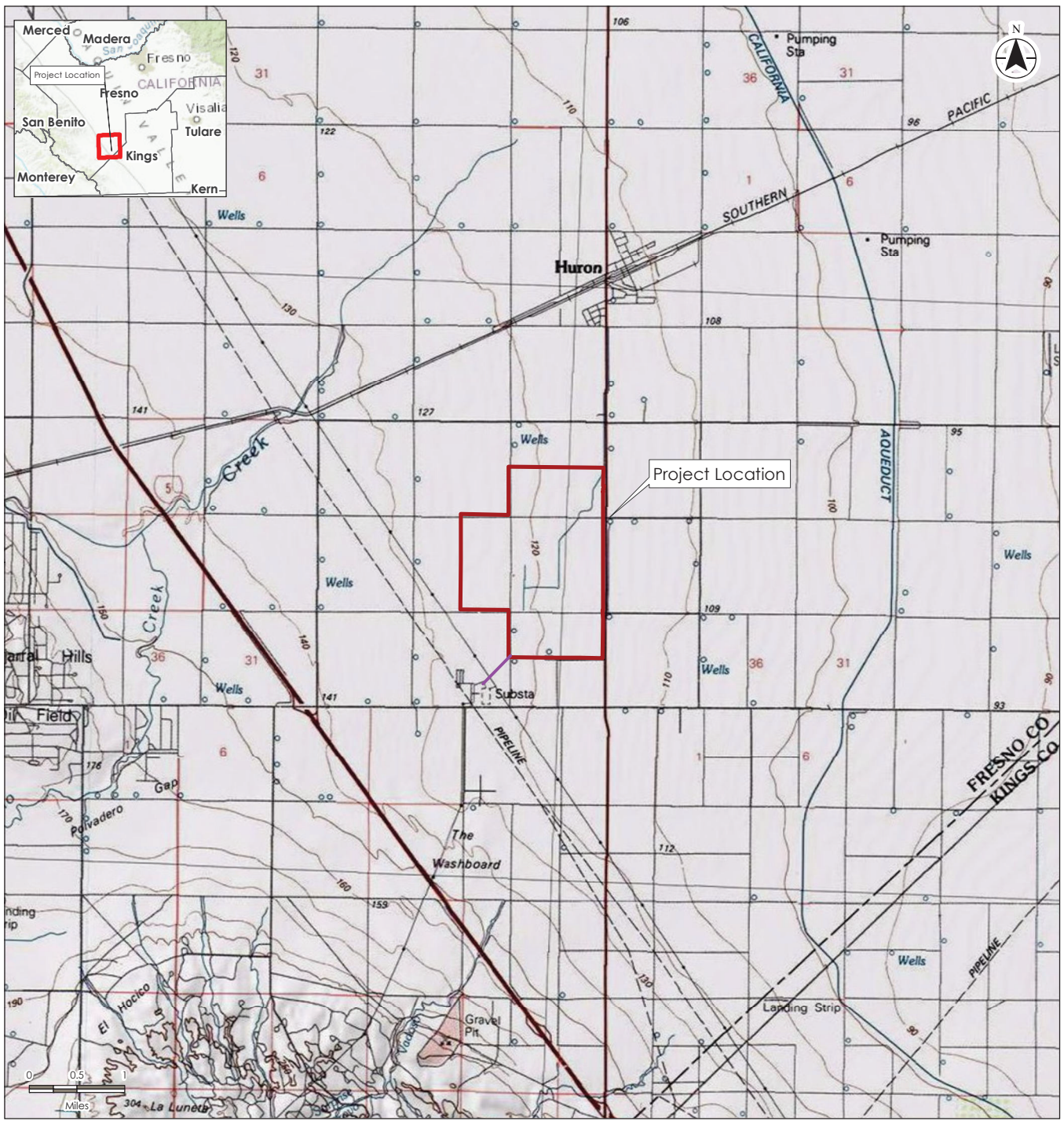
The Applicant is currently leasing the project site from various Woolf family trusts and entities (Table 2-1). The anticipated lifetime of the proposed project would be 35 years and would be decommissioned once operations of the facility cease. The final lease agreement is anticipated to occur by 2022 with a lease term of 35 years. The CUP would tentatively have an end date of August 2057. The lease agreement would include an option for renewal, in which case a new land use permit subject to the County’s review and approval would need to be obtained.

**Table 2-1: Fresno County Assessor Parcel Numbers**

Assessor’s Parcel Number (APN)	Parcel Size (Approximate Acres)	Ownership
075-060-15S	160	G3 Farming Trust
075-060-52S	159	Woolf Properties
075-070-01S	633	G3 Farming Trust
075-070-32S	144	Woolf Family Trust No. 1
075-070-34S	151	Woolf Family Trust No. 1
075-130-10S	1	Woolf Family Trust No. 1
075-130-12S	2	Woolf Family Trust No. 1
075-130-54S	77	Woolf Family Trust No. 1
075-130-59S	79	Woolf Family Trust No. 1
075-130-60S	157	Woolf Family Trust No. 1
075-070-35S	10	Woolf Family Trust No. 1
075-070-33S	10	Woolf Family Trust No. 1

Note: Parcel acreages are approximate calculations using ESRI ArcGIS.





Data Source: RWE Solar Development, LLC, 2019  
 Coordinate System: NAD 1983  
 StatePlane California IV  
 FIPS 0403 Feet.  
 See complete reference in EIR.



Figure No. \_\_\_\_\_  
 2 - 1  
 Title \_\_\_\_\_  
 Project Vicinity \_\_\_\_\_  
 Project \_\_\_\_\_  
 Fifth Standard Solar Project Complex

## 2.3 EXISTING CONDITIONS

### 2.3.1 Land Use

The project site is currently used entirely for agricultural purposes (since 2015, mostly used to produce tomato and wheat) and is classified as Prime Farmland (ESA 2018a). With the exception of a 1.25-acre parcel located in the interior of the project site, the site is under Williamson Act Contracts, all of which are currently being petitioned for cancellation by the Applicant and landowners. The project site has a history of growing processing tomatoes, wheat, dehydrator bulb onions, garlic, and pima cotton. Since 2014, portions of the project site have been left fallow.

The project site's recent crop rotation of tomatoes followed by wheat is typical of the region. The tomato beds are irrigated with subsurface drip, and the source of the irrigation water is a mix of surface water piped in from the irrigation district, Westland Water District (WWD), or from on-farm wells. In the case of wheat, sprinklers are used to irrigate the crop. Detailed crop history since 2006 is shown in Table 2-2.

**Table 2-2: Project Site Crop History**

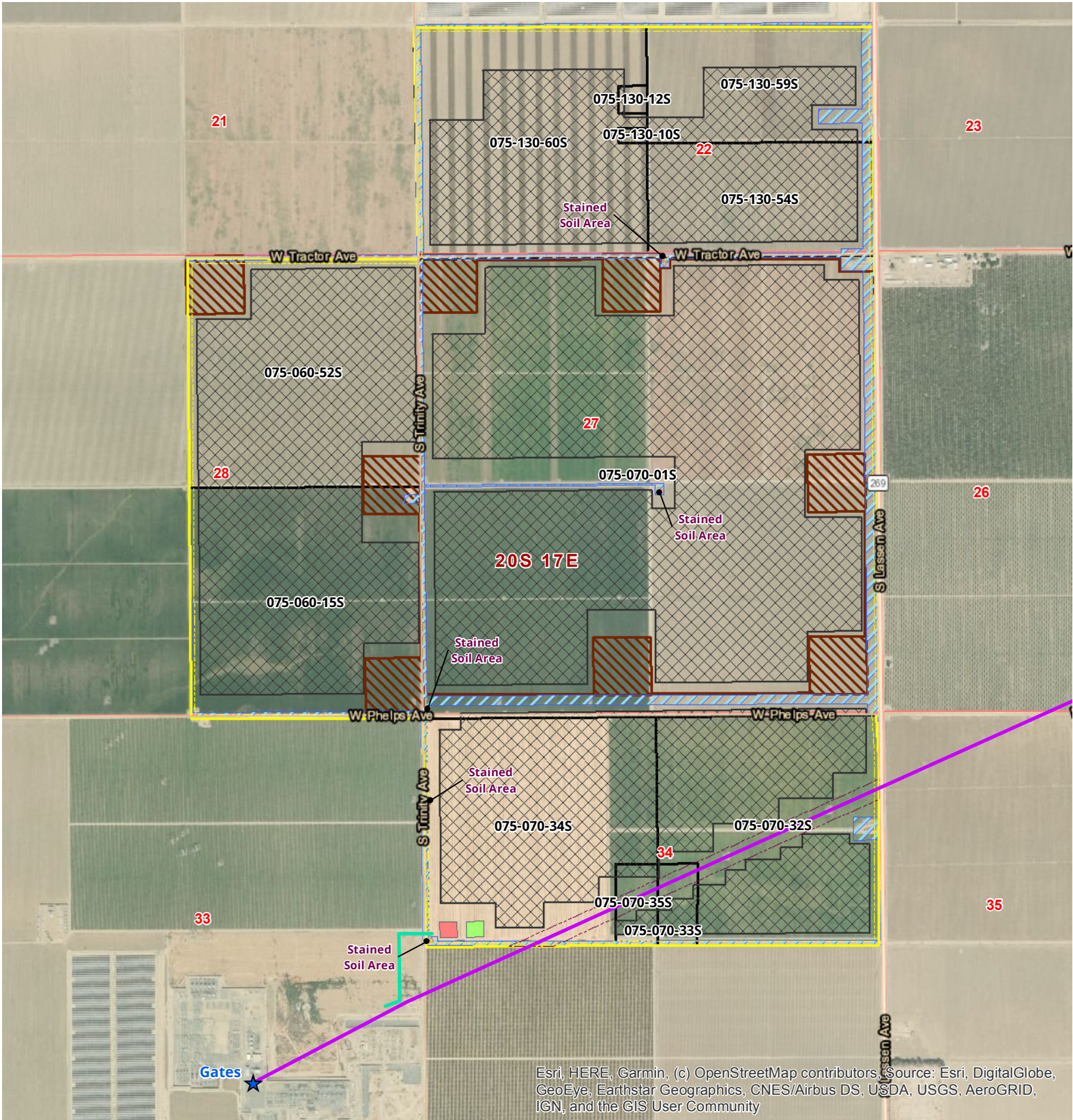
Crop Type	2017	2016	2015	2014	2013	2012	2011	2010	2009	2008	2007	2006
Tomato	481	800.5	795.5	627	954	800	638.5	630	949	798.5	953	784.5
Wheat	470	157	0	483	474.5	316	154	636	321.5	789	0	320
Onion	0		0	317.5	159	154	160	321.5	317	0	320	0
Garlic	0	0	0	0	0	0	319	0	0	0	0	0
Cotton		50	50	0	0	317.5	316	0	0	0	314.5	319
Fallow	636.5	580	742	160	0	0	0	0	0	0	0	0
Leased	0	0	0	0	0	0	0	0	0	0	0	164
Total	1,588	1,588	1,588	1,588	1,588	1,588	1,588	1,588	1,588	1,588	1,588	1,588

Note: The difference in crop acreage of 1,588 acres versus the project acreage of 1,600 acres is attributed to the dedicated 30 feet of right-of-way to Lassen Avenue. The project total is reported as 1,600 acres and is the acreage that is carried forward in the analysis.

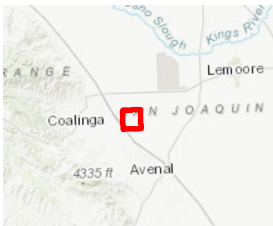
Source: ESA 2018a

The project site conceptual plan is shown on Figure 2-2. Figures 2-3 and 2-4 provide representative photographs of the project site. Figure 2-5 provides the land uses for the project site in 2016, at the time of the biological resources survey report. Note that the crops shown may differ from Table 2-2, based on the point in time the survey was taken, as the agricultural productions vary seasonally.





Esri, HERE, Garmin, (c) OpenStreetMap contributors, Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

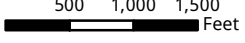


Data Source: RWE Solar Development, LLC, 2019.  
 Coordinate System: NAD 1983 State Plane California IV FIPS 0403 Feet.  
 See complete reference in EIR.

- ★ Substation
- ↗ Project Gen-Tie Line
- Project Substation
- Project BESS
- ▨ Solar Panels
- No Build Areas
- ↔ Transmission Line - 230 kV
- ▭ Transmission Line - 230 kV (105 Ft. Setback)
- Stained Soil Area
- ▨ Stained Soil Area (25 Ft. Setback)
- ▨ Water Infrastructure
- ▨ Drilling Pad
- ▨ Drilling Pad Corridor
- ▨ Internal Project Boundary (50 Ft. Setback)
- Boundaries
- ▨ Project Boundary
- ▨ Parcel Boundary
- ▨ Township
- ▨ Section



Figure No. 2 - 2  
 Title Project Site - Conceptual Plan  
 Project Fifth Standard Solar Project Complex



Disclaimer: Stantec assumes no responsibility for data supplied in electronic format. The recipient accepts full responsibility for verifying the accuracy and completeness of the data. The recipient releases Stantec, its officers, employees, consultants and agents, from any and all claims arising in any way from the content or provision of the data. 1:18,000





Figure 2-3a: View of project site from the East.



Figure 2-3b: View of project site from the North.



Figure No.

2 - 3

Title

Representative Site Photographs

Project

Fifth Standard Solar Project Complex

Data Source: Stantec 2017

Disclaimer: Stantec assumes no responsibility for data supplied in electronic format. The recipient accepts full responsibility for verifying the accuracy and completeness of the data. The recipient releases Stantec, its officers, employees, consultants and agents, from any and all claims arising in any way from the content or provision of the data.



Figure 2-4a: View of project site from the South.



Figure 2-4b: View of project site from the West.



Data Source: Stantec, 2017.

Disclaimer: Stantec assumes no responsibility for data supplied in electronic format. The recipient accepts full responsibility for verifying the accuracy and completeness of the data. The recipient releases Stantec, its officers, employees, consultants and agents, from any and all claims arising in any way from the content or provision of the data.

Figure No.

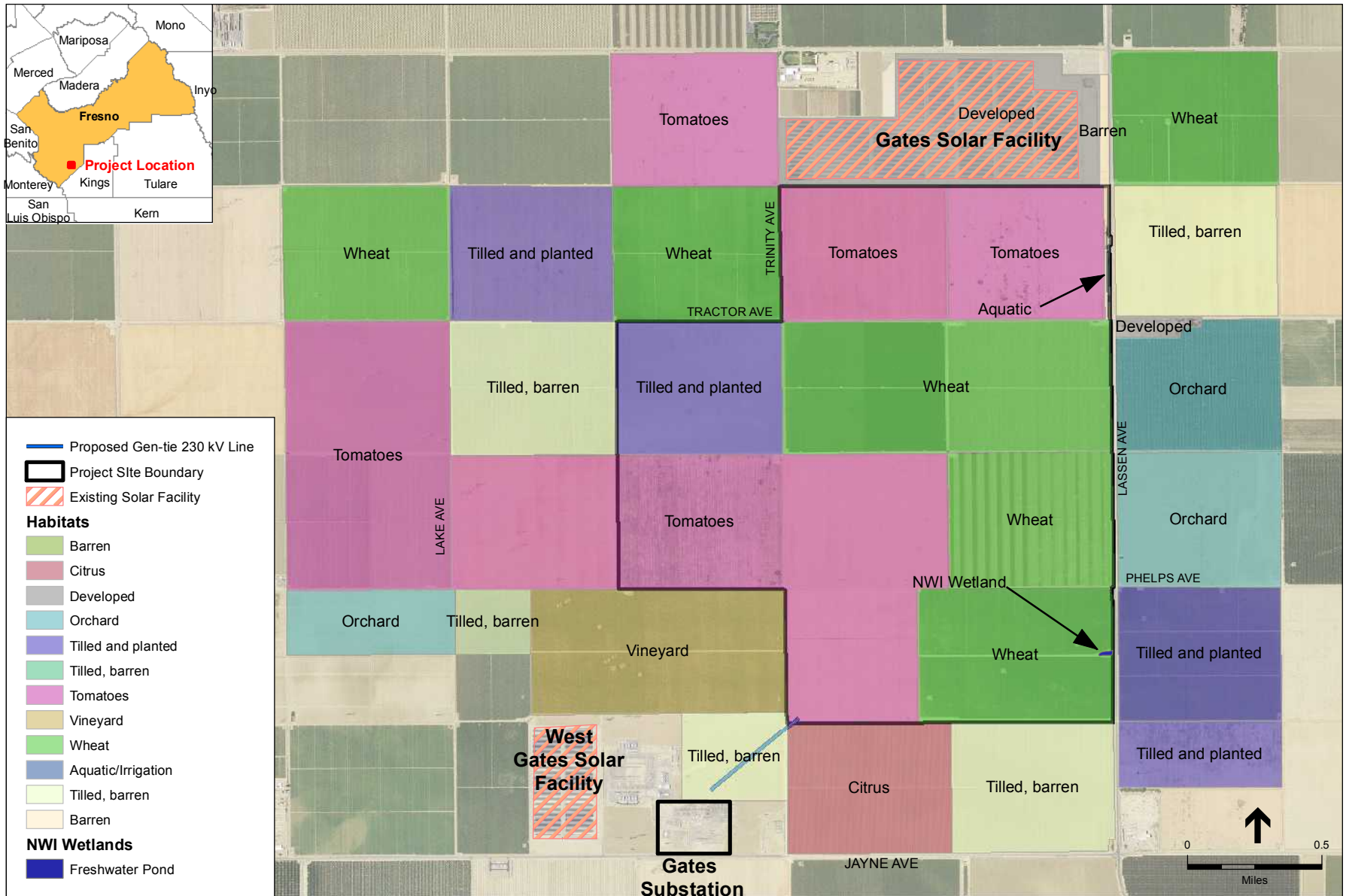
2 - 4

Title

Representative Site Photographs

Project

Fifth Standard Solar Project Complex



Data Source: RWE Solar Development, LLC, 2019  
 NWI, 2016: ESA.

Disclaimer: Stantec assumes no responsibility for data supplied in electronic format. The recipient accepts full responsibility for verifying the accuracy and completeness of the data. The recipient releases Stantec, its officers, employees, consultants and agents, from any and all claims arising in any way from the content or provision of the data.

Figure No.  
 2 - 5

Title

Existing Land Use

Project

Fifth Standard Solar Project Complex



### 2.3.2 Soils

The primary soil type is Westhaven loam: it comprises 1,499 acres, which is 93.8% of the project site. The secondary soil type is Excelsior sandy loam: it comprises 99.5 acres, which is 6.2% of the project site.

The Natural Resources Conservation Service's land capability classification system groups soils primarily based on their capability to produce common cultivated crops without deteriorating over time. Soils in Class I are suited to a wide range of plants, are productive, and are suited to intensive agricultural use (USDA 1961). Class I soils are nearly level, deep, generally-well drained, and easily worked; and erosion hazard (wind or water) is low (USDA 1961). The primary soil type present on the project site, Westhaven loam, is classified as Class I soil.

Soils in Class II need careful soil management, including conservation practices, to prevent deterioration or to improve air and water interactions during cultivation (USDA 1961). Limitations restricting the use of Class II soils are few, and in this case include the following: somewhat unfavorable soil structure and workability; slight-to-moderate salinity or sodium easily corrected but likely to recur; occasional damaging overflow; and slight climatic limitations on soil use and management (USDA 1961). Appropriate conservation practices for Class II soils may include crop rotations that include grasses and legumes, cover or green-manure crops, stubble mulching, and fertilizers (USDA 1961). The secondary soil type present on the project site, Excelsior sandy loam, is classified as Class II soil.

The Westhaven loam site soils are considered Class I soil and Excelsior sandy loam soils are considered Class II soils. The Class I erosion rating indicates that the soil has, on average, lost less than 25% of the uppermost 20 centimeters (cm) of the soil horizon. Soils are assigned to a Wind Erodibility Group, which categorizes soils based on their susceptibility to wind erosion. There are nine groups (1-8, with Group 4 having a subgroup), with Group 1 being the most susceptible and Group 8 being the least susceptible. Each Wind Erodibility Group has a corresponding Wind Erodibility Index (I), which is defined by the amount of material eroded per year and is measured in tons per acre per year (tons/acre/year) (USDA-NRCS 2018). The primary soil type in the study area belongs to Group 6 (I = 48 tons/acre/year), and the secondary soil type belongs to Group 3 (I = 86 tons/acre/year).

### 2.3.3 Irrigation Infrastructure

Surface water is the primary source of water to the project site. The Westlands Water District (WWD) provides water to the project site through its Lateral Line PV-9, which originates to the west of the project site at the Coalinga Canal. There is a total of three WWD turnouts to service the project site. Of the 1,600 acres of land on the project site, approximately 994 acres (60% of the project site) do not have turnouts (irrigation system connections) to the WWD laterals serving the site location. Woolf Farming has invested in its own permanent irrigation infrastructure, consisting of buried steel and polyvinyl chloride (PVC) piping to cover the remaining site.

Groundwater is also used as an irrigation source when surface water is insufficient or unavailable. The irrigation infrastructure is suitable to support the delivery and distribution of

groundwater, surface water, and effluent for irrigation use. The combination of WWD and Woolf Farming irrigation infrastructure allows for the effective distribution of surface and groundwater throughout the project site (ICF 2019).

### **2.3.4 Water Use**

Between 2008 and 2017, the project site has had an average annual water use of 3,100 acre-feet (af) (comprised of surface and groundwater) to serve existing agricultural operations (ESA 2018a). The average use per acre for the existing operations is 1.94 af of water per acre, which is consistent with the average 2 af of water per acre used by farmers in the area (ESA 2018a). Over the same time period, groundwater supplied an average of 90% of the estimated water use, which was approximately 2,800 af of water.

### **2.3.5 Water Supply**

#### **Surface Water**

Surface water for the project site is provided by WWD through allocation from the Central Valley Project (CVP). The CVP is a water storage and distribution system operated by the U.S. Bureau of Reclamation (USBR). WWD has annual contracts for approximately 1,500,000 af of water for environmental, irrigation, and municipal and industrial uses. WWD distributes through the CVP to farms and municipalities on a prioritized basis with contract farms, such as the project site being last in line for water delivery. WWD's regulations define the full allocation of agricultural water within its district. A 100% surface water allocation means that 2.6 af of water per acre was made available to WWD farmers. According to the USBR and WWD, the WWD anticipates receiving 50% of its contractual water from the CVP in an average year (ICF 2019). In such a case, the WWD would experience a 50% shortage in the amount of water needed to meet its contract requirements.

Over the past 42 years (1977-2018), the project site has received its full water allocation sixteen times and only once within the last 10 years for which data was provided (through 2018).

Unless the surface water allocation was close to 100%, the landowner has chosen to divert all surface water allocated to the project site acreage to other land holdings under their control for irrigating permanent and more profitable crops, such as nut trees, which are more sensitive to the salt content naturally occurring in the local groundwater.

#### **Groundwater**

In some years, the property owners have chosen to fulfill their irrigation needs through the pumping of groundwater from four irrigation wells located near the project site. Except for four years, during the period from 1990 to 2018, groundwater was either the primary (50% or more) and, at times, the only source of water for irrigation, due to surface water being diverted to other uses, as described above. Table 2-3 provides a summary of the four irrigation wells' capacities.



**Table 2-3: Project Site Well Capacity**

Well ID	Standing Water Level (feet below ground surface)	Pumping Water Level (feet below ground surface)	Acre Feet per Minute
21-1	431	535	0.003
27-2	424	521	0.006
28-2	473	596	0.004
34-4	434	Data not available	0.005

### 2.3.6 Water Quality

The physical characteristics of the wells and aquifer create chemical imbalances, which results in water quality at the project site having a high salt content. The chemical imbalances can constrain plant growth (ICF 2019). As noted previously, soils in the area have elevated salinity levels, which is a common condition among the soils on the west side of Fresno County. Depending on the crop, elevated soil salinity can reduce yields of salt-sensitive crops. Consequently, additional management measures, such as supplemental applications of water, fertilizer, and amendments, may be required.

### 2.3.7 Tomato Processing Effluent Water

In 2015, Los Gatos Tomato Processing Facility Products applied for and received a Classified CUP (CUP No. 3510) to allow an increase in land application area for processed wastewater from 4,676.66 acres to 6,263.08 acres (an additional 1,586.42 acres) for wastewater discharge from the existing tomato processing plant. The Fifth Standard parcels are within the area allowed to receive discharge water. Although a large land application area is permitted for the beneficial reuse of the effluent, only a fraction of that land area is used in a typical year. Crops that may receive effluent include winter wheat, cotton, processing tomatoes, alfalfa, sorghum, sudangrass, or other suitable crops. Currently, the Los Gatos Tomato Processing Facility wastewater effluent produced only requires 480 acres of alfalfa to dispose of their effluent and none of that acreage is within the project site.

The California Department of Water Resources (DWR) issued its most recent Waste Discharge Requirement Order R5-2017-0022, on March 13, 2017. The order requires specific conditions and monitoring requirements that must be maintained by Los Gatos Tomato Processing Facility to ensure that wastewater effluent is of sufficient quality in terms of nutrient loads, salt content, solids, etc., to avoid degrading the groundwater in the land application area. Groundwater and soil monitoring occurs on a quarterly basis to ensure the protection of the land application areas.

### 2.3.8 Summary of Existing Land Use

The project site is classified as Prime Farmland and with the exception of 1.25 acres, is under Williamson Act Contracts, which are being petitioned for cancellation under a separate process with the County. Although groundwater supply may be a concern in the future, under CUP Application No. 3510 issued for the Los Gatos Tomato Processing Facility, a portion of the

project site is allowed to receive tomato processing effluent water to allow continued agricultural production. Effluent may not be applied to parcels which are developed with solar panels. Notwithstanding the challenges of surface water allocation variability and groundwater quality, the project site has a history of producing agriculture crops, which is a clear priority to the County, as documented in its General Plan policies under its Agricultural Element.

## 2.4 PROJECT PURPOSE AND NEED

The California Renewable Portfolio Standard (RPS) legislation enacted in 2002 (Senate Bill [SB] 1078) and accelerated in 2006 required retail sellers of electricity to obtain 20% of their supply of electricity from renewable energy sources, such as solar, by 2010. Subsequent recommendations advocated a goal of 33% by 2020, which Governor Arnold Schwarzenegger set as a statewide goal when he signed Executive Order S-14-08. The following year, Executive Order S-21-09 directed the California Air Resources Board, under its Assembly Bill (AB) 32 authority, to enact regulations to achieve the goal of 33% renewables by 2020 (CEC 2014). SBX1-2, including the 33% goal, was signed into law by California Governor Jerry Brown on April 13, 2011. In 2015, further increasing demand for utility-scale generation, Governor Brown signed SB 350 into law, requiring that utilities procure 50% of their electricity from renewables by 2030. In 2018, Governor Brown signed SB 100, which revised the revised the renewable percentage for 2030 to 60% and committed California to obtaining all of its electricity from clean sources, such as solar, wind, and hydropower, by 2045.

Power generated by the proposed project would be delivered directly via the California Independent System Operator (CAISO) electrical transmission system pursuant to the terms of one or more Power Purchase Agreements (PPAs). Because the project site would be constructed as up to three independent units, the electricity generated within the project site could be provided to numerous entities under separate PPAs.

## 2.5 PROJECT OBJECTIVES AND APPROVALS

### 2.5.1 Objectives

The proposed objectives for the project are as follows:

- Construct and operate a solar PV power-generating facility capable of producing up to 170 MW alternating current in a cost competitive manner.
- Interconnect directly to the CAISO high-voltage electrical transmission system (grid) to the Gates Substation.
- Assist California utilities in meeting their obligations under California's RPS Program, including 60% of retail sales from renewable sources by the end of 2030.
- Assist California utilities in meeting their obligations under the California Public Utilities Commission (CPUC) Energy Storage Framework and Design Program, including procurement targets of 1,325 MW by 2020, by providing up to 100 MW of storage capacity.

- Provide renewable-energy-related and diversified job opportunities that will help reduce local unemployment and benefit the local economy.

To achieve the second objective, the proposed project must be developed via an interconnection to the Gates Substation. The interconnection process includes preparation of transmission studies, negotiation and execution of an interconnection agreement, and physical construction of infrastructure necessary to interconnect the new project. The proposed project is well advanced in the interconnection process at a point of interconnection at the Gates Substation.

## 2.5.2 Approvals

The Applicant has applied to the Fresno County Department of Public Works and Planning for three Unclassified CUPs (CUP Application Nos. 3562, 3563, and 3564) to construct, operate, maintain, and decommission the proposed project.

The following permits and approvals are required for the proposed project. Additional permits and approvals may also be required.

- Fresno County Building Permits and Right-of-Way Encroachment Permit,
- Model Water Efficiency Landscaping Ordinance,
- Regional Water Quality Control Board (RWQCB), National Pollutant Discharge Elimination System (NPDES) Permit and Report of Waste Discharge,
- San Joaquin Valley Air Pollution Control District (SJVAPCD) Regulation VIII, Dust Control Plan,
- SJVAPCD Rule 9510, Indirect Source Review,
- Fresno County Grading Permit, and
- California Department of Transportation (Caltrans) Encroachment Permit.

## 2.6 PROJECT FACILITIES

The proposed project, as defined for the purposes of CEQA analysis, includes three individual facilities that would be co-located on the project site. The three facilities would share an onsite project substation where the voltage of the electricity generated and stored at each facility would be increased to match that of the point of interconnection. An existing transmission substation owned by PG&E (Gates Substation) is located on a parcel adjacent to the project site, at West Jayne Avenue and South Trinity Avenue. An overhead gen-tie line would convey electricity generated at the project site to the Gates Substation for distribution to customers within the local and regional grid by PG&E. The gen-tie line would require approximately 1,800 feet, or 0.3 mile, of 230-kV, single-circuit overhead electric transmission line to connect the project site to the Gates Substation.

The project facilities would be situated to avoid any disturbance to the landowner's existing water infrastructure, which includes such features as water wells, pumping and treatment systems, including both in-ground and trailer mounted irrigation pumps, pipes, and water conveyance channels. Portions of the site—primarily along site boundaries and section lines—

would be reserved for the landowner's access to and use of this existing infrastructure and would not be disturbed by the project, except for the occasional road, utility, or fence crossing.

### **2.6.1 Solar Facility**

#### **Photovoltaic Panels**

The proposed solar facilities would primarily consist of PV module arrays that would generate electricity directly from sunlight. Each module, or solar panel, could measure from 44 inches to 75 inches tall and from 22 inches to 44 inches wide, depending upon final module selection. Modules would be placed on racking systems and arranged in rows. The ultimate configuration of modules and rows will depend on the final technology selected, as explained below. Electricity generated at the arrays would be collected and delivered to the project substation through modular power block, cabling, and connections.

The total number of panels would depend on the technology selected. Thin-film PV module technology or crystalline silicon PV module technology, or both, may be used for the proposed project. Once the final composition of varying technologies is selected, the Applicant would produce an optimized layout that takes landscape features, drainage considerations, and maintenance access into account.

Although selection of the module has not been finalized, the general characteristics of the PV panels are that they would be covered with dark, high-light-absorbing, low-reflective glass mounted on a corrosion-resistant metal racking system. Panel mounting systems that may be installed would include either fixed-tilt or tracking technology. Multiple types of panels and racking systems may be installed across the site.

Panels would be arranged on the site in solar arrays. For single-axis tracking systems, the length of each row of panels could be up to 350 feet along the north/south axis. For fixed-tilt systems, a row would consist of multiple tables (4 panels deep by 10 panels wide, depending on design), with each table measuring approximately 65 feet along the east/west axis with 1-foot spacing between them. Spacing between each row would be a minimum of 4 feet.

In accordance with County policy and the County's Solar Guidelines, the solar panels would be set back a minimum of 50 feet from the property lines and neighboring agricultural operations.

#### **Modular Power Block, Cabling, and Connections**

The solar panel array would contain individual modular power blocks. Individual PV panels and rows would be electrically connected in series to carry direct current (DC) electricity. Either central inverters or string inverters would be used to change the DC output from the panels to alternating current (AC) electricity.

If central inverters are used, multiple DC strings would be wired into an above-ground combiner box to merge the strings into a single high-current cable. From the combiner boxes, the cabling would be installed above-ground in cable trays and underground trenches approximately 3 feet

deep. These cables would terminate at inverters mounted on small concrete pads distributed across the project site. The inverters would change the DC output from the combiner boxes to AC electricity. Next, the AC electricity for the modular power block would be increased to medium voltage by a standard “step-up” transformer. The medium-voltage cabling would create multiple collection circuits that would carry the electricity from the modular power blocks to the project substation. The medium-voltage collection circuits would be installed underground or on overhead poles to the substation.

The DC cable system would be laid in above-ground metal trays measuring approximately 6 inches by 6 inches running the length of the tracker rows. DC cables would exit the arrays and run in underground trenches from the arrays to inverter skids and a step-up transformer. The inverter skids would be sized and spaced according to final design and engineering requirements, with a typical skid including two to four inverters to serve up to 4 MW. The proposed project would use between 100 and 200 inverters. The skids would be placed on concrete pad foundations. The top of the equipment would be approximately 10 feet above the ground. There would be one such skid and foundation for each modular power block.

Alternately, smaller string inverters may be used in lieu of the larger, central inverters. With string inverters, four to eight DC strings would be wired into an inverter, with each inverter converting the DC power to AC power. The DC circuits would be routed to the inverters via above-ground cable trays or buried in trenches. String inverters would be located on above-grade metallic racks between rows. Four to twelve string inverters would be clustered together with an AC combiner panel that would combine the AC currents into one set of conductors and then feed into a transformer, where the circuit would be “stepped-up” to medium voltage. These medium-voltage circuits would each travel to the project substation through underground trenches at depths greater than 40 inches. All the medium-voltage circuits would be combined and monitored at the project substation.

### **Tracker Unit**

Tracker units allow solar panels to continuously orient themselves directly toward the sun to maximize the exposure of the panel to sunlight over the course of a day (generally east to west). The trackers may be “self-powered” using individual PV modules or may be powered through connections to the inverters; in either case, the trackers would not require additional electricity from PG&E supplies. After sunset, the trackers orient the panels toward the east so that they are ready to capture a new day’s worth of sunlight. The tracker units would contain the rows of solar PV panels running in the north-south direction. The tracker units would include seven major components, described below.

**Drive Unit.** Multiple rows may be rotated with a single drive unit, or each row may be provided with its own drive. In the first scenario, multiple rows of solar PV panels would be linked by a steel drive strut, which would be oriented perpendicular to the axis of rotation. Each row would be connected to the drive strut by a torque arm, which acts as a lever, enabling the drive strut to rotate the rows together as the drive unit moves the drive strut forward and backward. The drive unit is typically mounted at the first row in a tracker unit and consists of a bi-directional AC motor

that rotates the drive strut. The drive unit would be connected to an industrial-grade variable-frequency drive that translates commands from the control computer into AC voltage that applies power to the motor and to the drive strut and the rows.

In the other tracking system, a motor would be mounted in the middle of each row, and there would be no drive components spanning multiple rows.

**Tracker Controller.** The tracker controller is a self-contained industrial-grade control computer that would incorporate all of the software needed to operate the system. The controller would include a liquid crystal display (LCD) monitor that displays a combination of calibration parameters and status values, providing field personnel with a user-friendly configuration and diagnostic interface. The LCD would enable field adjustment, calibration, and testing.

**PV Panels.** The system would incorporate commercially available Underwriters Laboratory (UL)-listed solar PV panels, as described above. Due to the limited rotation angles and generally flat topography in the area surrounding the project site, incorporation of low-reflective materials would ensure reflectivity, and glint or glare associated with the project would be minimized. Where solar arrays would be a fixed-tilt system, rows of panels would be placed along an east-west axis with panels oriented toward the south. These panels would be protected from impact by tempered glass and would have factory-applied ultraviolet- and weather-resistant “quick connect” wire connectors.

**Steel Tracking Structure.** The steel tracking structure would be able to withstand high wind conditions, site-specific wind gust and aerodynamic pressure effects, and seismic events, as required by applicable codes. Tracking arrays would be oriented along a north-south axis with panels tracking east to west to follow the movement of the sun. Fixed-tilt arrays would be oriented along an east-west axis with panels generally facing south. The total height of the panel system measured from ground surface would be up to 12 feet.

**Direct Current (DC)-Alternating Current (AC) Inverter.** The inverter would change the electrical current from DC, which is produced in the solar cells, to AC, which is delivered to the transmission system.

**Combiner Boxes.** Combiner boxes would merge the DC module wiring into a single high-current cable.

**Data Acquisition System.** Integrated with the inverter, the data acquisition system is made up of multiple components, including a data logger and sensors to record AC power output. Other integrated components include equipment to record weather conditions, including ambient temperature measured in degrees Celsius ( $^{\circ}\text{C}$ ), incoming solar radiation measured in watts per square meter ( $\text{W}/\text{m}^2$ ), and wind speed measured in meters per second ( $\text{m}/\text{s}$ ). The data acquisition system enables system data transfer and performance monitoring either locally or remotely.



## 2.6.2 Onsite Substation

The proposed project would include a single onsite substation located in the southwest corner of the project site (see Figure 2-2). The substation dimensions would be approximately 500 feet by 320 feet. The substation would collect the medium-voltage circuits that carry power from the solar facilities and prepare it for transmission to the point of interconnect. The onsite substation would contain metering equipment, switchgear, a series of fuses and circuit breakers that act as protective relays, and a transformer to step up the voltage to match the voltage of the local transmission grid. Figure 2-6 provides the substation layout, and Figure 2-7 provides elevations for the substation.

## 2.6.3 Electrical Interconnection

The proposed project would require the construction of a new 230-kV overhead, single-circuit gen-tie line, which would extend approximately 0.3 mile (1,800 feet) from the project substation at the southwestern corner of the project site to the Gates Substation, which is located on an adjacent PG&E-owned parcel.

PG&E would install and own approximately 1,550 feet of the gen-tie line and approximately four tubular steel poles (TSPs) on PG&E property (the Gates Substation parcel). PG&E would also install and own approximately 50 feet of the gen-tie line on the project site. One TSP for the gen-tie would be located on the project site. The TSPs would range in height from approximately 85 feet to 135 feet tall. To accommodate the power line, PG&E may also need to relocate and replace approximately three distribution poles and underground distribution power lines on the PG&E parcel.

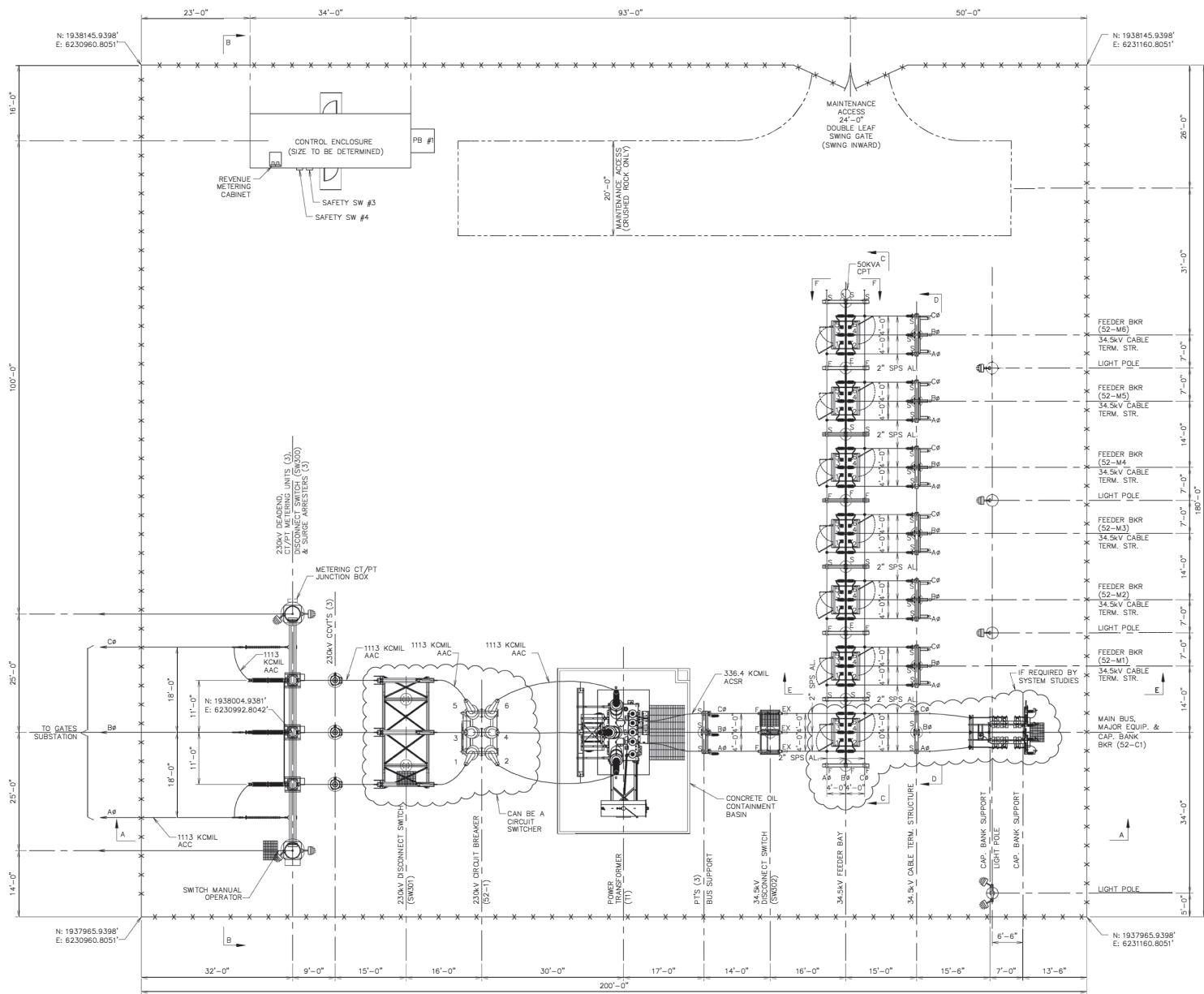
The project gen-tie would be designed to pass from the project site to PG&E property at a shared, common boundary, eliminating the need for easements or rights-of-way from other private landowners.

## 2.6.4 Telecommunications

The proposed project would be designed to employ a Supervisory Control and Data Acquisition (SCADA) system. The SCADA would allow remote monitoring of the project's operation, as well as remote operations of its critical control components. Access to the project's SCADA system would be accomplished with wireless and/or hard-wired connections to locally available commercial service providers (e.g., a local exchange carrier) and would be located within the proposed project site construction footprint.

## 2.6.5 Meteorological Data Collection System

The proposed project would include a meteorological data collection system (weather station). Various sensors at the station would measure three different types of solar radiation, wind speed, wind direction, temperature, humidity, and precipitation. Data from each sensor would be collected by the station's data-logger, as well as transmitted to the project's SCADA system for monitoring and reporting purposes.



Data Source: RWE Solar Development , LLC, 2019.

Disclaimer: Stantec assumes no responsibility for data supplied in electronic format. The recipient accepts full responsibility for verifying the accuracy and completeness of the data. The recipient releases Stantec, its officers, employees, consultants and agents, from any and all claims arising in any way from the content or provision of the data.

Figure No. 2 - 6  
 Title Substation Lay Out Drawing  
 Project Fifth Standard Solar Project Complex



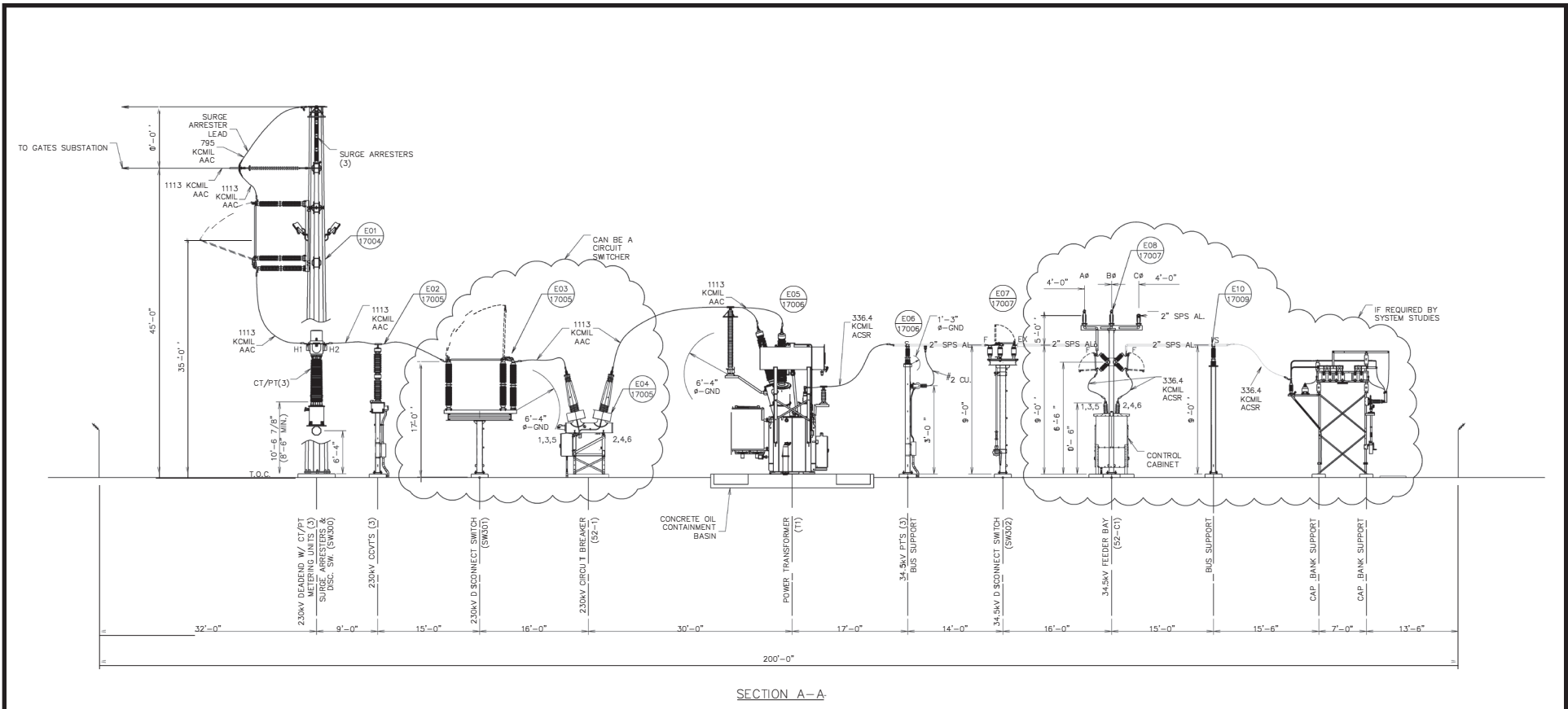


Figure No.  
2 - 7

---

Title  
Substation Elevation

---

Project  
Fifth Standard Solar Project Complex

Data Source: RWE Solar Development, LLC, 2019.

Disclaimer: Stantec assumes no responsibility for data supplied in electronic format. The recipient accepts full responsibility for verifying the accuracy and completeness of the data. The recipient releases Stantec, its officers, employees, consultants and agents, from any and all claims arising in any way from the content or provision of the data.

A mobile weather station mounted on a small, flatbed trailer was installed during the project development phase. This mobile version of the station would be replaced by a permanent, ground-mounted version during project construction.

### **2.6.6 Energy Storage Facility**

Storage systems can assist grid operators in more effectively integrating intermittent renewable resources into the statewide grid and can assist utilities in their efforts to meet the energy storage goals mandated by the CPUC. An up to 100-MW energy storage facility with a discharge duration of 4 to 10 hours would be constructed on the project site. The storage system would consist of battery racks housed in containers or a building, bi-directional inverters, step-up transformers, and supporting systems. The system would be located near the project substation. Containers measuring 30 to 60 feet long by 8 to 12 feet wide by 8 to 12 feet high would be installed on concrete pads designed for secondary containment, using up to 5 acres of the project site. Between 60 to 70 containers are expected to be required. Heating, ventilation, and air conditioning (HVAC) systems are required and would be located within the containers. Alternately, one or two larger buildings (rather than multiple, smaller containers) may be installed to house the energy storage components. In accordance with strict safety standards, the containers or structures would be equipped with fire suppression systems, fire/smoke detectors, and emergency stops. The battery modules would be housed in casings and then placed in racks. Several racks are placed in a container, which is a fully enclosed structure that is then placed on a concrete pad. The proposed project could use any commercially available battery technology, including but not limited to lithium ion, sodium sulfur, sodium hydride, and nickel hydride.

### **2.6.7 Site Access and Roads**

Access roads would be developed for ingress and egress to the project site, to individual project components, and between the solar array rows to facilitate installation, maintenance, and cleaning of the solar panels.

Primary access roads, running from the site entrance to the project substation and to the individual facilities, as well as a perimeter road, would be 12 feet wide and graveled using approximately 4 to 8 inches of aggregate base on a compacted subgrade. The roads providing access to the inverter equipment pads would be sufficient for California Department of Forestry and Fire Protection (CAL FIRE) access (the Fresno County Fire Protection District has a contract with the CAL FIRE Fresno-Kings Unit for the provision of emergency services). The perimeter roads would do the following:

- i) provide a fire buffer
- ii) accommodate project Operations and Maintenance (O&M) activities, and
- iii) facilitate onsite circulation for emergency vehicles.

Additional access roads providing access to PV arrays for O&M activities would consist of compacted earth. For these roads, the ground would be grubbed (cleared of vegetation),

scarified (loosened up), moisture conditioned, compacted, and graded with a crown in the center and a swale on the side.

Primary access to the project site would be via Lassen Avenue. The entrance road would be improved to 24 feet wide, with two 10-foot travel lanes, two 2-foot shoulders, and an aggregate base surface. During decommissioning of the facility, it is anticipated that the same access roads would be used for removal of the facility components.

### **2.6.8 Lighting**

Motion-sensitive directional lights would be installed to provide security and approach lighting for the substation and the control-equipment enclosure or building. Manually controlled lighting would be installed for O&M activities at other project locations, such as inverter and intermediate transformer locations. All lighting would be shielded and/or directed downward to minimize the potential for glare or spillover onto adjacent properties and would meet applicable rules and code requirements for outdoor lighting. Project lighting would be in use as determined by the motion sensors, security requirements, prudent utility practices, and as necessary for O&M activities.

### **2.6.9 Security and Safety**

As necessary for public safety and site security, a 6- to 8-foot-high fence would be installed around the perimeter of the project site.

Signage for safety and identification would be posted around the perimeter of the project site. The proposed project would include signs required by jurisdictions with authority. Signage would conform to County signage requirements.

### **2.6.10 Testing and Energizing**

Prior to commencement of commercial operations, commissioning and start-up activities would include testing, calibration, and any necessary troubleshooting of all substation equipment, inverters, electricity collection systems, energy storage systems, and PV array systems. Initial equipment energization would occur upon completion of successful testing.

### **2.6.11 Procurement of Equipment and Construction-Related Items**

If the project is approved, the Applicant will make reasonable efforts to procure equipment and construction-related items within the County from local manufacturing facilities and vendors, such as local concrete. The technical studies prepared for this EIR assumed deliveries of solar panels from the Port of Stockton or Port of Long Beach, and other construction materials and labor force were assumed to be sourced locally. The County unemployment rate was 7.3% in July 2019 (EDD 2019). Between July 2018 and July 2019, construction employment recorded a gain of 1,100 jobs; specialty trade contractors, such as those required for installation of solar

facilities, accounted for 73% of those jobs (EDD 2019). It is reasonable to anticipate that the labor market would be able to sustain the employment demand during project construction.

## 2.7 CONSTRUCTION SCHEDULE

Construction of the project facilities would occur over 11 to 12 consecutive months, with an expected start between late 2020 and late 2021<sup>2</sup>. Within this timeframe, construction of the three individual facilities would occur according to the following schedule:

- **Blackbriar Energy Storage Facility:** Construction of the Blackbriar Facility is expected to begin between late 2020 and late 2021 and to be completed between mid 2021 and mid 2022.
- **Fifth Standard Solar Facility:** Construction of the Fifth Standard Solar Facility is expected to begin between late 2020 and late 2021, occur simultaneously with Blackbriar construction for several months, continue beyond the completion of Blackbriar, and be completed between December 2021 and December 2022.
- **Stonecrop Solar Facility:** Construction of the Stonecrop Facility would begin after completion of Blackbriar but prior to the completion of Fifth Standard, thus running concurrently with Fifth Standard construction. Stonecrop construction is expected to begin between August 2021 and August 2022 and to be completed at the same time as Fifth Standard.

### 2.7.1 Site Preparation and Pre-Construction Activities

Pre-construction activities would comprise the activities needed to prepare the project site for construction, including site surveying, vegetation clearance, and grading. The project site would be secured with the installation of chain-link fencing and gates around the site perimeter and staging and laydown areas. No pipelines would require removal as part of the site preparation and construction activities. Coordination with Underground Service Alert (USA) North 811 would occur prior to commencing any digging.

#### Staging and Other Temporary Work Areas

Construction of the proposed project would require temporary staging and storage areas for materials and equipment during the construction process. Construction laydown and staging areas would be located within the project site and secured by temporary, free standing chain-

---

<sup>2</sup> The Notice of Preparation issued for this EIR noted earlier construction dates. The technical studies prepared for the project were based on earlier construction dates beginning and ending in 2019. The construction period, phasing, and means and methods of construction would remain the same, thus the impacts analyzed under those earlier construction dates would continue to be valid. In the case of air quality, the impacts are likely to be reduced with the later construction dates because construction equipment continues to be less polluting as construction fleets change over in response to the California Air Resources Board's regulation for in-use off-road diesel-fueled fleets.

link fencing for the duration of construction activities. Following construction, the laydown and staging areas would be fully restored to as close to pre-construction conditions as possible.

### **Access Roads**

Temporary and permanent site access roadways would be graded and compacted prior to road construction. Final site preparation activities would consist of compaction of pad sites/foundations for the substation, inverter, and control room.

### **Erosion and Sediment Control and Pollution Prevention**

During grading, erosion prevention measures would be implemented, including separating topsoil and stockpiling and stabilizing it separately from subsoil. When project construction is complete, the stripped subsoil and topsoil would be replaced as required. Other erosion and sediment control measures would include watering for dust control and soil compaction during grading and throughout construction activities.

In conformance with industry standards, a registered civil engineer would prepare erosion control designs for the proposed project. Because the proposed project would result in disturbance of an area greater than 1 acre, and because there are several aquatic features that meet the qualifications for federal or state jurisdictional waters located on the eastern fringe of the project site, including an agricultural pond located immediately adjacent to Lassen Avenue, the proposed project would be required to enroll (under the State Construction General Permit) in the NPDES program.

## **2.7.2 Construction Activities**

### **Panels and Trackers**

Solar PV panels would be manufactured offsite and shipped to the site ready for installation. Concrete pads for the drive motors would be poured using concrete from an offsite local batch plant, located within approximately 20 miles of the project site (potentially South Valley Materials Inc. in Coalinga or Cemex Lemoore in Lemoore), and electrical equipment for the array would be set in place.

The trackers and, in turn, the PV modules, are typically supported by driven, H-shaped piles made of galvanized steel. The piles are usually driven with a hydraulic ram to 6 to 10 feet below grade. Approximately 4 to 5 feet of the pile would remain above grade. Soil disturbance is limited to the pile location and temporary disturbance by the hydraulic ram during construction. No blasting or rock breaking is anticipated to occur during project construction. Small truck-mounted cranes or grade-all forklifts would move materials through the project site and support tracker construction. Array construction would include small all-terrain vehicles to transport materials and workers on access roads and array aisles.

The process and procedures for installation of the racking system and assembly of modules would be in accordance with final engineering design details, but would generally include these steps:

- Installation of support piles using a hydraulic/vibratory technique, or assembly of skid system at central location, as required or necessary, for the selected racking system,
- Installation of any specified tracking system components,
- Installation of galvanized metal racking system for solar PV modules,
- Mounting of PV solar modules to racking system,
- Installation of the PV solar module strings' wire harnesses and associated hardware,
- Installation of the inverters and equipment control enclosures,
- Installation of the DC collector wires from string locations to inverter locations,
- Installation of cable from the inverters to the project substation,
- Construction of the substation,
- Construction of PG&E transmission system interconnection facilities,
- Installation and interconnection of the communications system,
- Connection to local fiber optic and/or telephone network,
- Installation of meteorological stations, and
- Final installation of site roadways after placement of all necessary underground components.

### **Inverters, Transformers, Substation, and Electrical Collector System**

Underground cables to connect panel strings would be installed in trenches, which would be constructed using a rubber-tired backhoe excavator or trencher. Wire depths would be approximately 3 feet below grade in a trench approximately 3 to 6 feet wide. Cable types would either be cable rated for direct burial or installed inside a PVC conduit.

#### Substation

Construction work within the substation footprint would include site preparation and installation of substructures and electrical equipment. The area would initially be cleared and graded and fenced with security fencing for the duration of substation construction. USA would be contacted to mark the locations of existing buried utilities in the vicinity. The substation would be constructed with conventional grading and construction equipment. Grading would be minimal. The substation equipment would be mounted on concrete foundation pads or piers depending

on local soil condition. The substation area would be graveled with crushed rock for grounding and employee safety purposes.

### Energy Storage Facility

After clearing and grading the site for the battery energy storage system, underground electrical conduit and cable, including the grounding grid, would be installed. Concrete pad foundations for the containers or building(s) would be poured, and battery containers or building(s) would be installed on top of the foundations.

The HVAC and fire suppression systems may be pre-installed in containers offsite or they may be installed in containers or the building during site construction. Battery modules would be installed in racking systems within the containers or building. Wiring would be connected at the equipment and in enclosures. Inverters and transformers would either be installed within the containers/building or installed externally on concrete pads. The inverters and transformers would be connected electrically to complete the system.

### 2.7.3 Construction Equipment and Personnel

During construction, the number of workers onsite would vary, as would the type of equipment and vehicles that would operate on the project site. Table 2-4 provides a summary of the maximum number of workers anticipated by construction phase. Table 2-5 lists the type and number of equipment and vehicles expected for construction of each of the project components. Construction equipment would generally operate between the hours of 7 AM and 7 PM Monday through Friday. Nighttime and Sunday construction work is not expected, but could occur on occasion depending on schedule considerations; however, construction activities would not occur outside the hours designated in the County’s standard noise ordinance as further described in Section 4.12, Noise.

**Table 2-4: Construction Phasing and Construction-Related Employment**

Construction Element	Construction Phase				
	Site Preparation	Grading / Excavation	Drainage / Utilities / Sub-Grade	Construction	Paving
Maximum Number of Workers	50	50	100	200	20
Length of Phase (work days)	12	31	31	310	22

Construction phases for the proposed project are expected to overlap, and the number of construction workers onsite is expected to range between 20 and 300 workers per day, with the peak number of workers onsite during months eight and nine. Local labor would be used to the

maximum extent practicable. Parking for the construction workers would be in designated areas at the project site. Carpooling for construction workers would be encouraged to reduce vehicle trips; however, to provide a conservative estimate of this project's impacts, it was assumed that no carpooling would occur.

**Table 2-5: Onsite Equipment and Vehicle Use by Construction Phase**

Equipment	Estimated Usage		
	Units	Hours per Day	Total Days
<i>Phase 1</i>			
Tractors/Loaders/Backhoes	4	8	12
Plate Compactors	2	8	12
Crawler Tractors	2	8	12
Dumpers/Tenders	5	8	12
Forklifts	2	8	12
Generator Sets	4	8	12
Graders	2	8	12
Scraper	2	8	12
Skid Steer Loaders	2	8	12
<i>Phase 2: Grading/Excavation</i>			
Tractors/Loaders/Backhoes	4	8	31
Plate Compactors	2	8	31
Crawler Tractors	2	8	31
Dumpers/Tenders	5	8	31
Forklifts	2	8	31
Generator Sets	4	8	31
Graders	2	8	31
Rollers	2	8	31
Scraper	2	8	31
Skid Steer Loaders	2	8	31
<i>Phase 3: Drainage/Utilities/Sub-Grade</i>			
Tractors/Loaders/Backhoes	4	8	31
Plate Compactors	2	8	31
Crawler Tractors	2	8	31
Dumpers/Tenders	5	8	31
Forklifts	2	8	31
Generator Sets	4	8	31



Equipment	Estimated Usage		
	Units	Hours per Day	Total Days
Graders	2	8	31
Scraper	2	8	31
Skid Steer Loaders	2	8	31
<i>Phase 4: Construction</i>			
Tractors/Loaders/Backhoes	7	8	310
Bore/Drill Rigs	10	8	310
Cement and Mortar Mixers	10	8	310
Concrete/Industrial Saws	3	4	310
Plate Compactors	1	8	310
Cranes	1	8	310
Dumpers/Tenders	5	8	310
Excavators	2	8	310
Forklifts	5	8	310
Generator Sets	4	8	310
Pavers	1	8	310
Paving Equipment	1	8	310
Rollers	1	8	310
Skid Steer Loaders	2	8	310
Trenchers	10	8	310
<i>Phase 5: Paving</i>			
Rollers	1	8	22

## 2.7.4 Construction Traffic

Project construction traffic would primarily include the delivery of construction equipment, construction vehicles, material deliveries, and daily construction worker trips. Workers would commute to and from the project site on a daily basis at an average one-way distance of 50 miles. A majority of the project equipment (e.g., solar PV panels, inverters, tracker steel, transmission poles, substation circuit breakers, and substation steel) would be delivered to the site in standard widths and lengths by trucks, vans, or covered flatbed trailers. Substation equipment, inverter enclosures, and cranes would be delivered to the project site on wide-load trailers. These trailers would require pilot cars and are expected to make up to two round trips during the installation period. The Applicant would facilitate materials delivery during off-peak traffic hours and would comply with all Caltrans permitting requirements if these loads are oversize.

Construction materials and worker trips would generally be sourced from the major urban areas in the region and nearby communities. Based on the existing roadway network serving the project area, it is assumed that trucks would travel to and from the construction site via I-5 (using the Jayne Avenue interchange to and from Lassen Avenue), SR 198 (east of Lassen Avenue), and SR 269 (Lassen Avenue). Deliveries of solar panels from the Port of Stockton or Port of Long Beach would be routed to the project site via I-5 to Jayne Avenue, then to SR 269. Miscellaneous deliveries of equipment and materials would come from the Fresno area and would access the project site via SR 198 and SR 269. Assuming that workers would be drawn from the Fresno area, it is anticipated that workers would use SR 198 (east of Lassen Avenue) and SR 269 (Lassen Avenue) to access the project site.

It is anticipated that during the anticipated 334 total days of construction, the proposed project would result in an average of up to 600 daily one-way haul truck and worker trips (ESA 2016a). At the peak of construction (when construction of all three facilities is underway), there could be up to 1,200 daily one-way trips.

## **2.8 WATER REQUIREMENTS AND WASTE GENERATION**

### **2.8.1 Water and Wastewater**

During project construction, the primary use of water would be for dust control. Water would also be needed to condition the soils for proper compaction at roads and foundations and for concrete mixing. It is anticipated that the total water volume used during construction would be up to 300 af.

The project site currently has six wells, of which four are active. No new wells would be constructed as part of the proposed project. Construction water would be acquired from the existing onsite wells.

During the O&M phase of the proposed project (which could last 35 years with options for extension subject to additional discretionary approval), water would be required for panel washing, maintenance, and dust control. During the life of the proposed project, the panels would be washed two to three times per year to improve power production. Additional water may be required for extra cleanings and/or dust control. Water would also be consumed for dust mitigation if needed. In total, expected annual water consumption during operation would be less than 4 to 10 af per year. Decommissioning activities would require an amount of water that is comparable to construction (300 af). This consumption is compared to the roughly 3,100 af of water that has been applied to the land over the last 12 years (based on 2 af per acre) (ESA 2018a). Similar to construction, water for operation would likely be obtained through existing onsite wells. However, depending on available quantities, the Applicant may also be able to obtain water from the WWD.

No wastewater would be generated during panel washing as the water would be absorbed into the surrounding soil or would evaporate.

Table 2-6 summarizes projected water use for the proposed project.

**Table 2-6: Estimated Project Water Use**

Project Phase / Element	Project Water Use
Construction/dust control and grading	300 acre-feet total
Operation/panel washing and maintenance	4 to 10 acre-feet per year
Decommissioning	300 acre-feet total

### 2.8.2 Waste

During construction, the proposed project would involve the transport of general construction materials (e.g., concrete, aggregate, wood, metal, and fuel), as well as the materials necessary to construct the proposed PV and battery storage systems. Solid waste generated during construction would include debris such as concrete, wood, brick, glass, plastics, scrap metal, and similar material. Construction waste that is generated at the project site would be sorted to separate recyclable and non-recyclable materials. It would be stored in dumpsters that would be serviced by a licensed solid waste hauler in the County. Non-hazardous construction debris would be disposed of in local landfills, in accordance with applicable regulations. Soils from drilling, trenching, or excavation would be screened and separated for use as backfill at the site of origin, to the maximum extent feasible.

A construction waste recycling program would be implemented, with the objective of recycling at least 65 percent of the project waste (by weight), pursuant to the California Green Building Standards Code (California Green Building Standards Code 2016). All solid construction wastes would be disposed of or recycled by qualified service providers. To accommodate directing of construction materials to proper end-point destinations, contractors and workers would be trained on waste sorting, appropriate recycling storage areas, and measures to reduce landfill waste.

Construction materials would be sorted onsite throughout construction and transported to appropriate waste management facilities. Nonhazardous construction materials that cannot be reused or recycled would likely be disposed of at municipal County landfills. Project construction and decommissioning would require disposal of up to 20 cubic yards of solid waste per week.

Liquid (sanitary) wastes generated during project construction are expected to range from 13 to 20 gallons per worker. Sanitary wastes would be contained in portable facilities, collected at least weekly, and disposed of at an offsite disposal or treatment facility. An onsite sewage system would not be constructed to treat sanitary wastes during construction.

Operation and maintenance of the proposed project is not expected to generate hazardous waste on a recurring basis. Any hazardous wastes, in liquid or solid form, would be removed from the site by a licensed hazardous waste recycling or disposal firm. The transformers proposed to be located at the project substation would use mineral oil for cooling purposes; however, certain battery technologies and PV panels may include materials considered hazardous. Disposal of these materials, if required, would occur in accordance with applicable regulations. During normal operation, PV panels, batteries, and inverters would produce no waste.

Nonhazardous solid waste generated during operations would consist of paper, wood, plastic, cardboard, deactivated equipment and parts, defective or broken electrical materials, empty nonhazardous containers, and other miscellaneous solid wastes. The operator would remove solid waste on a regular basis.

At the end of the project's life, the PV panels would be evaluated to determine their value in a secondary market. If not resold or repurposed, they would be recycled. The majority of the remaining project components would be recycled. Equipment, such as drive controllers, inverters, transformers, and switchgears, could either be reused or their components recycled. Poured concrete pads would be removed and recycled or reused as clean fill.

## **2.9 OPERATION AND MAINTENANCE**

### **2.9.1 Schedule**

The solar modules at the site would operate during daylight hours seven days per week, 365 days per year. The energy storage facility could operate at any hour but would typically operate no more than 4 hours at a time. The anticipated life of the proposed project would be 35 years.

### **2.9.2 Workforce**

The full-time offsite staff for the proposed project is expected to consist of one site manager, four technicians, and six security personnel. The site manager and technicians would be located in Austin, Texas, and are not expected to travel to and from the project site. Security or operations personnel would be available for dispatch to the project site 24 hours per day, 7 days a week. Staff would be located within a 2-hour drive of the project site. Additional support personnel would be employed as needed. Additional personnel may be either full-time employees of the Applicant or third-party local suppliers. For purposes of estimating impacts, the additional support personnel were assumed to come from the City of Fresno or surrounding communities. The support personnel would be present at the project site to undertake panel washing. Typical maintenance would be expected to require up to four full-time equivalent employees for panel washing up to three times per year. This would mainly occur during the summer months; if rainfall is sufficient to wash the panels clean during the winter, only a single cleaning would be required during the summer. If a winter is dry or soiling is greater than expected, more washing may be necessary, with correspondingly higher staffing requirements.

Reasonable efforts would be made to conduct local recruitment efforts and coordinate with local employment agencies to hire from the local workforce. Most of the operational labor force is expected to be from Fresno and the surrounding communities, with an average anticipated commute of 50 miles one-way.

### **2.9.3 Automated Facility Control and Monitoring System**

The proposed facility control and monitoring system would have two primary components: an onsite SCADA system and the accompanying sensor network to allow remote monitoring of facility operation and remote control of critical components.

The onsite SCADA system would offer near real-time readings of the monitored devices, as well as control capabilities for the devices where applicable. Offsite monitoring/data trending systems would collect historical data for remote monitoring and analysis. The plant manager would use both onsite (local) and offsite (remote) O&M personnel to monitor the facility as described in Section 2.9.2, Workforce. Offsite personnel would be based at an existing facility, most likely in Fresno County but potentially elsewhere in California, within a 2-hour drive of the facility.

Local O&M personnel would use the local SCADA and monitoring system to monitor operation and control at the project facilities. Personnel at a remote operations center would likely provide continuous monitoring coverage of the project facilities and would respond to real-time alerts and system upsets using advanced monitoring applications.

### **2.9.4 Site Maintenance**

The Applicant would provide landscape and related site maintenance throughout the life of the proposed project. This would include plant and landscape maintenance, replacement of trees or shrubs as needed, management of groundcover under the arrays, and appropriate disposal of any organic and inorganic materials used in the maintenance of the property. Nonhazardous solid waste would be collected for disposal by a licensed waste hauler and disposed of at municipal or County landfills.

The project site maintenance program would be largely conducted onsite during daytime hours. Equipment repairs could take place in the early morning or evening when the plant would be producing the least amount of energy. Key program elements would include maintenance activities originating from the onsite O&M facilities or a regional O&M facility located in the County and onsite maintenance as required to clear weeds for ground-mount systems.

The plant manager and maintenance staff would perform inspections, covering each portion of the PV arrays no less than once per month. Such inspections would be visual and at ground level. Monthly visual inspections and at least annual preventive maintenance would be performed. In accordance with Occupational Safety and Health Administration (OSHA) safety regulations, at least two qualified personnel would be present during all energized electrical maintenance activities at the facility. The plant manager and one technician would be onsite

when such activities are required. During normal business hours when the plant manager and maintenance staff would be onsite, they would monitor the project site to deter theft and vandalism. During all other times, offsite security personnel would monitor the project site and provide rapid response to any incidents; visits to the site for emergency purposes are expected to occur infrequently (i.e., only a few times per year). Panel-washing crews would generally conduct panel washing three times per year.

Maintenance would include panel repairs; panel washing; maintenance of transformers, inverters, and other electrical equipment as needed; maintenance of the oil/water separator system; and road and fence repairs. Pest and weed management also would be performed in accordance with the Pest and Weed Management Plan.

### **2.9.5 Site Security**

The project site would be securely fenced along all perimeters with specified points of ingress and egress. In addition to the installation of a 6- to 8-foot chain-link galvanized metal fence topped with standard three-strand barbed wire, access gates to the project site would remain locked when not in use.

The perimeter fence would be designed to allow ongoing movement of wildlife across the project site. The bottom of the fence would be 5 inches above the ground on average along the entire perimeter, as measured from the top of the ground to the highest point of the bottom of the fence. Fence posts would be drilled and grouted or driven pneumatically depending on site-specific soil characteristics. All fence posts would be capped to prevent the entrapment of birds and other wildlife. Final design specifications for the fence would be determined during detailed project engineering. Vehicle access gates would be installed as necessary, with the gates to remain locked when not in use.

As described in Section 2.9.2, Workforce, security or operations personnel would be available for dispatch to the project site 24 hours per day, 7 days a week. Staff would be located within a 2-hour drive of the project site.

### **2.9.6 Pest Management Plan**

The proposed project would develop and implement a Pest Management Plan in accordance with the County of Fresno Solar Facility Guidelines. The Pest Management Plan would identify methods and frequency to manage weeds, insects, disease, and vertebrate pests that may impact adjacent sites.

## **2.10 DECOMMISSIONING AND SITE RECLAMATION**

When the proposed project ceases operation, the facilities would be decommissioned and dismantled, and the project site restored to a condition suitable for agricultural use. Decommissioning of the project site would take approximately 12 months and would comprise removal of above- and below-ground structures as well as site reclamation, including restoration

of topsoil, revegetation, and seeding. Temporary erosion and sedimentation control Best Management Practices (BMPs) would be implemented during the decommissioning phase of the proposed project. A collection and recycling program would be implemented to promote recycling of project components and minimize disposal of project components in landfills. Decommissioning activities would consist of the following:

- Dismantling and removal of all above-ground equipment (solar panels, tracker units, transformers, substation, enclosures, etc.);
- Removal of gen-tie line—all conductors and poles would be removed and hauled offsite for scrapping or to an approved landfill;
- Excavation and removal of all below-ground cabling;
- Removal of posts;
- Removal of roads;
- Break-up and removal of concrete pads and foundations; and
- Scarification of compacted areas and regrading of the project site to pre-project conditions.

Decommissioning of the proposed project would require water use for dust control similar to that used during construction. Following decommissioning, the project site would be returned to agriculture-ready use and would thus require similar water use as existing conditions. Post-project, it is expected that the project site would continue in active agricultural use, which is the same as its pre-project use, and the same as current use of adjacent parcels. To help with post-construction dust control, a revegetation plan would be developed and implemented to repair temporary disturbance from installation activities and to be compatible with long-term site vegetation management.

## 2.11 INTENDED USES OF THIS DRAFT EIR

This Draft EIR has been prepared in accordance with CEQA (PRC, Section 21000 et seq.) and the Guidelines for Implementation of CEQA published by the State of California Resources Agency (Title 14, Cal. Code Regs., 15000 et seq.). Additionally, this Draft EIR has been prepared to comply with the rules, regulations, and procedures for implementing CEQA as adopted by the County. The County serves as the lead agency for the proposed project and is responsible for project approvals and supervision. This Draft EIR may be used by an outside agency for discretionary approvals and permits, which include but are not necessarily limited to those provided in Section 2.5.2, Approvals.

**This page left intentionally blank.**



## 3.0 ALTERNATIVES TO THE PROPOSED PROJECT

### 3.1 INTRODUCTION

The purpose of an alternatives analysis pursuant to the California Environmental Quality Act (CEQA) is to identify feasible options that would attain most of the basic objectives of a proposed project while reducing its significant effects. Provisions of CEQA Guidelines (Section 15126.6(f)) that address project alternatives in an Environmental Impact Report (EIR) state the following:

*The range of alternatives required in an EIR is governed by a “rule of reason”; the EIR must evaluate only those alternatives necessary to permit a reasonable choice. The alternatives shall be limited to those that would avoid or substantially lessen any of the significant effects of a proposed project while meeting most of the underlying project objectives.*

### 3.2 REQUIREMENTS FOR THE CONSIDERATION OF ALTERNATIVES

An important aspect of EIR preparation is the identification and assessment of alternatives to the proposed project that have the potential to avoid or substantially lessen potentially significant impacts. In addition to mandating consideration of the No Project Alternative, CEQA Guidelines (Section 15126.6(e)) emphasize the selection of a reasonable range of feasible alternatives and adequate assessment, which allows decision-makers to use a comparative analysis. CEQA Guidelines (Section 15126.6(a)) states:

*An EIR shall describe a reasonable range of alternatives to the project, or to the location of the project, which would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project, and evaluate the comparative merits of the alternatives. An EIR need not consider every conceivable alternative to a project. Rather it must consider a reasonable range of potentially feasible alternatives that will foster informed decision making and public participation.*

To comply with CEQA requirements for the evaluation of alternatives, each alternative identified was evaluated according to three criteria:

1. Would the alternative accomplish most of the basic project objectives?
2. Would the alternative be feasible (from a technological, economic, and legal perspective)?
3. Would the alternative avoid or substantially lessen any significant effects of the proposed project (including whether the alternative itself could create significant effects potentially greater than those of the proposed project)?

CEQA Guidelines require the consideration of alternatives capable of eliminating or reducing significant environmental effects even though they may “impede to some degree the attainment of project objectives or would be more costly” (Section 15126.6(b)).

### 3.2.1 Consistency with Project Objectives

A project’s statement of objectives describes the purpose of the project and the reasons for undertaking the project. To be considered for detailed analysis in the EIR, an alternative must meet most of the project objectives. RWE Solar Development, LLC (formerly known as EC&R Solar Development, LLC) (Applicant) has identified the following as the basic objectives for purposes of screening potential alternatives to the Fifth Standard Solar Facility Project Complex (proposed project):

- Construct and operate a PV power-generating facility capable of producing up to 170 megawatts (MW) of alternating electrical current in a cost-competitive manner.
- Directly interconnect the California Independent System Operator (CAISO) high-voltage electrical transmission system (grid) to the Gates Substation.
- Assist California utilities in meeting their obligations under California’s Renewable Portfolio Standard (RPS) Program, including 60% of retail sales from renewable sources by the end of 2030.
- Assist California utilities in meeting their obligations under the California Public Utilities Commission’s (CPUC’s) Energy Storage Framework and Design Program, including procurement targets of 1,325 MW by 2020, by providing up to 100 MW of storage capacity.
- Provide renewable-energy-related and diversified job opportunities that will help reduce local unemployment and benefit the local economy.

### 3.2.2 Feasibility

According to CEQA Guidelines (Section 15126.6[f][1]):

*Among the factors that may be taken into account when addressing the feasibility of alternatives are site suitability, economic viability, availability of infrastructure, general plan consistency, other plans or regulatory limitations, jurisdictional boundaries (projects with a regionally significant impact should consider the regional context), and whether the proponent can reasonably acquire, control, or otherwise have access to the alternative site (or the site is already owned by the proponent). No one of these factors establishes a fixed limit on the scope of reasonable alternatives.*

Based on CEQA Guidelines, “feasible” is defined as, “capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, legal, social, and technological factors” (CEQA Guidelines Section 15364). CEQA does not require that an EIR determine the ultimate feasibility of a selected alternative, but rather that an alternative be potentially feasible.

For the screening analysis, the feasibility of potential alternatives was assessed using the following considerations:

**Technological Feasibility.** Is the alternative feasible from a technical perspective, considering available technology? Are there any construction, operation, or maintenance constraints that cannot be overcome?

**Legal Feasibility.** For example, do legal protections on lands preclude or substantially limit the feasibility of constructing a utility-scale solar project? Is the alternative consistent with regulatory standards transmission system design, operation, and maintenance?

**Economic Feasibility.** Is the alternative so costly that its costs would prohibit its implementation?

In determining what alternatives should be considered in the EIR, it is important to acknowledge the objectives of the project, the project's significant effects, and unique project considerations. These factors are crucial to the development of alternatives that meet the criteria specified in Section 15126.6(a). Although, as noted above, an EIR must contain a discussion of "potentially feasible" alternatives, the ultimate determination whether an alternative is feasible or infeasible is made by the lead agency's decision-making body (See Public Resources Code [PRC] Section 21081[a][3]).

### 3.2.3 Potential to Avoid or Lessen Significant Environmental Effects

CEQA requires that alternatives to a proposed project have the potential to avoid or substantially lessen one or more significant effects of the project (CEQA Guidelines Section 15126.6). At the project and/or cumulative level, the Draft EIR has identified the following environmental issues that may result in significant impacts. This list only includes those impacts that were determined to be significant and unavoidable:

#### Agriculture

- Convert Prime Farmland to Non-Agricultural Use
- Conflict with Existing Zoning or Williamson Act Contract
- Pressures to convert farmland to non-agricultural use

#### Land Use

- Conflict with Applicable Plans, Policies, or Regulations

### 3.2.4 No Project Alternative

CEQA Guidelines require that the alternatives be compared to the project's environmental impacts and that the "no project" alternative be considered (CEQA Guidelines Section 15126.6(d)(e)). Section 15126.6(d)(e)(1) states:

*The specific alternative of "no project" shall also be evaluated along with its impact. The purpose of describing and analyzing a no project alternative is to allow decision-makers to compare the impacts of approving the proposed project with the impacts of not*

*approving the proposed project. The no project alternative analysis is not the baseline for determining whether the proposed project's environmental impacts may be significant, unless it is identical to the existing environmental setting analysis which does establish that baseline.*

The purpose of describing and analyzing a no project alternative is to allow decision-makers to compare the impacts of approving the proposed project with the impacts of not approving the proposed project.

### **3.3 METHODOLOGY AND SCREENING CRITERIA**

A range of potential alternatives was developed and subjected to the screening criteria. Pursuant to CEQA Guidelines, several alternatives were considered. The following criteria were used to screen potential alternatives:

- Does the alternative meet most or all of the basic project objectives?
- Is the alternative potentially feasible?
- Would the alternative substantially reduce one or more of the significant impacts associated with the project?

In addition, potential alternative solar facility locations needed to meet most of the following conditions:

- Sufficient incoming solar radiation;
- Flat terrain (<5% slope across the majority of the site);
- Absence of environmental constraints, such as significant wetlands and protected species habitat;
- Site devoid of "permanent" structures including orchard trees;
- At least 1,000 acres;
- Contiguous acreage;
- Connection to Gates Substation; and
- There must be an electrical substation or transmission line within 5 miles.

The capital expense required to construct a utility-scale solar project necessitates certain assurances of the revenues that can be generated by the project. Revenues for a solar project are typically prescribed in a Power Purchase Agreement (PPA). Therefore, a primary factor in determining whether a project under development will be successfully constructed and operated is whether the project can secure a PPA.

Given that California is a mature market for renewable energy, there is a clear demand for additional utility-scale solar facilities, and as a result, the market draws many experienced, well-

funded solar developers. The competition among projects for PPAs is very competitive. A utility, private entity, or community choice aggregator seeking to enter into a PPA would put out a request for proposals and would receive responses from numerous solar projects sited across California. The price of electricity is the primary deciding factor for utilities, and only projects with the lowest offered electricity price would receive a PPA. Therefore, the feasibility of a utility-scale solar project in California is determined, in large part, on the project's ability to generate and deliver electricity at a competitively low price.

The criteria listed above all contribute to determining the price of electricity from a solar project. Details on the criteria are provided below.

### **Site Devoid of Permanent Structures, Including Orchard Trees**

Property that has existing structures or significant infrastructure on it is avoided for purposes of developing a new utility-scale solar project. In California, this criterion is extended to include orchard trees. A landowner who has made the investment to plant fruit- or nut-bearing trees typically expects to reap the revenue from future harvests over a long period of time and is not interested in leasing or selling the property at a price that can be supported by a solar project.

### **At Least 1,000 Acres**

Based on the competitive market for utility-scale solar electricity in California, the fact that only the lowest-priced projects will secure PPAs, and the economic benefits of larger projects over smaller projects, the Applicant has proposed a project with 170 MW coming from solar generation. Using single-axis tracking technology, the required acreage for a solar project in California ranges from 6 acres to 9 acres per MW. For the Fifth Standard Solar Project Complex, this yields a project footprint ranging from 1,020 acres to 1,530 acres. Developers prefer to have extra acreage available, since setback requirements, existing easements, and other real estate or environmental constraints can "use up" acreage that would otherwise be available for the project. Nonetheless, in the interest of capturing a wide range of potential alternative projects sites, a minimum acreage criterion of 1,000 acres was set. Developing a project of this size would also ensure that other scalable criteria, like per-unit costs, are comparable to the proposed project. Ultimately, the developer must be able to negotiate a lease with the landowner(s) for a project to be feasible.

### **Contiguous Acreage Required for Feasible Project**

Every electrical component of a PV project is physically wired to the other components. Electricity generated at each PV module is wired to an inverter (typically sited with a transformer), from the inverter/transformer to combiner boxes, then from the combiner boxes to the project substation, and finally, from the project substation to the point of interconnection on the electric grid. A minimal amount of electricity is lost in the form of heat as it is transported through wires. As the components are spread out further, the cost of wiring increases and the amount of electricity delivered from the project simultaneously decreases.

Finally, reliability risks increase when portions of a project are tethered together over a considerable distance. Burying the interconnecting wiring between sites would be prohibitively expensive. Therefore, the feeder lines connecting the project sites would likely be installed

aboveground on poles. Overhead lines are subject to outages. If an overhead line fails, a portion of the project would be off-line while repairs are made. The repairs would add to the operational expense of the project, and the project would lose revenue the entire time that the line is out for repairs.

### **Connection to Gates Substation**

A power plant can deliver energy to the greatest number of potential customers in California by connecting to the electric grid controlled by the CAISO. In the County, the CAISO-controlled grid includes all Pacific Gas and Electric (PG&E)-owned substations and transmission lines.

Interconnecting a new electricity generating facility to the CAISO grid involves submitting an application and a study deposit. CAISO and the participating transmission owner (PG&E in the case of the Fifth Standard Solar Project Complex) would then conduct a series of transmission engineering studies to determine the extent of upgrades to the grid that would be required to safely and reliably interconnect the new project. Upgrades, if required, may include the following: expansion of a substation, new equipment at one or more substations, re-conductoring existing transmission lines, installing telecommunications and protection equipment at various locations. The initial cost of the transmission upgrades typically falls to the project, thereby impacting the project's price for electricity and ability to compete for a PPA.

The extent of the upgrades required are a function of the project size, or capacity, as well as the specifications and capacity of the existing grid facilities at and near the point of interconnection. Some points of interconnection can accept little to no new electricity before upgrades are triggered. Other points of interconnection happen to be "overbuilt" and can accept large new sources of electricity before upgrades are triggered. The Gates Substation has current capacity to serve the proposed project. The proposed project has a Large Generator Interconnection Agreement (LGIA) to interconnect at the Gates Substation.

As discussed in the Section 2.0, Project Description, the Fifth Standard Project is well advanced in the interconnection process at a point of interconnection at the Gates Substation. Abandoning the interconnection position at the Gates Substation and pursuing a new interconnection process at a different location would not represent a reasonable alternative, but an entirely different project.

### **Distance to Point of Interconnection**

New generating facilities require a gen-tie to physically connect the project site to the Point of Interconnection (POI). This is typically an overhead electrical line installed on poles. In addition to bearing the construction cost, the project must secure a right-of-way from one or more additional landowners along the path of the generation tie (gen-tie) line, which adds complexity and development costs. As described above in the "contiguous acreage" discussion, reliability concerns also increase as the length of an overhead line increases. Like the project site, a developer must be able to secure lease agreements or easements for all of the properties crossed by the gen-tie. For these reasons, and given the competition with other projects for a PPA, it is not feasible to pursue a solar development on a site that is more than 5 miles from the point of interconnection.



## 3.4 ALTERNATIVES CONSIDERED AND REJECTED FROM FURTHER CONSIDERATION

CEQA Guidelines Section 15126.6(c) provides the following guidance in selecting a range of reasonable alternatives for the proposed project.

*The range of potential alternatives for the project shall include those that could feasibly accomplish most of the basic objectives of the project and could avoid or substantially lessen one or more significant effects. The EIR should also identify any alternatives that were considered by the lead agency, but were rejected during the planning or scoping process and briefly explain the reasons underlying the lead agency's determination.*

### 3.4.1 Alternative Locations

#### Phelp's Site Alternative

The Phelp's Site alternative was considered by the Applicant as an alternative site. This alternative site is located in the community of Coalinga approximately 5 miles southwest of the project site.

Similar to the project site, the Phelp's Site is encumbered by active Williamson Act Contracts and contains Prime Farmland and Important Farmland (DOC 2012). However, based on the preliminary evaluation, the Phelp's Site has potential habitat for Swainson's hawk as it provides good foraging habitat. Protocol-level Swainson's Hawk and Burrowing Owl Surveys were conducted for the Phelp's site and two active Swainson's hawk nests are located within 0.4 mile of the site (Ecology and Environment 2015). The Phelp's Site is adjacent to the Pleasant Valley Ecological Reserve, which encompasses an area of undisturbed scrubland habitat and a dry stretch of Jacalitos Creek, which provides suitable Swainson's hawk nesting habitat and suitable habitat for small mammals such as ground squirrels, mice, and kangaroo rats; larger mammals such as coyotes, foxes, and badgers; and a variety of bird species including owls, ravens, quail, and songbirds. According to the California Natural Diversity Database (CNDDDB), occurrences of blunt-nosed leopard lizard, burrowing owl, and San Joaquin kit fox have been recorded just east of the Phelp's Site in 1980, 2005, and 1981, respectively. Fourteen special-status species have the potential to occur within the Phelp's Site and the nine surrounding U.S. Geologic Survey (USGS) Quadrangles, including six species listed as threatened, endangered, or candidates for listing under the Federal Endangered Species Act or California Endangered Species Act. Based on the available habitat, Swainson's hawk and burrowing owl are the only federally listed species with a potential to occur in the project area. This site has the potential to support additional special status species and have greater impacts to biological resources than the project site, thus it would likely require additional Mitigation Measures and/or permits.

Zapato Chino Creek crosses a portion of the Phelp's Site, and project construction would likely require a permit from the U.S. Army Corps of Engineers (USACE) to comply with Section 404 of the Clean Water Act (CWA). Adherence to regulatory requirements would address potential impacts to water resources; in addition, avoidance measures could be implemented to further reduce impacts.

The Phelps's Site is located approximately five miles northeast of Gates Substation, which would be within the 5-mile limit of the gen-tie line. A longer gen-tie line would potentially exacerbate impacts directly related to ground disturbance such as cultural resources, paleontological resources, geological resources, and hydrological resources. Negotiating easements, while potentially feasible, adds additional complexity.

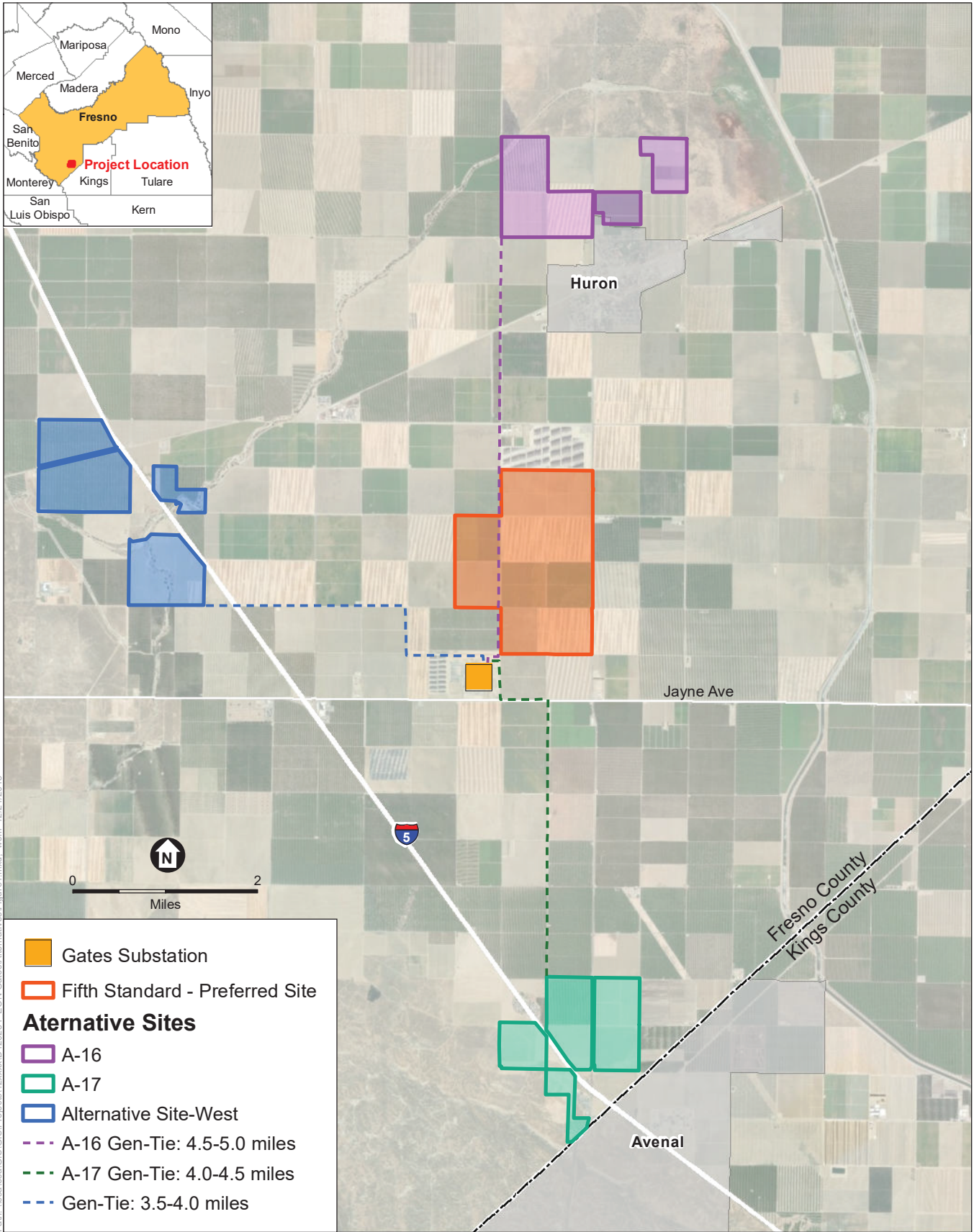
While the Phelps's Site would meet all of the proposed project objectives and is feasible, it would not reduce or avoid a significant environmental effect of the proposed project. With the exception of agricultural impacts, which would be slightly reduced with the Phelps site, this alternative would potentially have greater impacts associated with additional ground disturbance. Therefore, this alternative was eliminated from further consideration.

### **Non-Contracted Lands Alternative**

A non-contracted lands search was undertaken to find lands that were both available and suitable for the proposed use but not under an active Williamson Act Contract (non-contracted lands). For operational efficiency and economic feasibility, a site of approximately 1,500 contiguous acres was considered optimal for the proposed project. However, to ensure that a comprehensive search was undertaken for suitable land, all sites of 1,000 acres or larger were considered. A search radius of up to 10 miles was set around the Gates Substation. Beyond this distance, the high cost of construction of the gen-tie line between the solar facility and the substation would make the project economically infeasible, as even construction of a gen-tie of 5 miles or more in length presents challenges for the proposed project.

Since changing the point of interconnection would not be feasible, alternative sites that require a new interconnection position were not considered feasible alternatives to the project for the purposes of CEQA. However, it is possible that the project could be developed on an alternate site that could utilize the existing Gates interconnection.

The sites were initially screened to determine which would provide enough acreage (approximately 1,000 acres) for the proposed project and would be within 5 miles of the Gates Substation. Of the 29 sites, only three are within 5 miles of the Gates Substation (Figure 3.0-1) and only one site (Alternative Site-West) had enough acreage for the proposed project. Alternative Site-West was carried forward as a potential alternative.



Path: \\nasalesa\GIS\GIS\Projects\12xxxx\120251\_EON\_Gates\Alternatives\Figure1.mxd\_wsm\_12/21/2018

**Legend**

- Gates Substation
- Fifth Standard - Preferred Site
- Alternative Sites**
- A-16
- A-17
- Alternative Site-West
- A-16 Gen-Tie: 4.5-5.0 miles
- A-17 Gen-Tie: 4.0-4.5 miles
- Gen-Tie: 3.5-4.0 miles



**Stantec**  
 Data Source: RWE Solar Development, LLC, 2019.  
 Coordinate System: NAD 1983 StatePlane California IV FIPS 0404 Feet

Figure No. 3.0-1  
 Client/Project Fifth Standard Solar Project Complex  
 Title Potential Alternative Sites within 5 miles of Gates Substation

Disclaimer: Stantec assumes no responsibility for data supplied in electronic format. The recipient accepts full responsibility for verifying the accuracy and completeness of the data. The recipient releases Stantec, its officers, employees, consultants and agents, from any and all claims arising in any way from the content or provision of the data.

## Impaired or Underutilized Lands

The U.S. Environmental Protection Agency (EPA) is encouraging renewable energy development on current and formerly contaminated land and mining sites. This initiative identifies the renewable energy potential of these sites and provides other useful resources for communities, developers, industry, state and local governments, or anyone interested in reusing these sites for renewable energy development (EPA 2017). The EPA has created a dataset of potentially contaminated and underutilized sites identified as appropriate for solar-PV projects as part of the EPA's 2009 Re-Power America's Lands Project (EPA 2017). Based on review of the dataset, two sites were identified that were capable of delivering 170 MW of solar energy. The two underutilized sites are the Fresno Air Terminal/Old Hammer Field (Site Id. No. 10450005) and the Mount Owen Rifle Range (Site Id. No. 71000033). Both sites are more than 1,000 acres in size and can generate 170 MW or more solar energy. The Fresno Air Terminal/Old Hammer Field is currently a joint civil-military airport and is surrounded by existing development; therefore, it was eliminated from further consideration.

The Mount Owen Rifle Range is located north of SR 168, approximately 6 miles northeast of the City of Clovis. Based on past use of the site, lead contamination, explosives, and munitions debris may be present in the soil. There are no prime farmlands or Williamson Act Contracts on the site, though the site is currently used as cattle pasture. Nonetheless, impacts to agricultural resources would be reduced. However, the Friant-Kern Canal runs through the site and divides the site into north and south segments. It also includes a section of an intermittent stream south of the canal and the Big Dry Creek Reservoir to the southwest. According to the U.S. Fish and Wildlife Service (USFWS) National Wetlands Inventory (NWI), a small freshwater emergent wetland exists within the boundary of the rifle firing range. While the proposed project could be designed to avoid the hydrological features, constructing around these hydrologic features could change the impacts to hydrology.

While there are existing substations and transmission lines within 2 miles of the site, the transmission lines are less than 230 kilovolts (kV), and it is unknown if the existing system has enough capacity to support a 170-MW solar project. Without a system impact study, the County is unable to determine if the alternative has interconnection capacity and associated costs; therefore, it is speculative. If the existing system required upgrades, it would potentially increase environmental impacts associated with the system upgrade or expansion. As previously stated, this alternative would not meet the objective of delivering a minimum of 170 MW to the Gates substation, which was selected as a potentially suitable substation for interconnection in the Central Valley and was confirmed by CAISO and PG&E to have interconnection capacity and favorable interconnection costs. Therefore, this alternative was eliminated from further consideration.

### 3.4.2 Phased Development Alternative

Under the Phased Development Alternative, the proposed project would be constructed over 3 years instead of the currently proposed 1-year construction schedule. Under this alternative, one of the three project components would be built in Phase 1 in 2020, one in Phase 2 in 2021, and the final in Phase 3 in 2022.



If the Phased Development Alternative was selected, emissions would not exceed the SJVAPCD threshold and would remain less than significant before mitigation. However, once the three phases are complete, air emissions related to operations and decommissioning would be similar to the proposed project.

The Phased Development Alternative would reduce the concentration of daily vehicle trips necessary when compared to the proposed project. However, as determined in Section 4.14, Traffic, the proposed project would not result in significant traffic impacts. Therefore, under the Phased Development Alternative, while peak construction trips would decrease, impacts would be similar to that of the proposed project and would still require preparation of a traffic control plan.

The construction activities for the Phased Development Alternative would be spread out for a longer time-frame and would result in comparatively longer-term aesthetics and noise impacts resulting from construction activities. Significant impacts on agricultural resources that would occur under the proposed project would be the same once all phases of the project are constructed.

The Phased Development Alternative would be potentially feasible, as it would be located on the same site as the proposed project. While the Phased Development Alternative would address significant air quality impacts, it may exacerbate impacts to noise and aesthetics during construction. The remaining construction impacts of this alternative would be similar to the proposed project.

The Phased Development Alternative would be less efficient for construction crew and equipment, energy procurement, and energy storage to construct the energy-generation facilities and the battery storage facility separately over the span of 3 years, rather than within 1 year. Due to the greater potential for environmental impacts, this alternative was eliminated from further consideration.

### **3.4.3 Distributed Power Alternative**

Distributed power generation refers to a variety of technologies that generate electricity at or near where it will be used. Distributed power resources may be standalone or grid connected and may preclude the need for transmission lines. The distributed power alternative assumes the 170-MW production capacity of the proposed project would be provided by solar panels placed on the roofs of residential, commercial, industrial, and institutional buildings throughout the County.

Distributed solar PV is generally located on existing structures or disturbed areas so little to no new ground disturbance would be required; however, this alternative would not be technically feasible. The distributed power alternative would be outside the control of the Applicant, as the Applicant does not own or have site control over rooftops; therefore, there is no guarantee about the quantity of power potentially generated, nor could the alternative be implemented within a reasonable period of time.

Accordingly, the Distributed Power Alternative is speculative, not feasible, and would fail to meet proposed project objectives of providing battery storage and developing a utility-scale

renewable energy development. As a result, the Distributed Power Alternative is eliminated from detailed analysis as an alternative to the proposed project.

### **3.5 ALTERNATIVES CONSIDERED**

Section 15126 of CEQA Guidelines requires an EIR to identify and discuss a no project alternative, as well as a reasonable range of alternatives to the proposed project that would feasibly attain most of the basic objectives of the proposed project and would avoid or substantially lessen any of the significant environmental impacts. The alternatives screening process evaluated other alternatives discussed in Section 3.4; however, all of them were either infeasible, speculative, failed to meet most of the underlying project objectives, or had greater environmental impacts than the proposed project.

#### **3.5.1 Alternative 1 – No Project**

CEQA Guidelines Section 15126.6(e)(1) requires that the no project alternative be described and analyzed “to allow decision-makers to compare the impacts of approving the project with the impacts of not approving the project.” The no project analysis is required to discuss “the existing conditions at the time the Notice of Preparation is published . . . as well as what would be reasonably expected to occur in the foreseeable future if the project were not approved, based on current plans and consistent with available infrastructure and community services” (Section 15126.6(e)(2)).

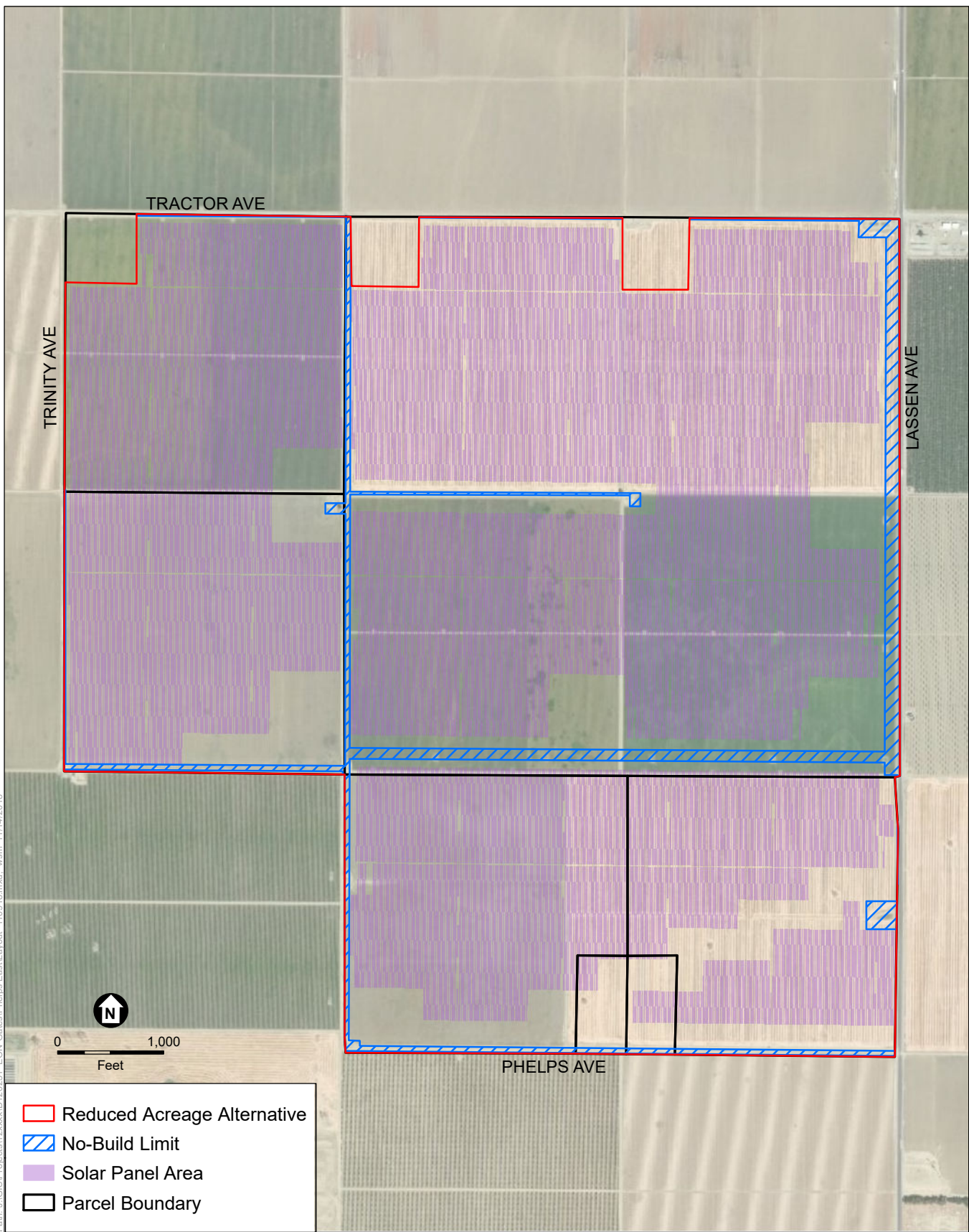
The no project alternative assumes that no development would occur on the project site. The project site would remain in agricultural production with a crop of tomatoes planted with wheat or would remain partially fallow, as described in Section 2.0, Project Description. In addition, cancellation of Williamson Act Contracts and conversion of Prime Farmlands would not be required.

#### **3.5.2 Alternative 2 – Reduced Acreage**

Under the reduced acreage alternative, the Stonecrop facility would not be constructed, and the footprint of the Fifth Standard facility would be reduced. The total MW capacity at the project site would be reduced by 20 MW, and the project footprint would be reduced by approximately 317 acres. Figure 3.0-2 provides the site layout for this alternative.

Elimination of the Stonecrop facility would allow the total footprint to be reduced by approximately 317 acres. In addition, the 150-MW Fifth Standard facility would be redesigned to: a) utilize PV modules rated at a higher watt class, and b) reduce the spacing between tracker rows. The Reduced Acreage Alternative boundary would include assessor’s parcel numbers (APNs) 075-060-52S, 075-070-35S, 075-060-15S, 075-070-01S, 075-070-33S, 075-070-32S, 075-070-34S. This would effectively remove the northern half-section of land—or one-fifth of the project site from the footprint, reducing the proposed project size from 1,595 to approximately 1,278 acres, a total reduction of 317 acres. This alternative would reduce, but not eliminate, significant and unavoidable impacts on agricultural resources.

Path: J:\GIS\Projects\12\xxxx\DI20251\_EON\_Gates\Phelps East\Layout\_110918.mxd, wsm 11/14/2018



- Reduced Acreage Alternative
- No-Build Limit
- Solar Panel Area
- Parcel Boundary



**Stantec**  
 Data Source: RWE Solar Development, LLC, 2019  
 Coordinate System: NAD 1983 StatePlane  
 California IV FIPS 0404 Feet

Figure No.  
 3.0-2  
 Client/Project  
 Fifth Standard Solar Project Complex  
 Title  
 Reduced Acreage Alternative

Disclaimer: Stantec assumes no responsibility for data supplied in electronic format. The recipient accepts full responsibility for verifying the accuracy and completeness of the data. The recipient releases Stantec, its officers, employees, consultants and agents, from any and all claims arising in any way from the content or provision of the data.



### 3.5.3 Alternative 3 – Alternative Site-West

As shown in Figure 3.0-3, this site consists of three, non-contiguous parcels totaling 1,019.69 acres, located approximately 4 miles west of the proposed site.

#### Site Challenges

Despite the relatively large size of this site compared to the other sites described above, this site has many characteristics that make it challenging and potentially non-viable. A major water feature passes through two of the parcels. The wetland components associated with this feature would need to be avoided. Constructing a project around these hydrologic features would introduce impacts to hydrology and biology.

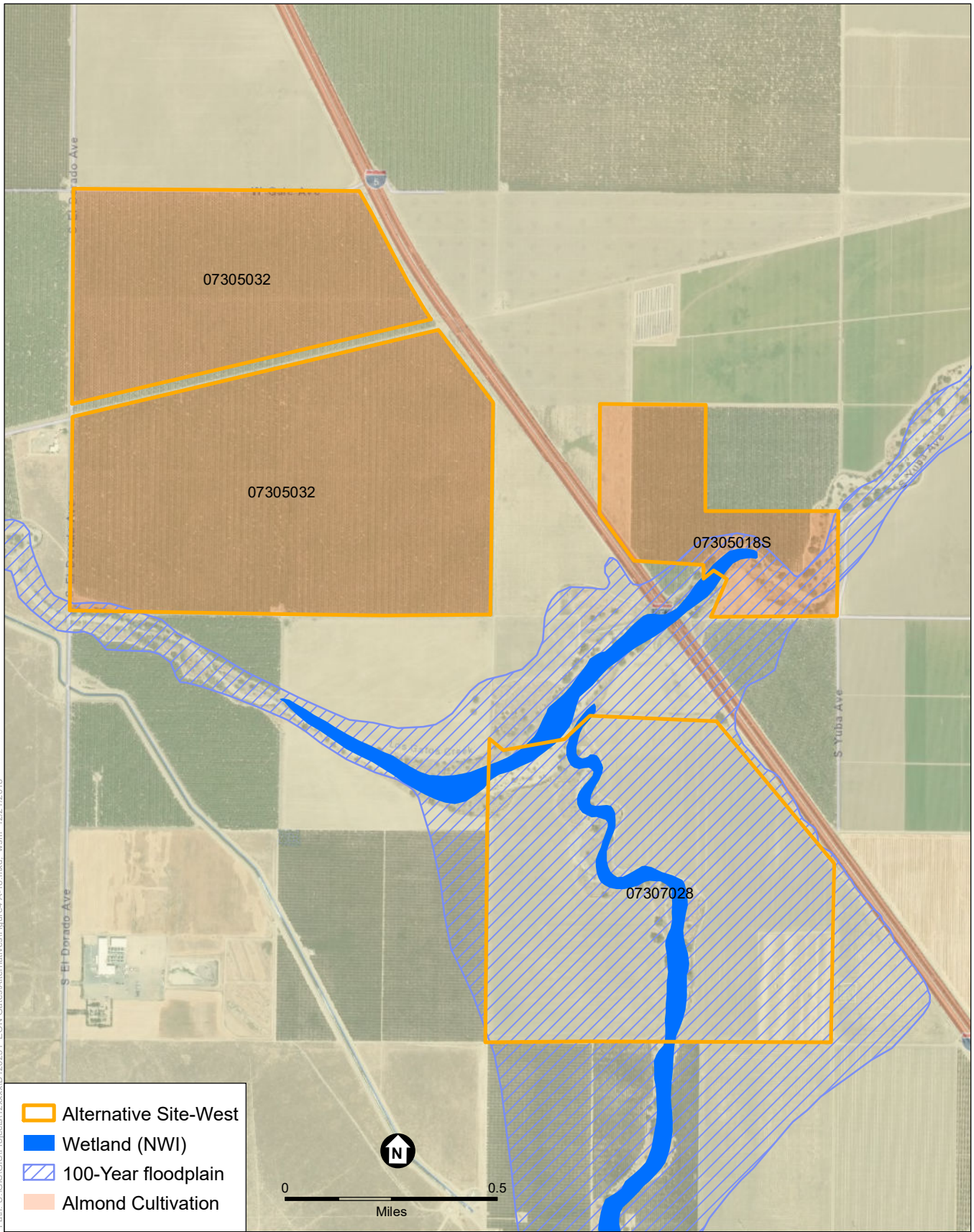
In addition, one of the parcels is entirely within the 100-year floodplain. Building a PV facility within the floodplain would trigger special engineering design and review standards. It is likely that equipment foundations would need to be raised (relative to the project foundations if located in a non-floodplain), which would add cost to the project. If site flooding occurs during project operations, accessing key equipment for maintenance purposes would be hampered.

The Applicant has spoken with the owners of this site (ESA 2018b). They have confirmed that two of the parcels are planted in almonds, and the third parcel is certified organic. These factors escalate the land value to a point that gaining site control for purposes of a solar would be economically challenging.

In addition, all three of the parcels are non-contiguous, and the parcels are located on both sides of I-5. The water feature described above, as well as a right-of-way bisecting the largest of the parcels, further divides the site into non-contiguous fragments. As mentioned in relation to the other sites, tying together non-contiguous parcels and passing over a major interstate adds significant cost and complexity to a solar project. For these reasons, a battery storage component would not be feasible.

The gen-tie to connect the project to the Gates Substation would be 3.5 to 4 miles in length and a gen-tie right-of-way would need to be obtained from landowners between the site and the Gates Substation, adding significant cost and complexity to the project.

Notwithstanding the above challenges, the non-contracted land alternative site was considered as a project alternative to mitigate impacts to agricultural resources and the County's General Plan Land Use Policies.



Path: U:\GIS\GIS\Projects\12\xxxx\120251\_EON\_Gates\Alternatives\Figure4\_A-18.mxd\_wsm\_12/21/2018

- Alternative Site-West
- Wetland (NWI)
- 100-Year floodplain
- Almond Cultivation


Miles



**Stantec**  
 Data Source: RWE Solar Development, LLC, 2019  
 Coordinate System: NAD 1983 StatePlane  
 California IV FIPS 0404 Feet  
 Figure image obtained from previous ESA report.

Figure No. 3.0-3  
 Client/Project Fifth Standard Solar Project Complex  
 Title Alternative Site-West

Disclaimer: Stantec assumes no responsibility for data supplied in electronic format. The recipient accepts full responsibility for verifying the accuracy and completeness of the data. The recipient releases Stantec, its officers, employees, consultants and agents, from any and all claims arising in any way from the content or provision of the data.

**This page left intentionally blank.**

## 4.0 ENVIRONMENTAL IMPACT ANALYSIS

### Overview

In accordance with California Environmental Quality Act (CEQA) Guidelines Section 15126.2, this Draft Environmental Impact Report (EIR) identifies and focuses on the significant direct and indirect environmental impacts of the Fifth Standard Solar Facility Project Complex (proposed project), given due to consideration of both its short- and long-term impacts. Short-term impacts are generally those associated with construction and decommissioning of the proposed project, while long-term impacts are generally those associated with the operation of the project components.

As described in Chapter 1.0, Introduction, this analysis focuses on a limited number of environmental resource topics, as other topics have already been addressed in the analysis that accompanied the Notice of Preparation (NOP, Appendix A). Sections 4.1 through 4.18 of this Draft EIR contain discussions of the potential environmental impacts related to the construction, operation, and decommission of the proposed project.

### Environmental Resource Areas

The potential environmental impacts associated with the implementation of the proposed project are evaluated for the following environmental resource areas:

- 4.1 Aesthetics
- 4.2 Agriculture
- 4.3 Air Quality
- 4.4 Biological Resources
- 4.5 Cultural Resources
- 4.6 Geology and Soils
- 4.7 Greenhouse Gas Emissions
- 4.8 Hazards and Hazardous Materials
- 4.9 Hydrology and Water Quality
- 4.10 Land Use and Planning
- 4.11 Mineral Resources
- 4.12 Noise
- 4.13 Public Services
- 4.14 Transportation
- 4.15 Tribal Cultural Resources
- 4.16 Utilities and Service Systems
- 4.17 Wildfire
- 4.18 Energy

## Organization of Environmental Resource Areas

The analysis within each issue area considers all components of the proposed project, discussed in Section 2.0, Project Description. Each environmental issue section listed above contains the following components:

- **Regulatory Setting:** this section presents the laws, regulations, plans, and policies that are relevant to each issue area. Regulations originating from the federal, state, and local levels are each discussed as appropriate.
- **Environmental Setting:** this section presents the existing environmental conditions on the project site and within the surrounding area as appropriate, in accordance with CEQA Guidelines Section 15125. The extent of the environmental setting area evaluated (the project study area) differs among resources, depending on the locations where impacts would be expected. For example, air quality impacts are assessed for the air basin (macro-scale), as well as the site vicinity (micro-scale), whereas aesthetic impacts are assessed for the project vicinity only.
- **Thresholds of Significance:** this section identifies the thresholds of significance used to determine the level of significance of the environmental impacts for each resource topic, in accordance with CEQA Guidelines Sections 15126, 15126.2, and 15143. The thresholds of significance used in this Draft EIR are based on the checklist presented in Appendix G of the CEQA Guidelines; best available data; and regulatory standards of federal, state, and local agencies.
- **Project Impacts:** this section identifies the level of each environmental impact by comparing the effects of the proposed project to the environmental setting. Key methods and assumptions used to frame and conduct the impact analysis, as well as issues or potential impacts not discussed further (i.e., such issues for which the project would have no impact), are also described.

Project impacts are organized numerically in each subsection (e.g., Impact AES-1, Impact AES-2, Impact AES-3). A bold-font environmental impact statement precedes the discussion of each impact while its level of significance succeeds the discussion of each impact. The discussion that follows the impact summary includes the substantial evidence supporting the impact significance conclusion.

- **Mitigation Measures:** this section describes any feasible measures that could avoid, minimize, rectify, reduce, or compensate for significant adverse impacts, with measures having to be fully enforceable through incorporation into the project (Public Resources Code [PRC] Section 21081.6[b]). Mitigation Measures are not required for environmental impacts that are found to be less than significant. Where feasible mitigation for a significant environmental impact is available, it is described following the impact. Where sufficient feasible mitigation is not available to reduce environmental impacts to a less than significant level, or where the lead agency lacks the authority to ensure that the mitigation is implemented when needed, the impacts are identified as significant and unavoidable.
- **Level of Significance After Mitigation:** this section describes the level of impact significance remaining after mitigation measures are implemented.



- **Cumulative Impacts:** this section describes two or more individual impacts that, when considered together, are significant or that compound or increase other significant environmental impacts. Cumulative impacts can result from individually minor, but collectively significant projects taking place over a period of time (State CEQA Guidelines Section 15355). The incremental impact of a project, although less than significant on its own, may be considerable when viewed in the cumulative context of other closely related past, present, and reasonably foreseeable probable future projects. “Cumulatively considerable” means that the incremental effects of an individual project are significant when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects (State CEQA Guidelines 15064).

### Level of Significance

Determining the severity of project impacts is fundamental to achieving the objectives of CEQA. CEQA Guidelines Section 15091 requires that decision-makers mitigate, as completely as is feasible, the significant impacts identified in the Final EIR. If the EIR identifies any significant unmitigated impacts or significant residual impacts after mitigation, CEQA Guidelines Section 15093 requires decision-makers to adopt a Statement of Overriding Considerations that explains why the benefits of the project outweigh the adverse environmental consequences identified in the EIR.

The level of significance for each impact examined in this Draft EIR is determined by considering the predicted magnitude of the impact against the applicable threshold. Thresholds were developed using criteria from the CEQA Guidelines and Appendix G Checklist; federal, state, and local regulatory schemes; local and regional plans and ordinances; accepted practice; consultation with recognized experts; and other professional opinions.

### Format Used for Impact Analysis and Mitigation Measures

The format adopted in this Draft EIR to present the evaluation of environmental impacts is described and illustrated below:

Summary Heading of Impact

---

**Impact AIR-1:** An impact summary heading appears immediately preceding the impact description (Summary Heading of Impact in this example). The impact abbreviation identifies the section of the report (AIR for Air Quality in this example) and the sequential order of the impact (1 in this example) within that section. To the right of the impact number is the impact statement, which identifies the potential impact (this text block).

---

### Impact Analysis

A narrative analysis follows the impact statement.

### Level of Significance Before Mitigation

This section identifies the level of significance of the impact before any mitigation is proposed.

### Mitigation Measures

In some cases, following the impact discussion, reference is made to state and federal regulations and agency policies that would fully or partially mitigate the impact. In addition,

policies and programs from applicable local land use plans that partially or fully mitigate the impact may be cited.

Project-specific mitigation measures, beyond those contained in other documents, are set off with a summary heading and described using the format presented below:

**MM AIR-1: Mitigation Measure Title.** Project-specific mitigation is identified that would reduce the impact to the lowest degree feasible. The mitigation number links the particular mitigation to the impact with which it is associated (AIR-1 in this example);

**Level of Significance After Mitigation**

This section identifies the resulting level of significance of the impact following mitigation. Abbreviations used in the mitigation measure numbering are shown in Table 4-1.

**Table 4-1: Environmental Issue Abbreviations**

Code	Environmental Issue
AES	Aesthetics
AG	Agriculture
AIR	Air Quality
BIO	Biological Resources
CUL	Cultural Resources
GEO	Geology and Soils
GHG	Greenhouse Gas Emissions
HAZ	Hazards and Hazardous Materials
HYD	Hydrology and Water Quality
LUP	Land Use and Planning
MIN	Mineral Resources
NOI	Noise
PUB	Public Services
TRA	Transportation
TRI	Tribal Cultural Resources
USS	Utilities and Service Systems
WF	Wildfire
EN	Energy



In performing the analysis for this Draft EIR, the EIR -preparers relied on available published studies and reports and conducted independent investigations as needed. Information provided by or on behalf of the Applicants was also independently reviewed and determined to be suitable for reliance on (in combination with other materials in the formal record) in the preparation of this Draft EIR. The specific documents considered and relied upon are cited in Section 9.0, References. Project-specific technical studies are included as appendices. Copies of cited reference materials, such as the County’s General Plan and Zoning Code, are available at the County’s website and upon request.

Additionally, each environmental resource evaluation in this Draft EIR includes a discussion of the Fresno County Solar Facility Guidelines in the environmental setting and impact analysis, as applicable. The County has developed Solar Facility Guidelines that provide general guidelines and policies, as well as outline for the process of evaluating solar facilities within the County. A list of the Solar Facility Guidelines is presented in Table 4-2.

**Table 4-2: Solar Facility Guidelines**

Guideline	EIR Resource Section
1. Information shall be submitted regarding the historical agricultural and operational use of the parcel, including specific crop types and crop yields, for the last ten years (if no agricultural operation in the last ten years, specify when the land was last in agricultural use).	Section 4.2, Agriculture
2. Information shall be submitted that identifies the source of water for the subject parcel (surface water from irrigation district, individual well(s), conjunctive system). If the source of water is via district delivery, the applicant shall submit information documenting the allocations received from the irrigation district and the actual disposition of the water (i.e., used onsite or moved to other locations) for the last ten years. If an individual well system is used, provide production capacity of each well, water quality data, and data regarding the existing water table depth.	Section 4.16, Utilities and Service Systems
3. Identify the current status of the parcel (Williamson Act Contract, Conservation Easement, retired land, etc.), the purpose of any easement and limitations of the parcel. The applicant shall submit a Title Report or Lot Book Guarantee for verification.	Section 4.2, Agriculture
4. Identify (with supporting data) the current soil type and mapping units of the parcel pursuant to the standards of the California State Department of Conservation and the Natural Resources Conservation Service.	Section 4.6, Geology and Soils
5. List all proposed measures and improvements intended to create a buffer between the proposed solar facility and adjacent agricultural operations (detailed information must be shown on the site plan) and provide factual technical data supporting the effectiveness of said proposed buffering measures.	Section 4.2, Agriculture

Guideline	EIR Resource Section
6. Provide a reclamation plan detailing the lease life, timeline for removal of the improvements, and specific measures to return the site to the agricultural capability prior to installation of solar improvements. If the project is approved, adequate financial security to the satisfaction of the County shall be provided to ensure site reclamation.	Section 2.10, Decommissioning and Site Reclamation
7. Provide information documenting efforts to locate the proposed solar facility on nonagricultural lands and noncontracted parcels and detailed information explaining why the subject site was selected.	Section 3.0, Description of Alternatives
8. Develop and submit a project site pest management plan to identify methods and frequency to manage weeds, insects, disease and vertebrate pests that may impact adjacent sites.	Section 2.9.4, Site Maintenance
9. The applicant must acknowledge the County’s Right to Farm Ordinance and shall be required to record a Right to Farm Notice prior to issuance of any permits. This shall be included as a recommended condition of approval of the land use entitlement. Note: The life of the approved land use permit will expire upon expiration of the initial life of the solar lease. If the solar lease is to be extended, approval of a new land use permit will need to be obtained.	Section 4.2, Agriculture
10. The life of the approved land use permit will expire upon expiration of the initial life of the solar lease. If the solar lease is to be extended, approval of a new land use permit will need to be obtained.	Section 2.0, Project Description
11. If the project is approved, the applicant shall make all reasonable efforts to establish a point of sale in the County for equipment and construction related items necessary for the project.	Section 2.0, Project Description
12. If the project is approved, the applicant shall make all reasonable efforts to conduct local recruitment efforts and coordinate with employment agencies in an attempt to hire from the local workforce.	Section 2.0, Project Description
13. In addition to disclosing the number of trips in the required project operational statement, the applicant shall disclose the weight of the shipments anticipated be delivered to the site. If the project is approved, pursuant to the CEQA analysis and based upon the existing road conditions and the weight and frequency of shipments to the site, the applicant shall mitigate impacts to County roads.	Section 4.14, Transportation
14. If the project is approved, the applicant shall make all reasonable efforts to purchase products and equipment from local (County) manufacturing facilities and/or vendors.	Section 2.0, Project Description

Source: County 2017a.

### Cumulative Impacts

Cumulative impacts refer to the combined effect of proposed project’s impacts with the impacts of other past, present, and reasonably foreseeable future projects. As established in the CEQA Guidelines, the discussion of cumulative impacts must reflect the severity of the impacts, as well

as the likelihood of their occurrence attributable to the project alone. As stated in CEQA, Title 14, Section 21083(b), “a project may have a significant effect on the environment if the possible effects of a project are individually limited but cumulatively considerable.”

According to CEQA Guidelines:

“Cumulative impacts’ refer to two or more individual effects which, when considered together, are considerable and which compound or increase other environmental impacts.

- a) The individual effects may be changes resulting from a single project or a number of separate projects.
- b) The cumulative impact from several projects is the change in the environment, which results from the incremental impact of the project when added to other closely related past, present, and reasonably foreseeable probable future projects. Cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time.” (California Code of Regulations [CCR], Title 14, Division 6, Chapter 3, Section 15355)

In addition, as stated in CEQA Guidelines:

“The mere existence of significant cumulative impacts caused by other projects alone shall not constitute substantial evidence that the proposed project’s incremental effects are cumulatively considerable.” (CCR, Title 14, Division 6, Chapter 3, Section 15064[T][5])

#### Cumulative Impact Setting

Cumulative impact discussions for each environmental issue area are provided within each individual impact section. As established in the CEQA Guidelines, related projects consist of “closely related past, present, and reasonably foreseeable probable future projects. Cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time.”(CCR, Title 14, Division 6, Chapter 3, Section 15355).

The incremental impact of a project, although less than significant on its own, may be considerable when viewed in the cumulative context of other closely related past, present, and reasonably foreseeable projects. A considerable contribution is considered to be significant from the point of view of cumulative impact analysis.

CEQA Guidelines explain that cumulative context may be described through either the list-of-projects approach or the summary of projections approach. The list approach involves identifying and listing the past, present, and reasonably foreseeable projects that contribute to a given significant cumulative impact. The summary of projections approach relies on an adopted plan or reliable projection that describes the significant cumulative impact. This Draft EIR combines both the project list-of-projects and summary of projections approaches to generate the most reliable future projections possible.

#### Geographic Scope

The geographic area analyzed for cumulative impacts is dependent on the resource being analyzed. The geographic area associated with the proposed project’s environmental impacts defines the boundaries of the area used for compiling the list of past, present, and reasonably

foreseeable projects considered in the cumulative impact analysis. For example, the analysis of air quality is based on a regional level because air quality impacts are regional in nature; whereas analysis of aesthetic impacts only considers projects in the vicinity of the project site because of the localized nature of the impact.

The geographic area that could be affected by implementation of the proposed project in combination with other projects varies depending on the type of environmental resource being considered. Table 4-3 provides the geographic area and the method of evaluation utilized in the cumulative analysis for each resource area.

**Table 4-3: Geographic Scope of Cumulative Impact and Method of Evaluation**

Resource Topic	Geographic Area	Method of Evaluation
Aesthetics	Viewshed of the proposed project and the area surrounding the project site from which the project is, or could be, visible to viewers in the foreground, middleground, or background	Projects
Agriculture	County	Projects
Air Quality	Local (toxic air contaminants) Air Basin (construction-related and mobile sources)	Projects and Projections
Biological Resources	5-mile radius	Projects
Cultural Resources	0.5-mile radius	Projects
Geology and Soils	General area of seismic influence	Projects
Greenhouse Gas Emissions	State	Projects and Projections
Hazards and Hazardous Materials	0.25-mile radius	Projects
Hydrology and Water Quality	Westlands hydrologic region for surface water and the Westside Subbasin for groundwater	Projects and Projections
Land Use and Planning	Immediate project vicinity	Projects
Mineral Resources	N/A	Projects
Noise	0.25-mile radius	Projects
Public Services	Immediate project vicinity	Projects
Transportation	Surrounding roadway network	Projects and Projections
Tribal Cultural Resources	0.5-mile radius	Projects
Utilities and Service Systems	Service areas	Projects
Wildfire	1-mile radius	Projects
Energy	State	Projects and Projections

Notes:

Projects = the use of a list of past, present, and reasonably foreseeable projects  
Projections = the use of projections contained in relevant planning documents

For those environmental resources that were evaluated based on the projections approach, the projections take into consideration future projects that are not included in the below list of related plans and projects.

### List of Related Plans and Projects

The summary of projections approach evaluates the impacts of a proposed project in the context of projections made in one or more local, regional, or statewide planning documents or environmental analysis that has been adopted or certified. The following adopted plans and analyses are considered in combination with the project for assessing cumulative impacts. In most cases these plans have been prepared by local agencies to meet the requirements of state law, and comprise the preparing agencies' comprehensive, long-term visions for physical development or resources conservation within the region:

- **Air Quality:** San Joaquin Valley Air Pollution Control District (SJVAPCD) 2016 Plan for the 2008 8-Hour Ozone Standard, 2013 Plan for the Revoked 1-Hour Ozone Standard, 2007 Particulate Matter 10 (PM<sub>10</sub>) Maintenance Plan and Request for Redesignation, 2008 Particulate Matter 2.5 (PM<sub>2.5</sub>) Plan, 2015 Plan for the 1997 PM<sub>2.5</sub> Standard, and the 2016 Moderate Area Plan for the 2012 PM<sub>2.5</sub> Standard.
- **GHG:** Scoping Plan Measure E-3: Renewables Portfolio Standard and Scoping Plan Measure H-6: High Global Warming Potential Gas Reductions from Stationary Sources—Sulfur Hexafluoride Leak Reduction and Recycling in Electrical Applications.
- **Hydrology and Water Quality:** Water Quality Control Plan for the Tulare Lake Basin
- **Transportation:** Fresno Council of Governments (Fresno COG) Regional Transportation Plan

The list of past, present, and reasonably foreseeable future projects used for this cumulative analysis is restricted to those projects that have occurred or are planned to occur within or directly adjacent to the County.

Section 15130 (b)(1)(B)(2) of the CEQA Guidelines state that when using a list, “factors to consider when determining whether to include a related project should include the nature of each environmental resource being examined, the location of the project, and its type. Location may be important, for example, when water quality impacts are at issue since projects outside the watershed would probably not contribute to a cumulative effect. Project type may be important, for example, when the impact is specialized, such as a particular air pollutant or mode of traffic.” Factors considered in determining whether a project is a cumulative project include whether it would cause impacts of the same nature as the proposed project in the same area at the same time. For the purposes of this discussion, these projects that may have a cumulative effect on the resources of the project area will often be referred to as the “related projects.” The timeframe of the cumulative analysis is from 2016 through operation and maintenance of the proposed project. A list of these related projects is described in Table 4-4 and depicted in Figure 4.0-1.

**Table 4-4: List of Related Projects**

<b>Lead Agency</b>	<b>Project Name/Applicant (Common Name)</b>	<b>Project Description</b>	<b>Status</b>
Caltrans #6	SR 269 Bridge Project (SR 269 Bridge Reconstruction)	Raise profile of SR 269 and construction of three bridges to prevent flooding	NOD received 2/14/18
City of Huron	Recycled Water Improvements at WWTF (Huron WWTF Improvements)	The use of approximately 200 acres of land to grow non-human consumption crops with treated effluent. Conversion of 188 acres of the land to agriculture, and related improvements such as installing an irrigation system and grading. Additional improvements to the existing WWTP.	NOD received 5/5/17
Fresno County	Los Gatos Tomato Products Huron Tomato Processing Plant – Classified Conditional Use Permit No. 3510 (Los Gatos Tomato Processing Facility)	An increase in land application area for processed wastewater from 4,676.66 acres to 6,263.08 acres for wastewater discharged from an existing tomato processing plant.	NOD received 2/6/16
Westlands Water District	Westlands Solar Park Master Plan and Gen-Tie Corridors Plan (Westlands Solar Park Project)	Master Plan for a series of utility-scale solar PV energy generating facilities on approximately 21,000 acres and associated gen-tie corridors.	Draft EIR received 10/17/17; Approved and adopted 01/18/18

Notes:

EIR = Environmental Impact Report

NOD = Notice of Determination

PV = photovoltaic

SR = State Route

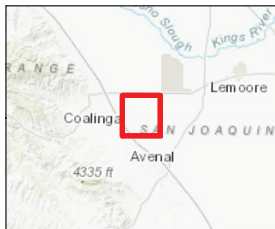
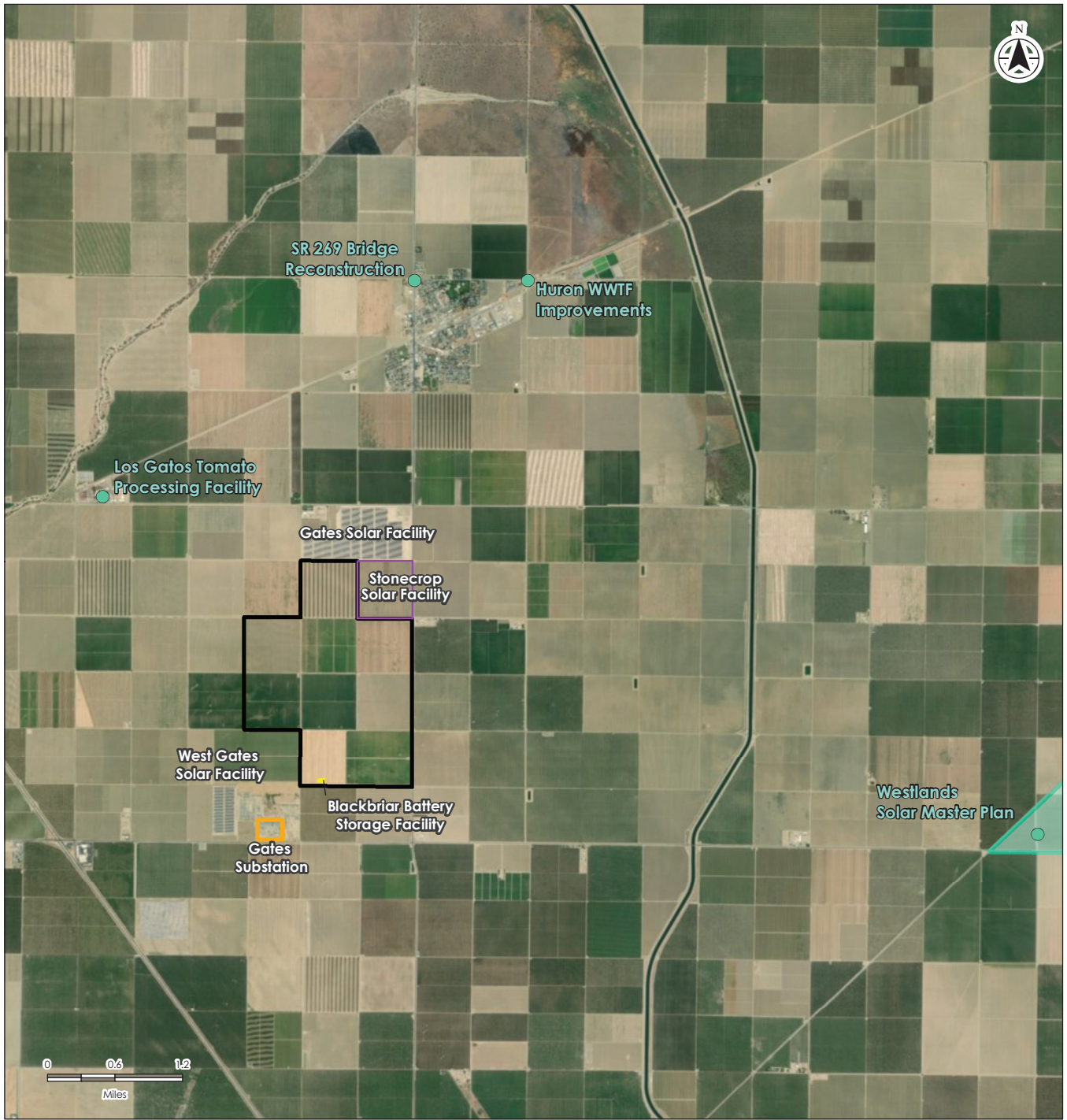
WSP = Westlands Solar Project

WWTF = Wastewater Treatment Facility

WWTP = Wastewater Treatment Plan

Source: Data compiled from State Clearinghouse 2018; adapted by Stantec in 2018





- Related Projects
- Gates Substation
- Stonecrop Solar Facility
- Fifth Standard Solar Facility
- Blackbriar Battery Storage Facility

Data Source: Stantec 2019.  
 Coordinate System: NAD 1983  
 StatePlane California IV FIPS 0403 Feet.  
 See complete reference in EIR.

Disclaimer: Stantec assumes no responsibility for data supplied in electronic format. The recipient accepts full responsibility for verifying the accuracy and completeness of the data. The recipient releases Stantec, its officers, employees, consultants and agents, from any and all claims arising in any way from the content or provision of the data.



Figure No.

4.0-1

Title

Cumulative Impact Analysis  
 Projects

Project

Fifth Standard Solar Project Complex

## 4.1 AESTHETICS

The aesthetic value of an area is a measure of its visual character and quality combined with viewer response to the area (FHWA 1988). Aesthetic impacts are generally defined in terms of a project's physical characteristics and potential visibility and the extent that the project's presence would change the visual character and quality of the environment in which it would be located.

This assessment of aesthetic resources uses the Federal Highway Administration (FHWA) Visual Impact Assessment for Highway Projects methodology (FHWA 1988<sup>1</sup>) to describe the existing environmental and regulatory setting for the Fifth Standard Solar Facility Project Complex (proposed project), identify potential sensitive views, and assess the levels of visual contrast that would be introduced through the construction and operation of the proposed project. Where applicable, Mitigation Measures are included for significant impacts. The County received no scoping comments pertaining to aesthetics (Appendix A).

### 4.1.1 Assessment of Existing Visual Conditions and Definition of Terms

The assessment of the proposed project's potential impacts to aesthetics and visual resources included a review of applicable planning documents, site reconnaissance and photography, production of visual simulations, and the application of the Visual Impact Assessment for Highway Projects methodology established by the FHWA through incorporation of the following steps:

1. Establish the visual environment for the area within which the proposed project would be located.
2. Assess the visual resources present within the proposed project area by describing existing visual character and assessing the visual quality of views toward the project site.
3. Describe and assess the affected viewers in terms of viewer exposure to the components of the proposed project and their levels of visual sensitivity.
4. Develop simulations to determine the potential visual impact of the proposed project. The degree of visual impact is a function of the projected visual change within the project area and anticipated viewer response to such change.

Assessment of the existing visual conditions at the project site were made based on professional judgement and incorporated on concepts defined in the FHWA methodology as follows (FHWA 1988).

#### Visual Quality

Visual quality is a function of the natural and cultural features of the environment that can be seen and that contribute to the public's enjoyment of the environment. It is an expression of the

---

<sup>1</sup> The FHWA Guidelines for Highway Projects were updated in 2015. While these guidelines revise the recommended methodology for visual impact analyses for highway projects, they are generally consistent with regard to definitions of concepts incorporated in this analysis. Those concepts were more fully defined in the 1988 methodology; thus, this analysis cites the 1988 FHWA guidelines.

visual impression or appeal of a given landscape and the associated public value attributed to the resource. The visual quality of the site is described using criteria established by the FHWA for visual landscape relationships. The criteria established to describe visual quality are based on the relative degree of vividness, intactness, and unity, as defined below:

- **Vividness** is described as the visual power or memorability of landscape components as they combine in distinctive visual patterns. Vividness is represented by an assessment of landforms, vegetation, water features, and human-made components present in views.
- **Intactness** is a measure of the visual integrity of the natural and human-built landscape and its freedom from encroaching elements. This factor can be present in well-kept urban and rural landscapes, as well as natural settings. High intactness consists of a landscape that is free of unattractive features and is not broken up by features and elements that are out of place. Low intactness consists of visual elements that can be seen in views that are unattractive and/or detract from the quality of the view.
- **Unity** is the visual coherence and compositional harmony of the landscape considered as a whole. High unity frequently attests to the careful design of individual components in the landscape and their relationship to the landscape.

### Viewer Groups and Visual Sensitivity

Visual sensitivity is based on the number and type of viewers and the frequency and duration of views. Typically, visual sensitivity increases with an increase in the total numbers of viewers, the frequency of viewing (e.g., daily vs. seasonally), and the duration of views (i.e., how long a scene is viewed). The criteria for identifying the importance of views are related in part to the viewer's position relative to the resource and the placement of the viewer in the viewshed, defined as the area surrounding the project area from which the project is, or could be, visible to viewers.

To quantify viewers, a viewshed may be broken into distance zones of foreground, middleground, and background. Generally, the dominance and importance of an object increases with its proximity to the viewer, although distance zones in viewsheds may vary between different geographic regions or types of terrain. The standard foreground distance zone is 0.25 to 0.50 mile from the viewer, the middleground distance zone extends from the foreground zone to 3 to 5 miles from the viewer, and the background zone extends from the middleground zone to the limit of human sight (FHWA 1988). Generally, visual contrast in foreground distances would be more noticeable to viewers than increased visual contrast in background distance zones.

Viewer groups in the project area are based on primary viewing activities and are described in terms of their physical location in relation to the project site, the number of viewers, the duration of views, and viewer sensitivity, which considers viewer activity and awareness. The following viewer groups and their sensitivity to visual change were identified for the proposed project:

- **Residents** typically have high sensitivity to visual changes, since residential viewer groups have stationary and long-term views of the landscape.

- **Commercial viewers** have moderate sensitivity to visual changes. Commercial business viewer groups are generally less sensitive to visual changes because they are more focused on operational tasks and less focused on the greater surrounding visual environment.
- **Recreational groups** are likely to be highly sensitive to visual changes because they typically regard the natural and built surroundings as a holistic visual experience.
- **Motorists** on local roads and freeways include residents, workers, and commuters driving to businesses in the area. Drivers generally have low sensitivity to visual changes since their views are of short duration and they're more concerned with surrounding traffic, road signs, and their immediate surroundings within their vehicle rather than visual features in the landscape.

## Visual Character

Natural and artificial landscape features contribute to the visual character of an area or view. Visual character is influenced by geological, hydrological, botanical, wildlife, recreational, and urban features. Urban features include those associated with landscape settlements and development, including roads, utilities, structures, earthworks, and the results of other human activities. The perception of visual character can vary seasonally, even hourly, as weather, light, shadow, and elements that compose the viewshed change. The FHWA describes visual character in terms of four visual pattern elements: form, line, color, and texture. The appearance of the landscape is described in terms of the dominance of each of these components.

### 4.1.2 Regulatory Setting

#### Federal

There are no applicable federal regulations, plans, or policies pertaining to aesthetics that are applicable to the proposed project.

#### State

##### California Scenic Highway

California's Scenic Highway Program was created by the State Legislature in 1963 and is managed by the Landscape Architecture Division of the California Department of Transportation (Caltrans). Its purpose is to protect and enhance the natural scenic beauty of California's highways and adjacent corridors through special conservation treatment. A highway may be designated scenic depending upon how much of the natural landscape can be seen by travelers, the scenic quality of the landscape, and the extent to which development intrudes upon the traveler's enjoyment of the view (Caltrans 2011).

According to the Caltrans State Highway Network Data Library, there are no officially designated state scenic highways in the vicinity of the project site (Caltrans 2011).



## Local

### Fresno County General Plan

The Open Space and Conservation Element of the Fresno County General Plan evaluates the County's scenic resources and provides policies intended to protect scenic resources to ensure that development enhances those resources through various measures including identification, development review, acquisition, and other methods.

The Fresno County General Plan also includes policies intended to protect scenic resources along County roadways by identifying, developing, and maintaining scenic amenities along roads and highways in the County and ensuring that development enhances those resources. According to Policy OS-L.1, the County has designated a system of scenic roadways that includes landscaped drives, scenic drives, and scenic highways. According to this element, the only locally designated scenic highway in the vicinity of the project site is I-5 (County 2000b).

The Open Space and Conservation element includes specific goals and policies related to scenic resources. Those that apply to the proposed project are listed below.

**Goal OS-K:** To conserve, protect, and maintain the scenic quality of Fresno County and discourage development that degrades areas of scenic quality.

**Policy OS-K.1:** The County shall encourage the preservation of outstanding scenic views, panoramas, and vistas wherever possible. Methods to achieve this may include encouraging private property owners to enter into open space easements for designated scenic areas.

**Goal OS-L:** To conserve, protect, and maintain the scenic quality of land and landscape adjacent to scenic roads in Fresno County.

**Policy OS-L.3:** The County shall manage the use of land adjacent to scenic drives and scenic highways based on the following principles:

[...]

- b. Proposed high voltage overhead transmission lines, transmission line towers, and cell towers shall be routed and placed to minimize detrimental effects on scenic amenities visible from the right-of-way.

[...]

### 4.1.3 Environmental Setting

#### Regional Visual Character

The proposed project is in the southwest portion of unincorporated Fresno County. Nearby communities include Huron (1.5 miles north), Avenal (9 miles south), Ora (11 miles west), Kettleman City (12 miles southeast), and Coalinga (13 miles west). Figure 4.1-1 shows the project location and the location of Key Observation Points (KOPs) referred to throughout this section.

Southwest Fresno County is located between the western edge of the San Joaquin Valley and the eastern edge of the Diablo Coastal Mountain Range. This portion of the valley is characterized visually by agricultural lands containing a relatively low level of development. The topography of the area is relatively flat, but elevations gradually rise to the west and south toward the steeper hillsides within the Diablo Range. The topographic characteristics of the region allow for open, expansive views of the distant hillsides and mountains that surround the flat valley floor, which has been highly altered to support agriculture activities. Other land uses in the proposed project area include open space, recreation, and sparse residential and commercial development. Existing utility and power-generating facilities are present throughout the proposed project area; several solar power plants, as well as substation, transmission, distribution, and communication facilities, are typically visible from residences, I-5, and local roads in the vicinity traveled by workers, recreationists, and others.

The major transportation corridor for the project area is I-5, a four-lane divided highway that extends north to south and is located approximately 2.5 miles west of the project site. As previously noted, I-5 is recognized as a local scenic highway by Fresno County. There are no officially designated state scenic highways within a 2-mile radius of the proposed project site, nor are there any recognized scenic vistas.

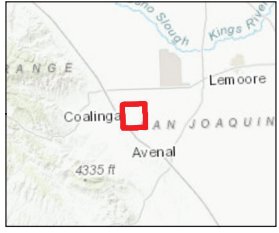
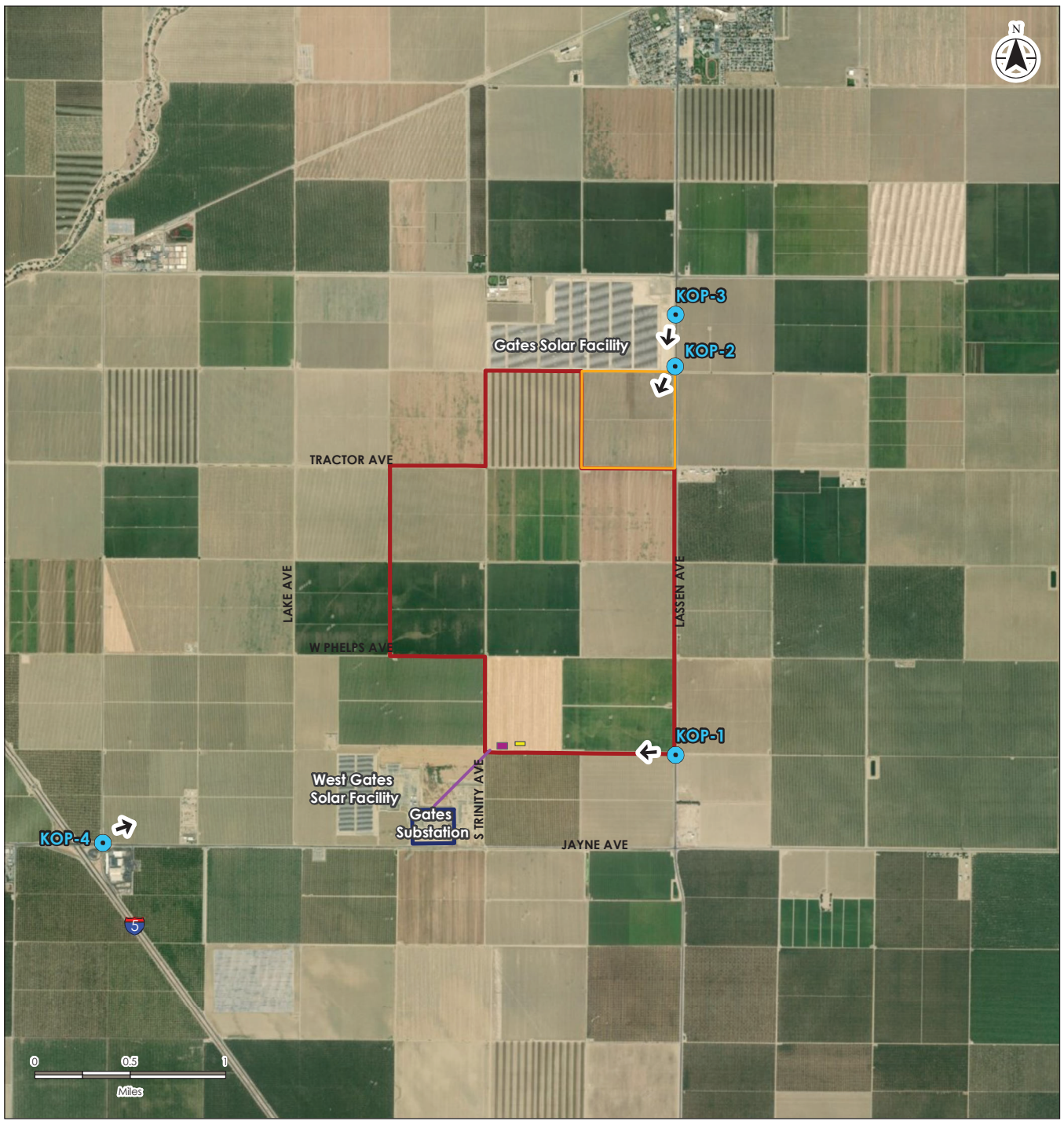
### **Visual Character of Project Site**

The project site is located approximately 1.5 miles south of Huron. It consists of approximately 1,600 acres of agricultural lands and is bordered by the existing Pacific Gas and Electric (PG&E) Gates Solar Facility to the north, agricultural lands (orchard and row crops) to the south, South Lassen Avenue to the east, and agricultural lands to the west (row crops). The PG&E Gates Substation and the adjacent West Gates Solar Facility are approximately 0.4 to 0.5 mile southwest of the project site on West Jayne Avenue. These utility and energy facilities are visible to residents and businesses near the project site and to motorists driving on South Lassen Avenue and West Jayne Avenue.

Figure 4.1-2a shows the existing view to the west from KOP-1, which is located along the northbound lane of South Lassen Avenue, at the southeastern corner of the project site. It demonstrates the proximity of the project site to Gates Substation and the extent of existing electrical infrastructure in the vicinity of the project site. Figure 4.1-3a shows the existing view from KOP-2, which is located along the southbound lane of South Lassen Avenue near the northeast corner of the project site and includes the southeastern corner of the Gates Solar Facility. Figure 4.1-4 shows the view from KOP-3, which is located along southbound South Lassen Avenue, approximately 0.25 mile north of KOP-2. It is included here to demonstrate the proximity and similarity of the existing Gates Solar Facility to the project site and the proposed project, respectively. Similarly, Figure 4.1-5 shows the view from KOP-4, which is located just off of West Jayne Avenue east of I-5 and demonstrates the broader context within which the proposed project would be set, approximating the elevated view from the West Jayne Avenue overpass of I-5.

The lands within the project site have been left fallow but have historically been farmed with a crop history of tomatoes and wheat; the agricultural fields surrounding the boundary of the project site are in active use and are defined by a grid of narrow roads, either paved or dirt. Views within this area are backdropped by the distant hills and mountains associated with the Diablo Range, which are visible to the south and west of the project site on clear days.





- Legend**
- Key Observation Point
  - Proposed Gen- tie 230 kV Line
  - Substation
  - Stonecrop Solar Facility
  - Gates Substation
  - Fifth Standard Solar Facility
  - Blackbriar Battery Storage Facility



Figure No.  
4.1-1

---

Title  
Project Site and Key Observation Points

---

Project  
Fifth Standard Solar Project Complex

Data Source: RWE Solar Development, LLC, 2019  
 Coordinate System: NAD 1983  
 StatePlane California IV FIPS 0403 Feet  
 See complete reference in EIR.

Disclaimer: Stantec assumes no responsibility for data supplied in electronic format. The recipient accepts full responsibility for verifying the accuracy and completeness of the data. The recipient releases Stantec, its officers, employees, consultants and agents, from any and all claims arising in any way from the content or provision of the data.





**Figure 4.1-2a:** View from the southeast corner of the project site, between West Jayne Avenue and West Phelps Avenue. The PG&E Gates Substation is visible in the left half of the view.



**Figure 4.1-2b:** View from KOP-1 with proposed project.



This page left intentionally blank.





**Figure 4.1-3a:** View from the northeast corner of the project site along South Lassen Avenue, at the southeast edge of the existing Gates Solar Facility. The PG&E Gates Substation is visible beyond the project site in the right half of the view.



**Figure 4.1-3b:** View from KOP-2 with proposed project.



This page left intentionally blank.



View to the southwest from southbound South Lassen Avenue, toward the proposed Stonecrop Solar Facility portion of the project site. The southeast corner of the Gates Solar Facility is visible in the right half of the view



Data Source: Stantec, 2018.

Disclaimer: Stantec assumes no responsibility for data supplied in electronic format. The recipient accepts full responsibility for verifying the accuracy and completeness of the data. The recipient releases Stantec, its officers, employees, consultants and agents, from any and all claims arising in any way from the content or provision of the data.

Figure No.  
4.1-4

Title

Key Observation Point 3

Project

Fifth Standard Solar Project Complex





View to the northeast from the intersection of South Butte Avenue and West Jayne Avenue, approximately 2 miles southwest of the project site. The PG&E Gates Substation is visible along the horizon in the right half of the view.



Data Source: Stantec, 2018.

Disclaimer: Stantec assumes no responsibility for data supplied in electronic format. The recipient accepts full responsibility for verifying the accuracy and completeness of the data. The recipient releases Stantec, its officers, employees, consultants and agents, from any and all claims arising in any way from the content or provision of the data.

Figure No.  
4.1-5  
Title  
Key Observation Point 4  
Project  
Fifth Standard Solar Project Complex

Beyond the boundaries of the site, other land uses in the immediate vicinity include several dispersed agriculture-related businesses to the east, north, and south of the project site on West Tractor Avenue, West Gale Avenue, and West Jayne Avenue, respectively. The use of agriculture-related equipment is common in the area, and such equipment is frequently visible to residences, motorists, and recreationists in the project area. There are no residences located within the project site. The nearest residences are located approximately 0.2 mile east of the project site on West Tractor Avenue. Huron is the nearest populated community.

The nearest recreational land use is the California Aqueduct, which extends north to south and is approximately 3 miles east of the project site. A developed trail system for pedestrians and bicyclists parallels the aqueduct. The segment of the trail directly east of the project site (the segment extending from West Gale Avenue in the north to West Jayne Avenue in the south) sits within the aqueduct right-of-way, at a lower point than the adjacent levees. Thus, the levees obscure views of the project site from the trail.

Because the project site is in a portion of the County that is predominantly agricultural, with dispersed development of industrial and commercial facilities and relatively few rural residences, potential sources of nighttime lighting resulting in substantial glare or skyglow are minimal and are generally not concentrated in single locations in the vicinity of the project site. Security and maintenance lighting needs at adjacent uses—namely Gates Substation, Gates Solar Facility, and West Gates Solar Facility—are likely nominal sources of localized nighttime light. The presence of nighttime lighting increases in the vicinity of both the I-5 corridor (primarily due to vehicle headlights, intermittent roadway lighting, and development concentrated within the corridor), and the City of Huron, which is the nearest urbanized area to the project site. Any such nighttime lighting from these sources is likely to be minimal or negligible at the project site, given their distance from the project site, intervening development, and orchards.

### Key Observation Points

The analysis of the proposed project's potential effects to visual resources primarily relies on the evaluation of changes to the existing aesthetic environment at the project site as viewed from viewpoints selected to best represent the proposed project and presumed viewer sensitivities. The previously introduced KOPs are representative of motorists traveling along South Lassen Avenue, which is the most proximate, highly traveled roadway. Motorists compose the most substantial group of potential viewers of the proposed project and are assumed to be the most sensitive to the proposed project, given the lack of other sensitive receptors in the proposed project vicinity and absence of residences adjacent to the proposed project. The views from KOP-1 and KOP-2 are used as the basis for evaluation, and simulations showing the proposed project are included here as Figure 4.1-2b and Figure 4.1-3b, respectively. Views from KOP-3 and KOP-4 are included for context and show existing conditions only. Descriptions of the existing conditions at each of the KOPs are described in the following paragraphs. The locations of all KOPs are shown in Figure 4.1-1.

KOP-1: View Near the Southeast Corner of Project Site

Figure 4.1-2a depicts the view from KOP-1, which is located approximately 50 feet from the southeast corner of the project site. This viewpoint was selected because it is representative of motorists driving northbound on South Lassen Avenue, which is the most heavily travelled roadway adjacent to the project site. This viewpoint is also the primary point for where the

proposed battery storage facility, overhead interconnection to Gates Substation, and solar photovoltaic (PV) panels associated with the Fifth Standard facility would be visible to roadway users.

The existing visual quality of this view is moderately low. While the presence of rural agricultural land uses and associated facilities visible from this location are typical of the broader area in this portion of the San Joaquin Valley, utility infrastructure visible within and surrounding the site is comparatively more prominent here, resulting in a moderate degree of vividness. Lands visible throughout the valley floor have been highly modified to accommodate the agricultural activities, surrounding utility infrastructure, and access roadways. As a result, the project site lacks any definitive natural elements, such as vegetation, waterways, or landforms. Only the silhouettes of the background mountains and hillsides are visible, due to the hazy atmospheric conditions, which are common in this area given the prevalence of agricultural activities. These landforms are also partially obscured by the transmission infrastructure at the existing Gates Substation, which extends across the portion of the valley floor beyond the project site. This variety of forms, multiple transmission lines, and encroachment on distant skylines results in a moderately low degree of intactness. However, the combination of these land uses commonly occurs throughout the project area and appear moderately cohesive. Therefore, these land uses define the overall rural composition of the project site and the surrounding area to form a moderately unified view.

#### KOP-2: View Near the Northeast Corner of Project Site

Figure 4.1-3a depicts the view from KOP-2, which is located approximately 0.4 mile from the northeast corner of the project site. This viewpoint was selected because it is representative of motorists driving southbound on South Lassen Avenue, which is the most heavily travelled roadway adjacent to the project site. This viewpoint was also selected because it shows that the Stonecrop Solar Facility portion of the project site is adjacent to the existing Gates Solar Facility.

The existing visual quality of this view is moderately low (see FHWA worksheet in Appendix B). The vividness of the view is moderate, given the hills and mountains visible as a backdrop and the prominence of transmission infrastructure beyond the project site. The existing visible utility infrastructure consists of overhead distribution lines along South Lassen Avenue, chain link fencing surrounding the adjacent Gates Solar Facility, and transmission power poles connecting with the existing Gates Substation south of the project site. These features, along with the agricultural activities and access roadways, have highly modified the existing landscape. While the dominance of the agricultural land and utility infrastructure characterizes the site visually, disparate individual components, as well as the visibility of the Gates Solar Facility in the near foreground, result in a moderately low degree of intactness and unity for this view.

### 4.1.4 Environmental Impacts

This section contains the visual resources impact analysis for the proposed project. It explains the methods used to determine the impacts of the proposed project, lists the thresholds used to conclude whether an impact would be significant, and provides measures to mitigate significant impacts.

The proposed project would consist of four separate components: Fifth Standard Solar Facility (150-megawatt [MW] PV facility), Stonecrop Solar Facility (20-MW PV facility), Blackbriar

Battery Storage Facility (an up to 100-MW battery storage facility), and a 0.30-mile overhead 230-kilovolt (kV) generation tie (gen-tie) line to connect the onsite project substation at the southwestern corner of the project site with the existing Gates Substation (Figure 2-2).

## Methodology

This assessment of the proposed project's potential impacts on visual resources was conducted through a review of applicable planning documents, site reconnaissance and photography, production of visual simulations, and the application of the FHWA Visual Impact Assessment for Highway Projects methodology. This evaluation depends in part on the assessment of the landscape's visual quality under existing conditions and the changes in visual quality with implementation of the proposed project. Visual quality ratings range from very high to very low and incorporate landscape assessment concepts applied by FHWA (FHWA 1988). The determination of impact significance was made following the four CEQA Guidelines checklist questions discussed in the Section 4.1.3 subsection titled Visual Character of the Project Site.

The inventory of viewpoints included three components: (1) identification and photo-documentation of viewing areas and viewpoints (field work was completed November 2017 by Stantec), (2) evaluation of visual sensitivity of viewpoints, and (3) an evaluation of the proposed project's visibility from the final KOPs. Assessments of existing visual conditions were made based on professional judgment that took into consideration the following conditions: visual quality, viewer groups and viewer sensitivity, and visual character.

During the field survey, images were photographed using a >10-megapixel digital single lens reflex camera equipped with a 50-millimeter fixed focal length lens. This configuration is the de facto standard that approximates the proportion seen by the human eye. The camera positioning was determined with a sub-meter differentially corrected global positioning system (GPS). The camera was leveled at eye-level for each photograph.

The visual simulations provide clear before-and-after images of the location, scale, and visual appearance of the features affected by and associated with the proposed project. The simulations were developed through an objective analytical and computer modeling process and are accurate within the constraints of the available site and alternative data (a three-dimensional computer model was created using a combination of AutoCAD files and geographic information system [GIS] layers and exported to Autodesk's three-dimensional Studio Max for production). Design data—consisting of engineering drawings, elevations, site and topographical contour plans, concept diagrams, and reference pictures—were used as a platform from which digital models were created. In cases where detailed design data were unavailable, more general descriptions about alternative facilities and their locations were used to prepare the digital models.

The visual impacts identified in this EIR are based in part on comparing the before-and-after visual conditions portrayed in the visual simulations and assessing the degree of visual change for the proposed project. The visual simulations of each KOP illustrate the location, scale, and conceptual appearance of the proposed sites from that location.

## Thresholds of Significance

In accordance with the CEQA Guidelines Appendix G Environmental Checklist, the following questions were analyzed and evaluated to determine whether impacts to aesthetics are significant. Would the proposed project:

- Have a substantial adverse effect on a scenic vista?
- Substantially damage scenic resources, including but not limited to trees, rock outcroppings, and historic buildings within a state scenic highway?
- In nonurbanized areas, substantially degrade the existing visual character or quality of the site and its surroundings?
- Create a new source of substantial light or glare, which would adversely affect day or nighttime views in the area?

## Evaluation of Visual Impacts

This section summarizes potential impacts to visual quality and character with the implementation of the proposed project based on changes to views toward the project site from KOP-1 and KOP-2. Figures 4.1-2a, 4.1.2b, 4.1.3a and 4.1-3b show existing and simulated conditions to allow for comparison of pre-project and post-project conditions.

### KOP-1: View Near the Southeast Corner of Project Site with Proposed Project

The visual quality of the view from KOP-1 with the proposed project would remain moderately low. As shown in Figure 4.1-2b, solar arrays and perimeter fencing would be prominently visible in the view's foreground. Inverter pads amid the solar arrays would be detectable, as would the battery storage facility and additional interconnection infrastructure would be visible in the middleground. The addition of the solar arrays would add to the view a component that is generally uniform in appearance and horizontal in terms of the space it occupies. As such, the solar array portion of the proposed project would relate in character, if not in precise form, to the agricultural croplands visible throughout the surrounding landscape. It would also increase the general vividness of the view to a moderate level, enhancing the view's memorability by adding a plane of color and form not present in existing views. Because the proposed project would appear generally contained to one portion of land in the foreground, and because structures and interconnection poles would not substantially encroach on other view components, the view's intactness would remain moderately low. However, the overall unity of the view would be altered by the addition of the proposed project. Whereas the project site currently appears dedicated to large-scale agricultural activities with electrical utility infrastructure throughout, the proposed project would add a prominent element of power generation. As such, the view's degree of unity would be reduced to moderately low.

### KOP-2: View Near the Northeast Corner of Project Site with Proposed Project

As in the view from KOP-1, visual quality in views from KOP-2 would remain moderately low with the proposed project, despite modest increases in the view's vividness and overall unity. As shown in Figure 4.1-3b, the proposed new solar arrays and additional perimeter fencing would substantially increase the portion of the view occupied by power generation. At present, only the

southeast corner of the Gates Solar Facility is visible along the right side of the view, which is somewhat unified, primarily containing industrial agricultural lands backdropped by utility infrastructure and further away, the most proximate portion of the Diablo Range. With the proposed project, the visible landscape would appear dedicated to power generation and transmission, with the elimination from the foreground of all lands containing any agricultural production. The effect would show moderate unity, and given the additional area occupied by solar arrays, one that would be more vivid.

### **Project Impact Analysis and Mitigation Measures**

This section discusses potential impacts on aesthetics associated with the proposed project and provides Mitigation Measures where necessary. Construction-related activities would not constitute permanent impacts to aesthetic resources, and as such, construction activities are considered temporary effects as addressed in the discussion of potential impacts below. When the proposed project ceases operation, the facilities would be decommissioned and dismantled over 12 months and would include removal of above- and belowground structures, as well as site reclamation activities. Accordingly, decommissioning-related activities would have similar temporary visual impacts as construction-related activities.

#### **Scenic Vista**

---

**Impact AES-1    The proposed project would not have a substantial adverse effect on a scenic vista.**

---

#### **Impact Analysis**

There are no designated scenic vistas in the project vicinity, nor is the project site prominently visible or even distinguishable from the relatively few locations where expansive views are available. The proposed project would still be visible in some long-distance views, though not prominently. Therefore, there would be a less than significant impact to scenic vistas.

Distance, the preponderance of orchards among the agricultural lands, and hazy air conditions typical of areas containing industrial agricultural activities all contribute to the diminished visibility. The view from KOP-4 (Figure 4.1-5) is an elevated view relative to the project site, which includes land ranging from 60 to 100 feet lower than the viewpoint and is approximately 1.8 to 3.8 miles away from the viewpoint. The numerous utility poles and towers particularly concentrated at Gates Substation are visible, and the project interconnection would incrementally increase the presence of vertical forms associated with utility infrastructure. However, the two existing utility-scale solar facilities on the near and far side of the project site as seen from KOP-4 are difficult to differentiate from their surroundings. The larger size of the proposed project could make it detectable in views from this location, but it would likely appear as a dark-colored plane along the horizon. Potential visibility is likely to be similar in views from elevated crossings of roadways along the California Aqueduct trail, which is between approximately 3 and 5 miles east of the project site. As such, the proposed project would result in a less than significant impact to scenic vistas.

#### **Level of Significance Before Mitigation**

Less Than Significant Impact.

#### **Mitigation Measures**

No mitigation is necessary.



**Level of Significance After Mitigation**

Less Than Significant Impact.

---

 Scenic Resources within a State Scenic Highway
 

---

**Impact AES-2**    **The proposed project would not substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway.**

---

**Impact Analysis**

There are no State Scenic Highways in the vicinity of the project site. Impacts to scenic resources within a state scenic highway would not occur.

The segment of I-5 that passes within 2 miles to the west of the proposed project is a County-designated scenic roadway. The County General Plan contains policies related to locally designated scenic roadways to address development on lands adjacent to scenic roadways; however, there are no County policies related to development on land that is visible at a distance from designated scenic roadways. The current uses of lands adjacent to I-5, primarily orchards and some agricultural structures, generally impede visibility of the project site, only allowing for intermittent views of lands to the east. Such views are typically seen by viewers in vehicles traveling at high speeds. The view from KOP-4 (Figure 4.1-5) approximates the distance between the project site and I-5, although it should be noted that this viewpoint is at a slightly higher elevation than the nearby segment of the interstate and is located east of the orchards that intervene in views from the road. As described above in the discussion related to scenic vistas, Gates Substation is detectible in views from KOP-4, but the West Gates Solar Facility, which is closer to the viewpoint than the proposed project, is not. It stands to reason that the larger but more distant proposed project would be similarly difficult to identify in views from I-5 and, if visible, would primarily appear as a somewhat darker plane along a portion of the horizon.

Such effects would not substantially alter views from I-5, and impacts to views from any designated scenic roadway would be less than significant.

**Level of Significance Before Mitigation**

Less Than Significant Impact.

**Mitigation Measures**

No mitigation is necessary.

**Level of Significance After Mitigation**

Less Than Significant Impact.

---

 Visual Character
 

---

**Impact AES-3**    **The proposed project would not substantially degrade the existing visual character or quality of public views of the site and its surroundings.**

---

**Impact Analysis**

A project is considered to “substantially degrade” the visual character or quality of a site if it would have a negative influence on the public’s experience and appreciation of the visual

---

environment (FHWA 1988). As such, visual changes are always considered in the context of a site's or locale's visual sensitivity. Visual changes caused by a project are evaluated in terms of their visual contrast with the area's predominant landscape elements and features, their dominance in views relative to other existing features, and the degree to which they could block or obscure views of aesthetically pleasing landscape elements.

The project site is set amid a local landscape characterized visually by the dominance of large-parcel agricultural uses and facilities dedicated to power generation and transmission. Beyond the proposed project's locale, agricultural production and uses that support the farming industry are prevalent and therefore visually dominant. On some lands in the vicinity of the project site, rows of solar arrays associated with two utility-scale generation facilities relate visually to row crops and orchards nearby. The lands within the project site have been left fallow but have historically been farmed. Construction of solar arrays and related storage and interconnection facilities on its nearly 1,600 acres would constitute a substantially different use of the project site but would not substantially alter the visual character within the site's immediate surroundings. While the portion of land in the immediate area occupied by power generation and transmission facilities would increase, the existing dominant visual character in the surrounding area would remain agricultural.

As previously discussed, the visual quality of the project site would not be substantially different with the development of the proposed project. This portion of the San Joaquin Valley is a landscape that has been extensively altered and is almost entirely managed for agricultural production, which requires industrial components. The presence of a solar facility alongside two existing solar facilities would not introduce but rather would increase the industrial-appearing elements in the landscape. It would do so to an extent that the industrial-appearing elements related to solar generation would be more apparently concentrated in one general location. Visually, such facilities would be subordinate to the agricultural character of the broader landscape. Views to one side of South Lassen Avenue would be dominated by solar arrays for a 2.5-mile stretch (2 miles associated with the proposed project; 0.5 mile associated with the existing Gates Solar Facility). Such views already include widespread transmission infrastructure and, in proximate locations, existing solar facilities.

As such, the impact to existing visual character and quality of the site and its surroundings would be less than significant.

**Level of Significance Before Mitigation**

Less Than Significant Impact.

**Mitigation Measures**

No mitigation is necessary.

**Level of Significance After Mitigation**

Less Than Significant Impact.

---

Light or Glare

---

**Impact AES-4**    **The proposed project would not create a new source of substantial light or glare which would adversely affect day or nighttime views in the area.**

---

**Impact Analysis**

The proposed project would include minimal nighttime lighting and would be the source of some glare during daytime hours. Onsite lighting has the potential to cause adverse impacts if lights were to shine onto adjacent properties and/or public right-of-way. Implementation of Mitigation Measure AES-1 would reduce these potential effects to a less than significant level.

As described in Section 2.0, Project Description, motion-sensitive directional lights would be installed to provide security and approach lighting for the substation and control-equipment enclosure or building. Lighting for other operations and maintenance activities would be manually controlled. All lighting would be shielded and/or directed downward to minimize the potential for glare or spillover onto adjacent properties and would meet applicable rules and code requirements for outdoor lighting. Project lighting would be engaged only as determined by the motion sensors, security requirements, prudent utility practices, and as necessary for operation and maintenance activities. Such limited effects are likely to be consistent with lighting at nearby solar facilities and the recently expanded Gates Substation.

Nighttime and weekend construction work is not expected, but could occur on occasion, depending on schedule considerations. Should nighttime construction or decommissioning work be necessary, implementation of Mitigation Measure AES-1, which would apply to all outdoor lights, including those necessary for any nighttime construction or decommissioning activities, would reduce potential effects from spillover lighting to less than significant levels.

The main impact of glare is the lingering effect a viewer might experience after direct exposure to a flash or bright light, referred to as “temporary afterimage.” There currently is no permanent source of substantial daytime glare within the project site. The proposed project would introduce a new potential source of glare from the reflective portions of the solar panel arrays. However, as described in Section 2.0, Project Description, the PV panels would be covered with dark, high-light-absorbing, low-reflective glass, and mounted on a metal tracking system. Further, in accordance with County policy and the County’s Solar Guidelines, the solar panels would be set back a minimum of 50 feet from the property line and neighboring agricultural operations.

Solar panels are designed to absorb, not reflect, light; PV solar glass is often stippled with a light-trapping, photon-absorbent solar cell that reduces reflectance (Sunpower 2010). Further, modern PV panels reflect as little as 2% of incoming sunlight, with approximately the same reflectivity as a body of water (Meister Consultants Group 2014). Incorporation of low-reflective materials would ensure reflectivity, and glint or glare associated with the project would be minimized. Where solar arrays would be a fixed-tilt system, rows of panels would be placed along an east-west axis with panels oriented toward the south. Light not absorbed would be reflected upward toward the source of light and away from the project site and surrounding area. Any potential glare would not be experienced at ground level, particularly along South Lassen Avenue/State Route (SR) 269, the nearest publicly accessible road to the east of the site. The County-required setback distance would reduce potential for glare experienced along South Lassen Avenue by reducing proximity of the potential source to viewers.

Where there would be a single-axis tracking system, solar arrays would be oriented north-south and would rotate from east to west, following the sun in its path across the sky as the day progresses. With such an installation, when the sun is high in the sky (close to noon or in the summer) and the panel arrays are parallel to the ground, sunlight would be reflected in an upward direction toward the light source. When the sun is low on the horizon (near dawn or dusk or in the winter) the panel is oriented toward it and thus approaches a more vertical position. Under such conditions, the potential for fugitive glare on ground-level receptors would increase, and the primary recipients of potential glare would be those traveling on South Lassen Avenue in the morning, when tracking panels would be oriented to the east.

However, these recipients typically travel north-south along South Lassen Avenue at a relatively high speed, duration of viewer exposure to any potential glare is anticipated to be brief, and the potential for an afterimage is low. The source of potential glare would be set back from the roadway a minimum of 50 feet, per County requirements, placing it toward the outer edges of drivers' presumed field of vision. Viewers traveling on West Jayne Avenue, south of the proposed project, would be less affected given distance from the project site, relative speed of travel, and the intervention of orchards and agricultural equipment to the southwest and southeast of the proposed project (locations directly south of the east-to-west-facing panels would likely not experience any effects from glare). Therefore, duration of viewer exposure to any potential glare is anticipated to be brief at most, and the potential for afterimage experienced by drivers of local roadways would be low.

#### **Level of Significance Before Mitigation**

Potentially Significant Impact.

#### **Mitigation Measures**

**MM AES-1: Lighting.** All outdoor lighting shall be hooded, directed downward, and permanently maintained to not shine towards adjacent properties and roads.

#### **Level of Significance After Mitigation**

Less Than Significant Impact with Mitigation Incorporated.

### **4.1.5 Cumulative Impacts**

The geographic scope of cumulative impacts for aesthetics includes the viewshed of the proposed project and the area surrounding the project site from which the project is, or could be, visible to viewers in the foreground, middleground, or background. The proposed project would have less than significant impacts to visual character and light or glare during construction, operation, and decommissioning. The proposed project would have no impact to scenic vistas and scenic resources within a state scenic highway, and therefore would not contribute to a cumulative impact. Construction and operation of solar arrays and related storage and interconnection facilities would constitute a substantially different use onsite but would not substantially alter the visual character within the site's immediate surroundings. Cumulative impacts could occur where proposed project facilities are viewed in combination with other past, present, and future developments in the same viewshed.

Of the related projects listed in Table 4-4, the Westlands Solar Park gen-tie transmission lines to the Gates Substation is the only project located within the foreground view of the proposed

project. The Westlands Solar Park PV facilities are located over 5 miles from the project site, and thus, are in the background; however, the gen-tie to the Gates Substation would be adjacent to the project site in the foreground.

The north and south Westlands Solar Master Plan gen-tie transmission lines rise up above the flat terrain, making them a vertical element in the background, middleground, and foreground views as they extend from the Westlands Solar Master Plan PV facilities to the Gates Substation near the project site. The proposed project would also require a gen-tie transmission line to the Gates Substation, increasing views of transmission lines in the foreground. However, the existing prominence of transmission lines in views near the proposed project site would not be significantly changed by the addition of a gen-tie from the proposed project as transmission lines already make up a defining vertical element in the character of the viewshed. However, the proposed project's gen-tie transmission line would cumulatively contribute to this view in the foreground and would also be visible from some middleground views towards the site.

The proposed project would contribute to a cumulative impact to foreground views of the solar panel area since it would be located adjacent to the Gates Solar Facility. This would expand the view of solar panels and make the immediate proposed project site of solar panels one of the most dominant visual elements in the foreground (along with agricultural land) since it would encompass a large area supplanting the agricultural uses currently onsite.

The remaining projects in Table 4-4 are located in the middleground. Similar to the foreground view, the proposed project would contribute to a cumulative impact on middleground views of the site. There would be a larger area of solar panels combined with the Gates Solar Facility, making the site more visible due to the contrast between agricultural uses and the darker solar panels, which would be visible in the middleground view as a dark line across the horizon.

The proposed project would contribute to a cumulative impact to background views, but similar to the Westlands Solar Master Plan project, it would be difficult to discern in background views due to distance from viewing sites, flat terrain (i.e., lack of higher viewing locations), intervening structures, low height of the Westlands Solar Master Plan facility and Fifth Standard's solar panels and generally hazy conditions. Thus, the cumulative impact in the background view would not be cumulatively considerable.

The construction schedule of the Westlands Solar Park project gen-tie could overlap with the construction schedule of the proposed project and would increase the potential for cumulative visual impacts. Some viewers may find views of construction and decommissioning equipment, vehicles, materials, staging areas, and personnel to be obstructive of foreground views. However, visual impacts during construction would be short-term and temporary, and viewers would not be exposed to construction and decommissioning of the proposed project and related projects for permanent periods of time.

The proposed project would include lighting, which would contribute to a cumulative impact to the general nighttime lighting in the valley. Most sources of light in the proposed project area are generated by passing vehicles on nearby roads, I-5, other solar and agricultural facilities, the town of Huron, and scattered residences. Much of this lighting is diffuse and scattered by distance between the light sources and the predominance of agricultural land, which is not lighted. Combined with lighting from other projects, the proposed project would make the

immediate area more visible from a distance but would not result in a cumulatively considerable impact.

Similarly, the proposed project may produce some glare at certain times of the day from certain viewing angles due to the proximity of the Gates Solar Facility and the enlarged area of solar panels created by the proposed project. However, the standard practice for solar facilities in the county is to use materials on the panels and supports that is non-reflective and/or non-refractive. It is not anticipated that the proposed project would produce glare effects that would be problematic in the viewshed. Therefore, the proposed project would not result cumulatively considerable impact to visual resources, and impacts would be less than significant.



**This page left intentionally blank.**

## 4.2 AGRICULTURE

This section describes the impacts on agricultural resources that would result from implementation of the Fifth Standard Solar Facility Project Complex (proposed project). Included is a review of existing conditions, a summary of applicable policies and regulations related to agriculture, and an analysis of environmental impacts of the proposed project on agricultural resources. Where applicable, Mitigation Measures are included for significant impacts. The County received no scoping comments pertaining to agricultural resources (Appendix A).

### 4.2.1 Regulatory Setting

#### Federal

No federal regulations pertaining to agricultural resources apply to the proposed project.

#### State

##### Williamson Act

The California Land Conservation Act of 1965 (Government Code [GC] Section 51200, et seq.), also known as the Williamson Act, protects farmland from conversion to other uses by offering owners of agricultural land a property tax incentive to maintain their land in agricultural use. Under the Williamson Act, the landowner voluntarily enters into a contract with the county or city in which their property is located to maintain the land in agricultural or a qualified open space use for a minimum of 10 years. In return, the property tax on the land is based on its productive value rather than its assessed valuation. A Williamson Act Contract is automatically renewed unless a notice of nonrenewal is filed in advance of the contract renewal date.

The preferred method for withdrawing from a Williamson Act Contract is filing a notice of nonrenewal, which can be initiated by either the land use agency or the landowner. Under this process, the contract is ended after a 9-year nonrenewal period, during which taxes gradually increase every year. A Williamson Act Contract cancellation is an option under limited circumstances and conditions set forth in GC Section 51280 et seq. In such cases, landowners may petition the board or council of their county or city for cancellation of the Williamson Act Contract. The board or council may grant tentative cancellation only if it makes required statutory findings (GC Section 51282(a)). The board or council must consider comments from the director of the California Department of Conservation (DOC) before acting on a proposed cancellation if comments are provided. A cancellation becomes final and a Certificate of Cancellation is issued by the board or council upon the completion of all Conditions of Approval.

##### Farmland Mapping and Monitoring Program

The Farmland Mapping and Monitoring Program (FMMP) is a non-regulatory program of the DOC that inventories the state's important farmlands and tracks the conversion of farmland to other land uses. The FMMP publishes reports of mapped farmland and conversions every 2 years, categorizing farmland on the basis of soil quality, the availability of irrigation water, current use, and slope among other criteria. The following are the categories of farmland identified in the FMMP:

- **Prime Farmland.** Farmland with the best combination of physical and chemical features to sustain long-term agricultural production. This land has the soil quality, growing season, and moisture supply needed to produce sustained high yields. Land must have been used for irrigated agricultural production at some time during the 4 years prior to the mapping date.
- **Farmland of Statewide Importance.** Farmland similar to Prime Farmland but with minor shortcomings, such as greater slopes or less ability to store soil moisture. Land must have been used for irrigated agricultural production at some time during the 4 years prior to the mapping date.
- **Unique Farmland.** Farmland of lesser quality soils than Prime Farmland or Farmland of Statewide Importance, used for the production of the state's leading agricultural crops. This land is usually irrigated but may include non-irrigated orchards or vineyards as found in some climatic zones in California. Land must have been cropped at some time during the 4 years prior to the mapping date.
- **Farmland of Local Importance.** Land of importance to the local agricultural economy as determined by each county's board of supervisors and a local advisory committee.
- **Grazing Land.** Land on which the existing vegetation is suited to the grazing of livestock.

The FMMP considers all of the above except Grazing Land to be important farmland.

## Local

### Fresno County General Plan

The Agriculture and Land Use Element of the General Plan states that, "since most of the county's highly productive agricultural soils could be easily developed by urban, rural residential, and other non-agricultural uses, careful land use decision-making is essential to minimizing the conversion of productive agricultural land to non-agricultural uses." The conversion of agricultural land diminishes the County's agricultural production capacity and economic viability and would detrimentally impact surrounding agricultural operations to the extent that further losses in production may occur.

The Agriculture and Land Use Element of the Fresno County General Plan describes land use designations and development standards for unincorporated land in the County and sets out goals, policies, and programs related to agricultural resources. The General Plan land use designation for the project site is Agriculture, which provides for the production of crops and livestock, and for location of necessary agricultural commercial centers, agricultural processing facilities, and certain non-agricultural activities. No overlay designations apply to the project site. The following General Plan policies and programs are applicable to the proposed project:

#### Goal LU-A

To promote the long-term conservation of productive and potentially productive agricultural lands and to accommodate agricultural support services and agriculturally related activities that support the viability of agriculture and further the County's economic development goals.

- **Policy LU-A.1:** The County shall maintain agriculturally-designated areas for agricultural use and shall direct urban growth away from valuable agricultural lands to cities, unincorporated communities, and other areas planned for such development where public facilities and infrastructure are available.
- **Policy LU-A.3:** The County may allow, by discretionary permit in areas designated Agriculture, special agricultural uses and agriculturally-related activities, including value-added processing facilities, and certain non-agricultural uses listed in Table LU-3. Approval of these and similar uses in areas designated Agriculture shall be subject to the following criteria (criteria e through h are not applicable and, therefore, are not included):
  - a. The use shall provide a needed service to the surrounding agricultural area which cannot be provided more efficiently within urban areas or which requires location in a non-urban area because of unusual site requirements or operational characteristics.
  - b. The use should not be sited on productive agricultural lands if less productive land is available in the vicinity.
  - c. The operational or physical characteristics of the use shall not have a detrimental impact on water resources or the use or management of surrounding properties within at least one-quarter (1/4) mile radius.
  - d. A probable workforce should be located nearby or be readily available.

[...]

- **Policy LU-A.12:** In adopting land uses policies, regulations and programs, the County shall seek to protect agricultural activities from encroachment of incompatible land uses.
- **Policy LU-A.13:** The County shall protect agricultural operations from conflicts with non-agricultural uses by requiring buffers between proposed non-agricultural uses and adjacent agricultural operations.
- **Policy LU-A.14:** The County shall ensure that the review of discretionary permits includes an assessment of the conversion of productive agricultural land and that mitigation be required where appropriate.
- **Policy LU-A.16:** The County should consider the use of agricultural land preservation programs that improve the competitive capabilities of farms and ranches, thereby ensuring long-term conservation of viable agricultural operations. Examples of programs to be considered should include land trusts; conservation easements; dedication incentives; new and continued Williamson Act Contracts; Farmland Security Act contracts; the California Farmland Conservancy Program Fund; agricultural education programs; zoning regulations; agricultural mitigation fee program; urban growth boundaries; transfer of development rights; purchase of development rights; and agricultural buffer policies.

Fresno County Zoning Ordinance

The project site is zoned Exclusive Agricultural, with a minimum lot size of 20 acres (AE-20). As indicated in Section 816 of the Fresno County Zoning Ordinance, permitted uses in AE districts include raising livestock, poultry, and plant crops; single-family residences and accessory and

farm buildings; and other agricultural and home occupation uses. Electrical transmission and distribution substations are allowed in AE districts subject to director review and approval (Section 816.2(D)). Additionally, the County processes photovoltaic (PV) solar facilities through the Unclassified Conditional Use Permit process, based on Section 853.B(14) of the Fresno County Zoning Ordinance.

#### Fresno County Solar Facility Supplemental Information

The Fresno County Solar Facility Guidelines (County 2017a) requires certain information to be provided as part of the application packet to assist staff in their analysis of the impacts of proposed solar project on the County's agricultural resources and to assist decision-making bodies when considering applications for solar facilities. Items relevant to agricultural impacts include the following:

1. Information shall be submitted regarding the historical agricultural operation and use of the parcel, including specific crop type and crop yields, for the last ten years (if no agricultural operation in the last ten years, specify when land was last in agricultural use).
2. [...]
3. Identify the current status of the parcel (Williamson Act Contract, Conservation Easement, retired land, etc.), the purpose of any easement, and limitations of the parcel. The applicant shall submit a Title Report or Lot Book Guarantee for verification.
4. Identify (with supporting data) the current soil type and mapping units of the parcel pursuant to the standards of the California State Department of Conservation and the Natural Resources Conservation Service.
5. List all proposed measures and improvements intended to create a buffer between the proposed solar facility and adjacent agricultural operations (detailed information must be shown on Site Plan) and provide factual/technical data supporting the effectiveness of said proposed buffering measures.
6. Provide a Reclamation Plan detailing the lease life, timeline for removal of the improvements, and specific measures to return the site to the agricultural capability prior to installation of solar improvements. If the project is approved, adequate financial security to the satisfaction of the County shall be provided to ensure site reclamation.
7. Provide information documenting efforts to locate the proposed solar facility on non-agricultural lands and noncontracted parcels and detailed information explaining why the subject site was selected.
8. Develop and submit a project site Pest Management Plan to identify methods and frequency to manage weeds, insects, disease, and vertebrate pests that may impact adjacent sites.
9. The applicant must acknowledge the County's Right to Farm Ordinance and shall be required to record a Right to Farm Notice prior to issuance of any permits. This shall be included as a recommended Condition of Approval of the land use entitlement.

10. The life of the approved land use permit will expire upon expiration of the initial life of the solar lease. If the solar lease is to be extended, approval of new land use permit will need to be obtained.

#### Fresno County Right to Farm Ordinance

For certain activities within 300 feet of an AE Zone District, Section 17.72.075(A) of the Fresno County Code of Ordinances requires the recordation with the Fresno County Recorder of a notice in substantially the following form:

*It is the declared policy of Fresno County to preserve, protect, and encourage development of its agricultural land and industries for the production of food and other agricultural products. Residents of property in or near agricultural districts should be prepared to accept the inconveniences and discomfort associated with normal farm activities. Consistent with this policy, California Civil Code 3482.5 (right to farm law) provides that an agricultural pursuit, as defined, maintained for commercial uses shall not become a nuisance due to a changed condition in a locality after such agricultural pursuit has been in operation for three years.*

### 4.2.2 Environmental Setting

This section presents information on the conditions of agricultural resources in and around the project area. The regional setting provides information on the baseline conditions in the project region. The project setting describes baseline conditions in the study area for the proposed project.

#### Regional

The proposed project is in the Westside Valley geographical region of Fresno County (County 2000a). According to the DOC's 2015 California Farmland Conversion Report, FMMP, the County had approximately 683,925 acres of Prime Farmland, 411,483 acres of Farmland of Statewide Importance, 92,927 acres of Unique Farmland, and 179,654 acres of Farmland of Local Importance. Most of the high-quality farmland areas are located in the Eastside Valley (County 2000b). However, there is quite a bit of high-quality farmland on the west side of the County that has been and continues to be actively farmed with fruit trees as well as row crops. The Westside Valley is used for row and field crop production as well as fruit and nut tree crops.

Approximately 1.5 million acres of farmland were within Williamson Act Contracts in the County in 2014 and 2015 (DOC 2016). In the same year, nonrenewal contracts expired on approximately 9,447 acres (DOC 2016).

#### Local

As described in Section 2.3.1, Land Use, the existing land use of the project site is agriculture, with a most recent crop history of producing tomatoes and wheat. The project site is shown on maps issued as part of the DOC's FMMP as Prime Farmland (DOC 2015). With the exception of a 1.25-acre parcel located in the interior of the 1,600-acre site, the remaining site is under Williamson Act Contracts, all of which are currently being petitioned for cancellation by the landowners. The project site is served through a combination of surface water from the Westlands Water District (WWD), groundwater, and effluent from the Los Gatos Tomato



Processing Facility. In 2015, Los Gatos Tomato Processing Facility Products applied for and received a Classified CUP (CUP No. 3510) to allow an increase in land application area for processed wastewater from 4,676.66 acres to 6,263.08 acres (an additional 1,586.42 acres) for wastewater discharge from the existing tomato processing plant. The Fifth Standard parcels are within the area allowed to receive discharge water. Although a large land application area is permitted for the beneficial reuse of the effluent, only a fraction of that land area is used in a typical year. There has been some variability in the amount of surface water allocation from the WWD. Typically, unless the surface water allocation is close to 100%, all surface water allocated to the project site acreage is diverted to other agricultural properties owned by the landowner for irrigating permanent crops, such as nut trees. In eight of the last ten years, all irrigation water applied to the project site has been groundwater, although there were only 2 years during that time when the site did not receive some portion of the allocation of surface water from the WWD. In all other years, the property owner opted to divert water allocated to the project site to other holdings. The irrigation infrastructure is suitable for effectively supporting the delivery and distribution of groundwater (in addition to surface water) for irrigation use. The combination of WWD and Woolf Farming irrigation infrastructure allows for the effective distribution of surface and/or groundwater throughout the project site.

The project site does not contain any land defined as forest land (as defined by PRC Section 12220(g)), timberland (as defined by PRC Section 4526), or land zoned Timberland Production (as defined by GC Section 51104(g)).

#### Farmland and Soil Classification

The DOC's FMMP identifies important farmland throughout California based on both current use and soil quality. In order to be classified as Prime Farmland by FMMP, land must have been used for irrigated agricultural production at some time during the four years prior to the mapping date. According to the FMMP mapping, the entire project area is classified as Prime Farmland.

According to the Natural Resources Conservation Service's (NRCS's) Web Soil Survey, an online database maintained by the U.S. Department of Agriculture, the primary soil type is Westhaven loam, which comprises 93.8% of the soil on the project site. The remaining 6.2% is Excelsior sandy loam. The project site soils qualify as Prime Agricultural Land. Federal regulations governing the NRCS's oversight of prime farmlands explain that such land has "the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops... it has the soil quality, growing season, and moisture supply needed to economically produce sustained high yields of crops when treated and managed, including water management, according to acceptable farming methods" (7 Code of Federal Regulations [CFR] §657.5(a)) (ESA 2018a).

Within California, land must meet at least one of five specified criteria in order to qualify as Prime Agricultural Land (California GC 51201). The five specified criteria are as follows:

1. All land that qualifies for rating as class I or class II in the Natural Resource Conservation Service land use capability classifications.
2. Land which qualifies for rating 80 through 100 in the Storie Index Rating.

3. Land which supports livestock used for the production of food and fiber and which has an annual carrying capacity equivalent to at least one animal unit per acre as defined by the United States Department of Agriculture.
4. Land planted with fruit- or nut-bearing trees, vines, bushes, or crops that have a nonbearing period of less than five years and that will normally return during the commercial bearing period on an annual basis from the production of unprocessed agricultural plant production not less than two hundred dollars per acre.
5. Land which has returned from the production of unprocessed agricultural plant products an annual gross value of not less than two hundred dollars per acre for three of the previous five years. The soils on the project site meet the characteristics described in the federal regulations

The soils on the project site meet three of the five criteria, criteria 1, 2, and 5.

The soils on the project site have a Class I and Class II land use capability classification. The Westhaven loam that comprises the majority of the site is a Class I soil. Soils in Class I are suited to a wide range of plants, productive, and suited to intensive agricultural use (ESA 2018a). Excelsior sandy loam, which comprises a small portion of the site, is a Class II soil. Soils in Class II need careful soil management, including conservation practices, to prevent deterioration or to improve air and water interactions during cultivation (ESA 2018a).

The Storie Index is a semi-quantitative method of rating soils for irrigated agricultural use based on crop productivity data. It assesses soil productivity based on four characteristics: the degree of soil profile development; surface texture; slope; and other soil and landscape conditions, including drainage, alkalinity, fertility, acidity, erosion, and microrelief. A score between 0 and 100% is determined for each factor, and then the scores are multiplied together to generate an index rating. Both of the onsite soil types have a Storie Index Rating of Grade 1, meaning they have a Storie Index Value between 80 and 100. The primary soil type, Westhaven loam, has a Storie value of 95; the secondary soil type, Excelsior sandy loam, has a Storie value of 81 (ESA 2018a).

In summary, the soils on the project site are well suited for agricultural production.

### **4.2.3 Environmental Impacts**

This section analyzes the proposed project's potential to result in significant environmental impacts related to agricultural resources. When an impact is determined to be significant, Mitigation Measures are identified that would reduce or avoid the impact.

#### **Methodology**

The proposed project's impacts on Prime Farmland, Unique Farmland, and Farmland of Statewide Importance were evaluated through the use of the Land Evaluation and Site Assessment (LESA) model. The LESA model provides an analytical approach for rating the relative quality of land resources based on specific measurable features. Factors considered by the LESA model include soils, site acreage, water availability, and surrounding land uses. The LESA model worksheets are provided in Appendix B. In addition, other resources, such as the Fresno County General Plan, the ESA Soil Memorandum, and the Williamson Act Cancellation

Petition submitted by the Applicant were also reviewed to provide context of existing and historical agricultural production. The project site would be leased for a period of 35 years, after which it will be reclaimed to agricultural uses consistent with the Reclamation Plan. The term of the lease may be renewed, in which case a new land use permit subject to discretionary approval would be required from the County. Given the extended period of time that the land would be out of agricultural production, and the potential for renewal of the solar lease, the impact to agricultural resources is considered a permanent impact.

### Thresholds of Significance

In accordance with the CEQA Guidelines Appendix G Environmental Checklist, the following questions were analyzed and evaluated to determine whether impacts to agricultural resources would be significant.

Would the proposed project:

- Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?
- Conflict with existing zoning for agricultural use, or a Williamson Act Contract?
- Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland to non-agricultural use (or conversion of forest land to non-forest use)?

The following questions were determined to have no impact during the Notice of Preparation (NOP) scoping. These issues are summarized in Section 6.0, Effects Found Not To Be Significant, and are not discussed further in this section.

- Conflict with existing zoning for, or cause rezoning of forest land (as defined in PRC section 12220(g)) or timberland (as defined in PRC section 4526)?
- Result in the loss of forest land or conversion of forest land to non-forest use?

### Project Impact Analysis and Mitigation Measures

This section discusses potential impacts on agriculture associated with the proposed project and provides Mitigation Measures where necessary.

#### Convert Important Farmland to Non-Agricultural Use

---

**Impact AG-1      The proposed project would convert Prime, Unique, or Farmland of Statewide Importance to a non-agricultural use.**

---

#### Impact Analysis

This project involves construction of solar facilities, including solar arrays, a substation, roads, battery storage, transmission lines, and operations and maintenance (O&M) facilities. Solar panels would be raised off the ground, but foundations for the O&M facilities, battery storage units, and roadways would permanently disturb the site. At full build-out of all three facilities,

1,600 acres of the project site would be developed with solar power generating equipment and support facilities.

The construction and operation of the proposed facility would result in permanent conversion of approximately 1,600 acres of Prime Farmland to a non-agricultural use. The Applicant has committed to return the land to farmland after the solar facilities are decommissioned through implementation of a Reclamation Plan. However, the conversion of Prime Farmland to non-agricultural use would be considered significant. The term of the lease may be extended with the landowner’s consent and the approval of additional land use permits from the County, thus potentially extending the period the land is out of agricultural use, subject to further environmental review.

California Land Evaluation and Site Assessment Model

The California LESA Model is designed to assess the significance of a proposed project’s conversion of agricultural land. Loss of agricultural land has typically involved conversion to permanent urban uses, and the LESA model has generally been used to evaluate that type of potential impact. The proposed project would affect the agricultural land on the project site for 35 years, with potential to expand that lifetime upon approval of additional land use permits. Due to the long-term conversion of farmland and despite the requirement to reclaim the land for agricultural purposes, the conversion of farmland is considered a permanent impact for evaluation under the LESA model.

The LESA model is composed of six factors, each of which is separately rated on a 100-point scale. Two land evaluation factors are based on measures of soil resource quality. Four site assessment factors provide measures of a project’s size, water resource availability, surrounding agricultural lands, and surrounding protected resource lands. The factors are weighted relative to each other and combined into a final single numeric score for the project, which has a maximum value of 100 points. Any project with a score of more than 39 points may be considered a significant conversion of agricultural land, depending on the values of the sub-scores. The scoring thresholds for the California LESA are listed in Table 4.2-1. Table 4.2-2 summarizes the LESA model score results for the project site. Based on the analysis, the final LESA score for the project site is 87.72, which means that the project’s conversion of agricultural land is considered significant. (See Appendix B for the California LESA Model Scoring Worksheet used in this analysis.)

**Table 4.2-1: California LESA Model Scoring Thresholds**

Total LESA Score	Scoring Decision
0 to 39 Points	Not considered significant
40 to 59 Points	Considered significant only if LE and SA sub-scores are each greater than or equal to 20 points
60 to 79 Points	Considered significant unless either the LE or SA sub-score is less than 20 points
80 to 100 Points	Considered significant

Source: DOC 1997.

**Table 4.2-2: California LESA Model Scoring Results for the Project Site**

Category	Factor	Points	Factor Weigh	Weighted Points	Remarks
Land Evaluation	Land Capability Class	98.8	0.25	24.7	The project site contains Class I and II soils, which have few agricultural limitations and, therefore, are considered to have high agricultural value.
	Storie Index	94.1	0.25	23.52	The project site has a high Storie Index because of the high agricultural value of the soils.
<b>Subtotal</b>			<b>0.50</b>	<b>48.22</b>	-
Site Assessment	Project Size	100	0.15	15	The project site size rating is 100 because the soils are of high agricultural value as per the Web Soil Survey.
	Water Resource Availability	33.7	0.15	5.05	The project site has limited access to irrigation district water, with physical and economic restrictions that may limit water availability during drought years.
	Surrounding Agricultural Land	95	0.15	14.25	Farmland accounts for 80% of the surrounding land uses, which translates to 95 points.
	Protected Resource Land	95	0.05	4.75	Williamson Act Contract lands account for 81% of the surrounding land uses, which translates to 95 points.
	<b>Subtotal</b>			<b>0.50</b>	<b>39.05</b>
<b>Total</b>				<b>87.72</b>	-

Source: Stantec Consulting Services Inc., LESA scoring sheet provided in Appendix B.

The construction and operation of the proposed facility will result in conversion of approximately 1,600 acres of Prime Farmland to a non-agricultural use. Prime Farmland is defined as land that must have been used for irrigated agricultural production at some time during the four years prior to the mapping date. The most recent map available through FMMP is from 2014. The project site has a long history of being under productive agricultural use. The most recent agricultural crops grown on the site include tomatoes and wheat. With development of the proposed project, current agricultural uses would cease for up to 35 years unless the term is extended and new land use permits are obtained. After decommissioning, the Reclamation Plan would require the conversion of the site back to agricultural uses. The project would be constructed and decommissioned in such a way that the site could be returned to agricultural capability. Site reclamation would include the following steps:

- Dismantling and removing all above- and below-ground equipment, cabling, posts, and foundations;

- Removing graveled and paved roads and their substrates; and
- Mechanically breaking up compacted soils by deep ripping and/or tilling, then planting cover crops selected to return plant nutrients and organic matter to the soil.

Once the project land uses change to non-agricultural uses, the surface water allocation from the WWD associated with the property will revert to the District and be made available to other agricultural users. The project site would be eligible to receive WWD Municipal and Industrial (M&I) supply water to service the solar facility. The project site has historically been able to support some agricultural production from groundwater supplies only in the years when surface water allocations have been reduced. All wells and irrigation infrastructure on the site will be retained by the site owners for the life of the solar facility. This will preserve the potential for the future return of the site to some agricultural use once the solar facility is decommissioned; however, without the surface water allocation from the WWD, the project site's production may not return to its pre-project levels.

Mitigation Measure AG-1 would require preparation of and implementation of Reclamation Plan to ensure that site restoration to agricultural uses is successful. The Reclamation Plans for the project site are included as appendices to this EIR.

The County has not formally adopted any farmland mitigation programs. Given the extended period that the land would be out of agricultural production, the County evaluated the use of agricultural conservation easements for the protection of agricultural lands and determined that placing farmland at another location under conservation easement would not mitigate the impact of converting the subject 1,600-acre project site to a non-agricultural use.

Although the land is intended to be returned to agricultural uses, there are several uncertainties regarding the feasibility of the land's successful return to agricultural production, such as how the soil quality will change due to non-farming and non-irrigation. Additionally, the site may not return to pre-project levels without the surface water allocation and if the groundwater quality and supply are diminished over the extended period that the site is in non-agricultural use. The conversion of Prime Farmland to non-agricultural use would be considered significant; therefore, the impact is determined to be significant and unavoidable.

### **Level of Significance Before Mitigation**

Potentially Significant Impact.

### **Mitigation Measures**

**MM AG-1: Reclamation Plan.** Prior to any ground-disturbing activity, the Applicant shall enter into a Reclamation Agreement to implement a Reclamation Plan for each Conditional Use Permit for restoration of agricultural land. The Plan shall include the following standards:

- Final reclamation actions shall require that agricultural land be returned to a fertility level equivalent to that level required to support crops recommended by an agricultural consultant through consultation with the County.
- Revegetation fertility level success shall be achieved when the productive capability of the revegetated area is equivalent to or exceeds, for two



equivalent crop years, that of the pre-project condition or any similar crop production in the region, as determined by an agricultural consultant or as compared to the baseline onsite agricultural production, as determined by the County.

**Level of Significance After Mitigation**

Significant and Unavoidable Impact.

Conflict with Existing Zoning or Williamson Act Contract

**Impact AG-2      The proposed project would conflict with existing zoning for agricultural use or a Williamson Act contract.**

**Impact Analysis**

Agricultural Zoning

The site is designated in the General Plan as Agricultural and is classified by the Zoning Ordinance as AE-20 (Exclusive Agricultural, 20-acre minimum parcel size). The zoning designation does not allow solar facilities; however, that use may be permitted in any zone district subject to approval of an Unclassified Conditional Use Permit (CUP). The purpose of the CUP process is to make a use not permitted as a by-right use as compatible with the zoning classification as possible. Therefore, with the approval of the CUP, no conflicts with agricultural zoning would occur.

Williamson Act Contracts

With the exception of a 1.25-acre parcel located in the interior of the site, the entire site is under Williamson Act Contracts, all of which are currently being petitioned for cancellation by the landowners. GC Section 51280 through 51283 sets forth procedures for cancelling a Williamson Act Contract: the property owner must pay a cancellation fee, and the legislative body must make the required findings to approve the cancellation petition. Table 4.2-3 provides a summary of the required findings that the County Board of Supervisors must make to approve a Williamson Act Contract Cancellation Petition.

**Table 4.2-3: Williamson Act Contract Cancellation Findings**

<b>Required Findings</b>
That the cancellation is for land on which a notice of nonrenewal has been served pursuant to Section 51245.
That cancellation is not likely to result in the removal of adjacent lands from agricultural use.
That cancellation is for an alternative use, which is consistent with the applicable provisions of the city or county general plan.
That cancellation will not result in discontinuous patterns of urban development.
That there is no proximate noncontracted land, which is both available and suitable for the use to which it is proposed the contracted land be put, or that development of the contracted land would provide more contiguous patterns of urban development than development of proximate noncontracted land.

Required Findings
Cancellation is in the public interest based on the following findings: (1) Other public concerns substantially outweigh the objectives of this chapter; and (2) That there is no proximate noncontracted land, which is both available and suitable for the use to which it is proposed the contracted land be put, or that development of the contracted land would provide more contiguous patterns of urban development than development of proximate noncontracted land.

The project site is under Williamson Act Contract, and therefore, the project conflicts with the existing Williamson Act Contracts. Because solar facilities that produce electricity for transmittal to an electrical grid are neither agricultural uses that are either permitted on land enrolled in the Williamson Act Program nor are they considered compatible uses on land enrolled in the program, therefore, this is a significant and unavoidable impact.

**Level of Significance Before Mitigation**

Potentially Significant Impact.

**Mitigation Measures**

There is no mitigation available to address the cancellation of the Williamson Act Contracts.

**Level of Significance After Mitigation**

Significant and Unavoidable Impact.

Pressures to Convert Farmland to Non-Agricultural Use

---

**Impact AG-3      The proposed project would involve other changes in the existing environment that, due to their location or nature, could result in conversion of Farmland to non-agricultural use.**

---

**Impact Analysis**

The proposed project may cause changes to the existing environment that could result in conversion of Farmland outside the project site boundary to non-agricultural use. Farmland conversion is caused primarily by urbanization; other chief causes for the loss of Farmland include development of low-density rural residences and ecological restoration projects, such as wetlands and wildlife habitat (DOC 2015). The proposed project does not fall in either of these categories and would not result in any new infrastructure that could promote growth or remove development barriers. The project's gen-tie line that would interconnect to the Gates Substation would only serve the project. While other solar facilities may seek to develop near the project site to benefit from the proximity to the Gates Substation, the proposed project would reduce the capacity of the Gates Substation. Thus, future projects locating near the Gates Substation may be required to make upgrades to the Gates Substation to allow additional interconnections, which may discourage additional development.

During construction, disturbance to the project site would result from installation of solar panels, staging areas, roads, and other structures. Vehicle emissions and traffic may increase on nearby roadways, thus affecting crops and farm operations on adjacent farms. However, this would occur over a 2-year period with varying levels of activity and would cease once the construction is completed.

Long-term operational impacts would be minimal. The small number of employees required for operations would not require increased urban development and the Solar Facility Guidelines require that the workforce be primarily drawn from local work force, who have typically established residences nearby in the County. Per General Plan Policy LU-A.13 and the Fresno County Solar Facility Guidelines, the project solar panels would be set back a minimum of 50 feet from neighboring agricultural operations. Additionally, in compliance with the Solar Facility Guidelines, the Applicant would be required to record with the County Recorder a Right-to-Farm Notice, indicating that adjacent agricultural operations shall not become a nuisance due to the changed condition of the project site (i.e., the development of a PV solar facility). Additionally, a pest and weed management plan would be implemented to control the introduction or establishment of rodents and weeds during project construction, operation, maintenance, and decommissioning activities. Implementation of these plans would prevent the project site from becoming a nuisance to adjacent agricultural operations through the introduction of pests or weeds. The zoning designation for the project site would not change, thereby precluding any future urbanization potential.

The proposed project would not affect available water supply for adjacent farmers as the water demand would be reduced from the baseline condition. As discussed in Section 4.16, Utilities and Service Systems, the operation of the proposed project would require 4 to 10 acre feet (af) of water per year as compared to average 2 af of water per acre used by farmers in the area. Between 2008 and 2017, the project site has had an average annual water use of 3,100 af (comprised of surface and groundwater) to serve existing agricultural operations (ESA 2018a).. Since the volume of water withdrawn for the proposed project would be much lower, it would allow for the groundwater to recharge over the duration of the proposed project. In addition, the limited supply of surface water could be diverted to other Westlands' users. Upon termination of the lease for the proposed project, the Applicant would restore the site to allow future agricultural use pursuant to the requirements of the Reclamation Plans.

Given the increased importance of renewable energy in California, other landowners may determine that the conversion of some of their land holdings to non-agricultural use is economically feasible; thus, indirect conversion of offsite farmland could potentially occur. This is a potentially significant impact. MM AG-1 would require the implementation of a reclamation plan to return of the project site to potential agricultural use, but it would not address the precedent of a large Prime Farmland conversion to non-agricultural use. There are no Mitigation Measures that would reduce this impact. The impact would remain significant and unavoidable.

#### **Level of Significance Before Mitigation**

Potentially Significant Impact.

#### **Mitigation Measures**

There are no Mitigation Measures available to address this impact.

#### **Level of Significance After Mitigation**

Significant and Unavoidable Impact.

### **4.2.4 Cumulative Impacts**

The geographic scope of the cumulative impact analysis for agricultural resources is the extent of the County. The proposed project would have a significant and unavoidable impact on

agricultural resources due to the conversion of Prime Farmland to non-agricultural use and conflict with Williamson Act contracts. The proposed project would also have significant and unavoidable impacts with respect to pressures to convert farmland to non-agricultural use through the precedent-setting conversion of a 1,600-acre Prime Farmland site in favor of solar facilities which would contribute to a cumulative impact on agricultural resources.

Accordingly, the following related projects are also expected to affect agricultural resources based on the available environmental review documents: Westlands Solar Master Plan project, Huron Wastewater Treatment Facility (WWTF) Improvements, and State Route 269 Bridge Reconstruction Project. The Westlands Solar Master Plan was approved to allow solar facilities on 21,000 acres in west-central Kings County. The Westlands Solar Master Plan includes gen-tie lines that would connect at the Gates Substation that would result in conversion of Important Farmland in Fresno County where tower footings would be located. Overall, gen-tie corridors across the Westlands Solar Master Plan area would result in conversion of 1.81 acres of farmland.

The SR 269 Bridge Project would convert approximately 23 acres of prime and unique farmland to roadway/right-of-way uses. However, the Huron WWTF would convert 188 acres to agricultural use by applying effluent from its WWTF to non-human consumption crops. Overall, projects that convert agricultural land to non-agricultural land would disrupt agricultural operations, but would not preclude agricultural activities in the area. However, the WWTF involves conversion of 188 acres of the land to agriculture and improvements to the existing waste WWTF. Nonetheless, because the proposed project would have a significant and unavoidable impact on agricultural resources due to the conversion of Prime Farmland to non-agricultural use and conflict with Williamson Act contracts, the proposed project impacts to agricultural resources would be cumulatively considerable.

**This page left intentionally blank.**

## 4.3 AIR QUALITY

This section provides an analysis of air quality impacts that would result from the Fifth Standard Solar Facility Project Complex (proposed project). Included in this section is the overall regulatory framework for air quality management in California and the region, a description of the existing air quality conditions in the project vicinity, and an analysis of the impacts related to air quality. Where applicable, Mitigation Measures are included for significant impacts. The County received no scoping comments pertaining to air quality (Appendix A).

### 4.3.1 Regulatory Setting

The agencies with regulatory authority over air emissions in the County are the United States Environmental Protection Agency (EPA), the California Air Resources Board (CARB), and the San Joaquin Valley Air Pollution Control District (SJVAPCD). EPA has established federal air quality standards for which CARB and SJVAPCD have primary implementation responsibility. CARB and SJVAPCD are also responsible for ensuring that state air quality standards are met. SJVAPCD is responsible for ensuring that state air quality standards are met within the region.

#### Federal

##### Clean Air Act and National Ambient Air Quality Standards

The federal Clean Air Act (CAA), enacted in 1963 and amended several times thereafter, including the 1990 CAA amendments, establishes the framework for modern air pollution control. The CAA directs the EPA to establish National Ambient Air Quality Standards (NAAQS) for six criteria pollutants: ozone (O<sub>3</sub>), carbon monoxide (CO), lead (Pb), nitrogen dioxide (NO<sub>2</sub>), sulfur dioxide (SO<sub>2</sub>) and particulate matter (PM). The NAAQS are divided into primary and secondary standards: the primary standards are set to protect human health within an adequate margin of safety; and the secondary standards are set to protect environmental values such as plant and animal life. Table 4.3-1 summarizes the NAAQS and the California Ambient Air Quality Standards (CAAQS).

The CAA requires states to submit a State Implementation Plan (SIP) for areas in nonattainment for NAAQS. The SIP, which is reviewed and approved by EPA, must demonstrate how the NAAQS would be achieved. Failing to submit a plan or secure approval can lead to denial of federal funding and permits. In cases where the SIP fails to demonstrate achievement of the standards, EPA is directed to prepare a federal implementation plan.



Table 4.3-1: National and California Ambient Air Quality Standards

Pollutant	Averaging Time	California Standards <sup>1,3</sup>	National Standards <sup>2</sup>	
			Primary <sup>3,4</sup>	Secondary <sup>3,5</sup>
Ozone	1 hour	0.09 ppm	N/A	N/A
		(180 µg/m <sup>3</sup> )	N/A	N/A
	8 hour	0.07 ppm	0.075 ppm	0.075 ppm
		(137 µg/m <sup>3</sup> )	(147 µg/m <sup>3</sup> )	(147 µg/m <sup>3</sup> )
Carbon Monoxide	8 hour	9 ppm	9 ppm	N/A
		(10 mg/m <sup>3</sup> )	(10 mg/m <sup>3</sup> )	N/A
	1 hour	20 ppm	35 ppm	N/A
		(23 mg/m <sup>3</sup> )	(40 mg/m <sup>3</sup> )	N/A
Nitrogen Dioxide	Annual	0.03 ppm	0.053 ppm	0.053 ppm
		(57 mg/m <sup>3</sup> )	(100 µg/m <sup>3</sup> )	(100 µg/m <sup>3</sup> )
	1 hour	0.18 ppm	N/A	N/A
		(339 mg/m <sup>3</sup> )	N/A	N/A
Sulfur Dioxide	Annual	N/A	80 µg/m <sup>3</sup>	N/A
		N/A	(0.03 ppm)	N/A
	24 hour	0.04 ppm	0.14 ppm	N/A
		(105 mg/m <sup>3</sup> )	(365 µg/m <sup>3</sup> )	N/A
	3 hour	N/A	N/A	0.5 ppm
		N/A	N/A	1,300 ug/m <sup>3</sup>
1 hour	0.25 ppm	N/A	N/A	
		(655 µg/m <sup>3</sup> )	N/A	N/A
PM <sub>10</sub>	Annual	20 µg/m <sup>3</sup>	N/A	N/A
	24 hour	50 µg/m <sup>3</sup>	150 µg/m <sup>3</sup>	150 µg/m <sup>3</sup>
PM <sub>2.5</sub>	Annual	12 µg/m <sup>3</sup>	15 µg/m <sup>3</sup>	15 µg/m <sup>3</sup>
	24 hour	N/A	35 µg/m <sup>3</sup>	35 µg/m <sup>3</sup>
Sulfates	24 hour	25 µg/m <sup>3</sup>	N/A	N/A
Lead <sup>6,7</sup>	30 day	1.5 µg/m <sup>3</sup>	N/A	N/A
	Quarterly	N/A	1.5 µg/m <sup>3</sup>	1.5 µg/m <sup>3</sup>
	Rolling 3 month average <sup>7</sup>	N/A	0.15 µg/m <sup>3</sup>	0.15 µg/m <sup>3</sup>
Hydrogen Sulfide	1 hour	0.03 ppm	N/A	N/A
		(42 µg/m <sup>3</sup> )	N/A	N/A
Vinyl Chloride <sup>6</sup>	24 hour	0.010 ppm	N/A	N/A
		(26 µg/m <sup>3</sup> )	N/A	N/A

Pollutant	Averaging Time	California Standards <sup>1,3</sup>	National Standards <sup>2</sup>	
			Primary <sup>3,4</sup>	Secondary <sup>3,5</sup>
Visibility	1 observation	Extinction coefficient of 0.23 per kilometer; visibility of 10 miles or more due to particles when relative humidity is less than 70%.	N/A	N/A

Notes:

µg/m<sup>3</sup> = micrograms per cubic meter

mg/m<sup>3</sup> = milligrams per cubic meter

ppm = parts per million

- 1 California standards for ozone, carbon monoxide, sulfur dioxide (1 and 24 hour), nitrogen dioxide, particulate matter (PM)<sub>10</sub> and 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.
- 2 National standards other than ozone, particulate matter, and those based on annual averages or 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 in a year, averaged over 3 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% of the daily concentrations, averaged over three years, are equal to or less than the standard.
- 3 Concentration expressed first in units in which it was promulgated. Equivalent units given in parentheses are based on a reference temperature of 250 degrees Celsius (°C) and a reference pressure of 760 Torricelli (torr). Most measurements of air quality are to be corrected to a reference temperature of 250°C and a reference pressure of 760 torr; ppm in this table refers to parts per million by volume (ppmv), or micromoles of pollutant per mole of gas.
- 4 National Primary Standards: The levels of air quality necessary, with an adequate margin of safety, to protect the public health.
- 5 National Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.
- 6 The California Air Resources Board 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.
- 7 National lead standard, rolling three-month average; final rule signed October 15, 2008.

Source: CARB 2016a.

### Clean Air Non-Road Diesel Rule

To reduce emissions from off-road diesel equipment, EPA established a series of increasingly strict emission standards for new engines. Manufacturers of off-road diesel engines are required to produce engines meeting certain emission standards based on the model year the engine was manufactured in accordance with the following compliance schedule:

- Tier 1 standards were phased in from 1996 to 2000 (year of manufacture) depending on the engine horsepower category.
- Tier 2 standards were phased in from 2001 to 2006.
- Tier 3 standards were phased in from 2006 to 2008.

- Tier 4 standards, which require add-on emissions-control equipment to attain, were phased in from 2008 to 2015.

## State

CARB is responsible for establishing and reviewing the state standards, compiling the California SIP, securing approval of that plan from EPA, conducting research and planning, and identifying toxic air contaminants (TACs). CARB also regulates mobile sources of emissions in California, such as construction equipment, trucks, and automobiles, and oversees the activities of California's air quality management districts, which are organized at the county or regional level. Air quality management districts are primarily responsible for regulating stationary sources at industrial and commercial facilities within their geographic areas and for preparing the air quality plans that are required under the federal CAA and California CAA.

### California Clean Air Act and California Ambient Air Quality Standards

In 1988, the state legislature adopted the California CAA, which established a statewide air pollution control program. Unlike the federal CAA, the California CAA does not set precise attainment deadlines. Instead, the California CAA requires all air districts in the state to endeavor to meet the CAAQS by the earliest practical date. Each air district's clean air plan is specifically designed to attain the standards and must be designed to achieve an annual 5% reduction in district-wide emissions of each nonattainment pollutant or its precursors. When an air district is unable to achieve a 5% annual reduction, the adoption of all feasible measures on an expeditious schedule is acceptable as an alternative strategy (Health and Safety Code Section 40914[b][2]). CAAQS are generally more stringent than NAAQS and incorporate additional standards for sulfates (SO<sub>4</sub>), hydrogen sulfide (H<sub>2</sub>S), vinyl chloride (C<sub>2</sub>H<sub>3</sub>Cl), and visibility-reducing particles (Table 4.3-1).

CARB and local air districts are responsible for achieving the CAAQS, which are to be achieved through district-level Air Quality Management Plans (AQMPs) that would be incorporated into the SIP. In California, EPA has delegated authority to prepare SIPs to CARB, which in turn has delegated that authority to individual air districts. CARB traditionally has established state air quality standards, maintained oversight authority in air quality planning, developed programs for reducing emissions from motor vehicles, developed air emission inventories, collected air quality and meteorological data, and approved SIPs.

The California CAA substantially adds to the authority and responsibilities of air districts. The California CAA designates air districts as lead air quality planning agencies, requires air districts to prepare air quality plans, and grants air districts authority to implement transportation control measures. The California CAA also emphasizes the control of indirect and area-wide sources of air pollutant emissions and gives local air pollution control districts explicit authority to regulate indirect sources of air pollution.

### Toxic Air Containment Regulation

California regulates TACs primarily through the Tanner Air Toxics Act (Assembly Bill [AB] 1807) and the Air Toxics Hot Spots Information and Assessment Act of 1987 (AB 2588). In the early 1980s, CARB established a statewide comprehensive program to reduce exposure to air toxics. The Toxic Air Contaminant Identification and Control Act (AB 1807) created California's program

to reduce exposure to air toxics. The Air Toxics “Hot Spots” Information and Assessment Act (AB 2588) supplements the AB 1807 program by requiring a statewide air toxics inventory, notification of people exposed to a significant health risk, and facility plans to reduce these risks.

In August 1998, CARB identified Diesel Particulate Matter (DPM) emissions from diesel-fueled engines as a TAC. In September 2000, CARB approved a comprehensive diesel risk reduction plan to reduce emissions from both new and existing diesel-fueled engines and vehicles (CARB 2000). The goal of the plan is to reduce diesel PM<sub>10</sub> (inhalable particulate matter) emissions and the associated health risk by 75% in 2010 and by 85% by 2020. The plan identifies 14 measures that target new and existing on-road vehicles (e.g., heavy-duty trucks and buses), off-road equipment (e.g., graders, tractors, forklifts, sweepers, and boats), portable equipment (e.g., pumps), and stationary engines (e.g., stand-by power generators). CARB will implement the plan over the next several years.

The Tanner Act sets forth a formal procedure for CARB to designate substances as TACs. The procedure entails research, public participation, and scientific peer review before CARB designates a substance as a TAC. To date, CARB has identified 21 TACs and has also adopted EPA’s list of hazardous air pollutants (HAPs) as TACs. In August 1998, DPM was added to the CARB list of TACs (CARB 2018).

CARB has adopted several regulations that will reduce diesel emissions from vehicles and engines throughout California. For example, CARB adopted an idling regulation for on-road diesel-fueled commercial vehicles in July 2004 and updated it in October 2005. The regulation applies to public and privately-owned trucks with a gage widening ratio greater than 10,000 pounds. Vehicles subject to the regulation are prohibited from idling for more than 5 minutes in any one location. CARB also adopted a regulation applicable to the operation of diesel-powered construction and mining vehicles. Fleet owners are subject to retrofit or accelerated replacement/repower requirements. The regulation also imposes a 5-minute idling limitation on owners, operators, renters, or lessees of off-road diesel vehicles. In some cases, the PM reduction strategies reduce smog-forming emissions such as nitrogen oxides (NO<sub>x</sub>). CARB continues to establish new programs and regulations for the control of TACs, including DPMs, as appropriate.

## Local

The proposed project would be located within the jurisdiction of SJVAPCD, which regulates air pollutant emissions for all sources throughout the air basin other than motor vehicles. SJVAPCD enforces regulations and administers permits governing stationary sources. The following rules, regulations, and plans would apply to the proposed project:

### Regulation IV (Prohibitions)

Regulation IV contains rules developed pursuant to EPA guidance for specific prohibitions in the region. Rule 4101, Visibility, limits the visible plume from any source to 20% opacity. Rule 4102, Nuisance, prohibits the discharge of air contaminants or other materials in quantities that may cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public or that endanger the comfort, repose, health, or safety of any such person or the public.

Regulation VIII (Fugitive PM<sub>10</sub> Prohibitions)

Regulation VIII contains rules developed pursuant to EPA guidance for serious PM<sub>10</sub> nonattainment areas. Rules included under this regulation limit fugitive PM<sub>10</sub> emissions from the following sources: construction, demolition, excavation, extraction and other earth-moving activities, bulk materials handling, carryout and track-out, open areas, paved and unpaved roads, unpaved vehicle and equipment traffic areas, and agricultural sources. The Applicant would be required to implement the following control measures during project construction activities pursuant to Rule 8021, Construction, Demolition, Excavation, Extraction, and Other Earthmoving Activities:

- **A.1:** Pre-water site sufficient to limit visible dust emissions (VDE) to 20% opacity.
- **A.2:** Phase work to reduce the amount of disturbed surface area at any one time.
- **B.1:** Apply water or chemical/organic stabilizers/suppressants sufficient to limit VDE to 20% opacity.
- **B.2:** Construct and maintain wind barriers sufficient to limit VDE to 20% opacity. If using wind barriers, control measure B.1 above shall also be implemented.
- **B.3:** Apply water or chemical/organic stabilizers/suppressants to unpaved haul and access roads and unpaved vehicle and equipment traffic areas sufficient to limit VDE to 20% opacity and meet the conditions of a stabilized unpaved road surface.
- **C.1:** Restrict vehicular access to the area.
- **C.2:** Apply water or chemical/organic stabilizers/suppressants sufficient to comply with the conditions of a stabilized surface. If an area having 0.5 acre or more of disturbed surface area remains unused for 7 or more days, the area must comply with the conditions for a stabilized surface area as defined in section 3.58 of Rule 8011.
- **5.3.1:** An owner or operator shall limit the speed of vehicles traveling on uncontrolled unpaved access and haul roads within construction sites to a maximum of 15 miles per hour.
- **5.3.2:** An owner or operator shall post speed limit signs that meet state and U.S. Department of Transportation (DOT) standards at each construction site's uncontrolled unpaved access or haul road entrance. At a minimum, speed limit signs shall also be posted at least every 500 feet and shall be readable in both directions of travel along uncontrolled unpaved access and haul roads.
- **5.4.1:** Cease outdoor construction, excavation, extraction, and other earthmoving activities that disturb the soil whenever VDE exceed 20% opacity. Indoor activities, such as electrical, plumbing, dry wall installation, painting, and any other activity that does not cause any disturbances to the soil, are not subject to this requirement.
- **5.4.2:** Continue operation of water trucks and devices when outdoor construction excavation, extraction, and other earthmoving activities cease, unless unsafe to do so.

- **6.3.1:** An owner/operator shall submit a dust control plan to the Air Pollution Control Officer (APCO) prior to the start of any construction activity on any site that will include 10 acres or more of disturbed surface area for residential developments, or 5 acres or more of disturbed surface area for non-residential development, or will include moving, depositing, or relocating more than 2,500 cubic yards per day of bulk materials on at least three days. Construction activities shall not commence until the APCO has approved or conditionally approved the dust control plan. An owner or operator shall provide written notification to the APCO within 10 days prior to the commencement of earthmoving activities via fax or mail. The requirement to submit a dust control plan shall apply to all such activities conducted for residential and nonresidential (e.g., commercial, industrial, or institutional) purposes or conducted by any governmental entity.
- **6.3.3:** The dust control plan shall describe all fugitive dust control measures to be implemented before, during, and after any dust generating activity.
- **6.3.4:** A dust control plan shall contain all the [administrative] information described in Section 6.3.6 of this rule. The APCO shall approve, disapprove, or conditionally approve the dust control plan within 30 days of plan submittal. A dust control plan is deemed automatically approved if, after 30 days following receipt by the SJVAPCD, SJVAPCD does not provide any comments to the owner or operator regarding the dust control plan.

#### Rule 4102 (Nuisance)

Rule 4102 prohibits the discharge of air contaminants or other materials in quantities that may 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 person or the public.

#### Rule 9510 (Indirect Source Review)

Rule 9510 requires certain development projects to mitigate exhaust emissions from construction equipment greater than 50 horsepower (hp) to 20% below statewide average NO<sub>x</sub> emissions and 45% below statewide average PM<sub>10</sub> exhaust emissions. This rule also requires applicants to reduce baseline emissions of NO<sub>x</sub> and PM<sub>10</sub> emissions associated with operations by 33.3% and 50%, respectively, over a period of 10 years (SJVAPCD 2005).

#### Air Quality Management Plans

As required by the federal CAA and the California CAA, air basins or portions thereof have been classified as either “attainment” or “nonattainment” for each criteria air pollutant, based on whether the standards have been achieved. Jurisdictions of nonattainment areas also are required to prepare an Air Quality Management Plan (AQMP) that includes strategies for achieving attainment. SJVAPCD has approved AQMPs demonstrating how the San Joaquin Valley Air Basin (air basin) will reach attainment with the federal 1-hour and 8-hour ozone, PM<sub>10</sub>, and PM<sub>2.5</sub> and California CO standards.

SJVAPCD’s most recent AQMP for ozone attainment is the 2016 Plan for the 2008 Eight-Hour Ozone Standard, which was adopted by SJVAPCD in June 2016. The purpose of this plan is to achieve attainment with the federal 8-hour ozone ambient air quality standards in the air basin by 2031 (SJVAPCD 2016a).



The 2007 Ozone Plan, approved by CARB on June 14, 2007, demonstrates how the air basin would meet the federal 8-hour ozone standard. The 2007 Ozone Plan includes a comprehensive list of regulatory and incentive-based measures to reduce emissions of ozone and particulate matter precursors throughout the air basin. Additionally, this plan calls for major advancements in pollution control technologies for mobile and stationary sources of air pollution, and an increase in state and federal funding for incentive-based measures to create adequate reductions in emissions to bring the entire air basin into attainment with the federal 8-hour ozone standard. The 2016 Plan for the 2008 8-Hour Ozone Standard was adopted in June 2016 and ensures the attainment of the 75 parts per billion 8-hour ozone standard (SJVAPCD 2007).

In June 2007, the SJVAPCD Board adopted the 2007 PM<sub>10</sub> Maintenance Plan and Request for Redesignation. This plan demonstrates how PM<sub>10</sub> attainment in the air basin will be maintained in the future. Effective November 12, 2008, EPA re-designated the air basin to attainment for the PM<sub>10</sub> NAAQS and approved the 2007 PM<sub>10</sub> Maintenance Plan (SJVAPCD 2015). In April 2008, the SJVAPCD Board adopted the 2008 PM<sub>2.5</sub> Plan and approved amendments to Chapter 6 of the 2008 PM<sub>2.5</sub> Plan on June 17, 2010. This plan was designed to address EPA's annual PM<sub>2.5</sub> standard of 15 micrograms per cubic meter (µg/m<sup>3</sup>), which was established by EPA in 1997. In December 2012, SJVAPCD adopted the 2012 PM<sub>2.5</sub> Plan, which addresses EPA's 24-hour PM<sub>2.5</sub> standard of 35 µg/m<sup>3</sup>, which was established by EPA in 2006. In April 2015, SJVAPCD adopted the 2015 Plan for the 1997 PM<sub>2.5</sub> Standard and adopted the 2016 Moderate Area Plan for the 2012 PM<sub>2.5</sub> Standard in September 2016. Currently, the draft 2018 PM plans are available for public comments and contain an attainment strategy for the multiple PM<sub>2.5</sub> standards (SJVAPCD 2018).

#### Fresno County General Plan

The Fresno County General Plan contains the following air quality policies aimed at reducing air emissions from development projects, including the proposed project (County 2000b):

**Policy OS-G.12:** The County shall continue, through its land use planning processes, to avoid inappropriate location of residential uses and sensitive receptors in relation to uses that include but are not limited to industrial and manufacturing uses and any other use which have the potential for creating a hazardous or nuisance effect.

**Policy OS-G.13:** The County shall include fugitive dust control measures as a requirement for subdivision maps, site plans, and grading permits. This will assist in implementing the SJVAPCD's particulate matter of less than ten (10) microns (PM<sub>10</sub>) regulation (Regulation VIII). Enforcement actions can be coordinated with the Air District's Compliance Division.

**Policy OS-G.14:** The County shall require all access roads, driveways, and parking areas serving new commercial and industrial development to be constructed with materials that minimize particulate emissions and are appropriate to the scale and intensity of use.

### 4.3.2 Environmental Setting

#### Regional Topography, Meteorology, and Climate

The project site is in the air basin, which occupies the southern half of the Central Valley and comprises eight counties: San Joaquin, Stanislaus, Fresno, Merced, Madera, Kings, Tulare, and

portions of Kern County. The air basin is approximately 250 miles long and 35 miles wide (on average) and is bordered by the Coast Ranges on the west, the Sierra Nevada on the east, and the Tehachapi Mountains to the south. On the valley floor, the air basin is open only to the north, which heavily influences prevailing winds (ESA 2016a).

Although marine air generally flows into the air basin from the San Francisco Bay Area through the Carquinez Strait (a gap in the Coast Ranges) and low mountain passes such as Altamont Pass and Pacheco Pass, the mountain ranges restrict air movement through the air basin. Additionally, most of the surrounding mountains are above the normal height of summer inversion layers (1,500 to 3,000 feet). These topographic features result in weak airflow, poor dispersion of pollutants, and, as a result, the air basin is highly susceptible to pollutant accumulation.

The average daily maximum and minimum summer temperatures (i.e., July) in unincorporated Fresno County are 97.9 degrees Fahrenheit (°F) and 63.1°F, respectively, and the average daily maximum and minimum winter (i.e., January) temperatures are 55.1°F and 36.3°F, respectively. Average annual precipitation is 6.8 inches (WRCC 2016).

### **Air Pollutants of Concern**

The NAAQS and the CAAQS are established for six criteria pollutants: ozone, CO, Pb, NO<sub>2</sub>, SO<sub>2</sub>, and PM. The following section discusses the criteria pollutants, as well as additional air pollutants of concern, TACs and DPM.

Ozone and NO<sub>2</sub> are regional pollutants because they (or their precursors) affect air quality on a regional scale; NO<sub>2</sub> reacts photochemically with reactive organic gases (ROGs) to form ozone, and this reaction occurs at some distance downwind of the source of pollutants. Pollutants such as CO, SO<sub>2</sub>, and Pb are local pollutants that tend to accumulate in the air locally. PM is a local as well as a regional pollutant.

#### **Ozone**

Ozone is a respiratory irritant that can cause severe ear, nose, and throat irritation and increase susceptibility to respiratory infections. It is also an oxidant that can cause extensive damage to plants through leaf discoloration and cell damage. It can cause substantial damage to other materials as well, such as synthetic rubber and textiles.

Ozone is not emitted directly into the air but is formed by a photochemical reaction in the atmosphere: precursors (e.g., ROG and NO<sub>x</sub>) react in the atmosphere in the presence of sunlight to form ozone. Because photochemical reaction rates depend on the intensity of ultraviolet light and air temperature, ozone is primarily a summer air pollution problem. ROG and NO<sub>x</sub> are mainly emitted by mobile sources and stationary combustion equipment.

Hydrocarbons are organic gases that are made up of hydrogen and carbon atoms. There are several subsets of organic gases, including ROGs and volatile organic compounds (VOCs). ROGs are defined by state rules and regulations; VOCs are defined by federal rules and regulations. For the purposes of this assessment, hydrocarbons are classified and referred to as ROGs. Both ROGs and VOCs are emitted from the incomplete combustion of hydrocarbons or other carbon-based fuels or as a product of chemical processes. The major sources of hydrocarbons are combustion engine exhaust, oil refineries, and oil-fueled power plants. Other

common sources are petroleum fuels, solvents, dry-cleaning solutions, and paint (through evaporation).

The health effects of hydrocarbons result from the formation of ozone. High levels of hydrocarbons in the atmosphere can interfere with oxygen intake by reducing the amount of available oxygen through displacement. Carcinogenic forms of hydrocarbons are considered TACs. There are no separate health standards for ROG, although some are also toxic; for example, benzene is both an ROG and a carcinogen.

#### Nitrogen Oxides

Nitrogen Oxides (NO<sub>x</sub>) are a family of highly reactive gases that are a primary precursor to the formation of ground-level ozone and react in the atmosphere to form acid rain. NO<sub>2</sub>, often used interchangeably with NO<sub>x</sub>, is a brownish, highly reactive gas that is present in all urban environments. The major human sources of NO<sub>2</sub> are combustion devices such as boilers, gas turbines, and mobile and stationary reciprocating internal combustion engines. Combustion devices emit primarily nitric oxide (NO), which reacts through oxidation in the atmosphere to form NO<sub>2</sub>. The combined emissions of NO and NO<sub>2</sub> are referred to as NO<sub>x</sub> and reported as equivalent to NO<sub>2</sub>. Because NO<sub>2</sub> is formed and depleted by reactions associated with ozone, the NO<sub>2</sub> concentration in a particular geographical area may not be representative of local NO<sub>x</sub> emission sources.

Inhalation is the most common route of exposure to NO<sub>2</sub>. Because NO<sub>2</sub> has relatively low solubility in water, the principal site of toxicity is in the lower respiratory tract. The severity of the adverse health effects primarily depends on the concentration inhaled rather than the duration of exposure. An individual may experience a variety of acute symptoms such as coughing, difficulty breathing, vomiting, headache, and eye irritation during or shortly after exposure. After a period of approximately 4 to 12 hours, an exposed individual may experience chemical pneumonitis or pulmonary edema with breathing abnormalities, cough, cyanosis, chest pain, and rapid heartbeat. Severe symptomatic NO<sub>2</sub> intoxication after acute exposure has been linked to prolonged respiratory impairment, with such symptoms as emphysema, bronchitis, and aggravating existing heart disease.

#### Carbon Monoxide

Carbon Monoxide (CO), a colorless and odorless gas, interferes with the transfer of oxygen to the brain. It can cause dizziness and fatigue and can impair central nervous system functions. CO is emitted almost exclusively from the incomplete combustion of fossil fuels. In urban areas, motor vehicles, power plants, refineries, industrial boilers, ships, aircraft, and trains emit CO. Automobile exhaust is responsible for most of the CO in urban areas. CO is a nonreactive air pollutant that dissipates relatively quickly, so ambient CO concentrations generally follow the spatial and temporal distributions of vehicular traffic. CO concentrations are influenced by local meteorological conditions, primarily wind speed, topography, and atmospheric stability. CO from motor vehicle exhaust can become locally concentrated when surface-based temperature inversions are combined with calm atmospheric conditions, a typical situation at dusk in urban areas between November and February. These locally concentrated peaks in CO are referred to as CO hotspots. Because motor vehicles are the dominant source of CO emissions, CO hotspots are normally located near roads and freeways with high traffic volume.

## Other Criteria Pollutants *Particulate Matter*

Particulate Matter (PM) pollution consists of very small liquid and solid particles floating in the air, which can include smoke, soot, dust, salts, acids, and metals. PM also forms when gases emitted from industries and motor vehicles undergo chemical reactions in the atmosphere. PM less than 10 microns in diameter, about 1/7<sup>th</sup> the thickness of a human hair, is referred to as PM<sub>10</sub>. Major sources of PM<sub>10</sub> include motor vehicles; wood burning stoves and fireplaces; dust from construction, landfills, and agriculture; wildfires and brush and waste burning; industrial sources; windblown dust from open lands; and atmospheric chemical and photochemical reactions. PM that is 2.5 microns or less in diameter, roughly 1/28<sup>th</sup> the diameter of a human hair, is referred to as PM<sub>2.5</sub>. PM<sub>2.5</sub> results from fuel combustion (from motor vehicles, power generation, and industrial facilities), residential fireplaces, and wood stoves. In addition, PM<sub>10</sub> and PM<sub>2.5</sub> can be formed in the atmosphere from gases such as SO<sub>2</sub>, NO<sub>x</sub>, and VOCs.

PM<sub>10</sub> and PM<sub>2.5</sub> pose a greater health risk than larger-size particles. When inhaled, these tiny particles can penetrate the human respiratory system's natural defenses and damage the respiratory tract. PM<sub>10</sub> and PM<sub>2.5</sub> can increase the number and severity of asthma attacks, cause or aggravate bronchitis and other lung diseases, and reduce the body's ability to fight infections. Very small particles of substances, such as lead, SO<sub>4</sub>, and nitrates, can cause lung damage directly. These substances can be absorbed into the bloodstream and cause damage elsewhere in the body; they can also transport absorbed gases such as chlorides or ammonium into the lungs and cause injury. Whereas particles 2.5 to 10 microns in diameter tend to collect in the upper portion of the respiratory system, particles 2.5 microns or less are so tiny that they can penetrate deeper into the lungs and damage lung tissues. Suspended particulates also damage and discolor surfaces on which they settle and contribute to haze and reduce regional visibility.

## *Toxic Air Contaminants*

Although NAAQS and CAAQS exist for criteria pollutants, no ambient standards exist for TACs. Many pollutants are identified as TACs because of their potential to increase the risk of developing cancer or other acute (short-term) or chronic (long-term) health problems. For TACs that are known or suspected carcinogens, the CARB has consistently found that there are no levels or thresholds below which exposure is risk free. Individual TACs vary greatly in the risks they present; at a given level of exposure, one TAC may pose a hazard that is many times greater than another. For certain TACs, a unit risk factor can be developed to evaluate cancer risk. For acute and chronic health effects, a similar factor, called a Hazard Index, is used to evaluate risk. TACs are identified and their toxicity is studied by the California Office of Environmental Health Hazard Assessment (OEHHA). Examples of TAC sources include industrial processes, dry cleaners, gasoline stations, paint and solvent operations, and fossil fuel combustion sources.

## *Sulfur Oxides*

Sulfur oxides (SO<sub>x</sub>) are any of several compounds of sulfur and oxygen, of which the most relevant to air quality is SO<sub>2</sub>. SO<sub>2</sub> is a respiratory irritant that causes the bronchioles to constrict with inhalation at 5 parts per million (ppm) or more. On contact with the moist mucous membranes, SO<sub>2</sub> produces sulfurous acid, which is a direct irritant. Concentration rather than

duration of the exposure is an important determinant of respiratory effects. Exposure to high SO<sub>2</sub> concentrations may result in edema of the lungs or glottis and respiratory paralysis. SO<sub>2</sub> is produced by coal and oil combustion and such stationary sources as steel mills, refineries, and pulp and paper mills.

### Lead

Lead (Pb) is a natural metal constituent of air, water, and the biosphere; it is neither created nor destroyed in the environment, so it persists forever. Lead was used several decades ago to increase the octane rating in automotive fuel; therefore, gasoline-powered automobile engines were a major source of airborne lead. Since the use of leaded fuel has been phased out, the ambient concentrations of lead have dropped dramatically. Short-term exposure to high levels of lead can cause vomiting, diarrhea, convulsions, coma, or even death. However, even small amounts of lead can be harmful, especially to infants, young children, and pregnant women. Lead exposure is most serious for young children because they absorb lead more easily than adults and are more susceptible to its harmful effects. Even low-level exposure may harm the intellectual development, behavior, size, and hearing of infants. During pregnancy, especially in the last trimester, lead can affect the fetus. Female workers exposed to high levels of lead have more miscarriages and stillbirths (EPA 2018a).

Symptoms of long-term exposure to lower lead levels may be less noticeable but are still serious. Anemia is common, and damage to the nervous system may cause impaired mental function. Other symptoms are appetite loss, abdominal pain, constipation, fatigue, sleeplessness, irritability, and headache. Continued excessive exposure, as in an industrial setting, can affect the kidneys.

### Diesel Particulate Matter

In 1998, the CARB identified DPM as a TAC (CARB 2018). On a statewide basis, the average potential cancer risk associated with DPM is more than 500 potential cases per million people. OEHHA estimated the potential cancer risk from a 70-year exposure to DPM at a concentration of 1 µg/m<sup>3</sup> ranges from 130 to 2,400 excess cancer cases per million people. A scientific review panel concluded that an appropriate point estimate of unit risk for a 70-year exposure to DPM is 300 excess cancer cases per million people (CARB 2000).

The DPM of greatest health concern are those in the categories of fine (PM<sub>10</sub>) and ultra-fine (PM<sub>2.5</sub>). These fine and ultra-fine particles may be composed of elemental carbon with adsorbed compounds such as organic compounds, SO<sub>4</sub>, nitrate, metals, and other trace elements. The fine and ultra-fine particles are respirable, which means that they can avoid many of the human respiratory system defense mechanisms and enter deeply into the lungs.

### Valley Fever

San Joaquin Valley Fever (formally known as Coccidioidomycosis) is an infectious disease caused by the fungus *Coccidioides immitis*. San Joaquin Valley Fever is also known as Valley Fever, Desert Fever, or Cocci. Infection is caused by inhalation of *Coccidioides immitis* spores that have become airborne when dry, dusty soil, or dirt is disturbed by natural processes such as wind or earthquakes or by human-induced ground disturbing activities such as construction, farming, etc.

While cases of Valley Fever have been reported throughout California, over 75% of the cases have been in the San Joaquin Valley (California Department of Public Health 2016). In 2014, there were 2,217 cases of Valley Fever in California, with the most reported in the Central Valley (Fresno Bee 2015). Anyone who lives, works, or travels in a Valley Fever area could contract Valley Fever; however, those most at risk of developing severe symptoms from Valley Fever include adults older than 60 years of age, African Americans, Filipinos, Hispanics, pregnant women (especially in the later stages of pregnancy), persons with diabetes, and persons with weakened immune systems (California Department of Public Health 2016).

Farmers, construction workers, and others who engage in soil-disturbing activities are at the highest risk for developing Valley Fever. During the construction of two solar-power generating facilities in San Luis Obispo County, 1.2 cases of Valley Fever were observed per 100 workers (Centers for Disease Control and Prevention 2015). For comparison, the overall incidence in 2011 for states where Valley Fever is endemic (Arizona, California, Nevada, New Mexico, and Utah) was 42.6 cases per 100,000 residents (or approximately 0.43 case per 100 people) (California Department of Public Health 2016, ESA 2016a).

### Existing Air Quality Conditions

SJVAPCD operates a regional monitoring network that measures the ambient concentrations of criteria pollutants. Existing and probable future general levels of air quality in the air basin can generally be inferred from ambient air quality measurements conducted by SJVAPCD at its monitoring stations. The major criteria pollutants of concern in the Central Valley (i.e., ozone, PM<sub>10</sub>, PM<sub>2.5</sub>, CO, NO<sub>2</sub>, and SO<sub>2</sub>) are monitored at a number of locations. Background ambient concentrations of pollutants are determined by pollutant emissions in a given area and wind patterns and meteorological conditions for that area. As a result, background concentrations can vary among different locations in the County. However, areas located close together and exposed to similar wind conditions can be expected to have similar background pollutant concentrations. The closest SJVAPCD monitoring station to the project site is the Hanford-S Irwin Street station at 807 South Irwin Street in Hanford, California, which is approximately 28 miles northeast of the project site; it monitors ozone, NO<sub>2</sub>, PM<sub>2.5</sub>, and PM<sub>10</sub>.

### Attainment Status

Local monitoring data (Table 4.3-2) are used to designate areas as nonattainment, maintenance, attainment, or unclassified for the NAAQS and CAAQS. The four designations are defined as follows:

- Nonattainment: assigned to areas where monitored pollutant concentrations consistently violate the standard in question.
- Maintenance: assigned to areas where monitored pollutant concentrations exceeded the standard in question in the past but are no longer in violation of that standard.
- Attainment: assigned to areas where pollutant concentrations meet the standard in question over a designated period of time.
- Unclassified: assigned to areas where data are insufficient to determine whether a pollutant is violating the standard in question.



Table 4.3-2: Existing Air Quality

Air Pollutants	Standard	Year		
		2013	2014	2015
<b>Ozone (O<sub>3</sub>)</b>				
Maximum 1-hour concentration measured (ppm)	-	0.107	0.110	0.135
Number of days above state standard	0.09	9	9	12
Highest 8-hour average (ppm)	-	0.094	0.094	0.110
Number of days above state/national standard	0.070/0.070	46/24	44/20	41/21
<b>Particulate Matter (PM<sub>10</sub>)</b>				
Highest 24-hour average (µg/m <sup>3</sup> )	-	142.2	107.3	120.7
Number of days above state/national standards	50/150	122.3/0	108.9/0	80.3/0
Annual average (µg/m <sup>3</sup> )	-	45.6	41.8	39.4
Exceed state standard?	20	Yes	Yes	Yes
<b>Particulate Matter (PM<sub>2.5</sub>)</b>				
Highest 24-hour average (µg/m <sup>3</sup> )	-	128.7	96.7	98.2
Number of days above national standards	35	44.7	33.8	27.8
Annual average (µg/m <sup>3</sup> )	-	18.1	17.4	16.4
Exceed state standard?	12/12.0	Yes	Yes	Yes
<b>Nitrogen Dioxide (NO<sub>2</sub>)</b>				
Highest 1-hour average (ppm)	-	0.058	0.050	0.051
Number of days above state/national standards	0.18/0.100	0/0	0/0	0/0
Annual average (ppm)	-	0.010	0.010	0.009
Exceed state standards?	0.030/0.053	0/0	0/0	0/0

## Notes:

PM<sub>2.5</sub> and NO<sub>2</sub> monitoring data from Hanford-S Irwin Street air monitoring site. PM<sub>10</sub> and O<sub>3</sub> monitoring data from Fresno-Drummond Street air monitoring site.

ppm = parts per million.

µg/m<sup>3</sup> = micrograms per cubic meter.

Source: CARB 2016b.

EPA and CARB have designated SJVAPCD as nonattainment for ozone and PM. Some of these designations have an associated classification (see Table 4.3-3). Pollutants that are in nonattainment status can be categorized as moderate, severe, and extreme based on the concentration level of the pollutants.

**Table 4.3-3: SJVAPCD State and Federal Attainment Status**

Ambient Air Quality Standard	Averaging Time	State	Federal
Ozone	1-Hour	Nonattainment	-
	8-Hour	Nonattainment	Nonattainment
Carbon monoxide	1-Hour	Attainment/Unclassified	Attainment/Unclassified
	8-Hour	Attainment/Unclassified	Attainment/Unclassified
PM <sub>10</sub>	24-Hour	Nonattainment	Attainment
	Annual	Nonattainment	-
PM <sub>2.5</sub>	24-Hour	-	Nonattainment
	Annual	Nonattainment	Nonattainment
Nitrogen dioxide	1-Hour	Attainment	Attainment/Unclassified
	Annual	Attainment	Attainment/Unclassified
Sulfur dioxide	1-Hour	Attainment	Attainment/Unclassified
	3-Hour	-	Attainment/Unclassified
	24-Hour	Attainment	-
	Annual	-	-
Lead	30-Day	Attainment	-
	Quarterly	-	Unclassified
Sulfates	24-Hour	Attainment	-
Hydrogen sulfide	1-Hour	Unclassified	-
Visibility reducing particles	8-Hour	Unclassified	-
Vinyl chloride	24-Hour	Attainment	

Source: CARB 2016b, SJVAPCD 2016b

### Sensitive Receptors

Sensitive land uses are defined as locations where human populations, especially children, seniors, and sick persons, are located and where there is reasonable expectation of continuous human exposure according to the averaging period for the air quality standards (e.g., 24-, 8-, and 1-hour). Typical sensitive receptors include residences, hospitals, and schools.

The nearest sensitive receptors to the project site are single-family residences approximately 1,100 feet east of the eastern edge of the project site on West Tractor Avenue. Two single-family residences are approximately 2,500 and 2,900 feet north of the northern edge of the project site. The prevailing wind blows from the northwest. The residences on West Tractor Avenue may be considered downwind, and the residences north of the project site may be considered upwind. Additionally, the nearest national park or wilderness area to the project site is Pinnacles National Park, which is located approximately 60 miles to the northwest (ESA 2016a).

### 4.3.3 Environmental Impacts

This section analyzes the proposed project's potential to result in significant air quality impacts. When an impact is determined to be significant, Mitigation Measures are identified that would reduce or avoid that impact.

#### Methodology

The proposed project would result in both short- and long-term emissions of criteria air pollutants. Construction emissions would include exhaust from the operation of conventional construction equipment and vehicles and fugitive dust as a result of grading, equipment, and vehicle travel on unpaved surfaces. Table 4.3-4 presents the SJVAPCD air quality thresholds of significance relied upon in this analysis.

Construction and operational emissions were estimated using the California Emissions Estimator Model (version 2016.3.2) (CalEEMod). CalEEMod is a statewide land use emissions computer model designed to provide a uniform platform for government agencies, land use planners, and environmental professionals to quantify potential criteria pollutants associated with both construction and operation of a variety of land use projects. The model quantifies direct emissions from construction and operations (including vehicle use), as well as indirect emissions, such as greenhouse gas (GHG) emissions from energy use, solid waste disposal, vegetation planting and removal, and water use.

The model was developed in collaboration with the air districts in California. Default data (e.g., emission factors, trip lengths, meteorology, and source inventory) have been provided by the various California air districts to account for local requirements and conditions. The model is an accurate and comprehensive tool for quantifying air quality impacts from land use projects throughout California. The model can be used for a variety of situations where an air quality analysis is necessary or desirable such as CEQA documents. For the proposed project, site-specific grading calculations, equipment vehicle use, and construction schedule were developed in consultation with the Applicant and the County. Information used in the emission modeling is documented in the Air Quality and Greenhouse Gas Evaluation Technical Report (Appendix C). The analysis in this section is based on that report. The construction schedule used in the technical study represented a worst-case analysis scenario. Construction occurring any time after the respective dates will result in fewer emissions releases since increasing regulations require the use of cleaner construction equipment fleets.

**Table 4.3-4 Air Quality Thresholds of Significance for Criteria Air Pollutants**

Pollutant/Precursor	Tons per Year		
	Construction Emissions	Operational Emissions (permitted equipment and activities)	Operational Emissions (non-permitted equipment and activities)
CO	100	100	100
NO <sub>x</sub>	10	10	10
ROG	10	10	10
SO <sub>x</sub>	27	27	27
PM <sub>10</sub>	15	15	15
PM <sub>2.5</sub>	15	15	15

Notes:

CO = carbon monoxide

NO<sub>x</sub> = nitrous oxides

PM<sub>10</sub> = fine particulate matter

PM<sub>2.5</sub> = ultra-fine particulate matter

SO<sub>x</sub> = Sulfur oxides

### Thresholds of Significance

According to the CEQA Guideline's Appendix G Environmental Checklist and the SJVAPCD CEQA Guidelines, the following questions are analyzed and evaluated to determine whether impacts to air quality or GHG emissions are significant.

Would the proposed project:

- Conflict with or obstruct implementation of the applicable air quality plan?
- Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard?
- Expose sensitive receptors to substantial pollutant concentrations?

The following question was determined to have no impact during the NOP scoping. This issue is summarized in Section 6.0, Effects Found Not to Be Significant, and is not discussed further in this section.

- Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?

### Project Impact Analysis and Mitigation Measures

This section discusses potential impacts on air quality associated with the proposed project and provides Mitigation Measures where necessary.

## Air Quality Plan

---

**Impact AQ-1      The proposed project would not conflict with or obstruct implementation of the applicable air quality plan.**

---

**Impact Analysis**

Construction, operation, maintenance, and decommissioning of the solar facility would result in emissions of criteria pollutants, including ozone precursors such as ROG and NO<sub>x</sub>, as well as PM. The SJVAPCD 2016 Plan for the 2008 8-Hour Ozone Standard, 2013 Plan for the Revoked 1-Hour Ozone Standard, 2007 PM<sub>10</sub> Maintenance Plan and Request for Redesignation, 2008 PM<sub>2.5</sub> Plan, 2015 Plan for the 1997 PM<sub>2.5</sub> Standard, and the 2016 Moderate Area Plan for the 2012 PM<sub>2.5</sub> Standard outline a number of control strategies to help SJVAPCD reach attainment for the revoked federal 1-hour ozone standard, the 24-hour PM<sub>10</sub> standard, and the federal and state PM<sub>2.5</sub> standards, respectively (SJVAPCD 2007, 2012, 2016a, 2016b). The air basin is in attainment for CO, SO<sub>2</sub>, and lead, so there are no attainment plans for those pollutants.

Control measures outlined in the ozone plans focus primarily on control of stationary and indirect sources such as housing and commercial developments that may generate substantial vehicle trips during operations. The primary source of criteria pollutant emissions generated by the proposed project would be associated with construction and decommissioning activities; operation of the proposed project would require only minor use of equipment and generate a very small number of vehicle trips required to perform routine maintenance and PV panel washing. SJVAPCD has established thresholds of significance for criteria pollutant emissions based on its New Source Review offset requirements for stationary sources. Emission reductions achieved through implementation of SJVAPCD offset requirements are a major component of the SJVAPCD air quality plans. According to the 2015 Guide for Assessing and Mitigating Air Quality Impacts, projects with emissions below the thresholds of significance for criteria pollutants would be determined to “not conflict or obstruct implementation of the District’s air quality plan.” Operational emissions would be significantly less than the SJVAPCD thresholds of significance for criteria pollutants; therefore, the solar facility would not create a permanent substantial source of pollutants and would not obstruct implementation of SJVAPCD air quality attainment plans.

Regarding the construction emissions, the proposed project’s criteria pollutant emissions would exceed SJVAPCD thresholds of significance for NO<sub>x</sub> and PM<sub>10</sub>; therefore, the proposed project has the potential to conflict with SJVAPCD air quality plans. Mitigation Measure AIR-1 would implement Best Management Practices (BMPs) during construction and decommissioning. Mitigation Measure AIR-2 would require that the Applicant participate in a Voluntary Emission Reduction Agreement (VERA) with the SJVAPCD or stagger the construction periods for the three facilities to avoid a significant impact. Because of the uncertainty with the timing of decommissioning emissions due to potential lease extensions and new CUPs to extend operations, which would be subject to additional environmental review, the decommissioning emissions would not be included in the VERA for the project. Accordingly, implementation of Mitigation Measures AIR-1 and AIR-2 would reduce the emissions below the applicable thresholds of significance; therefore, the mitigated construction emissions would not conflict with SJVAPCD air quality attainment plans.

The PM<sub>10</sub> maintenance plans focus on how SJVAPCD will maintain attainment of the federal 24-hour PM<sub>10</sub> standard, which includes continued implementation of the 2007 PM<sub>10</sub> Maintenance

Plan (which focuses on implementing rules that limit PM<sub>10</sub> emissions from various industrial sources as well as fugitive dust emissions and indirect source emissions of PM<sub>10</sub> and precursor NO<sub>x</sub>s). Construction of the solar facility must be in compliance with SJVAPCD Regulation VIII, Fugitive PM<sub>10</sub> Prohibitions and Rule 9510 Indirect Source Review. Operation and maintenance activities associated with the solar facility would generate PM<sub>10</sub> emissions from travel on unpaved roads; however, these activities would also be subject to rules set forth in Regulation VIII. Regulation VIII limits fugitive dust emissions through implementation of control measures such as watering, use of dust suppressants, limiting speeds on unpaved roads, sweeping and prevention of trackout, and covering bulk storage piles. The selected fugitive dust control measures are formalized in a required dust control plan to be submitted and approved by the SJVAPCD prior to ground disturbance. Rule 9510 requires projects to achieve construction emission reductions of NO<sub>x</sub> and PM<sub>10</sub> of 20% and 45% respectively as well as reducing a development project's operational NO<sub>x</sub> and PM<sub>10</sub> emissions by 33.3% and 50% respectively. The reductions may be achieved through the use of onsite measures such as cleaner than average construction equipment or payment of mitigation fees based on a per ton basis for PM<sub>10</sub> and NO<sub>x</sub>. The SJVAPCD then uses those fees to fund emission reduction projects to achieve the required emission reductions. The proposed project would not obstruct implementation of the PM<sub>10</sub> maintenance plan because it would comply with Regulation VIII and Rule 9510. Therefore, the proposed project would be regulated by applicable SJVAPCD rules and would not obstruct implementation of the PM<sub>10</sub> maintenance plan.

The 2008 PM<sub>2.5</sub> Plan and the 2012 PM<sub>2.5</sub> Plan specifically focus on PM<sub>2.5</sub>, although the control strategies from previous PM<sub>10</sub> plans (particularly those related to fugitive dust control) have already improved the air basin's ambient PM<sub>2.5</sub> levels. Therefore, because fugitive dust controls continue to be addressed in the PM<sub>10</sub> plan, the 2008 and 2012 PM<sub>2.5</sub> Plan contain a comprehensive list of strict regulatory and incentive-based measures to reduce directly emitted PM<sub>2.5</sub> and precursor emissions. However, the solar facility would result in relatively negligible PM<sub>2.5</sub> emissions from those types of sources, with the vast majority of PM<sub>2.5</sub> emissions associated with the solar facility arising from the PM<sub>2.5</sub> component of fugitive dust. Nevertheless, the solar facility would be regulated by applicable SJVAPCD rules, which would ensure compliance with the 2008 and 2012 PM<sub>2.5</sub> Plan, and, therefore, would not obstruct implementation of the PM<sub>2.5</sub> plans. Impacts would be considered less than significant.

### **Level of Significance Before Mitigation**

Potentially Significant Impact.

### **Mitigation Measures**

**MM AIR-1: Air Quality Best Management Practices (BMPs).** During construction and decommissioning, the following measures shall be implemented:

- Ozone precursor emissions from mobile construction equipment shall be controlled by maintaining equipment engines in good condition and in proper tune per manufacturers' specifications. Equipment maintenance records and equipment design specification data sheets shall be kept onsite during construction.



- Electricity from power poles shall be used whenever practicable instead of temporary diesel- or gasoline-powered generators to reduce the associated emissions.
- To reduce construction vehicle (truck) idling while waiting to enter or exit the site, the contractor shall submit a traffic control plan pursuant to Mitigation Measure TRA-1 that will describe in detail safe detours to prevent traffic congestion to the best of the project's ability and provide temporary traffic control measures during construction activities that will allow both construction and on-street traffic to move with less than 5-minute idling times.
- Construction equipment will use only California-certified diesel or gasoline fuels.
- The Applicant will use construction equipment that is at the Tier 4 interim emission level for equipment less than or equal to 81 horsepower and Tier 3 engines for all other equipment.

**MM AIR-2: Voluntary Emission Reduction Agreement (VERA).**

- a. The developer shall enter into a Voluntary Emission Reduction Agreement (VERA) with the San Joaquin Valley Air Pollution Control District (SJVAPCD) or stagger the construction periods for the three facilities to avoid a significant impact. Proof of payment to the SJVAPCD shall be provided prior to issuance of grading permits for construction.
- b. Twelve months prior to initiation of decommissioning activities, the Applicant shall prepare additional analysis to determine air quality impacts from the proposed decommissioning activities. If the emissions will exceed the SJVAPCD thresholds of significance, the Applicant shall enter into a new VERA with the SJVAPCD to offset the decommissioning emissions below the thresholds of significance.

**Level of Significance After Mitigation**

Less Than Significant Impact with Mitigation Incorporated.

Criteria Pollutants

---

**Impact AQ-2      The proposed project would not result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard.**

---

**Impact Analysis**

The air basin is currently classified as nonattainment for the 1-hour state ozone standard as well as for the federal and state 8-hour standards. Additionally, the air basin is classified as nonattainment for the state 24-hour and annual arithmetic mean PM<sub>10</sub> standards and the national 24-hour and annual PM<sub>2.5</sub> standards. The air basin is unclassified or classified as attainment for all other pollutants' standards. A project would be considered to contribute

considerably to a significant cumulative impact if it would result in an increase in ROG, NO<sub>x</sub>, PM<sub>10</sub>, or PM<sub>2.5</sub> of more than its respective significance thresholds.

### Construction

The majority of construction emissions would be generated onsite due to the use of heavy-duty off-road equipment (such as backhoes, bulldozers, graders, front loaders, dump trucks, and cranes) for site preparation, construction of access roads, installation of the solar arrays, and construction of the inverter sites, substations, and gen-tie lines. Exhaust emissions also would be generated by construction worker daily commutes and by heavy-duty diesel truck trips. Worker vehicle numbers and construction equipment are provided in Section 2, Project Description, tables 2-4 and 2-5, respectively. In addition to daily commuter trips, construction would require daily truck trips to haul construction materials to the site.

It is assumed that the one-way worker trip lengths would average 50 miles long (assuming origin from the Fresno area). For the vendor trips, it is assumed the trips associated with site preparation, grading/excavation, drainage/utilities, and paving would all come from the Fresno area (50-mile one-way trips), half the trips associated with the construction phase would come from the Port of Stockton (153-mile one-way trip), and the other half would come from the Fresno area (50-mile one-way trip), for an average trip length of 101.5 miles. Criteria pollutant and precursor exhaust emissions from construction equipment and vehicles would incrementally add to the regional atmospheric loading of these pollutants during construction of the solar facility.

Fugitive dust emissions would be the majority of PM<sub>10</sub> emissions. Regulation VIII limits fugitive emissions from construction by implementing measures such as watering, limiting vehicle speed, creating and implementing a dust control plan, and limiting construction in windy conditions. Compliance with Regulation VIII does not constitute mitigation because it is required by law. Therefore, reductions in PM<sub>10</sub> due to control measures required by Regulation VIII are included as unmitigated emissions.

SJVAPCD has identified PM<sub>10</sub> as the pollutant of greatest concern for construction-related emissions. In the *Guide for Assessing and Mitigating Air Quality Impacts Technical Document* (2002), SJVAPCD recommends that construction PM<sub>10</sub> impacts be evaluated based on implementation of effective and comprehensive dust control measures rather than detailed quantification of emissions in comparison to quantitative thresholds (SJVAPCD 2002). However, for large construction projects such as the solar facility, SJVAPCD also recommends using the same significance thresholds as for operational impacts. Based on the SJVAPCD's New Source Review rules, the following significant thresholds are applicable to the solar facility:

- 15 tons per year for PM<sub>10</sub> and PM<sub>2.5</sub>.
- 10 tons per year for ROG and NO<sub>x</sub>.
- 100 tons per year for CO.
- 27 tons per year for SO<sub>x</sub>.

Therefore, the significance of PM<sub>10</sub> and PM<sub>2.5</sub> is assessed relative to implementation of effective and comprehensive dust control Mitigation Measures and whether PM<sub>10</sub> emissions would exceed 15 tons per year. Project construction emissions estimates are presented in Table 4.3-5. As presented in Table 4.3-5, the Fifth Standard Solar Facility and the project as a whole would

result in a significant impact due to exceedances of the NO<sub>x</sub> significance threshold. The project as a whole would result in a significant impact due to an exceedance of the PM<sub>10</sub> significance threshold. For each of the Stonecrop Solar and Blackbriar Battery Storage projects, emissions would not exceed any significance threshold.

Mitigation Measure AIR-1 would reduce these impacts but would not prevent an exceedance of SJVAPCD thresholds. Table 4.3-6 shows the estimated construction emissions after implementation of Mitigation Measure AIR-1, which would reduce construction equipment exhaust emissions of NO<sub>x</sub> and PM<sub>10</sub> emissions as required under Rule 9510.

**Table 4.3-5 Unmitigated Construction Emissions Summary**

Project	Estimated Emissions (tons per year)					
	ROG	NO <sub>x</sub>	CO	SO <sub>2</sub>	Total PM <sub>10</sub>	Total PM <sub>2.5</sub>
Fifth Standard Solar	1.69	<b>18.02</b>	12.24	0.05	13.53	2.17
Stonecrop Solar	0.92	9.87	6.71	0.03	7.04	1.15
Blackbriar Battery Storage	0.89	9.55	6.49	0.03	6.79	1.11
Total for Project	3.50	<b>37.44</b>	25.44	0.11	<b>27.35</b>	4.42
SJVAPCD Thresholds	10	10	100	27	15	15
Threshold Exceeded?	No	<b>Yes</b>	No	No	<b>Yes</b>	No

Notes:

Exceedances shown in **Bold**

CO = carbon monoxide

NO<sub>x</sub> = nitrogen oxides

PM<sub>2.5</sub> = particulate matter smaller than 2.5 microns

PM<sub>10</sub> = particulate matter smaller than 2.5 microns

ROG = reactive organic gases

SO<sub>2</sub> = sulfur dioxide

SJVAPCD = San Joaquin Valley Air Pollution Control District

Source: ESA 2016a (Appendix C)

**Table 4.3-6: Mitigated Construction Emissions Summary**

Project	Estimated Emissions, tons per year					
	ROG	NO <sub>x</sub>	CO	SO <sub>2</sub>	Total PM <sub>10</sub>	Total PM <sub>2.5</sub>
Fifth Standard Solar	0.93	<b>15.00</b>	14.41	0.05	<b>13.28</b>	1.95
Stonecrop Solar	0.51	8.21	7.9	0.03	6.89	1.03
Blackbriar Battery Storage	0.49	7.94	7.63	0.03	6.65	0.99
Total for Project	1.93	<b>31.15</b>	29.94	0.11	<b>26.82</b>	3.97
SJVAPCD Thresholds	10	10	100	27	15	15
Threshold Exceeded?	No	<b>Yes</b>	No	No	<b>Yes</b>	No

Notes:

Exceedances shown in Bold

CO = carbon monoxide

NO<sub>x</sub> = nitrogen oxides

PM<sub>2.5</sub> = particulate matter smaller than 2.5 microns

PM<sub>10</sub> = particulate matter smaller than 2.5 microns

ROG = reactive organic gases

SO<sub>2</sub> = sulfur dioxide

SJVAPCD = San Joaquin Valley Air Pollution Control District

Source: ESA 2016a (Appendix C)

Regulation VIII requires the proposed project to limit fugitive PM<sub>10</sub> emissions from construction by implementing measures such as watering, limiting vehicle speed, creating and implementing a dust control plan, and limiting construction in windy conditions (SJVAPCD 2004). Rule 9510 requires that project applicants reduce exhaust emissions from construction equipment greater than 50 hp by 20% below statewide average NO<sub>x</sub> emissions and 45% below statewide average emissions. This reduction may be achieved through on-site reductions such as using add-on controls, cleaner fuels, newer low-emitting equipment, or by purchasing offsite credits from the SJVAPCD (SJVAPCD 2005).

With project construction as currently proposed, compliance with SJVAPCD regulations and implementation of Mitigation Measure AIR-1 are not sufficient to reduce project-related impacts to a less than significant level. Mitigation Measure AIR-1 would reduce impacts associated with construction of the proposed project (all three facilities) but would not prevent an exceedance of SJVAPCD thresholds for NO<sub>x</sub> and PM<sub>10</sub>. Furthermore, although Regulation VIII substantially reduces fugitive dust emissions, it is not sufficient to reduce PM<sub>10</sub> emissions to less than significant levels.

If the proposed project were constructed on an extended schedule with no overlap between construction of the Fifth Standard Solar Facility and either or both the Stonecrop Solar Facility and Blackbriar Battery Storage Facility, emissions of PM<sub>10</sub> would not exceed SJVAPCD thresholds and would remain less than significant.

If an extended construction schedule is not feasible, SJVAPCD provides a further option to reduce the impact to air quality to a less than significant level. The implementation of an adopted VERA would reduce the impacts of construction emissions. To implement a VERA, the project proponent and SJVAPCD enter into a contractual agreement in which the project proponent agrees to mitigate project-specific emissions by providing funds to SJVAPCD. SJVAPCD administers the implementation of the VERA and verifies that emission reductions have been achieved and that project-specific emissions have been mitigated to a less than significant level (SJVACPD 2002). To reduce construction impacts to a less than significant level, Mitigation Measure AIR-2 requires the proposed project (the construction of all three facilities within 1 year) to enter into a VERA with SJVAPCD or stagger the construction and decommissioning periods for the three facilities to avoid a significant impact.

Therefore, with the implementation of Mitigation Measures AIR-1 and AIR-2 the construction and decommissioning of the proposed project would have a less than significant impact.

#### Operation

Implementation of the solar facility would result in a renewable energy resource that would generate no direct emissions of air pollutants. Onsite emissions of criteria pollutants associated with project operation would be generated as a result of maintenance and periodic PV panel-washing activities. The full-time offsite staff for the proposed project is expected to consist of one site manager, four technicians, and six security personnel. The site manager and technicians would be located in Austin, Texas, and are not expected to travel to and from the project site. Security or operations personnel would be available for dispatch to the project site 24 hours per day, 7 days a week. Staff would be located within a 2-hour drive of the project site. As shown in Table 4.3-7, the operational emissions for the three facilities would not exceed SJVAPCD thresholds, and therefore, there would be a less than significant impact.

**Table 4.3-7 Unmitigated Operation Emissions Summary**

Project	Estimated Emissions, tons per year					
	ROG	NO <sub>x</sub>	CO	SO <sub>2</sub>	Total PM <sub>10</sub>	Total PM <sub>2.5</sub>
Fifth Standard Solar	0.25	2.33	1.54	0.01	0.11	0.09
Stonecrop Solar	0.16	1.52	1.04	<0.01	0.06	0.06
Blackbriar Battery Storage	0.16	1.50	1.02	<0.01	0.06	0.06
Total for Project	0.57	5.35	3.60	0.01	0.23	0.21

Project	Estimated Emissions, tons per year					
	ROG	NO <sub>x</sub>	CO	SO <sub>2</sub>	Total PM <sub>10</sub>	Total PM <sub>2.5</sub>
SJVAPCD Thresholds	10	10	100	27	15	15
Threshold Exceeded?	No	No	No	No	No	No

Notes:

Exceedances shown in **Bold**

CO = carbon monoxide

NO<sub>x</sub> = nitrogen oxides

PM<sub>2.5</sub> = particulate matter smaller than 2.5 microns

PM<sub>10</sub> = particulate matter smaller than 2.5 microns

ROG = reactive organic gases

SO<sub>2</sub> = sulfur dioxide

SJVAPCD = San Joaquin Valley Air Pollution Control District

Source: ESA 2016a (Appendix C)

### Decommissioning

The proposed project has an expected lifetime of 35 years, after which time it would be decommissioned and returned to agricultural production according to the reclamation plans approved for each CUP. Emissions associated with decommissioning and site restoration were conservatively estimated to be equal to emissions associated with construction. Therefore, decommissioning of the proposed project would result in similar emissions. The decommissioning of the entire proposed project would not exceed SJVAPCD significance thresholds for ROG, SO<sub>x</sub>, PM<sub>2.5</sub>, and CO; however, emissions from NO<sub>x</sub> and PM<sub>10</sub> would exceed their applicable significance thresholds. Implementation of Mitigation Measures AIR-1 and AIR-2 would reduce the impact of these emissions to a less than significant level.

### Level of Significance Before Mitigation

Potentially Significant Impact.

### Mitigation Measures

Mitigation Measures AIR-1 and AIR-2 are required.

### Level of Significance After Mitigation

Less Than Significant Impact with Mitigation Incorporated.

### Sensitive Receptors

---

**Impact AQ-3      The proposed project would not expose sensitive receptors to substantial pollutant concentrations.**

---

### Impact Analysis

Heavy-duty vehicle operations and construction equipment operated during the grading and building phases of solar facility construction and decommissioning can produce substantial amounts of DPM, which was identified by the CARB as a TAC in 1998. The nearest receptors in



the vicinity of the project area are single-family residences approximately 1,100 feet east of the eastern edge of the project site on West Tractor Avenue. Additionally, two single-family residences are approximately 2,500 and 2,900 feet north of the northern edge of the project site. Fugitive dust would be generated through earthmoving activities such as grading, which can cause health concerns when airborne due to potential inhalation. Compliance with Regulation VIII is required and would effectively limit emissions of fugitive dust from project construction activities.

The solar facility is not anticipated to result in a significant risk of exposure to DPM, in part because of the large area within which the construction occurs relative to the fixed location of the receptors. Furthermore, because the CARB measures would be enacted prior to construction, the proposed project would be required to comply with applicable diesel control measures. Pursuant to SJVAPCD Rule 9510 (Indirect Source Review), the Applicant is proposing to use construction equipment that is at the Tier 4 interim emission level or Tier 3 emission level. Use of such equipment would reduce the amount of DPM emissions and correspondingly reduce the above risk further below the threshold of significance.

The solar facility would not be a significant source of criteria pollutant emissions or fugitive dust during operation and maintenance. With implementation of Mitigation Measures AIR-1 and AIR-2, impacts to sensitive receptors would be less than significant during construction, operation and maintenance, and decommissioning.

#### Valley Fever

Construction, operation, maintenance, and deconstruction of the proposed project have the potential to generate substantial amounts of fugitive dust that may suspend *Coccidioides immitis* spores and expose sensitive receptors. West Fresno County is an area with elevated Valley Fever activity (County 2017b).

Given the endemic nature of the disease and the amount of earthmoving activities in the County related to agricultural activities; grading and excavation for new residential, commercial, and industrial development; and surface mining operations, it is not possible to attribute a specific case of Valley Fever to a specific earthmoving activity. Such ground-disturbing activities represent a continual source of spores that contribute to the number of Valley Fever cases reported each year. Construction activities associated with the proposed project would result in similar localized ground-disturbing activities to those that occur continually within the County.

Dust control measures, such as wetting the soil, would reduce fugitive dust and exposure of *Coccidioides immitis* spores to workers. Fugitive dust control measures would ensure that fugitive dust that may potentially contain *Coccidioides immitis* spores would be controlled to the maximum extent feasible. Additionally, worker's compliance with applicable California Division of Occupational Safety and Health Administration (Cal/OSHA) protections would further protect human health from dust-related illnesses. Therefore, with the implementation of fugitive dust control measures, health and safety requirements and compliance with regulations, Valley Fever-related impacts to construction workers and sensitive receptors would be less than significant.

#### **Level of Significance Before Mitigation**

Potentially Significant Impact.

## Mitigation Measures

Mitigation Measures AIR-1 and AIR-2 are required.

## Level of Significance After Mitigation

Less Than Significant Impact with Mitigation Incorporated.

### 4.3.4 Cumulative Impacts

The geographic scope for localized air quality impacts associated with fugitive PM<sub>10</sub> emissions and TACs is the project site and adjacent area. The air basin is the geographic scope for construction-related and mobile source emissions.

With respect to localized air quality impacts associated with fugitive PM<sub>10</sub> and TACs, the only project with the potential to contribute cumulatively to a localized fugitive PM<sub>10</sub> and TAC impact is the Westlands Solar Park and construction of the gen-tie at the Gates Substation.

Construction, operation, and decommissioning of the proposed project has the potential to generate substantial amounts of fugitive dust and may suspend *Coccidioides immitis* spores and expose sensitive receptors. The nearest sensitive receptors to both the proposed project and the Westlands Solar Park project are a group of three residences located approximately 1,100 feet from the eastern project site boundary. Compliance with Regulation VIII is required for all related projects and would effectively limit emissions of fugitive dust from project construction activities from the proposed project and the Westlands Solar Park project to less than significant levels.

Heavy-duty vehicle operations and construction equipment operated during the grading and building phases of solar facility construction can produce substantial amounts of DPM, which is a TAC. The Westlands Solar Park Master Plan found that construction of the gen-tie at the Gates Substation would generate diesel exhaust emissions from construction vehicles and equipment; however, given the dispersed nature of gen-tie line construction, the very small number of nearby sensitive receptors, the very short period of construction emissions that would occur in the vicinity of the nearest sensitive receptors, and the negligible level of operational emissions, the overall health risks from TACs would not be significant. In addition, the Westlands Solar Master Plan includes Mitigation Measure AQ-2 requiring the use of low-emission construction equipment, minimizing idling time, reducing worker trips and delivery truck trips. Mitigation Measure AQ-2 from the Westlands Solar Master Plan would have the co-benefit of reducing TACs. If both the Westlands Solar Master Plan gen-tie and the proposed project were constructed simultaneously each of the projects would implement Mitigation Measures to use cleaner construction equipment reducing the amount of exhaust emissions and consequently, emissions of TACs. Given the reduction in TACs and the distance to the nearest sensitive receptors, the localized TAC impact would be a less than significant cumulative impact.

The proposed project would have less than significant impacts with mitigation incorporated to air quality with respect to conflicting with SJVAPCD air quality plans, violating air quality standards, increasing criteria pollutants, and exposing sensitive receptors to substantial pollutant concentrations. Cumulative impacts could occur if other related projects release air pollutant emissions during construction of the proposed project.

The proposed project's criteria pollutant emissions would exceed SJVAPCD thresholds of significance for NO<sub>x</sub> and PM<sub>10</sub> during construction; however, implementation of Mitigation Measures AIR-1 and AIR-2 would reduce the emissions below the applicable thresholds of significance and the mitigated construction and decommissioning emissions would not conflict with SJVAPCD air quality attainment plans. To reduce construction and decommissioning impacts to a less than significant level, Mitigation Measure AIR-2 requires the proposed project enter into a VERA with SJVAPCD or stagger the construction periods for the three facilities to avoid a significant impact.

Related projects within the geographic scope of air quality impacts could potentially overlap with construction of the proposed project, resulting in potentially significant cumulative impacts to air quality, particularly for NO<sub>x</sub> and PM<sub>10</sub> emissions. According to CEQA Guidelines Section 15064(h)(3), a project's incremental contribution to a cumulative effect is not cumulatively considerable if the project will comply with the requirements in a previously approved plan or mitigation program (including but not limited to air quality attainment or maintenance plan or plans or regulations for the reduction of greenhouse gas emissions) that provides specific requirements that will avoid or substantially lessen the cumulative problem within the geographic area in which the project is located. SJVAPCD thresholds are required to ensure that state air quality standards are met within the region. As the proposed project is consistent with SJVAPCD thresholds with the implementation of Mitigation Measures AIR-1 and AIR-2; the proposed project would not contribute to a cumulative impact regarding NO<sub>x</sub>.

The proposed project would limit fugitive PM<sub>10</sub> emissions during construction by implementing measures such as watering work areas, limiting vehicle speeds, creating and implementing a dust control plan, and limiting construction activities in windy conditions. When evaluating cumulative PM<sub>10</sub> impacts, SJVAPCD recommends examining the potential PM<sub>10</sub> exposure to sensitive receptors near the project site from earth disturbing activities associated with the proposed project and any nearby projects that may occur at the same time—if it appears that the level of activity may cause an adverse impact, the lead agency should require implementation of enhanced control measures as identified in the SJVAPCD Guide for Assessing and Mitigating Air Quality Impacts Technical Document to reduce the impact to less than significant levels. There is potential that the construction schedules of the related projects could overlap with the construction schedule of the proposed project; however, the implementation of dust control measures required for each project under SJVAPCD regulations would reduce PM<sub>10</sub> emissions from each of the projects to below the annual significance threshold. Therefore, construction of the proposed project would be in compliance with SJVAPCD Regulation VIII, Fugitive PM<sub>10</sub> Prohibitions. With implementation of Mitigation Measures AIR-1 and AIR-2, cumulative impacts to sensitive receptors would be less than significant during construction, operation and maintenance, and decommissioning

The proposed project and the Westlands Solar Master Plan project would not be a significant source of criteria pollutant emissions or fugitive dust during operation. The Westlands Solar Master Plan includes Mitigation Measures such as MM AQ-1 that incorporates compliance with the SJVAPCD's Regulation VIII, MM AQ-2 which addresses NO<sub>x</sub> reduction measures during construction and includes idling restrictions, Tier 3 equipment, worker trip reduction, and delivery truck trip reduction, and potential VERAs for future projects.

The SJVAPCD established its thresholds of significance based on the amount of pollutants that would be cumulatively considerable. As such, pursuant to the Air District's Guidance projects that are below the thresholds of significance on a project-level would be considered to be less than significant on a cumulative basis. The mitigated cumulative construction emissions would not conflict with SJVAPCD air quality attainment plans. The operational emissions for the proposed project would not exceed SJVAPCD thresholds, thus cumulative impacts would be less than significant. Therefore, contribution from the proposed project would not be cumulatively considerable.

**This page left intentionally blank.**

## 4.4 BIOLOGICAL RESOURCES

This section describes the impacts on biological resources that would result from implementation of the Fifth Standard Solar Facility Project Complex (proposed project). Included is a review of existing conditions, a summary of applicable policies and regulations related to biological resources, and an analysis of environmental impacts of the proposed project. Where applicable, Mitigation Measures are included for significant impacts. The County did not receive any scoping comments regarding biological resources (Appendix A).

### 4.4.1 Regulatory Setting

#### Federal

##### Federal Endangered Species Act

Pursuant to the Federal Endangered Species Act (FESA), U.S. Fish and Wildlife Service (USFWS) and the National Marine Fisheries Service (NMFS) have authority over projects that may result in take of a species listed as threatened or endangered under FESA. Under FESA, the definition of “take” is to “harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or attempt to engage in any such conduct.” Under federal regulations, take is further defined to include habitat modification or degradation that results in or is reasonably expected to result in death or injury to wildlife by significantly impairing essential behavioral patterns including breeding, feeding, or sheltering. If any likelihood exists that a nonfederal project would result in take of a federally listed species, an incidental take permit under Section 10(a) of FESA must be obtained from the appropriate federal agency before the project may proceed.

In general, persons subject to FESA (including private parties) are prohibited from taking endangered or threatened fish and wildlife species on private property and from taking endangered or threatened plants in areas under federal jurisdiction or in violation of state law.

##### Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) domestically implements a series of international treaties that provide for migratory bird protection. The MBTA authorizes the Secretary of the Interior to regulate the taking of migratory birds. It further provides that it is unlawful, except as permitted by regulations, “to pursue, take, or kill any migratory bird, or any part, nest or egg of any such bird...” (16 U.S. Code [USC] 703). As amended by U.S. Department of the Interior Solicitor’s Opinion M-37050 in December 22, 2017, and subsequently by USFWS guidance issued on April 11, 2018, the accidental or incidental take of birds resulting from an activity is not prohibited by the MBTA when the underlying purpose is not to take birds.<sup>1</sup> If the purpose of the action is not to take birds, Opinion M-37050 allows both the direct take of birds and their nests and indirect or incidental take that results in the direct loss of birds, nests, or eggs (USDOJ 2017b, USFWS 2018). The current list of species protected by the MBTA can be found in the November 1, 2013, Federal Register (78 Federal Register [FR] 65843). This list includes essentially all native migratory birds (i.e., nonmigratory birds, such as wild turkey or quails, are

---

<sup>1</sup> Active bird nests are also protected by State law; specifically, Fish and Game Code sections 3503 and 3503.5, which respectively prohibit the unlawful destruction of nests and eggs; and the unlawful take of birds-of-prey or their eggs. Hence, the federal MBTA guidance does not alter the state protection of active bird nests and eggs.



not included but may be otherwise protected). Permits for take of nongame migratory birds can be issued only for specific activities, such as scientific collecting, rehabilitation, propagation, education, taxidermy, and protection of human health and safety and of personal property. USFWS publishes a list of Birds of Conservation Concern (BCC) to identify migratory nongame birds that are likely to become candidates for listing under FESA without additional conservation actions. The BCC list is intended to stimulate coordinated and collaborative conservation efforts among federal, state, tribal, and private parties.

#### Clean Water Act

Wetlands and other waters of the United States are protected under Section 404 of the Clean Water Act (CWA). Any activity that involves any discharge of dredged or fill material into waters of the United States, including wetlands, is subject to regulation by the U.S. Army Corps of Engineers. Waters of the United States are defined to encompass navigable waters of the United States; interstate waters; all other waters where their use, degradation, or destruction could affect interstate or foreign commerce; tributaries of any of these waters; and wetlands that meet any of these criteria or are adjacent to any of these waters or their tributaries.

#### Executive Order 11990: Protection of Wetlands

Executive Order 11990 (May 24, 1977) established the protection of wetlands and riparian systems as the official policy of the federal government. The executive order requires all federal agencies to consider wetland protection as an important part of their policies; take action to minimize the destruction, loss, or degradation of wetlands; and preserve and enhance the natural and beneficial values of wetlands.

### State

California Fish and Game Code:

#### *California Endangered Species Act*

Sections 2050-2116, the California Endangered Species Act (CESA), state that all native species of fish, amphibians, reptiles, birds, mammals, invertebrates, and plants and their habitats that are threatened with extinction and those experiencing a significant decline that, if not halted, would lead to a threatened or endangered designation will be protected or preserved.

Under Section 2081, a permit from California Department of Fish and Wildlife (CDFW) is required for projects that could result in the take of a species that is state-listed as threatened or endangered. Under CESA, take is defined as an activity that would directly or indirectly kill an individual of a species. The definition does not include harm or harass, as does the definition of take under FESA. Consequently, the threshold for take under CESA is higher than that under FESA. For example, habitat modification is not necessarily considered take under CESA.

#### *Fully Protected Species*

Sections 3511, 3513, 4700, and 5050 of the California Fish and Game Code pertain to fully protected wildlife species (birds in Sections 3511 and 3513, mammals in Section 4700, and reptiles and amphibians in Section 5050) and strictly prohibit the take of these species. CDFW

cannot issue a take permit for fully protected species, except under narrow conditions for scientific research or the protection of livestock, or if a Natural Community Conservation Plan (NCCP) has been adopted.

#### *California Native Plant Protection Act*

Section 1900 et seq., the California Native Plant Protection Act (CNPPA) of 1977, gave the California Fish and Game Commission the authority to list plant species as rare or endangered and authorized them to adopt regulations prohibiting importation of rare and endangered plants into California, take of rare and endangered plants, and sale of rare and endangered plants. The CNPPA prohibits take, possession, transportation, exportation, importation, or sale of rare and threatened plants, except as a result of agricultural practices, fire control measures, timber operations, mining, or actions of public agencies or private utilities. Private landowners are also exempt from the prohibition against removing rare and endangered plants from their property, although they must provide 10-day notice to CDFW before removing the plants. The CNPPA has mostly been superseded by CESA.

#### *Protection of Birds and Raptors*

Section 3503 prohibits the killing of birds and/or the destruction of bird nests. Section 3503.5 prohibits the killing of raptors and the destruction of raptor nests. Typical violations include destruction of active bird and raptor nests as a result of tree removal and failure of nesting attempts (loss of eggs or young) as a result of disturbance of nesting pairs caused by nearby human activity. Section 3513 adopts the list of federally protected migratory birds and take provisions under the MBTA that prohibit the intentional take or possession of birds designated by the MBTA as migratory nongame birds except as allowed by federal rules and regulations pursuant to the MBTA.

#### *Lake and Streambed Alteration Agreements*

Sections 1600-1603 of the California Fish and Game Code state that it is unlawful for any person or agency to substantially divert or obstruct the natural flow or substantially change the bed, channel, or bank of any river, stream, or lake in California that supports wildlife resources or to use any material from the streambeds without first notifying CDFW. A Lake and Streambed Alteration Agreement (LSAA) must be obtained if effects are expected to occur. The regulatory definition of a stream is a body of water that flows at least periodically or intermittently through a bed or channel having banks and that supports wildlife, fish, or other aquatic life. This definition includes watercourses having a surface or subsurface flow that supports or has supported riparian vegetation. CDFW's jurisdiction within altered or artificial waterways is based on the value of those waterways to fish and wildlife.

#### *Porter-Cologne Water Quality Control Act*

Under the Porter-Cologne Water Quality Control Act, waters of the state fall under jurisdiction of the nine Regional Water Quality Control Boards (RWQCBs). Projects in the County fall under the jurisdiction of the Central Valley RWQCB, Region 5. Under the Act, each RWQCB must prepare and periodically update water quality control basin plans. Each basin plan sets forth water quality standards for surface water and groundwater, as well as actions to control nonpoint and point sources of pollution. Pursuant to CWA Section 401, an applicant for a

Section 404 permit to conduct any activity that may result in discharge into navigable waters must provide a certification from the RWQCB that such discharge will comply with state water quality standards. Because drainages within the project site are not subject to state jurisdiction, a water quality certification from the RWQCB is not required. However, projects that affect wetlands or other waters of the state and that are deemed required by the RWQCB must file a report of waste discharge with the RWQCB, which then issues Waste Discharge Requirements (WDRs). The Regional Water Board may not issue WDRs until a CEQA document has been finalized.

#### California Wetlands Conservation Policy

The goals of the California Wetlands Conservation Policy, adopted in 1993 (Executive Order W-59-93 [August 23, 1993]), are “to ensure no overall net loss, and achieve a long-term net gain in the quantity, quality, and permanence of wetlands acreage and values in California, in a manner that fosters creativity, stewardship, and respect for private property”; to reduce procedural complexity in the administration of state and federal wetlands conservation programs; and to make restoration, landowner incentive programs, and cooperative planning efforts the primary focus of wetlands conservation.

#### Local

##### Fresno County General Plan

The Fresno County General Plan (County 2000b) outlines several policies intended for the protection of biological resources countywide, including the following, which apply to the proposed project:

**Policy OS-B.2:** The County shall work closely with agencies involved in the management of forest ecosystems and shall coordinate with State and Federal agencies, private landowners, and private preservation/conservation groups in habitat preservation and protection of rare, endangered, threatened, and special concern species, to ensure consistency in efforts and to encourage joint planning and development of areas to be preserved. The County shall encourage State and Federal agencies to give notice to and coordinate with the County on any pending, contemplated, or proposed actions affecting local communities and citizens of the County. The County will encourage State and Federal agencies to address adverse impacts on citizens and communities of Fresno County, including environmental, health, safety, private property, and economic impacts.

**Policy OS-E.1:** The County shall support efforts to avoid the “net” loss of important wildlife habitat where practicable. In cases where habitat loss cannot be avoided, the County shall impose adequate mitigation for the loss of wildlife habitat that is critical to supporting special-status species and/or other valuable or unique wildlife resources. Mitigation shall be at sufficient ratios to replace the function and value of the habitat that was removed or degraded. Mitigation may be achieved through any combination of creation, restoration, conservation easements, and/or mitigation banking. Conservation easements should include provisions for maintenance and management in perpetuity. The County shall recommend coordination with the USFWS and the CDFW to ensure that appropriate mitigation measures and the concerns of these agencies are adequately addressed. Important habitat and habitat components include nesting, breeding, and foraging areas, important spawning grounds, migratory routes, migratory stopover areas,

oak woodlands, vernal pools, wildlife movement corridors, and other unique wildlife habitats (e.g., alkali scrub) critical to protecting and sustaining wildlife populations.

**Policy OS-E.2:** The County shall require adequate buffer zones between construction activities and significant wildlife resources, including both onsite habitats that are purposely avoided and significant habitats that are adjacent to the project site, in order to avoid the degradation and disruption of critical life cycle activities such as breeding and feeding. The width of the buffer zone should vary depending on the location, species, etc. A final determination shall be made based on informal consultation with the US Fish and Wildlife Service and/or the California Department of Fish and Game.

**Policy OS-E.3:** The County shall require development in areas known to have particular value for wildlife to be carefully planned and, where possible, located so that the value of the habitat for wildlife is maintained.

**Policy OS-E.4:** The County shall encourage private landowners to adopt sound wildlife habitat management practices as recommended by the California Department of Fish and Wildlife officials and the U.S. Fish and Wildlife Service.

**Policy OS-E.7:** The County shall continue to closely monitor pesticide use in areas adjacent to habitats of special-status plants and animals.

**Policy OS-E.8:** The County shall promote effective methods of pest (e.g., ground squirrel) control on croplands bordering sensitive habitat that do not place special-status species at risk, such as the San Joaquin kit fox.

**Policy OS-E.9:** Prior to approval of discretionary development permits, the County shall require, as part of any required environmental review process, a biological resources evaluation of the project site by a qualified biologist. The evaluation shall be based upon field reconnaissance performed at the appropriate time of year to determine the presence or absence of significant resources and/or special-status plants or animals. Such evaluation will consider the potential for significant impact on these resources and will either identify feasible mitigation measures or indicate why mitigation is not feasible.

**Policy OS-E.10:** The County shall support State and Federal programs to acquire significant fish and wildlife habitat areas for permanent protection and/or passive recreation use.

**Policy OS-E.18:** The County should preserve, to the maximum possible extent, areas defined as habitats for rare or endangered animal and plant species in a natural state consistent with state and federal endangered species laws.

**Policy OS-E.19:** The County should preserve areas identified as habitats for rare or endangered plant and animal species primarily through the use of open space easements and appropriate zoning that restrict development in these sensitive areas.

**Policy OS-F.5:** The County shall establish procedures for identifying and preserving rare, threatened, and endangered plant species that may be adversely affected by public or private development projects. The County shall require, as part of the environmental review process, a biological resources evaluation of the project site by a qualified biologist. The evaluation shall be based on field reconnaissance performed at the appropriate time of year to determine the

presence or absence of significant plant resources and/or special-status plant species. Such evaluation shall consider the potential for significant impact on these resources and shall either identify feasible mitigation measures or indicate why mitigation is not feasible.

**Policy OS-F.8:** The County should encourage landowners to maintain natural vegetation or plant suitable vegetation along fence lines, drainage and irrigation ditches and on unused or marginal land for the benefit of wildlife.

#### 4.4.2 Environmental Setting

A biological reconnaissance survey was conducted by Environmental Science Associates (ESA), with the results detailed in the Biological Resources Technical Report (Appendix D). Prior to the survey, ESA biologists reviewed the March 2016 California Natural Diversity Database (CNDDB) records for the project site and a surrounding 5-mile study area for reported distribution of sensitive plant and wildlife species (Appendix D). In addition, a list of potential threatened and endangered species that could occur on or in the vicinity of the project site was requested from the USFWS, and a USFWS Information Planning and Conservation System (IPaC) Trust Resources Report was generated for the analysis (Appendix D). The National Wetlands Inventory (NWI) mapping system was reviewed to identify whether any aquatic features have been identified at the project site.

The biological reconnaissance survey of the project site was performed on March 3, 2016, between 2:00 PM and 4:40 PM by a certified wildlife biologist. Weather conditions during the assessment were partly cloudy; the wind was 0 to 2 mph; the air temperature ranged from 86°F to 88°F. During the assessment, Brian Pittman, a certified wildlife biologist with more than 25 years of experience drove each of the interior roads within the site, which are spaced at half-mile intervals (approximately 2,500 feet). Each edge of every field was carefully reviewed for potentially sensitive biological resources, and the interior of each agricultural unit was scanned and characterized using binoculars. The entirety of the site has been completely leveled and tilled and all natural habitat removed, with the exception of a few small areas beneath energy transmission towers (see Biological Technical Report, Appendix D, Figure A-14 photo point 14). These areas were each visited on foot. The surveys confirmed that small mammals have been mostly eliminated from the entire 1,588-acre site with the exception of a few persistent gophers (see Biological Technical Report, Appendix D, Figure A-12, photo point 11a). Photographs in the Biological Technical Report of active tomato and wheat fields and the barren fringes of these fields illustrate that walking surveys within tilled fields were not warranted to characterize wildlife habitat in these areas.

The project site is within the central western San Joaquin Valley in an area dominated by current and historic agricultural activities. As described in the Biological Resources Technical Report, the land uses surrounding the project site include farmland, PG&E's Gates Substation, and two nearby solar-generating facilities (Gates Solar and West Gates Solar) (Appendix D; ESA 2016b).

The biological reconnaissance survey found that the project site contained developed areas, areas of bare soil, and agricultural lands with associated wetland areas consisting of irrigation canals and a pond feature (see Figure 2 in Appendix D). It also contained two overhead electric transmission lines and their associated towers running through the southern section of the



project site. During the biological reconnaissance survey, most of the project site was under active cultivation with crops including tomatoes and wheat and recently tilled areas for impending planting. Some areas of the project site had been leveled, with adjacent 0.25-square-mile sections at different elevations. The site is maintained such that no weeds or native plant species are present. With the exception of three small, isolated areas beneath three of the electric transmission towers in the southeast portion of the site, the entire site appears to be subject to major periodic disturbance from tilling and planting.

A reconnaissance-level wetland assessment determined that there were four potentially jurisdictional aquatic features present on the project site. These included a freshwater pond also identified on the NWI and three additional aquatic features (large, somewhat vegetated irrigation canals) that run north-south between Lassen Avenue and the northeastern-most agricultural field. In addition to these four potentially jurisdictional features, the Biological Resources Technical Report (Appendix D) also describes the presence of additional irrigation drainage features that were recently excavated in agricultural areas and that do not drain to offsite areas. Upon further review, the four potentially jurisdictional features do not appear to have connectivity to any natural water features and are direct results of the agricultural use of the project site and surrounding fields. Therefore, these features (and the recently excavated irrigation features) do not meet the qualifications for jurisdictional features.

### **Plant Communities**

As described above, the project site has predominantly been used for active agricultural cultivation. The project site has been cultivated for agricultural use for at least the past 23 years, based on aerial imagery from Google Earth dating back to April 1994; additional details can be found in Section 4.2, Agriculture. The project site is maintained such that no weeds or native plant species are present; thus, no naturally occurring plant communities are present. Therefore, mapping of the vegetation communities in accordance with a generally accepted classification system, such as *A Manual of California Vegetation* (Sawyer et al. 2009) or *The Preliminary Descriptions of the Terrestrial Natural Communities of California* (Holland 1986) was not possible. However, reference to the California Wildlife Habitat Relationship System (CWHRS) (Mayer and Laudenslayer 1988) was made where appropriate. The project site at the time of the biological reconnaissance survey (March 3, 2016) contained fields devoted to tomatoes (defined in CWHRS as “irrigated row and field crops [IRF]”) and wheat (defined in CWHRS as “dryland grain crops [DGR]”), with an additional field that was recently tilled (Appendix D; Mayer and Laudenslayer 1988).

### **Wildlife Species**

Because the project site does not contain any natural plant communities, wildlife diversity and abundance on the site are low. No small mammal burrows were observed on the project site during the reconnaissance survey except in the areas beneath the electric transmission towers. The burrows present consisted of fewer than a dozen small (<1-inch diameter) mouse-size holes noted in disturbed habitat beneath one power tower within an approximately 20-square-foot area (Appendix D). Per CWHRS, the irrigated row crop and dryland grass crops habitats present on the project site are usually established on fertile soils, which historically would have supported an abundance of wildlife. Due to the cultivation of crops, wildlife habitat richness and diversity was reduced; however, many species of rodents and birds have adapted to use



cropland habitats. Many of these species are considered pests and are controlled using fencing, trapping, and poisoning to prevent excessive crop losses. Species present could include the following: great egret, great blue heron, northern harrier, killdeer, burrowing owl, red-tailed hawk, American crow, Brewer's blackbird, western meadowlark, house finch, red-winged blackbird, California ground squirrel, and deer mouse. Therefore, while wildlife diversity and abundance are expected to be low, there is some potential for wildlife species to be present on the project site. The potential for special-status wildlife to be present at the project site is described below.

### Special-Status Species

Special-status species are defined as those plants and wildlife that, because of their recognized rarity or vulnerability to various causes of habitat loss or population decline, are recognized by federal, state, or other agencies as under threat from human-associated developments. Some of these species receive specific protection that is defined by federal or state endangered species legislation. Others have been designated as special-status on the basis of adopted policies and expertise of state resource agencies or organizations with acknowledged expertise, or policies adopted by local governmental agencies such as counties, cities, and special districts to meet local conservation objectives. Special-status species include:

- Species that are listed or proposed for listing as threatened or endangered under FESA (50 CFR 17.11 [listed animals]; 50 CFR 17.12 [listed plants]; and various notices in the Federal Register (FR)).
- Species that are candidates for possible future listing as threatened or endangered under FESA (77 FR 69993, November 21, 2012).
- Species that are identified by the USFWS as birds of conservation concern.
- Species that are listed or proposed for listing by the State of California as threatened or endangered under CESA (14 California Code of Regulations [CCR] 670.5).
- Species that meet the definitions of rare or endangered under CEQA (CEQA Guidelines Section 15380).
- Plants listed as rare under the CNPPA (CDFW Commission 1900 et seq.).
- Plants with a California Rare Plant Rank (CRPR) of 1A, 1B, 2A, and 2B.
- Animals listed as species of special concern on CDFW's Special Animals List (CDFW 2017a).
- Animals that are fully protected in California (CDFW Commission, California Fish and Game Code sections 3511 [birds], 4700 [mammals], 5050 [amphibians and reptiles], and 5515 [fish]).

Sensitive natural communities are designated as such by various resource agencies, such as the CDFW, or in local policies and regulations, and are generally considered to have important functions or values for wildlife and/or are recognized as declining in extent or distribution, and are considered threatened enough to warrant some level of protection. For example, many local

agencies in California consider protection of oak woodlands important, and federal, state, and most local agencies also consider wetlands and riparian habitat as sensitive communities. CDFW tracks communities it believes to be of conservation concern through its List of California Terrestrial Communities (CDFW 2010) and the CNDDDB (CDFW 2017b). This analysis considers these communities to be special-status.

Special-status plant and wildlife species were identified during the literature and database search as part of the Biological Resources Technical Report (Appendix D). The guidelines of these searches indicate that these lists should be verified after 90 days; thus, the database searches were updated concurrently with the preparation of this report, and the results are provided in this section. No new species were identified in these updates. All special-status plant and wildlife species were analyzed based on the following “potential to occur” definitions.

- **Present (P):** Species observed on the project site and immediate vicinity during surveys or other site visits.
- **Habitat Present (HP):** The project site and immediate vicinity provide suitable habitat for a particular species, and proposed development may impact this species.
- **Low (L):** The project site and immediate vicinity only provide limited habitat for a particular species. In addition, the known range for a particular species may be outside of the project site and immediate vicinity.
- **Absent (A):** The project site and immediate vicinity do not support suitable habitat for a particular species, and therefore the project is unlikely to impact this species.

### Special-Status Plant Species and Natural Communities

Three special-status plant species were identified in the literature review and database search and are listed and described in Appendix D, which identifies the protective status for each plant species as well as the potential for each species to occur on the project site based on focused survey results and the presence or absence of suitable habitat.

### Special-Status Wildlife Species

Based on the literature and database review, 26 special-status wildlife species were preliminarily identified as having the potential to occur on the project site or within the immediate vicinity (Appendix D). The 26 special-status wildlife species included in the analysis are listed and described in Appendix D, which identifies the protective status and habitat requirements of each wildlife species as well as the potential for each species to occur on the project site based on survey results and the presence or absence of suitable habitat. In addition to the species listed in Appendix D, numerous migratory species, including many which are listed as threatened or endangered under FESA or CESA, have the potential to occur on the project site.

Of the 29 special-status wildlife species identified in Appendix D, the California horned lark (*Eremophila alpestris*) was found to be present onsite, while suitable habitat was present for Swainson’s hawk (*Buteo swainsoni*) and tricolored blackbird (*Agelaius tricolor*). No special-status plants were determined to have the potential to occur onsite. Each species with the potential to occur onsite is discussed below.

### California Horned Lark

California horned larks are brown songbirds that form large flocks for foraging and roosting. They build grass-lined nests directly on the ground in dry, open habitats with sparse vegetation. Range-wide, California horned larks nest in level or gently sloping shortgrass prairie, montane meadows, barren fields, open coastal plains, fallow grain fields, row crops, and alkali flats (ESA 2016b). No nesting occurrences are reported within 5 miles of the project site. (Note that nesting occurrences are generally under-reported for this relatively widespread species.) However, several horned larks were observed during the reconnaissance survey foraging in the recently harvested wheat fields in the southeastern portion of the project site. Due to the ongoing active cultivation of these areas, this species is not expected to nest on the project site, and no impacts are anticipated to nesting California horned larks (Appendix D).

### Swainson's Hawk

Swainson's hawks are a medium-sized raptor with white leading edges of wings, a dark bib, and lightly banded tail. This species has various color morphs that can make it difficult to identify. It breeds in stands with few trees in juniper-sage flats, riparian areas, or oak savannah adjacent to suitable foraging habitat such as grasslands, alfalfa, or grain fields with rodent populations. Threats to Swainson's hawk include development resulting in the loss of foraging and nesting habitat. Swainson's hawk is listed as threatened by the State of California and is not federally listed. Grassland and cropland within the project area provide suitable foraging habitat for this species; however, the lack of small mammals onsite due to intensive tilling cultivation limit the amount and quality of available forage onsite. There are suitable mature trees just offsite on the eastern edge of the site along West Tractor Avenue that could provide suitable nesting substrate for Swainson's hawks. No Swainson's hawks were observed during the site survey on March 3, 2016; however, the CNDDDB identifies many occurrences within 5 miles of the project site. Recent nesting occurrences are noted 3.0 miles east of the project site near the California Aqueduct (Occ. No. 1431; July 2011) and 3.6 miles north of the site (Occ. No. 2508; July 2008). This species is present in the regional area surrounding the project site and could occasionally use the site for limited foraging, but as the quality of available forage is low, this use would be expected to be intermittent. Additionally, due to the presence of nearby suitable mature trees, the species could nest adjacent to the site despite not being observed during the reconnaissance survey. See Mitigation Measure BIO-2 below, which would be implemented to reduce impacts to nesting birds, including Swainson's hawks.

### Tricolored Blackbird

Tricolored blackbirds are a colonial species that typically nest in dense vegetation in and around freshwater wetlands. When nesting, tricolored blackbirds generally require freshwater wetland areas large enough to support colonies of 50 pairs or more. They prefer freshwater emergent wetlands with tall, dense cattails or tules for nesting, but will also nest in thickets of willow, blackberry, wild rose, or tall herbs. However, the species is also known to nest in silage and agricultural fields. During the nonbreeding season, flocks are highly mobile and forage in grasslands, croplands, and wetlands (Appendix D).

While tricolored blackbirds are locally common in portions of the Central Valley and coastal areas south of Sonoma County, no nesting records are reported within 4 miles of the project site. The agricultural fields could provide suitable nesting habitat when planted with grain crops

or silage despite the species not being observed during the reconnaissance survey. Mitigation Measure BIO-2 (below) will be implemented to reduce impacts to nesting birds including tricolored blackbirds.

### **Critical Habitat**

USFWS does not identify any designated critical habitat on the project site or immediate vicinity. The nearest identified Critical Habitat is for the Buena Vista Lake ornate shrew (*Sorex ornatus relictus*) located 15 miles northeast of the project site. This species is found in a wide variety of habitats; however, it requires cover and prefers low, dense vegetation. Due to the lack of nearby occurrences and the active agricultural use of the project site, this species is not anticipated to occur onsite, and no project impacts are anticipated.

### **Wildlife Movement Corridors**

The project site does not lie within a recognized terrestrial wildlife connectivity area as identified by the California Essential Habitat Connectivity project (Spencer et al. 2010). The project site and surrounding area are not likely to serve as a large-scale terrestrial wildlife corridor due to the extensive historic and ongoing agricultural practices that have constrained wildlife movement within the area.

The project site is located within the Pacific Flyway, a significant avian migration route. The Pixley National Wildlife Refuge located approximately 41 miles southeast, and the Mendota Wildlife Area, located approximately 42 miles north of the project site, are recognized stopover location for migratory birds travelling along the Pacific Flyway (USFWS 2017a, CDFW 2017c). There is some potential for the presence of migratory bird species within the project site due to the proximity to these areas.

The *USFWS Recovery Plan for Upland Species of the San Joaquin Valley, California* (Recovery Plan, USFWS 1998) identifies linkage areas that are important corridors for wildlife species. In Fresno County, these include the following: (1) the western section of the County, which includes the valley floor west of the San Joaquin River and Fresno Slough; (2) the Kettleman Hills to Anticline Ridge; and (3) the western valley edge from Panoche Creek to Coalinga. The first linkage area occurs north of the project site, the second area occurs south of the project site, and the third area occurs west of the project site. Therefore, the project is not contained within any of these important linkage areas.

### **Jurisdictional Waters**

The wetland areas were assessed during the biological reconnaissance survey to provide a reconnaissance-level wetland assessment, and it was determined that there are four potentially jurisdictional aquatic features present on the project site (Appendix D). Upon further review, the four potentially jurisdictional features do not appear to have connectivity to any natural water features and are direct results of the agricultural use of the project site and surrounding fields. Therefore, these features (and the recently excavated irrigation features) do not appear to meet the qualifications for jurisdictional features.

### 4.4.3 Environmental Impacts

This section analyzes the project's potential to result in significant impacts on biological resources. When an impact is determined to be significant, Mitigation Measures are identified that would reduce or avoid the impact.

#### Methodology

The analysis presented in this section is based on a review of relevant literature and field reconnaissance surveys. It also relies upon a Biological Resources Technical Report prepared by ESA (Appendix D), which documents existing conditions and the findings of reconnaissance surveys on the project site and surrounding area.

The literature review included information available in peer-reviewed journals, standard reference materials, and relevant databases on sensitive resource occurrences, including the CNDDDB (CDFW 2017b), the USFWS Critical Habitat Portal, and USFWS IPaC Species List Generator (USFWS 2017b). The Special Animals List (CDFW 2017a) and Special Vascular Plants, Bryophytes, and Lichens List (CDFW 2017e) also were reviewed to account for other special-status species with the potential to occur at the project site. Other sources of information reviewed include aerial photographs, topographic maps, soil survey maps, geologic maps, and climatic data.

#### Thresholds of Significance

In accordance with the CEQA Guidelines' Appendix G Environmental Checklist, the following questions were analyzed and evaluated to determine whether impacts to biological resources are significant.

Would the proposed project:

- Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the CDFW or USFWS?
- Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by the CDFW or USFWS?
- Have a substantial adverse effect on state or federally protected wetlands (including but not limited to marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?
- Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of wildlife nursery sites?
- Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

- Conflict with the provisions of an adopted Habitat Conservation Plan, NCCP, or other approved local, regional, or state habitat conservation plan?

## Project Impact Analysis and Mitigation Measures

This section discusses potential impacts on biological resources associated with the proposed project and provides Mitigation Measures where necessary.

### Effects on Plants and Animals

---

**Impact BIO-1**     **The proposed project would not have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service.**

---

### Impact Analysis

#### Impacts to Special-Status Species

##### *Special-Status Plants*

The project site does not contain suitable habitat for any special-status plants or natural communities. Therefore, the proposed project will not affect any special-status plants or natural communities.

##### *Special-Status Wildlife*

No special-status wildlife species were observed on the project site or gen-tie routes during the reconnaissance surveys (Appendix D). The only species observed on the project site was California horned lark, which would be protected only under MBTA. Additionally, there is habitat present for Swainson's hawk and tricolored blackbird. Take of any federally- or state-listed or special-status species would be considered a significant impact. Impacts would be reduced to a less than significant level by implementing Mitigation Measures BIO-1, BIO-2 and BIO-3.

#### Impacts to Avian Species

##### *Nesting and Migratory Birds*

Several bird species, including several protected under the California Fish and Game Code and MBTA, were observed on and adjacent to the site during project surveys. Project-related impacts on nesting birds unrelated to collision could include mortality of individuals by crushing and destruction of nests and eggs through clearing and grading activities. The direct removal or disturbance to active nests is prohibited under Fish and Game Code sections 3503 and 3503.5. Additional indirect impacts could include interference with reproductive success and nest abandonment brought on by increased noise levels during construction within the breeding season (February 1 through September 15); which is also prohibited under Fish and Game Code. Due to the historic and current agricultural practices onsite, nesting birds are not anticipated to occur. However, impacts to protected birds and raptors would be a significant impact. This impact would be reduced to a less than significant level by implementing Mitigation Measures BIO-2 and BIO-3.



### *Potential Raptor Interactions with Power Lines*

Large raptors and other avian species are susceptible to collisions with power lines to a greater or lesser extent based on specific species characteristics such as the birds' body size, weight, wing shape, flight behavior, and perching, roosting, and nesting habits (APLIC 2012). Birds of prey are generally understood to have the ability to avoid obstacles; however, their collision risk increases when they are engaged in activities such as territorial defense and pursuing prey (APLIC 2012). Although the County is traversed by multiple high-voltage transmission lines, the proposed project would introduce collision hazards to the site that are not now present due to the installation of a new 0.3-mile aboveground powerline to connect the proposed project to the point of interconnect. During both daytime and nighttime activity, special-status birds may collide with project infrastructure beginning when project structures are erected during construction and remaining until the infrastructure is removed during decommissioning. For example, the project would interconnect to the Gates Substation via a single gen-tie line. Such facilities can result in injury or mortality to raptors due to collision and electrocution. This would be a significant impact. However, impacts to protected raptors would be reduced to a less than significant level by implementing Mitigation Measure BIO-3.

### *Potential Avian Collision with Solar Facilities*

Based on the U.S. Department of the Interior (USDOl) Solicitor's Opinion M-37050 and subsequent USFWS guidance, the incidental take of birds that is not the purpose of an action is no longer considered a take of birds (USDOl 2017b, USFWS 2018). Potential impacts to birds must still be included in the environmental review process; however, as of December 22, 2017, the incidental take of birds during otherwise legal activities is not prohibited by the MBTA. This interpretation applies to any species on the MBTA bird list that has the potential to collide or interact with project infrastructure. However, active bird nests are still protected by state law; specifically, California Fish and Game Code sections 3503 and 3503.5, which respectively prohibit the unlawful destruction of nests and eggs; and the unlawful take of birds-of-prey or their eggs. Hence, the federal MBTA guidance does not alter the state protection of active bird nests and eggs. Potential impacts to birds during facility construction and operations are further described below.

Much of what is known about collision-related avian injury and mortality associated with solar photovoltaic (PV) facilities in California is based on preliminary avian monitoring data from the Desert Sunlight Solar Farm, a PV project built in the Mojave Desert. Existing data in this context is based on incidental opportunistic observations rather than monitoring and collection conducted in accordance with standardized or agency-approved methods; such data do not have the scientific rigor to support conclusions about how many birds of which species would be affected by this or any other solar PV project. The causes of avian injuries and fatalities at commercial-scale solar projects are continuing to be evaluated by the USFWS, CDFW, and others. Nonetheless, available information, including USFWS's National Forensic Laboratory's spring 2014 report, *Avian Mortality at Solar Energy Facilities in Southern California: A Preliminary Analysis* (NFWFL 2014), is helpful to the County's consideration of potential significant impacts of the project and related uncertainties.

The numbers or species of birds that may be affected from collisions with solar panels or other infrastructure cannot be known with confidence, although ongoing monitoring data from the Desert Sunlight Solar Farm suggest that a broad ecological variety of birds may be susceptible

to injury and mortality at PV solar farms (NFWFL 2014). As described in Section 4.4.2, Environmental Setting, the project site has very low biological resource value. Nonetheless, foraging or transient use of the site is possible. Special-status bird species with potential to occur on the project site are identified in Appendix D. Any common or special-status bird species on the project site has the potential to collide with project infrastructure. Because the numbers and varieties of such birds cannot be known with certainty, it is possible that the project could cause a significant impact related to collision-related avian injury and mortality.

Solar PV panels have a strong polarization signature, an element thought to mimic water. As a result, some biologists have theorized that PV panels can attract species that mistake the panels for bodies of water (Randall et al. 2010), potentially leading to increased number of collisions and other risks, such as being stranded within site fencing once they land, or other forms of distress. The phenomenon sometimes colloquially is referred to as the “lake effect.” While not expected, it is possible that the project’s PV panels could attract birds, including water birds, to the site and expose the birds to such risks. In addition, aquatic insects may also mistake PV panels as bodies of water, which could increase attractiveness of the PV panels to avian species that feed on the aquatic insects.

Avian deaths at the Desert Sunlight facility have been attributed to two key causes: bird collisions with solar panels and the subsequent predation of injured birds (NFWFL 2014). Although incidental monitoring data from the Desert Sunlight Solar Farm project suggests that limited injury to and mortality of common and special-status migratory birds could be expected to occur at PV project sites (NFWFL 2014), uncertainty remains regarding the extent to which birds might be impacted by this project because injury and mortality information from other locations may not be indicative of outcomes likely in the County. At night, the panels would be positioned where they last tracked the sun or pre-positioned toward the east to capture sunrise. This may reduce impacts to avian species attempting to land on the PV array at sunset when mistaking it for water; however, this may increase the potential for collisions due to the increased cross-sectional area of the panels. To address the uncertainty that exists around the issue of avian collisions, including those that may be caused by the lake effect, and to ensure that any ecologically significant impacts are mitigated to the extent feasible, Mitigation Measure BIO-4 would be implemented to monitor and reduce potential impacts to avian species resulting from collisions with PV panels.

#### Impacts to Bats

The proposed project has the potential to attract bats that could mistake the grouped panels for a body of water, as discussed above. The attraction of bats to the project site as a source of drinking water could result in mortality from a collision with the panels. Bats are able to detect water by aiming their echolocation calls straight down to determine whether there is a flat, even surface below them (Greif and Siemers 2010). Greif and Siemers (2010) have shown that bats can mistake other horizontally placed flat, smooth surfaces, such as metal, plastic, and wood that are as small as 20 square feet, for water. Theoretically, solar panels could have the same effect if they are oriented horizontally; however, the solar arrays at the project site would not be situated in a fixed horizontal plane. The solar arrays would be angled based on the position of the sun during a given time of year and potentially track the sun throughout the day. At night, the panels would be positioned where they last tracked the sun or pre-positioned toward the east to capture sunrise. Therefore, the solar arrays would not have a potential impact to bats.

Additionally, there have been only limited historic sightings within the project area, and no potential bat roost structures are present in the project site. The project site contains marginal suitable foraging habitat for bats. Thus, the proposed project would have a less than significant impact to bats.

#### Impacts to Non-Bird or Bat Species

The interior of each agricultural unit was subject to extensive tilling and suspected herbicide and rodenticide treatment at the time of the March 16, 2016, biological resources review. Based on the high-intensity agricultural use and survey findings, none of the agricultural units onsite or within provide burrows or subterranean habitat that would support San Joaquin kit fox or kangaroo rats.

The site was almost entirely devoid of kit fox forage species and lacked any burrows where kit foxes could take cover from predators. If intensive industrial scale agricultural continues onsite, kit fox are not expected to take up residency. As shown in Figure 2 of Appendix D, which identified project site land uses, all of the neighboring properties are also in active agricultural use and show very poor conditions for kit fox. As illustrated in Figure 3 of Appendix D, kit foxes were documented in several areas in the vicinity of the California Aqueduct in 1981. A review of historic imagery from 1971 and 1994 shows less intensive agricultural uses in the area at that time (Historic Aerials 2019). Such areas are generally no longer in existence. Present day movement habitat for kit fox in the region is mostly limited to areas west of I-5, as the project area and surrounding properties have excluded this species through ongoing agricultural operations and landscaped area for solar facilities. Any kit fox movement through the site is considered extremely unlikely as this nocturnal animal would have no cover or forage.

The proposed future use of the site for solar facilities would be more benign than current uses relative to kit fox suitability. As identified in Appendix D, "(i)f the San Joaquin kit fox population is present regionally, it is possible that the Project may benefit this species through the elimination of active cultivation, which would likely allow the future use of the site by prey species and which would also provide undisturbed habitat where kit foxes could reside." Similarly, for kangaroo rats, there is no habitat of any kind onsite that would support this species, and areas adjacent to the project site are tilled and cultivated, with the exception of existing solar facilities (see Figure 2 of Appendix D). Figure 3 of Appendix D depicts CNDDDB occurrences within a 5-mile radius. Areas generally within 2 miles of the project site show similar agricultural operations that would not support rare kangaroo rats such as the short-nosed kangaroo rat. Additionally, short-nosed kangaroo rat has not been locally identified east of I-5 and it is not considered likely that this species would ever be present on the project site as a transient species.

#### Level of Significance Before Mitigation

Potentially Significant Impact.

#### Mitigation Measures

**MM BIO-1: General Measures for the Avoidance and Protection of Biological Resources:** During construction, operation and maintenance, and decommissioning of the facility, the operator or contractor shall implement the following general avoidance and protective measures to protect San Joaquin kit fox and other special-status wildlife species:

- The operator shall limit the areas of disturbance. Parking areas, new roads, staging, storage, excavation, and disposal site locations shall be confined to the smallest areas possible. All proposed impact areas, including solar fields, staging areas, access routes, and disposal or temporary placement of spoils, shall be delineated with stakes and/or flagging prior to construction to avoid special-status species where possible. Construction-related activities, vehicles, and equipment outside of the impact zone shall be avoided.
- These areas shall be flagged, and disturbance activities, vehicles, and equipment shall be confined to these flagged areas.
- Spoils shall be stockpiled in disturbed areas that lack native vegetation. Best Management Practices (BMPs) shall be employed to prevent erosion in accordance with the project's approved Stormwater Pollution Prevention Plan (SWPPP). All detected erosion shall be remedied within two (2) days of discovery or as described in the SWPPP.
- To prevent inadvertent entrapment of wildlife during construction, all excavated, steep-walled holes or trenches with a 2-foot or greater depth shall be covered with plywood or similar materials at the close of each working day or provided with one or more escape ramps constructed of earth fill or wooden planks. Before such holes or trenches are filled, they shall be thoroughly inspected by the approved biological monitor for trapped animals. If trapped animals are observed, escape ramps or structures shall be installed immediately to allow escape. If a listed species is trapped, the U.S. Fish and Wildlife Service (USFWS) and/or California Department of Fish and Wildlife (CDFW) shall be contacted immediately.
- All construction pipes, culverts, or similar structures with a 4-inch or greater diameter that are stored at a construction site for one or more overnight periods shall be thoroughly inspected for special-status wildlife or nesting birds before the pipe is subsequently buried, capped, or otherwise used or moved in any way. If an animal is discovered inside a pipe, that section of pipe shall not be moved until the Lead Biologist has been consulted and the animal has either moved from the structure on its own accord or until the animal has been captured and relocated by the Lead Biologist.
- Vehicles and equipment parked on the sites shall have the ground beneath the vehicle or equipment inspected for the presence of wildlife prior to moving.
- Vehicular traffic shall use existing routes of travel. Cross-country vehicle and equipment use outside of the project properties shall be prohibited.
- A speed limit of 20 miles per hour shall be enforced within all construction areas.
- A long-term trash abatement program shall be established for construction, operations, and decommissioning and submitted to the County. Trash and

food items shall be contained in closed containers and removed daily to reduce the attractiveness to wildlife such as common raven (*Corvus corax*), coyote (*Canis latrans*), and feral dogs.

- Workers shall be prohibited from bringing pets and firearms to the project site and from feeding wildlife in the vicinity.
- Intentional killing or collection of any wildlife species shall be prohibited.

**MM BIO-2: Reduce Construction-related Impacts to Nesting Birds.** Ensure that active nests of raptors and other special-status nesting birds are not affected as a result of the proposed project.

If construction work is scheduled to take place outside of the avian nesting season (September 16 through January 31), no action would be required to protect nesting birds. If any activities that could harm birds or their nests (e.g., clearing temporary workspaces; staging or stockpiling machinery or supplies; parking vehicles, equipment, or trailers; grading or leveling; creating stockpiles of dirt or gravel; or any activity that could cover existing habitat or disrupt surface soils) occur during the avian nesting season (February 1 through September 15), the following measures shall be implemented to avoid impacts on nesting raptors and other protected and common birds:

- No more than 14 days prior to construction, a qualified wildlife biologist shall conduct preconstruction surveys of all construction sites to determine if birds or nests are present. Surveys may be phased as construction is phased, so that each section is surveyed no more than 14 days prior to the start of construction in that area.
- If active nests are found during preconstruction surveys, a no-disturbance buffer shall be created around nests until it is determined that all young have fledged or until the recognized nesting season has ended (i.e., September 15 annually). The size of any employed buffers will vary based on the species that is nesting, the status of the nest, site conditions, and work to be completed during the active period of the nest. All buffers will be appropriately sized, based on USFWS published recommendations to avoid take to the nest. The size of the buffer zones and types of construction activities restricted in these areas could be further modified during construction in coordination with CDFW and shall be based on the existing level of noise and human disturbance on the project site.
- If preconstruction surveys indicate that nests are inactive, or potential habitat is unoccupied during the construction period, no further action is required. Trees and shrubs within the construction footprint determined to be unoccupied by nesting birds or that are outside the no-disturbance buffer for active nests could be removed.

**MM BIO-3: Reduce Potential for Avian Collisions with Power Lines.** Avian Power Line Interaction Committee (APLIC) Guidelines in accordance with *Reducing Avian*

*Collisions with Power Lines: The State of the Art in 2012* (APLIC 2012) will be incorporated into the power line design to minimize the likelihood of avian electrocutions. Transmission lines and all electrical components shall be designed, installed, and maintained in accordance with APLIC guidance to reduce the likelihood of large bird electrocutions and collisions (APLIC 2012).

**MM BIO-4: Reduce Avian Collisions with Photovoltaic Array.**

- Visual deterrents to encourage bird avoidance of the project site will be installed. These deterrents will be made of a material that is both reflective and highly visible, such that the material reflects ambient light and is stimulated by air movement. The effect of such installation will create the visual impression of continuous and varied movement, which has been shown as an avian deterrent in agricultural applications. An example of the types of material that could be used includes reflective tape. Within 30 days after project commissioning, materials will be installed in 50-acre blocks within the solar facility on a 3-month trial basis to examine panel performance issues. Following the initial 3-month period, visual deterrents will either be adjusted to reduce performance issues and reexamined on a continuing 3-month basis, or if adjustments are not deemed necessary to improve panel performance, deployed on the remainder of the site and maintained for the life of the project or until determined infeasible (based on the definition of “feasible” in California Environmental Quality Act (CEQA) Guidelines Section 15364) or ineffective by the project owner in consultation with CDFW and the County.
- Panels shall include, if feasible, a light-colored, ultraviolet (UV)-reflective, or otherwise nonpolarizing outline, frame, grid, or border, which has been shown to substantially reduce panel attractiveness to aquatic insects, which in turn would reduce the attractiveness of the panels to birds that feed on the aquatic insects (Horvath et al. 2010) in order to reduce avian mortality by avoiding collisions with panel faces (NFWFL 2014).

**Level of Significance After Mitigation**

Less Than Significant Impact with Mitigation Incorporated.

Riparian Habitat and Sensitive Natural Community

**Impact BIO-2 The proposed project would not have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service.**

**Impact Analysis**

Per Appendix D, there are no sensitive natural communities present at the project site and the surrounding area.

**Level of Significance Before Mitigation**

No Impact.



**Mitigation Measures**

No mitigation is necessary.

**Level of Significance After Mitigation**

No Impact.

## Federally Protected Wetlands

---

**Impact BIO-3**     **The proposed project would not have a substantial adverse effect on federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means.**

---

**Impact Analysis**

The reconnaissance-level wetland assessment determined that there are four potentially jurisdictional aquatic features present on the project site (Appendix D). Upon further review, the four potentially jurisdictional features do not appear to have connectivity to any natural water features and are direct results of the agricultural use of the project site and surrounding fields. Therefore, these features (and the recently excavated irrigation features) do not meet the qualifications for jurisdictional features.

Filling, dredging, or any other direct or indirect impact to sensitive natural communities would constitute a significant impact. If filling, dredging, or any other direct or indirect impact to these habitats is proposed to occur during project implementation, the Applicant may be required to seek regulatory approval under Section 1600 et seq. of the California Department of Fish and Game Code prior to construction.

The project has been designed to completely avoid the four areas (approximately 1.55 acres) on the eastern side of the site that may support potentially jurisdictional wetlands. Thus, no project-level impacts to state or federally protected waters of the United States, including wetlands, would occur from the implementation of the proposed project.

**Level of Significance Before Mitigation**

No Impact.

**Mitigation Measures**

No mitigation is necessary.

**Level of Significance After Mitigation**

No Impact.

## Wildlife Corridors and Nursery Sites

---

**Impact BIO-4**     **The proposed project would not interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors or impede the use of wildlife nursery sites.**

---

**Impact Analysis**

The project site consists entirely of disturbed areas. Accordingly, the project site is unlikely to contribute functionally to substantial wildlife movement locally. Additionally, the site has not been identified as a regional linkage area that would be anticipated to facilitate the dispersal of

plants and animals in significant numbers (USFWS 1998). However, it is located within the Pacific Flyway, a significant avian migration route. Thus, there is potential for the presence of migratory bird species at the project site. There is also a potential to affect migratory birds due to avian species mistaking the PV array as a water feature. This impact was discussed above, and with the implementation of Mitigation Measures BIO-1, BIO-2, and BIO-3, impacts would be reduced to a less than significant level.

As previously discussed, any kit fox movement through the site is considered extremely unlikely as this nocturnal animal would have no cover or forage. Similarly, for kangaroo rats, there is no habitat of any kind onsite that would support this species, and all areas adjacent to the project site are tilled and cultivated, with the exception of existing solar facilities (see Figure 2 of Appendix D). Additionally, short-nosed kangaroo rat has not been locally identified east of I-5 (see Figure 3 in Appendix D), and it is not considered likely that this species would ever be present on the project site as a transient species.

The proposed project includes habitat-friendly fencing around the project site that would be raised at regular intervals to allow small mammals to move freely in and out of the project site. Because the design of the proposed project would allow for movement through the project site, the proposed project would not be expected to interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites. Therefore, potential impacts to wildlife corridors and nursery sites are considered less than significant.

Project lighting could disorient the navigational abilities of other nocturnal wildlife species, such as bats and owls, or species that disperse at night. The proposed project would have low-level lighting at the entry and egress gates around the facility. All project lighting would be shielded and directed downward to minimize the potential for glare or spillover onto adjacent properties in accordance with Mitigation Measure AES-1. Additionally, lighting will be manually controlled for operation and maintenance activities, with all project lighting to be used only as determined by the motion sensors, security requirements, prudent utility practices, and as necessary for operation and maintenance activities. The project design would therefore minimize the effects of lighting on wildlife. Additionally, Mitigation Measure BIO-5 would be implemented to ensure that project lighting would have a less than significant impact on wildlife.

#### **Level of Significance Before Mitigation**

Potentially Significant Impact.

#### **Mitigation Measures**

##### **MM BIO-5: Reduce Impacts to Nocturnal Wildlife from Lighting.**

- No lighting shall be placed near or oriented towards any transmission lines running through the project site to avoid affecting wildlife that may use this area for nighttime movement.
- Narrow spectrum bulbs shall be used to limit the range of species affected by project lighting.

#### **Level of Significance After Mitigation**

Less Than Significant Impact with Mitigation Incorporated.

---

**Local Policies or Ordinances Protecting Biological Resources**

---

**Impact BIO-5**     **The proposed project would not conflict with local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.**

---

**Impact Analysis**

The County has policies and ordinances protecting biological resources, as described in Section 4.10, Land Use and Planning. As discussed in the section, the implementation of the proposed project would not conflict with local policies and ordinances designed to ensure protection of biological resources in the Fresno County General Plan (County 2000b).

**Level of Significance Before Mitigation**

No Impact.

**Mitigation Measures**

No mitigation is necessary.

**Level of Significance After Mitigation**

No Impact.

---

**Habitat Conservation Plans and Natural Community Plans**

---

**Impact BIO-6**     **The proposed project would not conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plans.**

---

**Impact Analysis**

The proposed project would not be constructed within the boundaries of any adopted Habitat Conservation Plan (HCP) or Natural Community Conservation Plan (NCCP) prepared by the County. Aera Energy LLC has prepared the Southwest San Joaquin Valley HCP & NCCP to address its ongoing operations and maintenance activities in Kern, Kings, and Fresno counties. The Southwest San Joaquin Valley HCP & NCCP serves as a basis for Aera's applications for incidental take permits from the USFWS and CDFW for threatened and endangered species. The plan area encompasses Aera's active oil fields, areas where Aera's future development may occur, and lands that will be conserved for species covered by the plan. The proposed project is not located within Aera's active or future areas for oil field development and would not impact the implementation of the plan.

**Level of Significance Before Mitigation**

No Impact.

**Mitigation Measures**

No mitigation is necessary.

**Level of Significance After Mitigation**

No Impact.

#### 4.4.4 Cumulative Impacts

Cumulative impacts to biological resources could occur as the result of multiple related projects impacting nesting and migratory birds, bats, and wildlife corridors within a 5-mile radius. The proposed project would have less than significant impacts with mitigation to nesting and migratory birds, bats, and wildlife corridors. The proposed project would have no impact to special-status plants, sensitive natural communities, federally protected wetlands, local policies or ordinances protecting biological resources, or the provisions of an adopted HCP or NCCP and, therefore, would not contribute to a cumulative impact.

It is possible that the proposed project's PV panels could attract birds and bats to the project site and thereby expose them to significant collision-related risks, which when combined with other existing solar projects may contribute to a cumulative impact. Nesting birds are not anticipated to occur on site; however, project-related impacts on nesting birds unrelated to collision would also be a significant impact. Potential impacts to protected birds and raptors and bats would be reduced to a less than significant level with Mitigation Measures BIO-1, BIO-2, BIO-3, and BIO-4. The Westlands Solar Park project would also have less than significant impacts to nesting birds and raptors; however, the project proponents would implement avoidance measures for raptor and migratory bird nests, including pre-construction surveys for active nests, and exclusions zones.

The Westlands Solar Park project and the SR 269 Bridge project would have impacts to special status species and their habitat, and potentially the same wildlife corridors. However, the Westlands Solar Park project and the SR 269 Bridge project would be subject to similar permitting requirements as the proposed project, and would mitigate and implement measures addressing impacts on sensitive species and critical habitats, such as conducting nesting surveys and biological monitoring. Such measures include avoidance measures as well as disturbance measures to reduce potential impacts. The cumulative biological impacts would be less than significant after the proposed project and related projects implement mitigation, and the contribution from the proposed project would not be cumulatively considerable.

**This page left intentionally blank.**

## 4.5 CULTURAL RESOURCES

This section describes impacts on cultural resources that would result from implementation of the Fifth Standard Solar Facility Project Complex (proposed project). Included is a summary of applicable policies and regulations related to cultural resources and a review of existing conditions. This section also describes impacts on cultural resources that would result from implementation of the proposed project based on the Cultural Resources Survey Report prepared by Environmental Science Associates, Inc. (ESA) in June 2017. The Cultural Resources Survey Report identifies the locations of cultural resources in the vicinity of the Fifth Standard Solar project site in the County. Disclosure of this information to the public may be in violation of both federal and state laws; therefore, the report will be kept confidential. Individuals meeting the U.S. Secretary of the Interior's professional standards or the California State Personnel Board criteria for Associate State Archaeologist or State Historian II may request to review the report from the County.

### 4.5.1 Regulatory Setting

#### Federal

National Historic Preservation Act

The National Historic Preservation Act, as amended, established the National Register of Historic Places (NRHP), which contains an inventory of the nation's significant prehistoric and historic properties. Under 36 Code of Federal Regulations (CFR) 60, a property is recommended for possible inclusion on the NRHP if it is at least 50 years old, has integrity, and meets one of the following criteria:

- It is associated with significant events in history or broad patterns of events;
- It is associated with significant people in the past;
- It embodies the distinctive characteristics of an architectural type, period, or method of construction; or it is the work of a master or possesses high artistic value; or it represents a significant and distinguishable entity whose components may lack individual distinction; or
- It has yielded, or may yield, information important in history or prehistory.

Certain types of properties usually are excluded from consideration for listing on the NRHP, but they can be considered if they meet special requirements in addition to meeting the criteria listed above. Such properties include religious sites, relocated properties, graves and cemeteries, reconstructed properties, commemorative properties, and properties that have achieved significance within the past 50 years.

#### State

California Health and Safety Code and Public Resources Code

California's Health and Safety Code and Public Resources Code (PRC) include broad provisions for the protection of Native American cultural resources:



*Native American Historic Resource Protection Act*

Section 5097-5097.993 established the Native American Historic Resource Protection Act. The regulations govern archaeological finds of human remains and associated objects. Procedures are detailed under PRC Section 5097.98 through 5097.996 for actions to be taken whenever Native American remains are discovered.

*California Health and Safety Code*

Section 7050.5 of the California Health and Safety Code states that any person who knowingly mutilates or disinters, wantonly disturbs, or willfully removes human remains in or from any location other than a dedicated cemetery without authority of law is guilty of a misdemeanor, except as provided in Section 5097.99 of the PRC. Any person removing human remains without authority of law or written permission of the person or persons having the right to control the remains under PRC Section 7100 has committed a public offense that is punishable by imprisonment. PRC Chapter 1.7, Section 5097.5/5097.9 (Stats. 1965, c. 1136, p. 2792), Archaeological and Historical Sites, defines any unauthorized disturbance or removal of remains on public land as a misdemeanor.

*California Native American Graves Protection and Repatriation Act*

Sections 8010 through 8030 establish the California Native American Graves Protection and Repatriation Act of 2001 and states the legislative intent to do the following:

- (a) Provide a seamless and consistent state policy to ensure that all California Native American human remains and cultural items be treated with dignity and respect.
- (b) Apply the state's repatriation policy consistently with the provisions of the Native American Graves Protection and Repatriation Act (25 U.S. Code [USC] Sec. 3001 et seq.), which was enacted in 1990.
- (c) Facilitate the implementation of the provisions of the federal Native American Graves Protection and Repatriation Act with respect to publicly funded agencies and museums in California.
- (d) Encourage voluntary disclosure and return of remains and cultural items by an agency or museum.
- (e) Provide a mechanism whereby lineal descendants and culturally affiliated California Native American tribes that file repatriation claims for human remains and cultural items under the Native American Graves Protection and Repatriation Act (25 USC Sec. 3001 et seq.) or under this chapter with California state agencies and museums may request assistance from the commission in ensuring that state agencies and museums are responding to those claims in a timely manner and in facilitating the resolution of disputes regarding those claims.
- (f) Provide a mechanism whereby California tribes that are not federally recognized may file claims with agencies and museums for repatriation of human remains and cultural items.

## California Environmental Quality Act

The California Environmental Quality Act (CEQA) requires public agencies to consider the effects of their actions on both “historical resources” and “unique archaeological resources.” Pursuant to California PRC Section 21084.1, a “project that may cause a substantial adverse change in the significance of a historical resource is a project that may have a significant effect on the environment.” Section 21083.2 requires agencies to determine whether proposed projects would have effects on unique archaeological resources.

### *Historical Resources*

Historical resources are considered part of the environment and are subject to review under CEQA. Historical resources are defined by CEQA Guidelines (California Code of Regulations [CCR] Title 14, Chapter 3, 15064.5) as follows:

- A resource listed in, or determined to be eligible by the State Historical Resources Commission, for listing in the California Register of Historical Resources (CRHR) (PRC 5024.1, Title 14 CCR, Section 4850 et seq.).
- A resource included in a local register of historical resources, as defined in section 5020.1(k) of the PRC or identified as significant in an historical resource survey meeting the requirements section 5024.1(g) of the PRC, shall be presumed to be historically or culturally significant. Public agencies must treat any such resource as significant unless the preponderance of evidence demonstrates that it is not historically or culturally significant.
- Any object, building, structure, site, area, place, record, or manuscript that a lead agency determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California may be considered to be an historical resource, provided the lead agency's determination is supported by substantial evidence in light of the whole record. Generally, a resource shall be considered by the lead agency to be historically significant if the resource meets the criteria for listing on the CRHR.

### *Unique Archeological Resources*

CEQA also requires lead agencies to consider whether projects will impact unique archaeological resources. PRC Section 21083.2(g), states that unique archaeological resource means an archaeological artifact, object, or site about which it can be clearly demonstrated that, without merely adding to the current body of knowledge, there is a high probability that it meets any of the following criteria:

- Contains information needed to answer important scientific research questions and that there is a demonstrable public interest in that information.
- Has a special and particular quality such as being the oldest of its type or the best available example of its type.
- Is directly associated with a scientifically recognized important prehistoric or historic event or person (PRC Section 21083.2).

### California Register of Historic Resources

California PRC Section 5024.1(a) establishes the CRHR. PRC Section 5024.1(c-f) provides criteria for CRHR eligibility listing. These criteria are used by CEQA in defining a historic resource. Resources eligible for listing under the CRHR are those that meet at least one of the following criteria:

1. Are associated with events that have made a significant contribution to the broad patterns of local or regional history and cultural heritage of California or the United States.
2. Are associated with the lives of persons important to the nation or to California's past.
3. Embody the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values.
4. Have yielded, or may be likely to yield, information important in prehistory or history of the state or nation.

These criteria do not preclude a lead agency from determining that a resource may be a historical resource as defined in PRC Sections 5020.1(j) and 5024.1.

### Native American Heritage Commission

PRC Section 5097.91 established the Native American Heritage Commission (NAHC), the duties of which include inventorying places of religious or social significance to Native Americans and identifying known graves and cemeteries of Native Americans on private lands. PRC Section 5097.98 specifies a protocol to be followed when the NAHC receives notification of a discovery of Native American human remains from a county coroner.

## Local

### Fresno County General Plan

The following lists goals and policies from the Fresno County 2000 General Plan (County 2000b) pertaining to cultural resources that are applicable to the proposed project.

#### *Open Space and Conservation Element*

**Goal OS-J:** To identify, protect, and enhance Fresno County's important historical, archeological, paleontological, geological, and cultural sites and their contributing environment.

**Policy OS-J.1:** The County shall require that discretionary development projects, as part of any required CEQA review, identify and protect important historical, archeological, paleontological, and cultural sites and their contributing environment from damage, destruction, and abuse to the maximum extent feasible. Project-level mitigation shall include accurate site surveys, consideration of project alternatives to preserve archeological and historic resources, and provision for resource recovery and preservation when displacement is unavoidable.

**Policy OS-J.2:** The County shall, within the limits of its authority and responsibility, maintain confidentiality regarding the locations of archeological sites in order to preserve and protect these resources from vandalism and the unauthorized removal of artifacts.

**Policy OS-J.9:** In approving new development, the County shall ensure to the maximum extent practicable, that the location, siting, and design of any project be subordinate to significant geologic resources.

#### 4.5.2 Environmental Setting

The following discussion is modified from the Cultural Resources Survey Report prepared for the proposed project in 2017 by ESA, unless otherwise referenced. Given the potential sensitive information regarding cultural resource locations and past surveys, the Cultural Resources Survey Report shall remain confidential and will not be circulated with the Environmental Impact Report (EIR).

##### Project Setting

The proposed project is within the Great Valley geomorphic province of California. The Great Valley is a vast alluvial plain approximately 50 miles wide and 500 miles long in the central portion of California, stretching from the Cascade Range in the north to the Tehachapi Mountains in the south. Topography at the project site is level, with a gentle slope from west to east and an elevation of 375 to 400 feet above mean sea level. The project site was historically used for grazing and crop agriculture. Historical maps and aerial imagery indicate that there have never been buildings or permanent structures on the project site.

Soils within the project site are of the Westhaven series, which are very deep, well-drained soils that formed in stratified mixed alluvium weathered from sedimentary or igneous rocks, characterized by layers of silt loam or silty clay (NRCS 2017b). These sediments were deposited in the Late Holocene era and are generally considered to have a high potential to contain buried soil surfaces (paleosols) (Meyer and Rosenthal 2007, Applied Earthworks 2016). However, the project site is not in the vicinity of a perennial water source. The nearest historical waterways are Los Gatos Creek, over 2 miles to the northwest, and Chino Creek, approximately 3 miles to the west (the confluence of these creeks is the possible location of the ethnographic village of Golon; see Ethnographic Setting below). Therefore, the potential for buried archaeological deposits associated with paleosols is considered moderate. This analysis is consistent with Applied Earthworks' geoarchaeological analysis for the Central Valley Power Connect Project, which included a small portion of the current project site (Applied Earthworks 2016).

##### Prehistoric Setting

Archaeologists have developed individual cultural chronological sequences tailored to the archaeology and material culture of each subregion of California. Each of these sequences is based principally on the presence of distinctive cultural traits and stratigraphic separation of deposits. Fredrickson (1974) initially divided human history in central California into three periods: the Paleoindian period, the Archaic period, and the Emergent period. This scheme used sociopolitical complexity, trade networks, population, and the introduction and variations of artifact types to differentiate between cultural units. New radiocarbon dates are used by Rosenthal et al. (2007), who have divided human history in central California into the five periods described below.

- Paleoindian Period (11,550 to 8,550 BC). This period is represented in the Central Valley region by only three locations in the San Joaquin Valley where early concave base points have been found at scattered surface sites.
- Lower Archaic Period (8,550 to 5,550 BC). One Lower Archaic archaeological site has been identified in the Central Valley, which includes a small group of stone artifact groupings in close association with each other and a small amount of animal remains that include fish, waterfowl, mussels, and a few fragments of deer and/or elk bone. Despite the lack of abundant large mammal remains from the site, the size of the projectile points<sup>1</sup> has led to the interpretation that hunting big game was predominant during the Lower Archaic.
- Middle Archaic Period (5,550 to 550 BC). Many sites from the Middle Archaic have been located in a buried context, especially in the foothills of central California. Deposits associated with early-Middle Archaic sites include artifact in groupings with close association of flaked and ground stone tools used for resource procurement and processing; few beads or ornaments have been found.
- Upper Archaic Period (550 BC to AD 1,100). The first rich black midden soils (deposits containing shells, animal bones, and other refuse that indicate longer-term human settlement) are recorded from this period.
- Emergent Period (AD 1,100 to the historic era). Development of large, central villages with resident political leaders and specialized activity sites started to form. Artifacts associated with this period include the bow and arrow, small corner-notched projectile points, and a diversity of beads and ornaments.

### **Ethnographic Setting**

Two large Southern Valley Yokuts villages, Golon and Poso de Chane, were located west of present-day Huron (approximately 3 and 5 miles west of the project site, respectively). Golon appears to have been near the confluence of Los Gatos and Chino creeks, where a small valley extends through the Gujarral Hills. Poso de Chane was centered on a large watering pool (poso); in its natural state, the deep pool supported a large swamp that attracted wildlife. Later, the area became home to a small Spanish/Mexican agricultural community, which became the town of Coalinga (Hoover et al. 2002, Tulare Basin Wildlife Partners 2009).

### **Historic Setting**

Most recently, the project site has been used to grow and process tomatoes, garlic, onions, and wheat (ESA 2018a). One of the earliest Spanish trails, known as El Camino Viejo (The Old Road), ran north-south through the San Joaquin Valley, extending from San Pedro to San Antonio (present-day East Oakland). The trail followed the path of a prehistoric trail and skirted the eastern slope of the Coast Ranges foothills (about 4 miles east of the project site). The trail, called "The Old Trace" by American settlers, became a stagecoach and mail route and also an important route for cattle ranchers. In the valley, the route largely corresponds to I-5.

---

<sup>1</sup> A projectile point is an object that was hafted to create a weapon or tool, such as a spear, dart, or arrow.

### 4.5.3 Environmental Impacts

This section analyzes the proposed project's potential to result in significant impacts to cultural resources. When an impact is determined to be significant, Mitigation Measures were identified to reduce or avoid that impact.

#### Methodology

The following impact analysis is based on the Cultural Resources Survey Report prepared for the proposed project by ESA in June 2017. The results of the cultural resources survey are described in the following paragraphs.

#### Cultural Resources Records Search and Archival Research

ESA requested a search within a one-half mile radius of the project site from the Southern San Joaquin Valley Information Center (SSJVIC) on January 23, 2017 (File No. 17-031). The records search included a review of the California Resources Information System, which includes records of previous surveys, studies, and cultural resource sites. Additionally, ESA reviewed records in the Historic Property Data File for Fresno County, which contains information and locations of resources of recognized historical significance, including those evaluated for listing in the NRHP, the CRHR, the California Inventory of Historic Resources, California Historic Landmarks, and California Points of Historical Interest. The purpose of the records search was to: (1) determine whether known cultural resources have been recorded within or adjacent to the project site; (2) assess the likelihood for unrecorded cultural resources to be present based on historical references and the distribution of nearby sites; and (3) develop a context for the identification and evaluation of cultural resources.

The results of the records search indicate that four cultural resource studies have been previously completed within one-half mile radius of the project site, and three cultural resources have been previously recorded within one-half mile of the project site. As shown in Table 4.5-1, the previously recorded resources include two historic-era transmission lines and a historic-era artifact concentration. No prehistoric archaeological resources have been recorded in the search radius.

The Gates-Gregg 230-kilovolt (kV) transmission line, designated as P-10-006640, is within the southern portion of the project site; however, none of the proposed project components would be installed within the transmission line right-of-way. The transmission line has been recommended as not historically significant under the CRHR and NRHP criteria and is not considered eligible for inclusion in the CRHR or NRHP (Applied EarthWorks 2016). As such, the resource is not considered a historical resource for the purposes of CEQA, and no further consideration of the resource is necessary for the proposed project.



**Table 4.5-1: Cultural Resources in or Within One-Half Mile of the Project Site**

Trinomial	Primary No.	Site type	Recorded by/Year	Within Project Site?
CA-FRE-3654H	P-10-006235	Historic-era refuse concentration including glass and ceramic fragments and saw-cut faunal remains	Far Western/ 2010	Outside project site
CA-FRE-3769H	P-10-006610	Late 1940s transmission line	Applied EarthWorks/ 2015	Outside project site
CA-FRE-3776H	P-10-006640	Late 1950s transmission line	Applied EarthWorks/ 2016	Within the project site boundaries; outside of the area of direct impact

Source: SSJVIC 2017, as cited by ESA 2017b

#### Cultural Resources Field Survey

ESA conducted a pedestrian archaeological survey of the project site from February 6, 2017, to February 9, 2017. During the field survey, isolated fragments of non-decorated whiteware and milk glass were observed and not collected. Several non-archaeological shell fragments were observed. The only archaeological material identified during the pedestrian survey consisted of several fragments of historic-era ceramic. However, the fragments all represent isolate archaeological artifacts and do not constitute an archaeological site, nor do they constitute a historical resource or unique archaeological resource for CEQA purposes. Additionally, no architectural resources were identified during the survey.

#### Native American Outreach

In a letter response on January 26, 2017, the NAHC did not identify any sacred sites at the project site and recommended contacting the tribes on the list provided for more information on potential sites and tribal cultural resources within the vicinity. The County completed required Assembly Bill (AB) 52 Native American consultations and received no comments from local Native American representatives pertaining to identification, documentation, and mitigation of potential impacts to tribal cultural resources. Additional information is provided in Section 4.15, Tribal Cultural Resources.

#### Thresholds of Significance

In accordance with the CEQA Guidelines' Appendix G Environmental Checklist, the following questions were analyzed and evaluated to determine whether impacts to cultural resources are significant.

Would the proposed project:

- Cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5?

- Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?
- Disturb any human remains, including those interred outside of formal cemeteries?

### Project Impact Analysis and Mitigation Measures

This section discusses potential impacts to cultural resources associated with the proposed project and provides Mitigation Measures where necessary.

#### Historic Resource

---

**Impact CUL-1    The proposed project would not cause a substantial adverse change in the significance of a historical resource pursuant to Section 15064.5.**

---

#### Impact Analysis

One cultural resource (Gates-Gregg 230 kV transmission line/P-10-006640) is located on the project site, but it is outside the area of direct impact. The cultural resource has been recommended as not historically significant under the CRHR and NRHP criteria and is not considered eligible for inclusion in the CRHR or NRHP. Therefore, the resource requires no further consideration.

Despite the low potential for a historical resource to be present at the project site, the inadvertent discovery of a historical resource cannot be entirely discounted. Therefore, Mitigation Measure CUL-1, which involves retaining a qualified project archaeologist to coordinate cultural mitigation; and Mitigation CUL-2, a protocol for inadvertent discovery of a cultural resource, would be implemented for the proposed project. The implementation of Mitigation Measures CUL-1 and CUL-2 would reduce potentially significant impacts to a less than significant level.

#### Level of Significance Before Mitigation

Potentially Significant Impact.

#### Mitigation Measures

**MM CUL-1:    Retain a Qualified Archaeologist:** The Applicant/contractor shall retain a qualified archaeologist, defined as an archaeologist meeting the Secretary of the Interior's Standards for professional archaeology, to carry out all Mitigation Measures related to archaeological and historical resources prior to the issuance of demolition or grading permits. The Applicant shall ensure that the qualified archaeologist has conducted a Cultural Resources Awareness Training for all construction personnel working on the proposed project. The training shall include an overview of potential cultural resources that could be encountered during ground disturbing activities to facilitate worker recognition, avoidance, and subsequent immediate notification to the qualified archaeologist for further evaluation and action, as appropriate, and penalties for unauthorized artifact collecting or intentional disturbance of archaeological resources. The qualified archaeologist shall conduct construction worker archaeological resources sensitivity training prior to the start of ground-disturbing activities. In the event that construction is phased, additional trainings shall be conducted for all new

construction personnel. The training sessions shall focus on the recognition of the types of archaeological resources that could be encountered at the project site and the procedures to be followed if they are found. Documentation shall be retained demonstrating that all construction personnel attended the training.

**MM CUL-2: Inadvertent Discovery of Archaeological Resources or Tribal Cultural Resources:** If prehistoric or historic-era cultural resources are encountered during the course of grading or construction, all ground-disturbing activities within 50 feet of the find shall cease. The qualified archaeologist shall evaluate the significance of the resources and recommend appropriate treatment measures. Per California Environmental Quality Act (CEQA) Guidelines Section 15126.4(b)(3)(A), project redesign and preservation in place shall be the preferred means to avoid impacts to significant archaeological sites. Consistent with CEQA Guidelines Section 15126.4(b)(3)(C), if it is demonstrated that resources cannot be avoided, the qualified archaeologist shall develop additional treatment measures in consultation with Fresno County, which may include data recovery or other appropriate measures. Fresno County shall consult with appropriate Native American representatives in determining appropriate treatment for unearthed cultural resources if the resources are prehistoric or Native American in nature. Archaeological materials recovered during any investigation shall be curated at an accredited curational facility. The qualified archaeologist shall prepare a report documenting evaluation and/or additional treatment of the resource. A copy of the report shall be provided to Fresno County and to the Southern San Joaquin Valley Information Center. Construction can recommence based on direction of the qualified archaeologist.

### Level of Significance After Mitigation

Less Than Significant Impact with Mitigation Incorporated.

#### Archaeological Resource

---

**Impact CUL-2    The proposed project would not cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5.**

---

### Impact Analysis

One cultural resource (Gates-Gregg 230-kV transmission line/P-10-006640) is located at the project site but outside the area of direct impact. The cultural resource has been recommended as not historically significant under the CRHR and NRHP criteria and is not considered eligible for inclusion in the CRHR or NRHP. Therefore, the resource requires no further consideration.

Despite the low potential, the inadvertent discovery of an archaeological resource cannot be entirely discounted. Therefore, Mitigation Measures CUL-1 and CUL-2, would be implemented for the proposed project. The implementation of Mitigation Measures CUL-1 and CUL-2 would reduce potentially significant impacts to a less than significant level.

### Level of Significance Before Mitigation

Potentially Significant Impact.

### Mitigation Measures

Mitigation Measures CUL-1 and CUL-2 would be required.

### Level of Significance After Mitigation

Less Than Significant Impact with Mitigation Incorporated.

### Human Remains

---

**Impact CUL-3**    **The proposed project would not disturb any human remains, including those interred outside of formal cemeteries.**

---

### Impact Analysis

No human remains are known to be located at or near the project site. However, the possibility exists that unmarked burials may be unearthed during proposed project construction. This impact is considered potentially significant but would be reduced to a less than significant level by implementing Mitigation Measure CUL-3, which outlines procedures for an inadvertent discovery of human remains during proposed project construction.

### Level of Significance Before Mitigation

Potentially Significant Impact.

### Mitigation Measures

**MM CUL-3: Inadvertent Discovery of Unmarked Burials.** If human remains are uncovered during project construction, the project operator shall immediately halt work within 50 feet of the find, contact the Fresno County Coroner to evaluate the remains, and follow the procedures and protocols set forth in CEQA Guidelines Section 15064.4 (e)(1). If the County Coroner determines that the remains are Native American in origin, the Native American Heritage Commission (NAHC) will be notified, in accordance with Health and Safety Code Section 7050.5(c), and Public Resources Code (PRC) 5097.98 (as amended by Assembly Bill 2641). The NAHC shall designate a Most Likely Descendant (MLD) for the remains per PRC Section 5097.98, and the landowner shall ensure that the immediate vicinity, according to generally accepted cultural or archaeological standards or practices, where the Native American human remains are located is not damaged or disturbed by further development activity until the landowner has discussed and conferred, as prescribed in PRC Section 5097.98 with the MLD regarding their recommendations for the disposition of the remains, taking into account the possibility of multiple human remains.

### Level of Significance After Mitigation

Less Than Significant Impact with Mitigation Incorporated.

## 4.5.4 Cumulative Impacts

The geographic scope of the cumulative impact analysis for cultural resources is the project site and a 0.5-mile buffer. No identified cultural resources would be impacted by the proposed project; therefore, this analysis of cumulative impacts on cultural resources is limited to construction impacts on previously unidentified cultural resources that could occur as a result of the proposed project. Cumulative impacts could occur to cultural resources if and where the

same unidentified resources were also affected by other related projects. The Westlands Solar Park project includes construction of the gen-tie line at the Gates Substation, which would fall within the 0.5-mile buffer.

The proposed project could disturb unknown subsurface human remains or historic or archaeological resources through excavation and ground disturbance during construction. The Westlands Solar Park project could take place in the immediate vicinity as the proposed project, and there is some potential that the proposed project and the Westlands Solar Park project could affect similar unknown resources or result in cumulatively significant impacts on unknown resources. However, like the proposed project, potential impacts on unknown cultural resources associated with the Westlands Solar Park in the immediate vicinity would be appropriately mitigated by construction monitoring and other measures, including pre-construction worker training and implementation of procedures for inadvertent discoveries as detailed in MM CUL-1 and MM CUL-2 from the Westlands Solar Park EIR. Additionally, MM CUL-3 from the Westlands Solar Park EIR includes measures to protect tribal cultural resources. Therefore, with the implementation of mitigation, the total impact of related projects on unknown cultural resources within the area of cumulative analysis would be less than significant, and the contribution from the proposed project would not be cumulatively considerable.

## 4.6 GEOLOGY AND SOILS

This section describes the environmental and regulatory setting for geology and soil resources. Included is a review of existing conditions, a summary of applicable policies and regulations related to geology and soil resources, and an analysis of the environmental impacts of the Fifth Standard Solar Facility Project Complex (proposed project). Where applicable, Mitigation Measures are included for significant impacts. The County received no scoping comments pertaining to geology and soil resources (Appendix A).

### 4.6.1 Regulatory Setting

#### Federal

##### Clean Water Act

The Clean Water Act (CWA) (33 U.S. Code [USC] 1344) primarily regulates waters of the United States. Further description of the CWA, including its application to biological and hydrological resources, is described in Section 4.4, Biological Resources, and Section 4.9, Hydrology and Water Quality. However, the CWA focuses on sediment control in two aspects. First, the United States Army Corps of Engineers (USACE) administers Section 404, which regulates the discharge of fill into waters of the United States. Secondly, the CWA applies to stormwater discharges, where erosion control is an integral part of achieving permit compliance.

##### Institute of Electrical and Electronics Engineers–Recommended Practices for Seismic Design of Substations

The Institute of Electrical and Electronics Engineers (IEEE) 693 *Recommended Practices for Seismic Design of Substations* was developed by the Substations Committee of the IEEE Power Engineering Society and approved by the American National Standards Institute and the IEEE Standards Association Board (IEEE 2006). This document provides seismic design recommendations for substations and equipment consisting of seismic criteria, qualification methods and levels, structural capacities, performance requirements for equipment operation, installation methods, and documentation. IEEE 693 is intended to establish standard methods of providing and validating the capability of electrical substation equipment to withstand seismic events. It provides detailed test and analysis methods for each type of major equipment or components found in electrical substations. This recommended practice is intended to assist the substation user or operator in providing substation equipment that would have a high probability of withstanding seismic events to predefined ground acceleration levels. It establishes standard methods of verifying seismic withstand capability, which gives the substation designer the ability to select equipment from various manufacturers, knowing that the seismic withstand rating of each manufacturer's equipment is an equivalent measure. Although most damaging seismic activity occurs in limited areas, many additional areas could experience an earthquake with forces capable of causing great damage. This recommended practice should be used in all areas that may experience earthquakes (IEEE 2006).



## State

### Seismic Hazards Mapping Act

The Seismic Hazards Mapping Act was developed to protect the public from the effects of strong ground shaking, liquefaction, landslides, or other ground failure, and from other hazards caused by earthquakes. This act requires the State Geologist to delineate “zones of required investigation” (i.e., seismic hazard zones) where site investigations are required to determine the need for mitigation of potential liquefaction, earthquake-induced landslides, or ground displacements. The project site is not within a seismic hazard zone, and no seismic hazard maps have been created under this act for the project site.

### California Public Utilities Commission General Order 128

California Public Utilities Commission (CPUC) General Order 128 contains uniform requirements for underground electrical supply and communication systems to ensure adequate service and secure safety to persons engaged in the construction, maintenance, operation, or use of underground systems and to the general public. General Order 128 is not intended as complete construction specifications; rather, it is intended to embody requirements that are most important from the standpoint of safety and service. Construction shall be performed according to accepted good practices for the given local conditions in all particulars not specified in the rules.

General Order 128 applies to all underground electrical supply systems used in connection with public utility services; when located in buildings, vaults, conduits, pull boxes or other enclosures for such systems, and shall meet the requirements of any statutes, regulations or local ordinances applicable to such enclosures in buildings and all underground communication systems used in connection with public utility services located outside of buildings. General Order 128 applies to the following activities related to underground electrical supply and communication systems: construction and reconstruction of lines, maintenance, systems constructed prior to these rules, reconstruction or alteration, and third-party nonconformance (CPUC 2006).

### National Pollutant Discharge Elimination System (NPDES) Construction General Permit

For the proposed project, the State Water Resources Control Board (State Water Board) has jurisdiction under Statewide General Construction Stormwater Discharge Permit (Order No. 2009-0009-DWQ as amended by 2010-0014-DWQ), which was adopted by the State Water Board on September 2, 2009. The permit applies to construction projects that disturb more than 1 acre or have the potential to impair water quality. The permit is required regardless of the time of year that construction occurs. This permit requires a Notice of Intent (NOI) to be submitted, a Stormwater Pollution Prevention Plan (SWPPP) to be developed and implemented, and monitoring to be conducted. The SWPPP must contain Best Management Practices (BMPs), other measures to prevent pollution, and a construction timeline.

## Local

### Fresno County General Plan

The following lists goals and policies from the Fresno County 2000 General Plan pertaining to geology and soils that are applicable to the proposed project.

**Policy HS-D.3:** The County shall require that a soils engineering and geologic-seismic analysis be prepared by a California-registered engineer or engineering geologist prior to permitting development, including public infrastructure projects in areas prone to geologic or seismic hazards (i.e., fault rupture, ground shaking, lateral spreading, lurch cracking, fault creep, liquefaction, subsidence, settlement, landslides, mudslides, unstable slopes, or avalanche).

**Policy HS-D.4:** The County shall require all proposed structures, additions to structures, utilities, or public facilities situated within areas subject to geologic-seismic hazards as identified in the soils engineering and geologic-seismic analysis to be sited, designed, and constructed in accordance with applicable provisions of the Uniform Building Code (Title 24 of the California Code of Regulations [CCR]) and other relevant professional standards to minimize or prevent damage or loss and to minimize the risk to public safety.

**Policy HS-D.7:** The County shall ensure compliance with state seismic and building standards in the evaluation, design, and siting of critical facilities, including police and fire stations, school facilities, hospitals, hazardous material manufacture and storage facilities, bridges, large public assembly halls, and other structures subject to special seismic safety design requirements.

**Policy HS-D.8:** The County shall require a soils report by a California-registered engineer or engineering geologist for any proposed development, including public infrastructure projects, that requires a County permit and is located in an area containing soils with high “expansive” or “shrink-swell” properties. Development in such areas shall be prohibited unless suitable design and construction measures are incorporated to reduce the potential risks associated with these conditions.

**Policy HS-D.9:** The County shall seek to minimize soil erosion by maintaining compatible land uses, suitable building designs, and appropriate construction techniques. Contour grading, where feasible, and revegetation shall be required to mitigate the appearance of engineered slopes and to control erosion.

**Goal OS-J:** To identify, protect, and enhance Fresno County’s important historical, archeological, paleontological, geological, and cultural sites and their contributing environment.

**Policy OS-J.1:** The County shall require that discretionary development projects, as part of any required CEQA review, identify and protect important historical, archeological, paleontological, and cultural sites and their contributing environment from damage, destruction, and abuse to the maximum extent feasible. Project-level mitigation shall include accurate site surveys, consideration of project alternatives to preserve archeological and historic resources, and provision for resource recovery and preservation when displacement is unavoidable.

### Fresno County Grading Ordinance (Section 7002)

The Fresno County Grading Ordinance stipulates safety and environmental control measures for construction practices. The ordinance sets forth rules and regulations to control excavation, grading, and earthwork construction, including fills and embankments. The ordinance also establishes the administrative procedure for issuance of permits and provides for approval of plans and inspection of grading construction. All grading activities are required to be permitted by the County's building official except for those indicated in the ordinance. The ordinance also sets forth other requirements that must be met before any permit is issued. The County requires erosion control measures and inspections to be made by the building official.

### Fresno County Solar Facility Guidelines

The County has prepared solar development guidelines (County 2017a) that contain the following requirement relevant to geology and soils:

- Identify (with supporting data) the current soil type and mapping units of the parcel pursuant to the standards of the California State Department of Conservation and the Natural Resources Conservation Service.

## 4.6.2 Environmental Setting

### Regional and Site Geology

The project site is within the southern portion of the Great Valley geomorphic province, east of the Coast Ranges. The Great Valley is an alluvial plain approximately 50 miles wide and 400 miles long. It is bounded to the east by the Sierra Nevada Range and to the west by the Coast Ranges. The Great Valley rises from about sea level to approximately 400 feet in elevation at its northern and southern ends. The northern portion of the valley referred to as the Sacramento Valley is drained by the Sacramento River, while the southern portion of the valley referred to as the San Joaquin Valley is drained by the San Joaquin River. The two rivers converge in the Central Valley and drain into San Francisco Bay and the Pacific Ocean via the San Joaquin Delta (CGS 2002).

The project site is located on the western side of the central San Joaquin Basin on quaternary alluvial sediments of Holocene age (County 2000b). Soils at the project site include very deep, well-drained soils that derived dominantly from calcareous sedimentary rock (NRCS 2017b). The topography of the project site is generally flat with an elevation range of approximately 375 feet above mean sea level (amsl) to approximately 400 feet amsl.

### Surface Soils

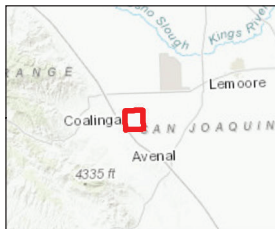
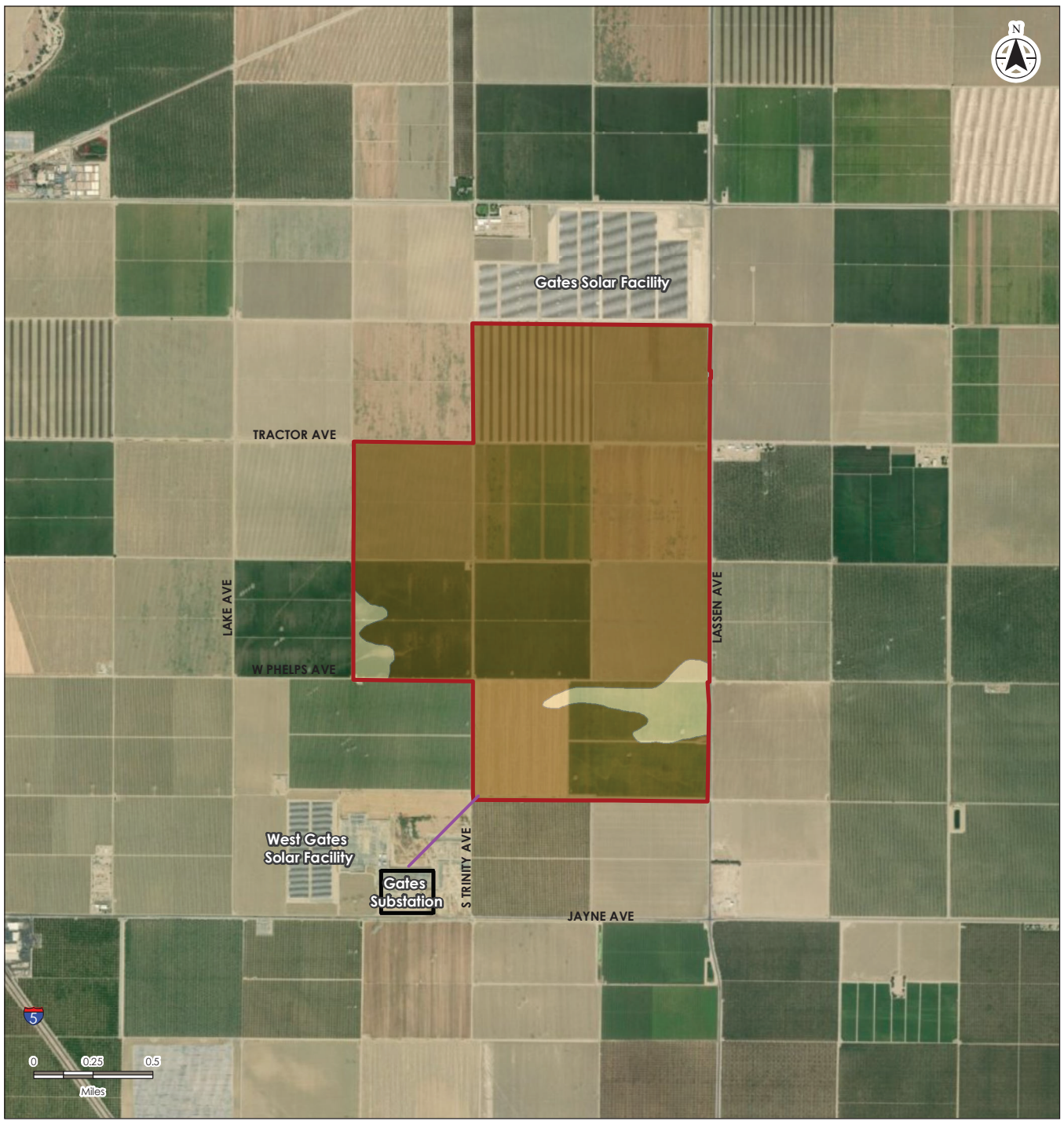
The Holocene alluvium described above is the parent material of soils on the project site. The description of soils is based on a review of soil surveys prepared by the U.S. Department of Agriculture, Natural Resources Conservation Service (NRCS), and identifies the NRCS soil map units at the project site in accordance with the Fresno County Solar Guidelines (County 2017a).

The NRCS identifies two soil complexes at the project site: Excelsior sandy loam (6.2%) and Westhaven loam (93.8%) (Figure 4.6-1). Loam soils typically have a roughly equal mixture of

sand, silt, and clay; thus the majority of the site consists of silt, sand, and clay with a slightly higher sand content due to presence of the Excelsior soils (Figure 4.6-1).

Clay is known as an expansive soil. Expansive soils have a high shrink-swell potential and volumetrically shrink or swell in response to the removal or addition of water, respectively. Certain clays can accommodate additional water molecules in their mineralogical structure, and the presence of these clays in a soil generally determines how much the soil would expand with the addition of water. This expansion and contraction of expansive soils in response to changes in moisture content can cause movements that result in damage and/or distress to structures and equipment with shallow foundations. Effects of expansive soils are seen near the ground surface where changes in moisture content typically occur. Often grading, site preparations, and backfill operations associated with subsurface structures can eliminate the potential for expansion. The silt and sand on the site have a low potential for shrink-swell; however, combined with the clay properties there is a low to moderate potential for shrink-swell of the site soils.





**Legend**






-  Proposed Gen-tie 230 kV Line
-  Project Site
-  Gates Substation
- Soil Type**
-  Excelsior sandy loam, sandy substratum, 0 to 2 percent slopes (447)
-  Westhaven loam, 0 to 2 percent slopes (474)



Figure No.  
4.6-1  
Title  
Soils Map  
Project  
Fifth Standard Solar Project Complex

Data Source: NRCS, 2017; Stantec, 2018  
Coordinate System: NAD 1983  
StatePlane California IV FIPS 0403 Feet  
See complete reference in EIR.

Disclaimer: Stantec assumes no responsibility for data supplied in electronic format. The recipient accepts full responsibility for verifying the accuracy and completeness of the data. The recipient releases Stantec, its officers, employees, consultants and agents, from any and all claims arising in any way from the content or provision of the data.

## Geologic Hazards

This section discusses the hazards and adverse conditions that are associated with the geological setting of the site. The project site is located in a moderately active geologic area of California within the Great Valley geomorphic province.

### Faulting and Seismicity

The project site lies on the North American tectonic plate, approximately 35 miles east of the San Andreas Fault zone, which marks the boundary between the North American and Pacific plates. Many of the large historic earthquakes in California occurred within approximately 30 miles of the San Andreas Fault Zone (Bryant and Hart 2007). Seismically induced faulting or ground rupture is defined as the physical displacement of surface deposits in response to an earthquake's seismic waves. The magnitude and nature of fault rupture can vary for different faults or even along different strands of the same fault. Ground rupture is considered most likely along active faults. The project site is not crossed by any known active faults or within a designated Alquist-Priolo Earthquake Fault Zone. The Nunez Fault is the closest active fault identified by the Alquist-Priolo Special Studies Zone Act and is located approximately 20 miles northwest of the project site. The San Andreas Fault is located approximately 35 miles to the west of the project site (CGS 2010).

### Ground Shaking

Generally, the greater the earthquake magnitude and the closer the fault rupture to a site, the greater the intensity of ground shaking. The amplitude and frequency of ground shaking are related to the size of an earthquake, the distance from the causative fault, the type of fault (e.g., strike-slip), and the response of the geological materials at the site. Ground shaking can be described in terms of acceleration, velocity, and displacement of the ground.

A common measure of ground motion during an earthquake is the Peak Ground Acceleration (PGA). Unlike measures of magnitude, which provide a single measure of earthquake energy, PGA varies from place to place and is dependent on the distance from the epicenter and the character of the underlying geology (e.g., hard bedrock, soft sediments, or artificial fills). The primary tool that seismologists use to describe ground shaking hazard is a Probabilistic Seismic Hazard Assessment (PSHA). The PSHA for the State of California considers the range of possible earthquake sources and estimates their characteristic magnitudes to generate a map indicating the probability of ground shaking across the state. The PSHA maps depict values of PGA that have a 10% probability of being exceeded in 50 years. Use of this probability level allows engineers to design structures to withstand ground motions that have a 90% chance of not occurring in the next 50 years, making buildings safer than if they were merely designed for the most probable events.

The Modified Mercalli Intensity (MMI) Scale assigns an intensity value based on the observed effects of ground-shaking produced by an earthquake. Unlike measures of earthquake magnitude, the MMI Scale is qualitative in nature (i.e., it is based on actual observed effects rather than measured values). The MMI values for an earthquake at any one place can vary depending on its magnitude, the distance from its epicenter, and the type of geologic material. The MMI values for intensity range from I (earthquake not felt) to XII (damage nearly



total). Significant structural damage typically does not occur until an event reaches an MMI value of IV.

According to the PSHA for the State of California, there is a 10% chance that the project site could experience a PGA value of 0.405 g (g is the acceleration due to Earth's gravity, equivalent to g-force) or greater over the next 50 years (CGS 2008). This PGA corresponds to an MMI value of VIII which would be strong enough to cause substantial damage to ordinary buildings (USGS 2017). However, the PGA value for the site given by the PSHA for California represents a conservative estimate of ground shaking levels that can be reasonably anticipated for the purposes of designing and constructing buildings. There is a 90% chance PGAs experienced on the project site over the next 50 years would be less than 0.405 g (CGS 2008).

## Secondary Earthquake Hazards

### Liquefaction

Liquefaction is a process by which sediments below the water table temporarily lose strength during an earthquake and behave as a viscous liquid rather than a solid. Liquefaction is restricted to certain geological and hydrological environments, primarily recently deposited sand and silt areas with high groundwater levels. Liquefaction can cause the soil beneath a structure to lose strength, which may result in the loss of foundation-bearing capacity. Liquefaction can also cause lateral ground movement with some vertical component. In effect, the soil rides on top of the liquefied layer. Lateral spreading can occur on relatively flat sites with slopes less than 2% under certain circumstances and can cause ground cracking and settlement. It may also produce a lurching movement of the ground surface toward an open face (e.g., a graded slope, stream bank, canal face, gully, or other similar feature) when the soil liquefies.

Poorly consolidated, water-saturated fine sands and silts having low plasticity and located within 40 feet of the ground surface are typically considered to be the most susceptible to liquefaction. Soils and sediments that are not water saturated and that consist of coarser or finer materials are generally less susceptible to liquefaction. Geologic age also influences the potential for liquefaction. Sediments deposited within the most recent millennia are generally more susceptible to liquefaction than older Holocene sediments; Pleistocene sediments are even more resistant, and pre-Pleistocene sediments are generally immune to liquefaction (CGS 2008). The susceptibility of soils on the project site to liquefaction have been approximated for purposes of this analysis, which assumes that the site may be vulnerable to liquefaction even though site soils are classified mainly as having low to moderate potential, and are on very flat slopes (flatter slopes generally are less susceptible to liquefaction) (NRCS 2017).

### Settlement

Earthquake-induced settlement of soils results when relatively unconsolidated granular materials experience vibration associated with seismic events. The vibration causes a decrease in soil volume as the soil grains tend to rearrange into a denser state. This decrease in volume and consolidation of soil can result in the settlement of overlying structural improvements. The clayey nature of the soils at the project site coupled with the variation in density among geologic units indicate that there is a low potential for earthquake-induced soil settlement to occur at the project site.

## Landslides

Slope failures, commonly referred to as landslides, include many phenomena that involve the downslope displacement and movement of material, either triggered by static (i.e., gravity) or dynamic (i.e., earthquake) forces. The project site is located on the broad, gently northeast-sloping alluvial fan and alluvial valley deposits of the San Joaquin Valley. There are no records of landslides either induced by earthquakes or by sudden soil saturation occurring on the project site. As the slope is very gentle and there are no recorded landslides on or around the project site, the landslide hazard for the project site is low.

## Subsidence

Land subsidence is the gradual settling or sudden sinking of the Earth's surface due to subsurface movement of earth materials. The San Joaquin Valley has a history of land subsidence due to groundwater pumping and related compaction of sand and clay layers in the valley sediments. Some areas of the Central Valley have subsided more than 20 feet during the past 50 years (County 2000b). According to Figure 9-6: Landslide Hazards and Areas of Subsidence, of the General Plan Background Report, the project site is in an area subject to deep subsidence (County 2000b).

## Erosion

Erosion is a natural process whereby soil and highly weathered rock materials are worn away, transported most commonly by wind or water. Soil erosion can become problematic when human intervention causes rapid soil loss and the development of erosional features (such as incised channels, rills, and gullies) that undermine roads, buildings, or utilities. Vegetation-clearing and earth-moving reduces soil structure and cohesion, resulting in abnormally high rates of erosion, referred to as accelerated erosion. This typically occurs during construction activity involving grading and soil-disturbance activities (e.g., presence of soil stockpiles or earthen berms) that loosen soils and make them more susceptible to wind and water erosion. Further, the operation of associated heavy machinery and vehicles over access roads, staging areas, and work areas can compact soils and decrease their capacity to absorb runoff, resulting in rills, gullies, and excessive sediment transport. Natural rates of erosion can vary depending on slope, soil type, and vegetative cover. (Regional erosion rates are also dependent on tectonics and changes in relative sea level.) Soils containing high amounts of silt are typically more easily eroded, while coarse-grained (sand and gravel) soils are generally less susceptible to erosion.

The NRCS classifies soils based on their capability to produce commercial crops, which takes into account the potential for soils to deteriorate over time from erosion caused by wind or stormwater runoff. The classification for crop production ranges from I to VIII, with Class I having few limitations for growing crops to Class VIII, which nearly precludes use for commercial crop production. The Westhaven site soils are considered Class I soil and Excelsior soils are Class II soil. Class I soils have a negligible to low erosion potential because they tend to be located on nearly level ground, are well-drained, easily worked, and deep. Class II soils have a moderate erosion potential due to their relatively unfavorable makeup, less than ideal soil depth, and slight to moderate salinity, among other factors and may require soil management and conservation measures such as soil amendments, crop rotation, or wetness control (drainage) to control erosion from storm runoff. NCRS also classify soil types by their

potential to be eroded by the wind by assigning soil types to a Wind Erodibility Group based on the amount of soil eroded per year. Both of the project site soil types have a low wind erosion rating (NRCS 2017).

#### Paleontological Resources

Paleontological resources are the fossilized remains of plants and animals, including vertebrates (animals with backbones), invertebrates (e.g., starfish, clams, ammonites, and coral marine), and fossils of microscopic plants and animals (microfossils). The age and abundance of fossils depend on the location, topographic setting, and particular geologic formation in which they are found. Fossil discoveries not only provide a historic record of past plant and animal life; they may also assist geologists in dating rock formations.

The potential for fossils to be preserved in a particular rock formation depends on the environmental conditions under which it formed. For example, sedimentary rocks formed in marine environments are more likely to preserve the remains of organisms than metamorphic rocks, which form under intense heat and pressure. Unit descriptions in geologic maps may explicitly describe the paleontological potential of a particular rock unit though more often a review of fossil locality records and published literature is required.

### 4.6.3 Environmental Impacts

This section analyzes the proposed project's potential to result in significant impacts related to geology and soils. When an impact is determined to be significant, Mitigation Measures are identified that would reduce or avoid the impact.

#### Methodology

The evaluation of potential impacts on geology and soils was based on a review of applicable policies and plans pertaining to the project site, which includes the General Plan, Fresno County Solar Guidelines, General Plan Background Report, USGS earthquake seismic hazard maps, and USGS land subsidence maps. The evaluation of soil characteristics and properties was based on the NRCS Web Soil Survey and Assessment of Primary and Secondary Soils Memo prepared by Environmental Science Associates (ESA) in January 2019 (ESA 2019a).

In addition, the analysis of potential impacts to paleontological resources was based on the Cultural Resources Survey Report prepared by ESA in June 2017 (ESA 2017a). The results of the Cultural Resources Survey Report pertaining to paleontological resources are described in the following paragraphs and further detailed in Appendix E of this document. The Paleontological Resources Survey Report is Appendix F.

#### Paleontological Resources Records Search

A database search of records from the Natural History Museum of Los Angeles County (NHM) and University of California Museum of Paleontology (UCMP) was performed to identify fossil localities in the project site. The purpose of the museum records search was to do the following: (1) determine whether any previously recorded fossil localities occur at the project site, (2) assess the potential for disturbance of these localities during construction, and (3) evaluate the paleontological sensitivity of the project site. Both records searches returned no known localities

at the project site; however, a number of vertebrate fossils have been discovered in similar sedimentary deposits in the region (McLeod 2017).

The Quaternary alluvium (Qa) that makes up the surficial sediments in the project site is too young to contain fossils. The subsurface sediments are old enough to preserve fossil resources. The NHM has records of a horse, *Equus*, recovered at depth of 45 feet from older Quaternary deposits near Delano (McLeod 2017). The UCMP has records of a primitive horse, *Equidae Pliohippus*, and a deer, *Cervidae Cervus*, from Pliocene-age deposits located approximately 3 miles southeast of the project site (ESA 2017b).

The exact depth at which the alluvium becomes old enough to preserve fossils is unknown. However, a number of fossils have been reported from similar sediments in the County further confirming the paleontological sensitivity of the sediments at depth (Dundas et al. 1996, Dundas et al. 2009, Gobalet and Fenenga 1993, Ngo et al. 2011, Trayler and Pluhar 2010, Boessenecker and Poust 2015).

#### Paleontological Resources Field Survey

On February 6, 2017, ESA completed a pedestrian survey of the project site. The survey focused on areas devoid of vegetation or with subsurface exposure such as road cuts and irrigation ditches to maximize the likelihood of observing fossils; however, much of the surface was covered with vegetation or Quaternary sediments. Ditches or irrigation cuts revealed a soil composition similar to that of the surface, which is consistent with the geologic mapping of Holocene alluvium (Dibblee and Minch 2007).

The surficial sediments of the project site identified as Qa are too young to preserve fossils and therefore have low paleontological sensitivity. However, the subsurface sediments (possibly older Qa or Tulare Formation) located at a depth of 10 feet or more do have high paleontological sensitivity. The field survey did not identify any fossil resources but did identify modern bivalve shells (such as from clams or mollusks) consistent with the dry bed of Tulare Lake, which are not considered fossils.

### Thresholds of Significance

According to the California Environmental Quality Act (CEQA) Guidelines' Appendix G Environmental Checklist, the following questions were analyzed and evaluated to determine whether impacts to geology and soils are significant.

Would the proposed project:

- Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury or death involving:
  - ii. Strong seismic ground shaking?
  - iii. Seismic-related ground failure, including liquefaction?
  - iv. Landslides?
- Result in substantial soil erosion or the loss of topsoil?

- Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or offsite landslide, lateral spreading, subsidence, liquefaction or collapse?
- Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?
- Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

The following questions were determined to have no impact during the Notice of Preparation (NOP) scoping. These issues are summarized in Section 6.0, Effects Found Not To Be Significant, and are not discussed further in this section:

Would the Project:

- Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury or death involving:
  - i. Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault?
- Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?

### Project Impact Analysis and Mitigation Measures

This section discusses potential impacts to geology and soils associated with the proposed project and provides Mitigation Measures where necessary.

#### Earthquakes

---

**Impact GEO-1**    **The proposed project would not directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury or death involving:**

**ii. Strong Seismic Ground Shaking**

---

#### Impact Analysis

While the project site is not within a mapped Seismic Hazard Zone, the site may be subject to strong earthquake-related ground shaking (MMI-VIII) at some point during the lifetime of the proposed project since there are earthquake faults (e.g., San Andreas Fault, Nunez Fault) to the west and south of the project site. As discussed above, there is a 10% chance that the project site could experience a PGA value of 0.405 g or greater over the next 50 years (CGS 2008). A PGA of 0.405 g could be severe and would result in the damage to ordinary structures according to current design standards. The highest severity of ground-shaking at the project site that can be reasonably anticipated would be strong, and structural designs would be consistent with the California Building Code (CBC), which requires engineers to design structures to withstand earthquake loads.

The Applicant would be required to implement the latest adopted guidelines and standards of IEEE into the design of the proposed project to minimize potential damage to the proposed project from ground shaking. Additionally, components of the proposed project would be designed as required by CPUC General Order 128 (Rules for Underground Electric Supply and Communication Systems). The project substation would be constructed in accordance with the seismic design recommendations required by IEEE Guideline 693 (Recommended Practices for Seismic Design of Substations). Additionally, the solar facility would be constructed in compliance with the geotechnical and seismic design criteria required for construction in accordance with the CBC.

The proposed project would also be required to conform to Fresno County General Plan Policy HS-D.3, which requires a geotechnical investigation to be performed in areas subject to strong seismic shaking, liquefaction, settlement, and subsidence hazards. In accordance with Fresno County General Plan Policy HS-D.3, a site-specific soils engineering and geologic-seismic analysis will also be prepared by a California-registered engineer or certified engineering geologist prior to construction of the proposed project. Therefore, with foundation and structural design in accordance with the Fresno County General Plan, current CBC standards, IEEE guidelines, and CPUC regulations, ground shaking impacts on the proposed project area would be less than significant.

The decommissioning of the proposed project would involve removal of all above-ground and underground structures. After decommissioning, the project site would be reclaimed for agricultural use, and no new infrastructure would be introduced that would expose people or structures to substantial adverse effects from ground shaking; therefore, no impact would occur from the decommissioning activities for the proposed project.

---

### **iii. Seismic-Related Ground Failure, including Liquefaction**

---

Based on the physical soil properties and groundwater depth at the project site, the potential for liquefaction, dynamic compaction, or seismically induced settling is considered low to moderate. As discussed above, decommissioning of the proposed project would involve removal of all above-ground and underground structures from the project site. The decommissioning of the proposed project would not introduce any new infrastructure that would expose people or structures to substantial adverse effects from seismic-related ground failure and liquefaction; therefore, no impact would occur.

---

### **iv. Landslides**

---

The topography of the project site is nearly level, with a gentle slope from west to east. There are no mapped landslides on or around the site; therefore, the potential for landslide hazards to occur at the project site is very low. As such, the construction, operation, and decommissioning of the proposed project would not expose people or structures to potential substantial adverse effects involving landslides; therefore, impacts would be less than significant.

#### **Level of Significance Before Mitigation**

Less Than Significant Impact.



**Mitigation Measures**

No mitigation is necessary.

**Level of Significance After Mitigation**

Less Than Significant Impact.

Soil Erosion or Topsoil Loss

---

**Impact GEO-2    The proposed project would not result in substantial soil erosion or the loss of topsoil.**

---

**Impact Analysis**

Construction Phase

The workspace and staging areas consist primarily of flat agricultural fields. Preparation of the project site for construction would include the removal of vegetation, grading, development of temporary and permanent access roads, and excavation. Excavation would be required for activities such as trenching for underground wiring and cables to connect panel strings. Final site preparation activities would include grading and compaction of pad sites and foundations for the substation, battery storage, inverter, and control room.

Grading of the project site would be minimized and would follow the existing topography of the project site to the greatest extent feasible to limit potential erosion and maintain existing drainage patterns. The temporary and permanent site roadways would be graded and compacted prior to road construction. Existing vegetation would be scarified and grubbed for the development of temporary and permanent access roads, and the soil surface would be smoothed, moisture conditioned, and compacted with a crown in the center and swale on the side to prepare the roadway surface. Grading, excavation, removal of vegetation cover, development of access roads, and disturbance of soils during construction activities would result in the disturbance of an area greater than 1 acre and would temporarily increase erosion, runoff, and sedimentation. Construction activities would also result in soil compaction and wind erosion effects that could adversely affect soils at the construction sites and staging areas.

During grading, erosion prevention measures would be implemented, including the separation of topsoil, whereby topsoil is separated and stockpiled separately from subsoil and stabilized to prevent erosion. When project construction is complete, stripped subsoil and topsoil would be replaced as required. Other erosion and sediment control measures would include watering for dust control and soil compaction during grading and throughout construction activities. The Applicant would comply with the National Pollutant Discharge Elimination System (NPDES) Construction General Permit and prepare a Stormwater Pollution Prevention Plan (SWPPP), as discussed in Section 4.9, Hydrology and Water Quality, and implement a dust control plan, as discussed in Section 4.3, Air Quality. The Central Valley Regional Water Quality Control Board and the County would be required to approve the SWPPP. The SWPPP would include BMPs such as the use of straw wattles, check dams, fabric blankets, or silt fencing to control sediment and limit erosion. All erosion control materials would be biodegradable and composed of natural fiber. Therefore, with the compliance with applicable regulations, Mitigation Measure AG-1, and Mitigation Measure AIR-3 as described, soil erosion impacts from construction of the proposed project would be less than significant.

## Operation Phase

Operational activities on the project site would involve the routine maintenance of solar panels, mowing vegetation, and cleaning the solar panels. These activities would not be considered erosive activities or result in the loss of topsoil. Furthermore, according to the NRCS, the soils on the project site have a low to moderate erosion potential. As a result, potential impacts associated with erosion occurring during the operational phase of the proposed project would be less than significant.

## Decommissioning Phase

Activities associated with the decommissioning of the proposed project would be similar to the construction phase. Decommissioning activities would include the removal of above-ground structures, excavation and removal of all below-ground cabling, removal of access roads, removal of concrete pads and foundations, scarification of compacted areas, and regrading of the project site to pre-project conditions. During the decommissioning phase of the project, a SWPPP would be implemented to minimize erosional impacts from disturbed areas and reduce runoff from the project site. A reclamation plan would be developed as required by Mitigation Measure AG-1 and implemented to repair temporary disturbance from installation activities and to ensure that the project site conditions are compatible with the long-term vegetation management activities. As such, adherence to applicable regulations and Mitigation Measure AG-1 would reduce erosion and sedimentation impacts associated with the decommissioning phase of the proposed project to a less than significant level.

### **Level of Significance Before Mitigation**

Potentially Significant Impact.

### **Mitigation Measures**

Mitigation Measure AG-1 and Mitigation Measure AIR-3 would be required.

### **Level of Significance After Mitigation**

Less Than Significant Impact with Mitigation Incorporated.

## Unstable Geologic Location

---

**Impact GEO-3**    **The proposed project would not be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in an on- or offsite landslide, lateral spreading, subsidence, liquefaction, or collapse.**

---

### **Impact Analysis**

As previously discussed, the proposed project would not be located within an area identified as a landslide hazard area. The proposed project is located on relatively flat agricultural fields, and the threat of a landslide occurring on or adjacent to the project site is considered low. Therefore, potential impacts associated with landslides would be less than significant.

The proposed project would be located on soils that exhibit low to moderate potential for liquefaction during an earthquake, and the potential for lateral spreading to occur is considered low. However, the County has a history of subsidence caused by groundwater, oil, or gas withdrawal or overdraft. According to Figure 9-6: Landslide Hazards and Areas of Subsidence of the General Plan Background Report, the project site is in an area with deep subsidence

(County 2000b). The proposed project would be designed in accordance with engineering design standards and structural improvement requirements to withstand the effects of soil settlement and collapsible soils. Engineered compacted fill would likely be used during construction in accordance with building code requirements, which would reduce the potential for lateral spreading of soils from project construction. In addition, the proposed project would be required to comply with Fresno County General Plan Policy HS-D.3 and complete a geotechnical investigation of the project site, which would be completed prior to design development for the proposed project. The Geotechnical Report would provide site-specific preparation and foundation design recommendations, as necessary, to comply with the building codes related to structural design. Therefore, with adherence to all applicable building code regulations, the proposed project would result in a less than significant impact resulting from unstable soils.

**Level of Significance Before Mitigation**

Less Than Significant Impact.

**Mitigation Measures**

No mitigation is necessary.

**Level of Significance After Mitigation**

Less Than Significant Impact.

**Expansive Soil**

---

**Impact GEO-4** The proposed project would not be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property.

---

**Impact Analysis**

The soils present on the project site have low to moderate potential for expansion (NRCS 2017b). Fresno County General Plan Policy HS-D.8 requires the preparation of a soils report for projects on sites with soils that have high expansive or shrink-swell potential and prohibits construction on these sites without incorporating adequate design and construction measures into the proposed project to reduce the risk associated with these soil hazards. As discussed under Impact GEO-3 above, the proposed project would be designed in accordance with all applicable building code requirements and structural improvement requirements, which would also address expansive soil hazards. Engineered fill or treatment of expansive soils would be used during proposed project design to minimize hazards from expansive soils. Additionally, the proposed project would complete a geotechnical investigation in conformance with Fresno County Plan Policy HS-D.3, which would identify structural design considerations to implement in the project design. Therefore, impacts related to expansive soils would be less than significant with standard building code requirements incorporated into the proposed project design.

**Level of Significance Before Mitigation**

Less Than Significant Impact.

**Mitigation Measures**

No mitigation is necessary.

## Level of Significance After Mitigation

Less Than Significant Impact.

### Paleontological Resource

---

**Impact GEO-5** The proposed project would not directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.

---

## Impact Analysis

A review of the paleontological literature and records searches from the NHM and the UCMF reveals that the County has a history of fossil resource finds, including from the Tulare Formation, which may underlie the surficial alluvium at the project site. The surficial sediments of the project site identified as Quaternary alluvium (Qa) are too young to preserve fossils and therefore have low paleontological sensitivity. However, the subsurface sediments (possibly older Qa or Tulare Formation) located at a depth of 10 feet or more do have high paleontological sensitivity. The field survey did not identify any fossil resources but did identify modern bivalve shells consistent with the dry bed of Tulare Lake, which are not considered fossils.

The inadvertent discovery of a paleontological resource during construction cannot be entirely discounted; therefore, Mitigation Measure GEO-1, which includes retaining a qualified paleontologist for the project; Mitigation Measure GEO-2, which includes paleontological resources sensitivity training for construction workers; and Mitigation Measure GEO-3, which provides a protocol for inadvertent discovery of a paleontological resource, would be implemented to reduce this impact to a less than significant level.

## Level of Significance Before Mitigation

Potentially Significant Impact.

## Mitigation Measures

**MM GEO-1: Retain a Qualified Paleontologist.** A qualified paleontologist, defined as one meeting the Society of Vertebrate Paleontology Standards (the “Qualified Paleontologist”), shall be retained prior to the issuance of grading permits. The Qualified Paleontologist shall provide technical and compliance oversight of all work as it relates to paleontological resources, attend the project kick-off meeting and project progress meetings on a regular basis, and report to the site in the event that potential paleontological resources are encountered.

**MM GEO-2: Pre-construction Training.** The Qualified Paleontologist shall conduct Paleontological Resources Awareness Training for all construction personnel. This may be conducted in conjunction with the archaeological resources training. The training shall include an overview of potential paleontological resources that could be encountered during ground-disturbing activities to facilitate worker recognition, avoidance, and subsequent immediate notification to the Qualified Paleontologist for further evaluation and action, as appropriate; and penalties for unauthorized collecting or intentional disturbance of paleontological resources. A sign-in sheet shall be completed and retained to demonstrate attendance at the awareness training. In the event that construction crews are phased, additional trainings shall be conducted for new construction personnel. The training session

shall focus on the recognition of the types of paleontological resources that could be encountered within the project site and the procedures to be followed if they are found. Documentation shall be retained demonstrating that all construction personnel attended the training.

**MM GEO-3: Inadvertent Discovery of Paleontological Resources.** If a paleontological resource is found, all ground-disturbing activities within 50 feet of the find shall immediately cease. The Qualified Paleontologist shall evaluate the significance of the resources and recommend appropriate treatment measures. At each fossil locality, field data forms shall be used to record pertinent geological data, stratigraphic sections shall be measured, and appropriate sediment samples shall be collected and submitted for analysis. Any fossils encountered and recovered shall be catalogued and donated to a public, nonprofit institution with a research interest in the materials, such as the Natural History Museum of Los Angeles County. Accompanying notes, maps, and photographs shall also be filed at the repository. The Qualified Paleontologist shall prepare a report documenting evaluation and/or additional treatment of the resource. The report shall be filed with the County and with the repository.

Full-time paleontological resources monitoring shall be conducted for all ground-disturbing activities occurring in older Quaternary alluvium or the Tulare Formation, which is estimated to occur at or below approximately 10 feet in depth. Paleontological resources monitoring shall be performed by a qualified paleontological monitor (or cross-trained archaeological/ paleontological monitor) under the direction of the Qualified Paleontologist. Monitors shall have the authority to temporarily halt or divert work away from exposed fossils to recover the fossil specimens. Any significant fossils collected during proposed project-related excavations shall be prepared to the point of identification and curated into an accredited repository with retrievable storage. Monitors shall prepare daily logs detailing the types of activities and soils observed and any discoveries. The Qualified Paleontologist shall prepare a final monitoring and mitigation report to document the results of the monitoring effort.

#### **Level of Significance After Mitigation**

Less Than Significant Impact with Mitigation Incorporated.

#### **4.6.4 Cumulative Impacts**

The geographic scope of geology and soils impacts is the project site and projects within the immediate area of seismic influence; however, in general, seismic hazards are dependent on site specific factors that can change over relatively short distances. The proposed project does not contribute to cumulative impacts. The proposed project would have less than significant impacts with respect to earthquakes, landslides, soil erosion or topsoil loss, unstable geologic location, expansive soils, and paleontological resources. Cumulative impacts to geology and soils could occur if related projects have the potential to directly or indirectly cause substantial adverse effects, including the risk of loss, injury, or death involving strong seismic ground shaking; soil erosion or loss of topsoil or if located on expansive soil, creating substantial risks to life or property.

Construction of the proposed project and other related projects in the area, including the Westlands Solar Park project, would have the potential to expose individuals and structures to geological hazards such as direct and indirect loss of equipment or injury to personnel during the construction and operational phases. In addition, construction of the proposed project has the potential to expose soils to erosion during grading and vegetation clearing. Simultaneous construction of the proposed project and other related projects could result in cumulative soil instability-related impacts such as soil erosion, landslides, and soil collapse from the cumulative loss of vegetation or ground-disturbing activities related to the construction phase of the proposed project. The Westlands Solar Park project could occur concurrently with the proposed project and is located within the immediate vicinity; however, the Westlands Solar Park gen-tie corridors are subject to similarly low levels of geologic and seismic hazards such as ground shaking, liquefaction, and slope failures and would be required to implement similar erosion controls and comply with applicable building codes and local grading ordinances. Therefore, cumulative impacts related to construction of the proposed project and related projects would be less than significant, and the contribution from the proposed project would not be cumulatively considerable.

Cumulatively significant impacts related to loss of life or property could result from a strong seismic event if structures associated with the proposed project and within the immediate vicinity, fail during the seismic event. The Applicant would be required to incorporate the design guidelines and standards of the IEEE and CPUC into the proposed project. In accordance with Fresno County General Plan Policy HS-D.3, the preparation of a site-specific geotechnical report would be required. The geotechnical report would evaluate the project site's potential for liquefiable soils and earthquake-induced settlement. The potential for landslide hazards to occur at the project site is very low. Therefore, cumulative impacts related to loss of life or property resulting from a strong seismic event and associated with failure of proposed project components would be less than significant and the proposed project would not contribute to a cumulative impact.

No known fossil resources would be impacted by the proposed project; therefore, this analysis of cumulative impacts on paleontological resources is limited to construction impacts on previously unidentified resources that could occur as a result of the proposed project, and where the same unidentified resources could also be affected by the other related projects. The proposed project could disturb unknown paleontological resources through excavation and ground disturbance during construction. The Westlands Park project could take place in the immediate vicinity as the proposed project, and there is some potential that the proposed project and the Westlands Solar Park project could affect the same unknown resource or result in cumulatively significant impacts on unknown resources.



**This page left intentionally blank.**

## 4.7 GREENHOUSE GAS EMISSIONS

This section describes the impacts on Greenhouse Gas (GHG) emissions that would result from implementation of the Fifth Standard Solar Facility Project Complex (proposed project). Included is a review of existing conditions, a summary of applicable policies and regulations related to GHG emissions, and analysis of environmental impacts of the proposed project. Where applicable, Mitigation Measures are included for significant impacts. The County received no scoping comments pertaining to GHG emissions (Appendix A).

### 4.7.1 Regulatory Setting

#### Federal

The federal government is taking a number of common-sense steps to address the challenge of climate change. The U.S. Environmental Protection Agency (EPA) collects various types of GHG emissions data. This data helps policy-makers, businesses, and EPA track GHG emissions trends and identify opportunities for reducing emissions and increasing efficiency. EPA has been collecting a national inventory of GHG emissions since 1990, and in 2009 they established mandatory reporting of GHG emissions from large GHG emissions sources.

EPA also achieves GHG reductions through partnerships and initiatives; evaluating policy options, costs, and benefits; advancing the science; partnering internationally and with states, localities, and tribes; and helping communities adapt.

U.S. Environmental Protection Agency “Endangerment” and “Cause or Contribute” Findings

The U.S. Supreme Court has held that the EPA must consider regulation of motor vehicle GHG emissions. In *Massachusetts v. Environmental Protection Agency et al.* (2007) 549 U.S. 497, twelve states and cities, including California, together with several environmental organizations sued to require the EPA to regulate GHGs as pollutants under the Clean Air Act (CAA) (127 S. Ct. 1438 [2007]). The Supreme Court ruled that GHGs fit within the CAA’s definition of a pollutant, and the EPA had the authority to regulate GHGs.

On December 7, 2009, the EPA Administrator signed two distinct findings regarding GHGs under Section 202(a) of the CAA:

- Endangerment Finding: The current and projected concentrations of the six key GHGs in the atmosphere—carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>), nitrous oxide (N<sub>2</sub>O), hydrofluorocarbons (HFCs), perfluorinated chemicals (PFCs), and sulfur hexafluoride (SF<sub>6</sub>)—threaten the public health and welfare of current and future generations.
- Cause or Contribute Finding: The combined emissions of these GHGs from new motor vehicles and new motor vehicle engines contribute to the GHG pollution that threatens public health and welfare.

In collaboration with the National Highway Traffic Safety Administration, the EPA adopted GHG emission standards for light-duty vehicles in May 2010 and for heavy-duty vehicles in August of 2011. In 2012, the agencies jointly adopted more stringent Phase 2 standards for light duty cars

and trucks, which would cover model years 2017 through 2025. In August of 2016, the agencies adopted more stringent Phase 2 standards for medium- and heavy-duty vehicles, which would cover model years 2018 through 2027 for certain trailers and model years 2021 through 2027 for semi-trucks, large pickup trucks, vans, and all types and sizes of buses and work trucks.

President Obama and the EPA announced the Clean Power Plan in August of 2015. In 2030, the Clean Power Plan would cut carbon pollution from power plants by 32% below 2005 levels and increase renewable energy generation percentage to nearly 20% of all power supplied. By comparison, in 2015, renewable energy accounted for about 13% of electricity generation. However, on February 9, 2016, the U.S. Supreme Court stayed implementation of the Clean Power Plan pending judicial review, and on March 28, 2017, the Executive Order on Energy Independence (EO 13783) was signed and called for a review of the Clean Power Plan (EPA 2018b).

#### Mandatory Greenhouse Gas Reporting Rule

On September 22, 2009, EPA released its final Greenhouse Gas Reporting Rule (Reporting Rule). The Reporting Rule is a response to the fiscal year 2008 Consolidated Appropriations Act (H.R. 2764; Public Law 110-161), that required the EPA to develop, "...mandatory reporting of GHGs above appropriate thresholds in all sectors of the economy...." The Reporting Rule applies to most entities that emit 25,000 metric tons of CO<sub>2</sub> equivalent (MTCO<sub>2</sub>e) or more per year. Since 2010, facility owners must submit an annual GHG emissions report with detailed calculations of facility GHG emissions. The Reporting Rule also mandates recordkeeping and administrative requirements in order for the EPA to verify annual GHG emissions reports.

#### American Recovery and Reinvestment Act of 2009 (Recovery Act)

The American Recovery and Reinvestment Act of 2009 (Recovery Act) provided a wide array of policy instruments. Its primary purpose was to maintain existing jobs and create new jobs. One of the secondary objectives was to invest in "green" energy programs, including facilitating funding for private companies developing renewable energy technologies; local and state governments implementing energy efficient and clean energy programs; research in renewable energy, biofuels, and carbon capture; and the development of high-efficiency or electric vehicles.

#### State

As described below, California has enacted various executive orders and regulations to address climate change.

#### Executive Order S-3-05

Executive Order S-3-05 was established by Governor Arnold Schwarzenegger in June 2006; the order establishes statewide emission reduction targets through the year 2050, as follows:

1. By 2010, reduce GHG emissions to 2000 levels.
2. By 2020, reduce GHG emissions to 1990 levels.
3. By 2050, reduce GHG emissions to 80% below 1990 levels.

This Order does not include any specific requirements that pertain to the proposed project; however, future actions taken by the state to implement these goals may affect the proposed project depending on the specific implementation measures that are developed. The 2050 reduction target has not been codified, and the California Supreme Court has ruled that California Environmental Quality Act (CEQA) lead agencies are not required to use it as a significant threshold.

#### Executive Order B-30-15

Executive Order B-30-15 was issued by Governor Jerry Brown in April 2015. The order established a mid-term GHG reduction target for California of 40% below 1990 levels by 2030. Similar to Executive Order S-3-05, the order does not include any specific requirements that pertain to the proposed project, but future actions taken by the state to implement the goals may affect the proposed project. A recently released 2030 Target Scoping Plan Update Concept Paper outlines the approach of the California Air Resources Control Board (CARB) to achieving the 2030 GHG reduction target established in Executive Order B-30-15 (CARB 2016).

#### Assembly Bill 32

California Assembly Bill (AB) 32, also known as the Global Warming Solutions Act of 2006, requires CARB to establish a statewide GHG emissions cap for 2020 based on 1990 emission levels. AB 32 required CARB to adopt regulations that identify and requires selected sectors or categories of emitters of GHGs to report and verify their statewide GHG emissions, and CARB is authorized to enforce compliance with the program. Under AB 32, CARB also was required to adopt a statewide GHG emissions limit equivalent to the statewide GHG emissions levels in 1990, which must be achieved by 2020. CARB established this limit in December 2007 at 427 million MTCO<sub>2e</sub>. This is approximately 30% below forecasted “business-as-usual” emissions of 596 million MTCO<sub>2e</sub> in 2020, and about 10% below average annual GHG emissions during the period from 2002 through 2004 (CARB 2009). To achieve the maximum technologically feasible and cost-effective GHG emission reductions, AB 32 permits the use of market-based compliance mechanisms and requires CARB to monitor compliance with and enforce any rule, regulation, order, emission limitation, emissions reduction measure, or market-based compliance mechanism that it adopts.

#### Climate Change Scoping Plan

In 2006, the Legislature passed the California Global Warming Solutions Act of 2006 (AB 32), which created a comprehensive, multi-year program to reduce GHG emissions in California. AB 32 required CARB to develop a Scoping Plan that describes the approach California will take to reduce GHGs to achieve the goal of reducing emissions to 1990 levels by 2020. The Scoping Plan was first approved by CARB in 2008 and must be updated every five years. The First Update to the Climate Change Scoping Plan was approved by CARB on May 22, 2014. In 2016, Legislature passed Senate Bill (SB) 32, which codified the 2030 GHG emissions reduction target of 40% below 1990 levels. With SB 32, the State Legislature passed companion legislation AB 197, which provides additional direction for developing the Scoping Plan. CARB adopted the 2017 Scoping Plan in December 2017 to reflect the 2030 target set by Executive Order B-30-15 and codified by SB 32. The Scoping Plan establishes a proposed framework of action for California to meet the climate target of a 40% reduction in GHGs by 2030 compared

to 1990 levels. Low-carbon energy, such as solar power, is considered a key portion of the state's plan to achieve the required GHG reduction target.

#### Senate Bill 1368

SB 1368, enacted in 2006, required the California Public Utilities Commission (CPUC) to establish a CO<sub>2</sub> emissions standard for base load generation owned by or under long-term contract with publicly owned utilities. The CPUC established a GHG Emissions Performance Standard (EPS) of 1,100 pounds of CO<sub>2</sub> per megawatt-hour (MWh). SB 1368 also requires the posting of notices of public deliberations by publicly owned companies on the CPUC website and establishes a process to determine compliance with the EPS. The proposed project, as a renewable energy generation facility, must comply with the GHG EPS requirements of SB 1368.

#### Senate Bill 97

In 2007, the California State Legislature passed SB 97, which required amendment of the CEQA Guidelines to incorporate analysis of and mitigation for GHG emissions from projects subject to CEQA. The amendments took effect March 18, 2010. The amendments added Section 15064.4 to the CEQA Guidelines, specifically addressing the potential significance of GHG emissions. Section 15064.4 was updated in December 2018 and identifies the following items which must be addressed in this Environmental Impact Report (EIR):

1. The extent to which the project may increase or reduce GHG emissions as compared to the existing environmental setting.
2. Whether the project emissions exceed a threshold of significance that the lead agency determines applies to the project.
3. The extent to which the project complies with regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of GHG emissions. ... In determining the significance of impacts, the lead agency may consider a project's consistency with the state's long-term climate goals or strategies, provided that substantial evidence supports the agency's analysis of how those goals or strategies address the project's incremental contribution to climate change and its conclusion that the project's incremental contribution is not cumulatively considerable.

#### Senate Bill 1078: Renewables Portfolio Standard

In 2002, SB 1078 established the basic policy framework for the increased use of renewable energy resources in California, known as the Renewables Portfolio Standard (RPS). SB 1078 accelerated RPS in 2006, and specific requirements were established for investor-owned utilities, including requiring that 20% of electricity retail sales be served by renewable energy resources by 2010. The major eligible renewable energy resources, as defined by the California Energy Commission (CEC), include biomass, geothermal, solar, wind, and small hydroelectric facilities. Under the law, Publicly Owned Utilities (POUs) were directed to pursue voluntary actions to increase the use of renewable energy in their portfolios, but were allowed the flexibility to define their targets and the types of resources that could meet those targets. CEC and CPUC work collaboratively to implement the RPS.

In April 2011, Governor Jerry Brown signed SB X1-2 that revised the RPS target to be 33% renewables by 2020. The new RPS standards apply to all electricity retailers in the state,

including POUs, investor-owned utilities, electricity service providers, and community choice aggregators. Lastly, in October 2015, Governor Brown signed SB 350, which expands and increases the target of the RPS Program to 50% by the end of 2030. SBs X1-2 and 350 included new enforcement provisions and direct CARB to collect financial penalties for any notice of violation issued by CEC to a POU for its failure to comply with requirements of the state's RPS Program.

Senate Bill 375 (Sustainable Communities and Climate Protection Act)

SB 375 supports the state's climate action goals to reduce GHG emissions through coordinated transportation and land use planning with the goal of developing more sustainable communities. Under SB 375, CARB sets regional targets for GHG emissions reductions associated with passenger vehicle use. Each of California's metropolitan planning organizations must prepare a Sustainable Communities Strategy (SCS) as an integral part of its Regional Transportation Plan (RTP). The SCS contains land use, housing, and transportation strategies that, if implemented, would allow the region to meet its GHG emission reduction targets. The Sustainable Communities Act also establishes incentives to encourage local governments and developers to implement the identified GHG reduction strategies.

The Fresno Council of Governments (Fresno COG) is the federally-recognized metropolitan planning organization for Fresno County and has prepared the *2014 Regional Transportation Plan and Sustainable Communities Strategy* for the region. Target reductions for Fresno COG are a 5% reduction in emissions per capita by 2020 and a 10% reduction by 2035. Project consistency with the *2014 Regional Transportation Plan and Sustainable Communities Strategy* would therefore support AB 32 GHG reduction goals.

Senate Bill 1368 Emission Performance Standards

The Emissions Performance Standard (EPS), established by Senate Bill 1368 (Perata, Chapter 598, Statutes of 2006), limits long-term investments in baseload generation by the state's utilities for power plants based on GHG emissions.

The California Energy Commission established an EPS for the baseload generation of local POUs. The standard is a rate of emissions of GHGs that is no higher than the rate of emissions of GHGs for combined-cycle natural gas baseload generation. All financial investments must meet the EPS. The project, as a renewable energy-generation facility is determined by rule to comply with the GHG EPS requirements of SB 1368.

17 Cal. Code Regs. Section 95350 et seq.

The purpose of this regulation is to achieve GHG emission reductions by reducing SF<sub>6</sub> emissions from gas-insulated switchgear. Owners of such switchgear must not exceed maximum allowable annual emissions rates, which are reduced each year until 2020, after which annual emissions must not exceed 1.0%. Owners must regularly inventory gas-insulated switchgear equipment, measure quantities of SF<sub>6</sub>, and maintain records of these for at least 3 years. Additionally, by June 1 each year, owners must submit an annual report to CARB's Executive Officer for emissions that occurred during the previous calendar year. These regulations will apply to the subject project if switchgear equipment containing SF<sub>6</sub> is installed onsite.



## Local

### Fresno Council of Governments Regional Transportation Plan

Fresno COG is a voluntary association of local governments within the County responsible for regional transportation planning. Fresno COG's 2018 RTP charts the 25-year course of transportation to 2042. The RTP addresses GHG emissions reductions and other air emissions related to transportation, with the goal of preparing for future growth in a sustainable manner.

### California Air Pollution Control Officer's Association *CEQA and Climate Change*

The California Air Pollution Control Officer's Association (CAPCOA) published its white paper on CEQA and climate change in January 2008, *Evaluating and Addressing Greenhouse Gas Emissions from Projects Subject to the California Environmental Quality Act* (CAPCOA 2008). The white paper provided a review of policy choices, analytical tools, and mitigation strategies for determining the significance of greenhouse gases. No specific recommendation was finalized, but the pros and cons of various thresholds were discussed.

### *Quantifying Greenhouse Gas Mitigation Measures*

In August 2010, CAPCOA published its report titled *Quantifying Greenhouse Gas Mitigation Measures* to serve as a resource for local governments to assess emission reductions from GHG Mitigation Measures. The measures were focused on typical land use development projects and involved building energy use, water use, solid waste, transportation, construction, and onsite energy generation.

### San Joaquin Valley Air Pollution Control District

In August 2008, the San Joaquin Valley Air Pollution Control District (SJVAPCD) Governing Board adopted the Climate Change Action Plan (CCAP). The CCAP directed the SJVAPCD Air Pollution Control Officer to develop guidance to assist lead agencies, project proponents, permit applicants, and interested parties in assessing and reducing the impacts of project-specific GHG emissions on global climate change.

On December 17, 2009, SJVAPCD adopted the *Guidance for Valley Land-use Agencies in Addressing GHG Emission Impacts for New Projects under CEQA* and the *District Policy Addressing GHG Emission Impacts for Stationary Source Projects under CEQA When Serving as the Lead Agency*. The guidance and policy rely on the use of performance-based standards otherwise known as Best Performance Standards (BPS) to assess the significance of project-specific GHG emissions on global climate change during the environmental review process, as required by CEQA (SJVAPCD 2009a, 2009b).

Use of BPS is a method of streamlining the CEQA process of determining significance and is not a required emission reduction measure. Projects implementing BPS would be determined to have a less than cumulatively significant impact. Otherwise, demonstration of a 29% reduction in GHG emissions from business-as-usual is required to determine that a project would have a less than cumulatively significant impact. The guidance does not limit a lead agency's authority in establishing its own process and guidance for determining significance of project-related impacts on global climate change (SJVAPCD 2009c).

## 4.7.2 Environmental Setting

The issue of combating climate change and reducing GHGs has been the subject of state legislation (AB 32 and SB 375).

### Greenhouse Gases

Greenhouse gases (GHGs) and climate change are cumulative global issues. CARB and EPA regulate GHG emissions in the State of California and the U.S., respectively. While CARB has the primary regulatory responsibility in California for GHG emissions, local agencies can also adopt policies for GHG emission reduction.

Many chemical compounds in the Earth's atmosphere act as GHGs because they absorb and emit radiation within the thermal infrared range. When radiation from the sun reaches the Earth's surface, some of it is reflected back into the atmosphere as infrared radiation (heat). GHGs absorb this infrared radiation and trap the heat in the atmosphere. Over time, the amount of energy radiated from the sun to the Earth's surface should be approximately equal to the amount of energy radiated back into space, leaving the temperature of the Earth's surface roughly constant; however, many gases exhibit these "greenhouse" properties, resulting in greater temperature variations. Some of them occur in nature (such as water vapor, Carbon Dioxide, Methane, and Nitrous Oxide), while others are exclusively human-made (such as gases used for aerosols) (EPA 2014).

The principal climate change gases resulting from human activity that enter and accumulate in the atmosphere are described below:

#### Carbon Dioxide

Carbon Dioxide (CO<sub>2</sub>) enters the atmosphere through the burning of fossil fuels (oil, natural gas, and coal), solid waste, trees and wood products, and chemical reactions (e.g., from the manufacture of cement). CO<sub>2</sub> is also removed from the atmosphere (or "sequestered") when it is absorbed by plants as part of the biological carbon cycle.

#### Methane

Methane (CH<sub>4</sub>) is emitted during the production and transport of coal, natural gas, and oil. CH<sub>4</sub> emissions also result from livestock and agricultural practices and the decay of organic waste in municipal solid waste landfills.

#### Nitrous Oxide

Nitrous Oxide (N<sub>2</sub>O) is emitted during agricultural and industrial activities as well as during combustion of fossil fuels and solid waste.

#### Fluorinated Gases

Hydrofluorocarbons (HFCs), perfluorinated chemicals (PFCs), and sulfur hexafluoride (SF<sub>6</sub>) are synthetic, powerful climate-change gases that are emitted from a variety of industrial processes. HFCs are frequently used in air conditioning and as refrigerants. PFCs are colorless, highly dense, chemically inert, and nontoxic. There are seven PFC gases: perfluoromethane (CF<sub>4</sub>), perfluoroethane (C<sub>2</sub>F<sub>6</sub>), perfluoropropane (C<sub>3</sub>F<sub>8</sub>), perfluorobutane (C<sub>4</sub>F<sub>10</sub>), perfluorocyclobutane

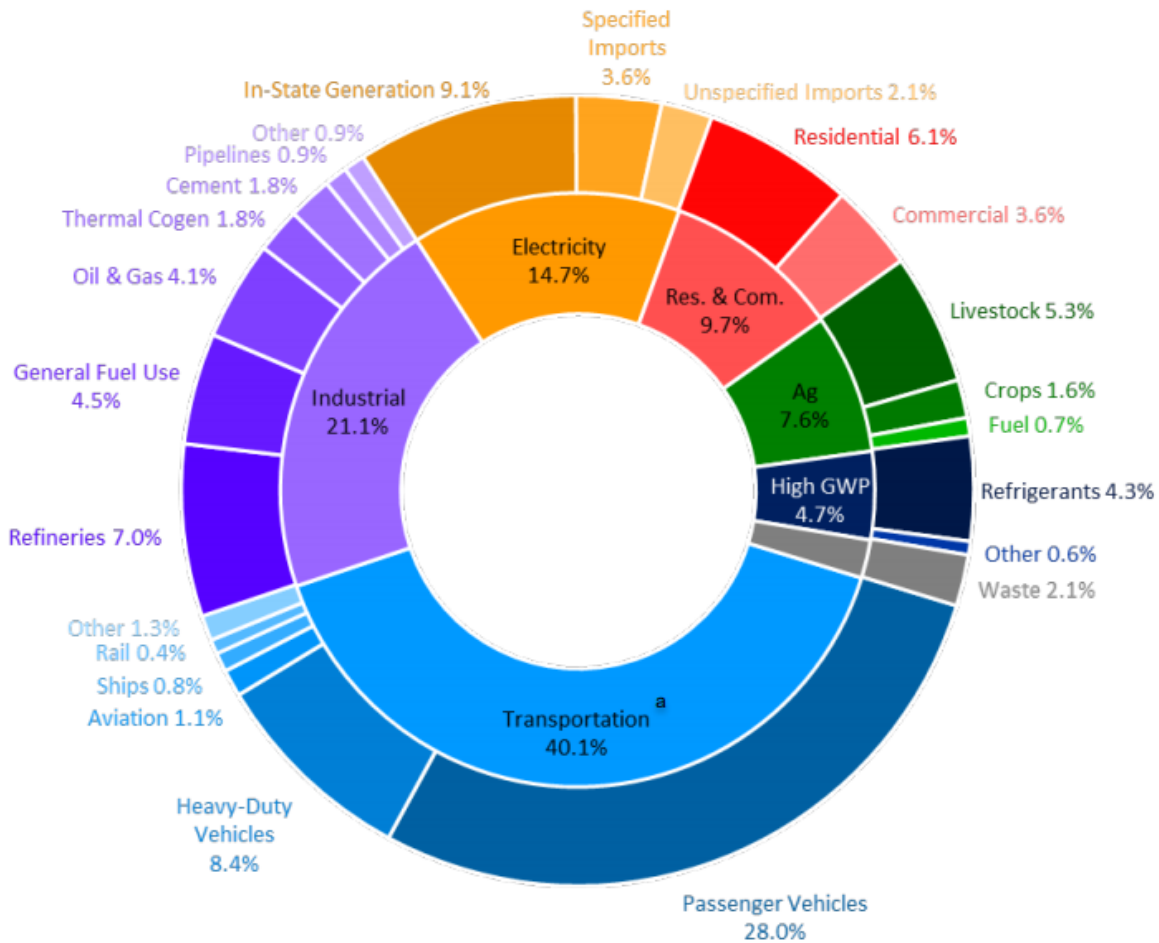
(C<sub>4</sub>F<sub>8</sub>), perfluoropentane (C<sub>5</sub>F<sub>12</sub>), and perfluorohexane (C<sub>6</sub>F<sub>14</sub>). Natural geological emissions have been responsible for the PFCs that have accumulated in the atmosphere in the past; however, the largest current source is aluminum production, which releases CF<sub>4</sub> and C<sub>2</sub>F<sub>6</sub> as byproducts. SF<sub>6</sub> is an inorganic compound that is colorless, odorless, nontoxic, and generally nonflammable. SF<sub>6</sub> is primarily used as an electrical insulator in high voltage equipment. Fluorinated gases are often used as substitutes for ozone-depleting substances (i.e., chlorofluorocarbons, hydrochlorofluorocarbons, and halons). These gases are typically emitted in smaller quantities, but because they are potent climate-change gases, they are sometimes referred to as high global warming potential gases.

### Emissions Inventories and Trends

According to the CARB's recent GHG inventory for the state released August 2019, California produced 424 million MTCO<sub>2</sub>e in 2017 (CARB 2019). The major source of GHGs in California is transportation, contributing 40% of the state's total GHG emissions in 2017. Emissions from the electric power sector comprise 15% of 2017 statewide GHG emissions. The GHG emission inventory divides the electric power sector into two broad categories: emissions from in-state power generation (including the portion of cogeneration emissions attributed to electricity generation) and emissions from imported electricity. GHG emissions from the electricity sector declined by 9% in 2017 compared to 2016. The overall decrease in carbon intensity of California's electricity generation is driven primarily by the large increase in zero-GHG and renewable energy resources due in part to RPS and the cap-and-trade program.

Figure 4.7-1 shows California's GHG emissions by sector and sub-sector categories. The inner ring shows the broad scoping plan sectors. The outer ring breaks out the broad sectors into sub-sectors or emission categories under each sector.

Figure 4.7-1: 2017 Greenhouse Gas Emissions by Scoping Plan Sector and Sub-Sector Categories



## Potential Environmental Impacts

For California, climate change in the form of warming has the potential to incur or exacerbate environmental impacts, including but not limited to changes to precipitation and runoff patterns, increased agricultural demand for water, inundation of low-lying coastal areas by sea-level rise, and increased incidents and severity of wildfire events. Although certain environmental effects are known hazards to certain locations, such as rising sea level for low-lying coastal areas, it is currently infeasible to predict all environmental effects of climate change on any one location.

Emissions of GHGs contributing to global climate change are attributable in large part to human activities associated with the industrial and manufacturing, utility, transportation, residential, and agricultural sectors. Therefore, the cumulative global emissions of GHGs contributing to global climate change can be attributed to every nation, region, and city, and virtually every individual on Earth. A project's GHG emissions are at a micro-scale relative to global emissions but could result in a cumulatively considerable incremental contribution to a significant cumulative macro-scale impact.

### 4.7.3 Environmental Impact Analysis

This section analyzes the proposed project's potential to result in significant impacts to GHG emissions. When an impact is determined to be significant, Mitigation Measures are identified that would reduce or avoid that impact.

#### Methodology

GHG emission estimates are provided in the Air Quality and Greenhouse Gas Evaluation Technical Report (Appendix C). The emission estimates and analysis therein were used as the basis for analysis in the preparation of this Draft EIR. The construction schedule used in the technical study represented a "worst-case" analysis scenario by considering a near-future construction timeline and assuming that no carpooling would occur. Emissions from construction occurring any time after the noted dates would likely decrease, since increased regulations requiring the use of cleaner construction equipment fleets are adopted annually.

To determine the significance of the impacts caused by the proposed project's GHG emissions, SJVAPCD's established GHG significance threshold methodology was used (SJVAPCD 2009c). This methodology recommends that projects be compared to a business-as-usual scenario, and that projects should be considered to not have a significant impact if they can be demonstrated to have a 29% reduction in GHG emissions from the business-as-usual scenario. The business-as-usual scenario for the project assumes that there would be no changes to the methods used to generate electricity for the State of California.

The potential for the proposed project to conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing emissions of GHG was assessed by examining any potential conflicts with the GHG reduction measures related to implementation of AB 32, including the potential conflict with any of the 39 recommended actions identified by CARB in its Climate Change Scoping Plan and the SJVAPCD's Climate Change Action Plan; and assessing the project's compatibility with the Fresno County General Plan.

## Thresholds of Significance

In accordance with the CEQA Guidelines Appendix G Environmental Checklist, the following questions were analyzed and evaluated to determine whether impacts related to GHG emissions are significant.

Would the proposed project:

- Generate GHG emissions either directly or indirectly that may have a significant impact on the environment?
- Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs?

## Project Impact Analysis and Mitigation Measures

This section discusses potential impacts related to greenhouse gas emissions associated with the proposed project and provides Mitigation Measures where necessary.

### Generation of Greenhouse Gases

---

**Impact GHG-1    The proposed project would not generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment.**

---

## Impact Analysis

### Construction and Decommissioning Emissions

The majority of emissions from the solar facility would be generated during construction and decommissioning from mobile sources due to the use of heavy-duty off-road equipment. GHG emissions also would be generated by construction worker daily commutes, from heavy-duty diesel tractor trailer trucks that would be required to haul materials and debris to and from the project site, and due to water used for dust control and other construction activities. Estimates of total annual GHG emissions from the solar facility are shown in Table 4.7-1. The project would displace 96,168 MTCO<sub>2e</sub> per year and result in a net reduction in GHG emissions. Refer to Appendix C for additional information on the assumptions, emission factors, and methodologies used to estimate GHG emissions. Additionally, Mitigation Measure GHG-1 would be implemented to further reduce any greenhouse gas emissions related to construction and decommissioning.

### Operational Emissions

Operational emissions associated with the solar facility are summarized in Table 4.7-1. Operational emissions of GHGs would be emitted during on- and offsite motor vehicle travel, water usage, and potential leaks of SF<sub>6</sub> gas from high-voltage switchgear. The total CO<sub>2e</sub> operational emissions from the three facilities are estimated to be 960 MTCO<sub>2e</sub> each year for a cumulative total of 33,600 MTCO<sub>2e</sub> over the course of 35 years.

High-voltage switchgear for the project may have circuit breakers that contain SF<sub>6</sub> gas, a GHG with high global warming potential. SF<sub>6</sub> is used as an insulator and arc suppressor in the circuit



breakers. Under normal operating conditions the SF<sub>6</sub> gas would be contained in the equipment and released only through a leak in the circuit breaker housing. Mitigation Measure GHG-2 would be implemented to ensure that all breakers purchased for this project will have a manufacturer's guaranteed SF<sub>6</sub> leakage rate of 0.5% per year or less.

As discussed above, SJVAPCD has established a GHG significance threshold methodology that recommends projects be compared to a business-as-usual scenario and that a project should be considered to not have a significant impact if it can be demonstrated to have a 29% reduction in GHG emissions from the business-as-usual scenario. The business-as-usual scenario for the solar facility assumes that there would be no changes to the methods used to generate electricity for the State of California. As described in Table 4.7-1, the proposed project would result in an annual GHG emissions reduction of more than 96,168 MTCO<sub>2</sub>e compared to the business-as-usual scenario, a reduction greater than 100%. Therefore, impacts associated with GHG emissions would be less than significant with compliance to the Mitigation Measures.

**Table 4.7-1 Total Project Annual Greenhouse Gas Emissions**

Project	Phases	CO <sub>2</sub> e (metric tons per year)
Fifth Standard Solar CUP 3562	Construction	4,391
	Operation and Maintenance	422
	Decommissioning	4,391
	Total	9,204
Stonecrop Solar CUP 3563	Construction	2,400
	Operation and Maintenance	270
	Decommissioning	2,400
	Total	5,070
Blackbriar Battery Storage CUP 3564	Construction	2,323
	Operation and Maintenance	268
	Decommissioning	2,323
	Total	4,914
Project Total		19,188
Annual Displaced Emissions		-105,502
Annual Net Emissions with Construction		-86,314

Note:

Source: ESA 2016a (Appendix C)

### Level of Significance Before Mitigation

Potentially Significant Impact.

## Mitigation Measures

**MM GHG-1: Greenhouse Gas Reduction Measures.** In order to further reduce greenhouse gas emissions, the Developer shall:

- Prior to the start of construction, develop and implement a program encouraging construction workers to carpool or use public transportation for travel to and from construction sites.
- Implement a construction waste recycling program with the objective of recycling at least 65% of the project waste (by weight), pursuant to the California Green Building Standards Code. This is discussed further in Section 4.16, Utilities.
- Minimize welding and cutting by requiring the use of compression of mechanical applications where practical and within standards.

**MM GHG-2: Circuit Breakers.** All breakers used for this project will have a manufacturer-guaranteed sulfur hexafluoride (SF<sub>6</sub>) leakage rate of 0.5% per year or less.

## Level of Significance After Mitigation

Less Than Significant Impact with Mitigation Incorporated.

Conflict with an Applicable Plan, Policy, or Regulation

---

**Impact GHG-2 The proposed project would not conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases.**

---

## Impact Analysis

Fresno County's General Plan does not include any applicable goals or policies for the reduction of GHGs.

The solar facility could conflict with the intent of certain GHG reduction goals set forth in AB 32, including the 39 recommended actions identified by CARB in its Climate Change Scoping Plan. The RPS and high global warming potential gases can be found in the Climate Change Scoping Plan and are relevant to the proposed project. Consistency of the project with these measures has been evaluated by each source-type measure described below.

**Scoping Plan Measure E-3: RPS.** The RPS promotes multiple objectives, including diversifying the electricity supply. Increasing the RPS to 33% renewables by 2020 is designed to accelerate the transformation of the electricity sector, including investment in the transmission infrastructure and system changes to allow integration of large quantities of intermittent solar and wind generation. The RPS has continued to evolve, with increasing requirements on utilities to increase their percentage of renewable energy. As of October 2015, the target percentage has been established as 50% renewable energy by 2030. A key prerequisite to reaching a target of 50% renewables by 2030 would be to provide sufficient electric transmission lines to renewable resource zones and system changes to allow integration of large quantities of intermittent wind and solar generation. The proposed project would add renewable solar-generated energy to the electricity supply; therefore, the project would be consistent with this recommended action.

**Scoping Plan Measure H-6: High Global Warming Potential Gas Reductions from Stationary Sources—SF<sub>6</sub> Leak Reduction and Recycling in Electrical Applications.** This measure will reduce emissions of SF<sub>6</sub> within the electric utility sector and at particle accelerators by requiring the use of best achievable control technology for the detection and repair of leaks and further requiring the recycling of SF<sub>6</sub>. This measure would establish a regulation mandating a performance standard. Utilities and other affected entities would comply by using leak detection and repair abatement equipment to reduce system leakage. The proposed performance standard would mandate and enhance current voluntary federal SF<sub>6</sub> recycling standards. The proposed project would implement Mitigation Measure GHG-2 to ensure that all breakers purchased for this proposed project would have a manufacturer's guaranteed SF<sub>6</sub> leakage rate of 0.5% per year or less, thus ensuring that emissions of SF<sub>6</sub> are less than significant.

#### **Level of Significance Before Mitigation**

Potentially Significant Impact.

#### **Mitigation Measures**

Mitigation Measures GHG-1 and GHG-2 are required.

#### **Level of Significance After Mitigation**

Less Than Significant Impact with Mitigation Incorporated.

### **4.7.4 Cumulative Impacts**

The geographic scope of GHG impacts is the State of California. The proposed project would have less than significant GHG impacts with mitigation during construction, operation, and decommissioning with respect to generation of GHGs and would not conflict with applicable plan, policy, or regulation.

As discussed previously, most of the emissions from the proposed project would be generated during construction from mobile sources due to the use of heavy-duty off-road equipment. GHG emissions also would be generated by construction worker daily commutes, from heavy-duty diesel tractor trailer trucks that would be required to haul materials and debris to and from the project site, and as a result of water used for dust control and other construction activities; however, these emissions would be more than offset by the avoided GHG emissions resulting from the proposed project's renewable electricity generation. Therefore, the cumulative impact would be less than significant and the proposed project would not be cumulatively considerable.

GHG emissions are inherently a cumulative concern, in that the significance of GHG emissions is determined based on whether such emissions would have a cumulatively considerable impact on global climate change. Although the geographic scope of cumulative impacts related to GHG emissions is global, this analysis focuses on the state, the region, and the project's direct and indirect generation or offset of GHG emissions. As shown in Table 4.7-1, the proposed project would result in a net reduction of 104,542 MTCO<sub>2e</sub> per year post-construction and would be consistent and not conflict with the state's GHG reduction goals. Therefore, the proposed project's incremental impact on GHG emissions would not be cumulatively considerable.

## 4.8 HAZARDS AND HAZARDOUS MATERIALS

This section describes the regulatory and environmental setting for hazards and hazardous materials. It also describes potential impacts regarding hazards and hazardous materials that would result from implementation of the Fifth Standard Solar Facility Project Complex (proposed project) and includes Mitigation Measures for significant impacts, where applicable. The County received no scoping comments pertaining to hazards and hazardous materials (Appendix A).

### 4.8.1 Regulatory Setting

#### Federal

##### U.S. Environmental Protection Agency

The U.S. Environmental Protection Agency (EPA) was established in 1970 to consolidate a variety of federal research, monitoring, standard-setting, and enforcement activities in one agency to ensure environmental protection. The EPA's mission is to protect human health and to safeguard the natural environment—air, water, and land—upon which life depends. EPA works to develop and enforce regulations that implement environmental laws enacted by Congress, is responsible for researching and setting national standards for a variety of environmental programs, and delegates to states and some tribes the responsibility for issuing permits and for monitoring and enforcing compliance. Where national standards are not met, EPA can issue sanctions and take other steps to assist the states and tribes in reaching the desired levels of environmental quality.

##### Federal Toxic Substances Control Act/Resource Conservation and Recovery Act/Hazardous and Solid Waste Act

The Federal Toxic Substances Control Act and the Resource Conservation and Recovery Act of 1976 (RCRA) established a program administered by EPA to regulate the generation, transportation, treatment, storage, and disposal of hazardous waste. RCRA was amended in 1984 by the Hazardous and Solid Waste Act (HSWA), which affirmed and extended the “cradle to grave” system of regulating hazardous wastes.

##### Comprehensive Environmental Response, Compensation, and Liability Act/Superfund Amendments and Reauthorization Act

The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), commonly known as “Superfund,” was enacted by Congress on December 11, 1980. This law (42 U.S. Code [USC] 103) provides broad federal authority to respond directly to releases or threatened releases of hazardous substances that may endanger public health or the environment. CERCLA establishes requirements concerning closed and abandoned hazardous waste sites, provides for liability of persons responsible for releases of hazardous waste at these sites, and establishes a trust fund to provide for cleanup when no responsible party can be identified. CERCLA also enables the revision of the National Contingency Plan (NCP). The NCP (Title 40, Code of Federal Regulations [CFR], Part 300) provides the guidelines and procedures needed to respond to releases and threatened releases of hazardous substances, pollutants, and/or contaminants. The NCP also established the National Priorities List (NPL), which lists sites of known or threatened release of hazardous substances to assist EPA in

determining which sites warrant further investigation. CERCLA was amended by the Superfund Amendments and Reauthorization Act on October 17, 1986.

#### Clean Water Act/Spill Prevention, Control, and Countermeasure Rule

The Clean Water Act (CWA) (33 USC 1251 et seq., formerly the Federal Water Pollution Control Act of 1972) was enacted with the intent of restoring and maintaining the chemical, physical, and biological integrity of waters of the United States. As part of the CWA, EPA oversees and enforces the Oil Pollution Prevention regulation contained in 40 CFR 112, which is often referred to as the “SPCC rule” because the regulations describe the requirements for facilities to prepare, amend, and implement Spill Prevention, Control, and Countermeasure (SPCC) plans. A facility is subject to SPCC regulations if a single oil storage tank has a capacity greater than 660 gallons, or the total aboveground oil storage capacity exceeds 1,320 gallons, or the underground oil storage capacity exceeds 42,000 gallons, and if, due to its location, the facility could reasonably be expected to discharge oil into or upon the “Navigable Waters” of the United States.

#### Occupational Safety and Health Act of 1970

The agency responsible for ensuring worker safety in the handling and use of chemicals in the workplace is the Occupational Safety and Health Administration (OSHA). The federal regulations pertaining to worker safety are contained in Title 29 of the CFR, as authorized in the Occupational Safety and Health Act of 1970. The regulations provide standards for safe workplaces and work practices, including standards relating to hazardous materials handling. At sites known or suspected to have soil or groundwater contamination, construction workers must receive training in hazardous materials operations and a site health and safety plan must be prepared. The health and safety plan establishes policies and procedures to protect workers and the public from exposure to potential hazards at the contaminated site.

### **State**

California hazardous materials and wastes regulations are equal to or more stringent than federal regulations. EPA has granted the state primary oversight responsibility to administer and enforce hazardous waste management programs. Several key state laws pertaining to hazardous materials and wastes are discussed below.

#### Title 8 Industrial Safety Regulations

California regulations pertaining to worker safety are codified in Title 8, Division 1, Chapter 3.2, Subchapter 2 of the California Code of Regulations [CCR]). The California Occupational Safety and Health Administration (Cal/OSHA) is the agency responsible for assuring worker safety from both physical and chemical hazards in the workplace.

#### Title 22 Hazardous Waste Regulations

The Department of Toxic Substance Control (DTSC) regulates the generation, transportation, treatment, storage, and disposal of hazardous materials waste. Title 22 hazardous waste regulations establish criteria for identifying, packaging, and labeling hazardous wastes; dictate the management of hazardous waste; establish permit requirements for hazardous waste treatment, storage, disposal, and transportation; and identify hazardous wastes that cannot be

disposed of in landfills. These regulations also require hazardous materials users to prepare written plans, such as a hazardous materials business plan, that describe hazardous materials inventory information, storage and secondary containment facilities, emergency response and evacuation procedures, and employee hazardous materials training programs. A number of agencies participate in enforcing hazardous materials management requirements, including DTSC, the Regional Water Quality Control Board (RWQCB), and the County.

#### Other State Regulations

The CCR contains additional requirements that would apply to the proposed project, including:

1. Title 8 CCR Section 2700 et seq., High Voltage Electrical Safety Orders, which establish essential requirements and minimum standards for installation, operation, and maintenance of electrical equipment to provide practical safety and freedom from danger.
2. Title 14 CCR Sections 1250–1258, Fire Prevention Standards for Electric Utilities, which provide specific exemptions from electric pole and tower firebreak and electric conductor clearance standards and specifies when and where the standards apply. It establishes minimum clearance requirements for flammable vegetation and materials surrounding structures.
3. Title 22 CCR Section 66273 Standards for Universal Waste Management, which regulate the management of universal wastes. These wastes are not fully regulated as hazardous waste to encourage their recycling. Batteries, electronic devices, mercury-containing equipment, lamps, cathode ray tubes and tube glass, and aerosol cans are considered universal wastes in California. A person or business who generates universal waste is required to follow the Management Requirements for Universal Waste Handlers (22 CCR Sections 66273.30–66273.39), which include storage, spill protection, and disposal rules designed to minimize risk of harm to public health and the environment.

#### Local

##### Fresno County General Plan

The following lists goals and policies from the Health and Safety Element of the Fresno County 2000 General Plan pertaining to hazards and hazardous materials that are applicable to the proposed project.

**Policy HS-B.1:** The County shall review project proposals to identify potential fire hazards and to evaluate the effectiveness of preventive measures to reduce the risk to life and property.

**Policy HS-B.5:** The County shall require development to have adequate access for fire and emergency vehicles and equipment.

**Policy HS-B.8:** The County shall refer development proposals in the unincorporated County to the appropriate local fire agencies for review of compliance with fire safety standards. If dual responsibility exists, both agencies shall review and comment relative to their area of responsibility. If standards are different or conflicting, the more stringent standards shall apply.

**Goal HS-F:** To minimize the risk of loss of life, injury, serious illness, and damage to property resulting from the use, transport, treatment, and disposal of hazardous materials and hazardous wastes.



**Policy HS-F.1:** The County shall require that facilities that handle hazardous materials or hazardous wastes be designed, constructed, and operated in accordance with applicable hazardous materials and waste management laws and regulations.

#### Fresno County Office of Emergency Services Operational Area Master Emergency Services Plan

The Fresno County Office of Emergency Services prepared the Operational Area Master Emergency Services Plan to serve as a guide for response to an emergency or disaster in the unincorporated areas of the County, and to coordinate and assist with the disaster response in jurisdictions both within and outside of the County. The plan provides support services and coordination activities to response agencies that assess, mitigate, and respond to threats to the public and the environment regarding actual or potential hazardous material releases. This includes short-term recovery and removal of hazardous materials and having a staff person in the Public Health and Environmental Health Division that acts as a resource to the Emergency Operations Center relative to technical specialty areas, which includes hazardous materials.

#### Fresno County Solar Facility Guidelines

The Fresno County *Solar Facility Guidelines* (County 2017a) include a provision applicable to the proposed project that requires the preparation of a reclamation plan detailing the lease life, timeline for removal of the improvements, and specific measures to return the site to the agricultural capability prior to installation of solar improvements. While not specifically addressing hazardous materials, the reclamation plan would provide for the disposal/recycling of materials (solar panels, inverters, and other infrastructure) in accordance with applicable regulations for the disposal of hazardous materials. If the project is approved, adequate financial security to the satisfaction of the County shall be provided to ensure site reclamation.

#### North American Electric Reliability Corporation Standards

The North American Electric Reliability Corporation (NERC) is a nonprofit corporation composed of ten regional reliability councils. NERC develops and enforces reliability standards; monitors the bulk power systems; and educates, trains, and certifies industry personnel (NERC 2013). NERC developed a transmission vegetation management program to prevent widespread outages. The plan is applicable to all transmission lines operated at 200 kilovolts (kV) and above and to lower voltage lines designated by the Regional Reliability Organization as critical to the reliability of the electric system in the region. As described in Chapter 2.0, Project Description, the proposed generation tie (gen-tie) line would require approximately 1,800 feet, or 0.3 mile, of 230-kV, single-circuit overhead electric transmission line to connect the project site to the Gates Substation; therefore, the NERC standards identified would be applicable.

### 4.8.2 Environmental Setting

A hazardous material is defined as any material that, because of quantity, concentration, or physical or chemical characteristics, poses a significant present or potential hazard to human health and safety or to the environment if released into the workplace or the environment (Health and Safety Code Section 25501(o)). The term “hazardous materials” refers to both hazardous substances and hazardous wastes. Under federal and state laws, any material, including wastes, may be considered hazardous if it is specifically listed by statute as such or if

it is toxic (causes adverse human health effects), ignitable (has the ability to burn), corrosive (causes severe burns or damage to materials), or reactive (causes explosions or generates toxic gases).

The project site is in a rural, agricultural area of the County in the southern part of the San Joaquin Valley. Hazardous waste handlers and generators in the County include industries, businesses, public and private institutions, and households. Additionally, agricultural land uses can involve the production and storage of animal wastes and the storage and application of various fertilizers, herbicides, and pesticides. If encountered during construction by workers or the general public, these sources of hazardous materials can cause exposures that may result in adverse environmental and health effects. The four primary exposure pathways through which an individual can be exposed to a hazardous material are inhalation, ingestion, bodily contact, and injection. Exposure can come as a result of an accidental release of hazardous materials during transport, storage, or handling. Disturbance of contaminated subsurface soil during construction can also cause exposure to workers, the public, or the environment through stockpiling, handling, or transport of soils.

### **Phase I Environmental Site Assessment**

A Phase I Environmental Site Assessment (Phase I) of the project site was performed by Stantec Consulting Services Inc. (Stantec) on November 1, 2017 (Stantec 2017). The purpose of the Phase I is to identify adverse environmental conditions, including Recognized Environmental Conditions (RECs) on the project site. The Phase I included a records review of the project site to develop the history of the site and the surrounding area and to evaluate if past uses may have resulted in RECs. The Phase I also included a site reconnaissance of the project site and its vicinity. The results of the records review and site reconnaissance are summarized in the following paragraphs and further discussed in Appendix G.

#### Records Review

A regulatory agency database search report for the project site was obtained from Environmental Data Resources, Inc. (EDR). The EDR database search included a search of all available federal, state, regional, and local agency database listings. The complete list of the searched databases is provided in Appendix G. The information listed within the databases was evaluated relative to the potential impact to the project site, assessing the potential for impacts based in part on the physical setting. The environmental agency database search also evaluated the conditions of surrounding sites to identify a REC, Historical Recognized Environmental Conditions (HRECs), and/or Controlled Recognized Environmental Conditions (CRECs). The term "Recognized Environmental Conditions" means the presence or likely presence of any hazardous substances or petroleum products in, on, or at a property that exist on the following bases:

1. Due to any release to the environment;
2. Under conditions indicative of a release to the environment; or
3. Under conditions that pose a material threat of a future release to the environment.

As indicated, the term REC does not include *de minimis* conditions, which generally do not present a material risk to human health and would not likely be subject to enforcement action if brought to the attention of governmental agencies.

The EDR database search reported release sites located within one-quarter mile of the project site, which are considered to have the potential to impact the project site. Facilities that are listed in the database search report but not identified as a release site, such as a hazardous waste generator, are not considered to have a potential to represent an environmental concern relative to the project site. Based on this evaluation, six individual facilities were identified as the most likely potential sources of impact to the project site, as reported by EDR. Table 4.8-1 provides a summary of the facilities. No RECs were identified due to *de minimis* conditions, “No Further Action” status, or distance from the project site. The term *de minimis* includes hazardous substances or petroleum products under conditions in compliance with laws. Based on the results of the EDR search, the project site does not contain any current or historical hazardous release sites.

**Table 4.8-1: Listings of Nearby Sites with Potential to Impact Property**

Listed Facility Name/Address	Database Listing	Distance/Direction from Property	REC? (Yes/No)
Woolf Burnett Farms 17101 Tractor Avenue, Huron, CA 93234	Certified Uniform Program Agency	0.702 mile northeast	No
Lassen Avenue at Tractor Avenue, Huron, CA 93234	California Hazardous Materials Incident Reporting System	Adjacent to the east	No
AT&T Mobility – Huron (9570) AT&T EH&S Compliance – USID 9570 New Cingular Wireless – Huron 27596 AT&T Wireless Services 40811 South Lassen Avenue Huron, CA 93234	Facility Index System, Emissions Inventory Data, Certified Uniform Program Agency	0.39 mile south-southeast	No
Woolf Enterprises 17891 Gale Avenue, Huron, CA 93234	U.S. Aerometric Information Retrieval System Facility Recovered Government Archives Leaking Underground Storage Tank, Cortese Hazardous Waste and Substances Sites List, Certified Uniform Program Agency	0.34 mile north	No
Level 3 Communications LLC 18364 W. Jayne Avenue Coalinga, CA 93210	Certified Uniform Program Agency, Emissions Inventory Data	Adjacent to the southwest of the south property boundary	No
PG&E Gates Substation & Maintenance HQ, 18336 W. Jayne Avenue Coalinga, CA 93210	Certified Uniform Program Agency, Aboveground Storage Tank	Adjacent to the southwest of the south property boundary	No

Site Reconnaissance

A visit to the project site was conducted by Stantec employee Mike Myers on October 5, 2017. The site reconnaissance focused on observation of current conditions and observable indications of past uses and conditions that may indicate the presence of a REC. Due to the size of the project site, site reconnaissance was conducted on vehicle and foot.

The following observations were made during the site reconnaissance of the project site, as presented below in Table 4.8-2. Figure 4.8-1 provides the approximate location of the site reconnaissance findings.

**Table 4.8-2: Site Reconnaissance Observations**

Observation	Description
Hazardous Substances and Petroleum Products as Defined by CERCLA 42 USC Section 9601(14):	Seven agricultural irrigation pumps with small turbine oil ASTs were identified on and immediately surrounding the project site (APNs 075-070-01S, 075-060-15S, 075-070-34S, and 075-070-01S). Two 55-gallon polypropylene drums containing organic peroxide and one large polypropylene tank containing sulfuric acid were identified immediately outside the project site, on the northeastern border. Three polypropylene tanks containing root chemical were identified immediately across the southwestern project site boundary, with two additional polypropylene tanks containing sulfuric acid (one tank), and US-15 fertilizer (one tank; see Figure 4.8-1). Two polypropylene tanks containing corrosive liquid were identified on the project site (APN 075-070-01S), approximately 0.5 mile south of W. Tractor Avenue, and 0.5 mile west of S. Lassen Avenue. One 1,000-gallon diesel fuel tank was identified on the adjacent project site located on the southeast corner of the intersection of W. Tractor Avenue and S. Lassen Avenue, immediately across the eastern project site boundary.
Drums (≥ 5 gallons):	Two 55-gallon polypropylene drums containing organic peroxide, one large polypropylene tank containing sulfuric acid, three polypropylene tanks containing root chemical, two polypropylene tanks containing sulfuric acid and US-15 fertilizer, and two polypropylene tanks containing corrosive liquid were identified on or immediately adjacent to the project site (APNs 075-070-01S, 075-060-015S, and 075-130-060S).
Strong, Pungent, or Noxious Odors:	None observed.
Pools of Liquid:	None observed.
Unidentified Substance Containers	One large polypropylene tank located on the southwestern corner of the project site, approximately 1 mile south of W. Tractor Avenue and 1 mile east of S. Lassen Avenue. Two unlabeled polypropylene tanks were identified on the adjacent project site to the southwest, immediately across the project site boundary, approximately 1 mile south of W. Tractor Avenue, and 1.5 miles west of S. Lassen Avenue.

Observation	Description
Polychlorinated biphenyl (PCB) Containing Equipment:	A total of eleven pole-mounted and pad-mounted transformers were observed throughout the project site in the following locations: <ul style="list-style-type: none"> <li>• One was identified on the adjacent project site to the north, located approximately 30-feet north of the northwest corner of APN 075-130-60S.</li> <li>• One was identified on the adjacent project site to the northeast, located immediately northeast of the northeast corner of APN 075-130-59S.</li> <li>• One was identified on the adjacent project site to the east, located immediately east of the boundary between APNs 075-130-59S and 075-130-54S.</li> <li>• Five pole-mounted transformers were identified on the adjacent project site to the east, located approximately 20-ft south of the northeast corner of APN 075-070-01S.</li> <li>• One was identified on the project site in the northeast corner of APN 075-070-34S.</li> <li>• One was identified on the project site approximately 20-feet east from the western border of APN 075-070-01S immediately south of the horizontal centerline of this parcel.</li> <li>• One was identified on the adjacent project site to the northwest, located approximately 20-feet west of the northwest corner of APN 075-06-52S</li> </ul>
Other Observed Evidence of Hazardous Substances or Petroleum Products:	None observed.

Notes:

AST = aboveground storage tank

CERCLA = Comprehensive Environmental Response, Compensation, and Liability Act

USC = United States Code

As noted in Table 4.8-2, seven agricultural irrigation pumps with small turbine oil Aboveground Storage Tanks (ASTs) were identified in and immediately adjacent to the project site; six of these exhibited evidence of leakage (soil staining). Additionally, two trailer-mounted diesel-powered agricultural irrigation pumps were identified on the project site that also exhibited evidence of leakage (staining of the trailer and underlying soil). Based on the visual evidence of leakage from these ASTs and the trailer, these are collectively considered to be a REC at the project site. These observed features are typical of agricultural production with similar infrastructure and are consistent with the existing agricultural use.

Fire Protection

The California Department of Forestry and Fire Protection (CAL FIRE) maps areas of significant fire hazard based on fuels, terrain, weather, and other relevant factors (Public Resources Code [PRC] Sections 4201–4204, Government Code [GC] Section 51175-89). Factors that increase an area’s susceptibility to fire hazards include slope, vegetation type and condition, and

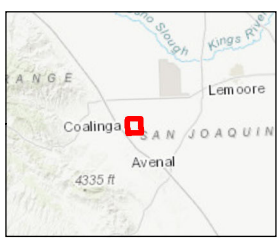
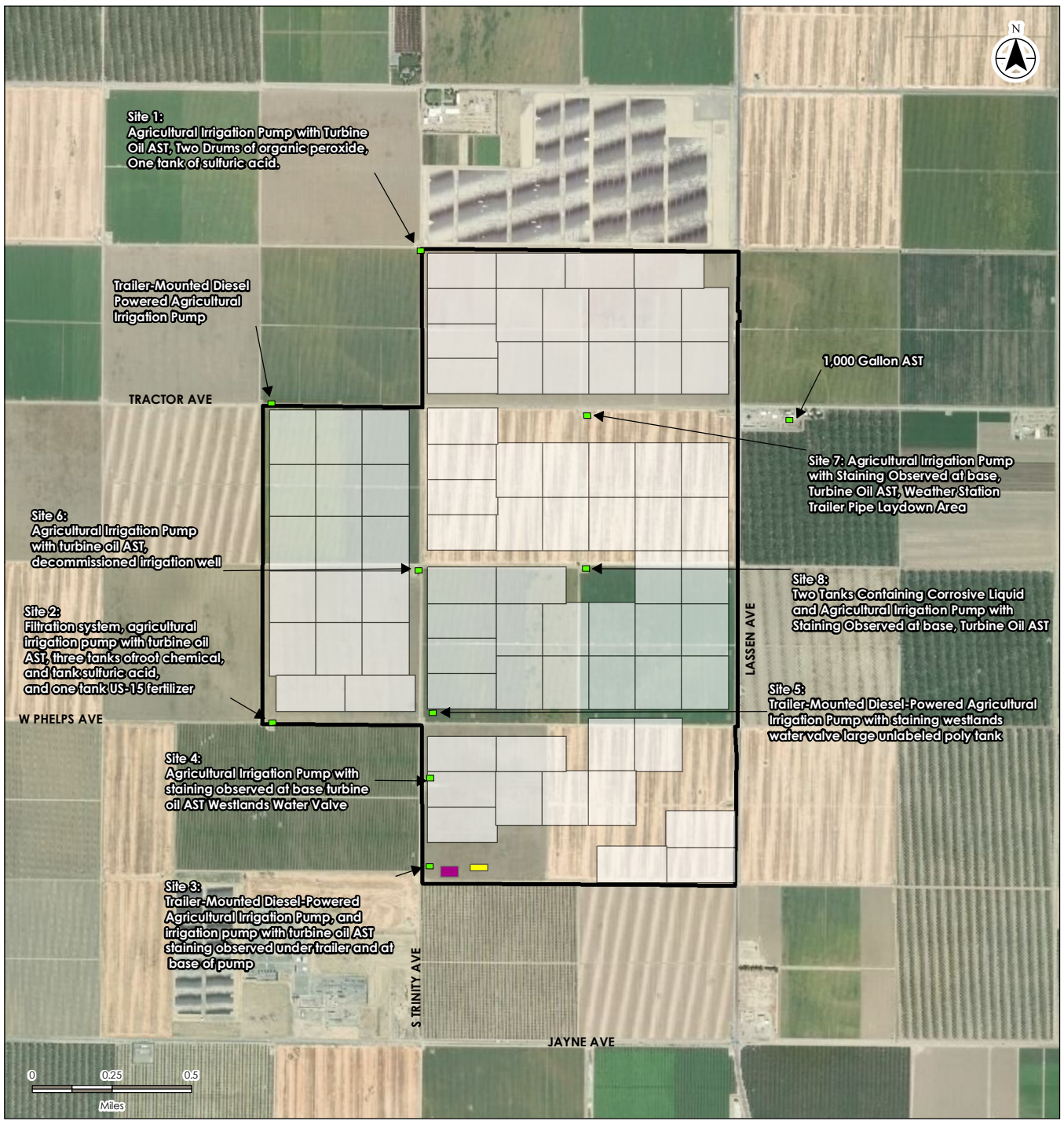
atmospheric conditions. According to the CAL FIRE Fresno County Fire Hazard Severity Zone Map, the project site is not within a Very High or High Fire Hazards Severity Zone. The project site region is classified as an “Unzoned” fire hazard severity zone, and the closest classified zone is the “Moderate” fire hazard severity zone, the lowest possible rating, which is within 13 miles west of the project site. According to the California Department of Forestry & Fire Protection mapping of their State Responsibility Areas, the project site is within a Local (non-State) Responsibility Area (CAL FIRE 2019a, CAL FIRE, 2007a, CAL FIRE 2007b).

#### Electric and Magnetic Fields

Electric and Magnetic Fields (EMFs) occur both naturally and as a result of human activity across a broad electrical spectrum. Naturally occurring EMFs are caused by the weather and the Earth’s geomagnetic field. The fields caused by human activity result from technological application of the electromagnetic spectrum for uses such as communications, appliances, and the generation, transmission, and local distribution of electricity. The electrical components associated with solar projects include solar panels, inverters, and battery storage systems. These components may produce non-ionizing, low frequency EMFs during normal operation, as is typical of standard electrical devices.

CPUC has been unable to determine whether there is a significant scientifically verifiable relationship between EMF exposure and negative health consequences. At present, CPUC does not consider EMFs, in the context of CEQA, to be an environmental impact because there is no agreement among scientists that EMFs create a potential health risk and because CEQA does not define, and has not adopted standards for defining, any potential risk from EMFs. Therefore, EMFs are not addressed in this Environmental Impact Report (EIR).





- Legend**
- Project Site
  - Proposed Solar Array (Developed Area)
  - Recognized Environmental Conditions
  - Proposed Substation
  - Blackbriar Battery Storage Facility



Figure No.  
4.8-1

Title  
Recognized Environmental  
Conditions

Project  
Fifth Standard Solar Project Complex

Data Source: Stantec, 2017.  
Coordinate System: NAD 1983  
StatePlane California IV FIPS 0403 Feet  
See complete reference in EIR.

Disclaimer: Stantec assumes no responsibility for data supplied in electronic format. The recipient accepts full responsibility for verifying the accuracy and completeness of the data. The recipient releases Stantec, its officers, employees, consultants and agents, from any and all claims arising in any way from the content or provision of the data.

## Crystalline and Amorphous Silicon

Crystalline and amorphous silicon (c-Si) is a semiconductor used in solar cells to convert solar energy into electricity. Crystalline silicon photovoltaic (PV) panels may include small amounts of solid materials considered to be hazardous. Because such materials are in a solid and non-leachable state, broken crystalline silicon PV panels would not be a source of pollution to surface water, stormwater, or groundwater. Crystalline silicon panels removed from the sites would be recycled or otherwise disposed of at an appropriate waste disposal facility. There are several possible disposal and recycling locations including Recycle PV and First Solar. Recycle PV of Grass Valley California opened a facility in 2018 for complete recycling of PV panels and internal materials in Arizona with plans to open several more facilities. First Solar has a state of the art facility in Ohio for recycling all the components of solar arrays and state that they have a recoverable rate of 90% of the materials processed (First Solar 2019).

### 4.8.3 Environmental Impacts

This section analyzes the proposed project's potential to result in significant impacts related to hazards or hazardous materials. If an impact is determined to be significant, Mitigation Measures are identified that would reduce or avoid that impact.

#### Methodology

The proposed project's effects are compared to the Thresholds of Significance (see below) related to hazards and hazardous materials to determine whether implementation of the proposed project would result in impacts on humans or the environment. As part of the proposed project impact evaluation process, Stantec prepared a Phase I on November 1, 2017 (Stantec 2017; Appendix G) for the entirety of the project site. The Phase I was conducted in conformance with the requirements of ASTM International (ASTM) Designation E2247-16 to evaluate any potential hazards or hazardous conditions that may be present at the project site.

#### Thresholds of Significance

The significance criteria used to identify hazards and hazardous materials impacts are from Appendix G of the CEQA Guidelines (2019).

Would the proposed project:

- Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?
- Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?
- Be located on a site which is included on a list of hazardous materials sites compiled pursuant to GC Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?
- Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

- Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?

The following questions were determined to have no impact during the Notice of Preparation (NOP) scoping. These issues are summarized in Section 6.0, Effects Found Not to Be Significant, and are not discussed further in this section.

- Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?
- For a project located within an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?

### Project Impact Analysis and Mitigation Measures

This section discusses potential impacts to hazards and hazardous materials associated with the proposed project and provides Mitigation Measures where necessary.

#### Routine Use

---

**Impact HAZ-1    The proposed project would not create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials.**

---

### Impact Analysis

#### Construction Phase

Construction activities would require the transport and use of materials necessary to construct the proposed PV and battery storage systems. The use, storage, and disposal of hazardous materials and wastes could result in potential adverse health and environmental impacts if these materials were used, stored, or disposed of improperly, causing accidents and spills. The proposed project would prepare and implement a Stormwater Pollution Prevention Plan (SWPPP). The SWPPP would be submitted to the Central Valley RWQCB and the County for review. The SWPPP is required to comply with state and federal water quality regulations and would identify, implement, and maintain Best Management Practices (BMPs) to reduce or eliminate pollutants in stormwater discharges from the project site during construction.

Additionally, as mandated by federal and state regulations, the Applicant and its contractors would use all hazardous, potentially hazardous, and non-hazardous materials in accordance with the manufacturer's instructions and directions and would be properly disposed of by a licensed hazardous waste recycling or disposal firm. As mandated by OSHA, all hazardous materials stored on the project site would be accompanied by material safety data sheets, which would inform onsite construction personnel as to the contents of the materials and in the event of accidental release and would provide the necessary remediation procedures. All hazardous materials and wastes would be handled, transported, and disposed of in accordance with all applicable federal, state, and local regulations. Compliance with these requirements is designed to minimize the potential for and the effects of spills of hazardous or nonhazardous materials. Therefore, with the mandatory compliance with applicable federal, state, and County

regulations, impacts pertaining to the transport, use, handling, and disposal of hazardous waste would be less than significant during project construction.

#### Operation and Maintenance Phase

During normal operation, the PV panels, batteries, and inverters are not expected to generate hazardous waste. Maintenance activities would typically include panel repairs, panel washing, and maintenance of transformers, inverters, and other electrical equipment as needed; maintenance of the oil/water separator system; and road and fence repairs. The transformers proposed for the project substation would use mineral oil for cooling purposes; however, certain battery technologies (electrochemical materials) may be considered hazardous, including but not limited to lithium ion, sodium sulfur, sodium hydride, and nickel hydride. The batteries would be stored in metal-framed storage containers that house multiple battery modules mounted in racks. The storage containers would be insulated, air conditioned, and equipped with a fire suppression system. The containers are sealed such that no fluid leaks can escape from the containers. In the event that these materials need to be disposed of, the transport, use, handling, and disposal would be in accordance with applicable federal, state, and County regulations. Therefore, with the mandatory compliance with applicable federal, state, and County regulations, impacts pertaining to the transport, use, handling, and disposal of hazardous waste would be less than significant during operation of the proposed project.

Herbicides may be used during operation as part of weed management. In addition, converting the project site from cultivated field crops to solar could result in a pest control issue that could adversely affect surrounding agricultural lands. The use of pesticides and herbicides on the project site would comply with EPA, California Department of Pesticide Regulation and County regulations. A Pest and Weed Management Plan would be prepared and implemented prior to proposed project construction and operation, as required by Fresno County. The Plan would detail how pesticides and herbicides would be labeled, stored, and used onsite, and how records of their use would be monitored, as well as emergency information in the event of exposure. The Plan would use an adaptive management strategy to continually evaluate the effectiveness of the control methods and would only target the worst pests and weeds so that over time the amount of pesticides and herbicides and the dosage needed could be reduced. The goal would be to control dosages to below the recommended levels of use, which would minimize their potential effects.

#### Decommissioning Phase

Decommissioning of the proposed project would involve activities and the use of hazardous materials similar to those used during the construction phase. At the end of the proposed project life, the PV panels would be evaluated to determine their value in a secondary market. If not resold or repurposed, they would be recycled. Equipment such as drive controllers, inverters, transformers, and switchgear would either be reused or recycled. Poured concrete pads would be removed and recycled or reused as clean fill. The batteries comprising the energy storage facility would be recycled or disposed of at a hazardous waste facility in accordance with applicable regulations for the disposal of hazardous materials. Prior to the approval of the proposed project, the Applicant would be required to prepare and submit a Reclamation Plan to the County for approval. The Reclamation Plan would describe the handling of any hazardous chemicals and materials to be removed from the solar facility site upon decommissioning. This Plan includes measures for ensuring that hazardous chemicals are properly labeled and that the



procedures listed in the materials handling data sheets are followed, as well as filling out and filing a hazardous waste report with the California Environmental Protection Agency. The Plan would identify suitable locations for recycling or disposal and safety measures for handling and transporting these materials.

### Level of Significance Before Mitigation

Less Than Significant Impact.

### Mitigation Measures

No mitigation is necessary.

### Level of Significance After Mitigation

Less Than Significant Impact.

### Accident Conditions

---

**Impact HAZ-2    The proposed project would not create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving a hazardous materials release into the environment.**

---

### Impact Analysis

#### Construction Phase

Site workers, the public, and the environment could be inadvertently exposed to hazardous substances onsite during proposed project construction. The likelihood of further impacts from the stained soil is minimal if the soil is not disturbed during construction (Stantec 2017). Small quantities of hazardous substances (such as petroleum and motor oil) would be used at the project site and transported to and from the area during construction. In addition, construction would involve the transport of solar PV panels and batteries to the project site. As described above, hazardous materials contained in the PV panels would not be emitted as a result of breakage or fire in the event of an accident. The electrochemical materials comprising the batteries may also be considered hazardous. Transport of the batteries would be in accordance with applicable regulations to minimize the risk of upset. The handling and disposal of these materials would be governed in accordance with regulations enforced by the Certified Unified Program Agency, Cal/OSHA, and DTSC. In addition, regulations under the CWA require contractors to avoid allowing the release of materials into surface waters as part of their SWPPP and National Pollutant Discharge Elimination System (NPDES) permit requirements (see Section 4.9, Hydrology and Water Quality, for further discussion). As previously discussed under Impact HAZ-1, a SWPPP would be submitted to the Central Valley RWQCB and the County for review and approval. Implementation of the SWPPP would ensure that BMPs are implemented to reduce or eliminate pollutants in stormwater discharges from the project site during construction, thereby reducing any potential impacts associated with the accidental upset or release of hazardous materials to a less than significant level with mitigation. As described in Section 4.9, examples of construction BMPs identified in SWPPPs may include using temporary mulching, seeding, or other stabilization measures to protect uncovered soils; storing materials and equipment to ensure that spills or leaks cannot enter the storm drain system or surface water; developing and implementing a spill prevention and cleanup plan; installing traps, filters, or other devices at drop inlets to prevent contaminants from entering storm drains; and using barriers, such as fiber rolls and silt fencing, to minimize the amount of uncontrolled runoff that could enter drains or surface water.

## Operation and Maintenance Phase

The potential for exposure to hazardous materials during operation of the proposed project would include exposure to solar panel materials. The PV solar panels that would be installed on the project site would be made from microcrystalline silicon.

Microcrystalline silicon PV panels may include small amounts of solid materials that are considered hazardous. A silicon PV module is composed of silicon solar cells, metal contacts between the cells, an encapsulation layer that encloses the cells, a front glass plate, and a back-side foil or a second glass plate on the back side. Often the module is framed with aluminum and contains a contact box. The outer glass cover constitutes the largest share of the total mass of a finished crystalline PV module (approximately 65%), followed by the aluminum frame (approximately 20%), ethylene vinyl acetate encapsulant (approximately 7.5%), polyvinyl fluoride substrate (approximately 2.5%), and the junction box (1%). The solar cells themselves represent only about 4% of the mass of a finished module. Because such materials are in a solid and non-leachable state, broken microcrystalline PV panels would not be a source of pollution to surface water, stormwater, or groundwater.

Implementation of Mitigation Measure HAZ-1 would require the Developer to prepare and implement a broken PV module detection and handling plan, which would minimize the potential for microcrystalline silicon leaching from damaged panels, and would reduce the potential for the release of hazardous materials from damaged panels to a less than significant level.

The storage system would consist of battery racks housed in containers or a building located near the project substation. Containers measuring 40 feet long by 8-12 feet wide by 8-12 feet high would be installed on concrete pads using up to 5 acres of the project site. Between 60 and 70 containers are expected to be required. Heating Ventilation and Air Conditioning systems are required and would be located within the containers. Alternatively, one or two larger buildings (rather than multiple, smaller containers) may be installed to house all of the energy storage components. To guarantee the highest safety standard, the containers or structures would be equipped with fire suppression systems, smoke detectors, and emergency stops. The battery modules would be housed in casings and then placed in racks. Several racks are placed in a container (which is a fully enclosed structure), then placed on a concrete pad. The full-time offsite staff for the proposed project would remotely monitor the energy storage operations on a daily basis and would be able to determine if an upset condition occurs. During routine maintenance, the energy storage facility would be inspected to determine if any leakage has occurred. Any potential leakage would be contained within the concrete pads and containers and would be reported and cleaned up in accordance with existing regulations. Adherence to regular monitoring and visual inspections during maintenance activities would result in a less than significant impact from the energy storage facility.

## Decommissioning Phase

Decommissioning of the proposed project would involve activities and the use of hazardous materials similar to those of the construction phase, as well as the transport and disposal of hazardous materials used at the project site. Inadvertent releases of hazardous materials from accidental spills or leaks could occur. The proposed project would be required to comply with existing federal, state, and County laws and regulations pertaining to the use, transport, and disposal of hazardous and nonhazardous materials. The batteries comprising the energy



storage facility would be recycled or disposed of at a hazardous waste facility in accordance with applicable regulations for the disposal of hazardous materials. There are several companies located in and near Fresno that handle hazardous waste disposal (e.g. ADCO Services and T&M Hazardous Waste Management) and recycling of batteries (e.g. Waste Management, Mid-Valley Disposal, and occasional recycling events sponsored by the County and others). Adherence to existing regulations and application of Mitigation Measures described below would result in a less than significant impact.

### Level of Significance Before Mitigation

Potentially Significant Impact.

### Mitigation Measures

**MM HAZ-1: Broken Photovoltaic Module Detection and Handling Plan.** Prior to the issuance of construction permits, the Applicant shall prepare and implement a broken photovoltaic (PV) module detection and handling plan. The plan shall describe the Applicant's method for identifying, handling, and disposing of PV modules that may break, chip, or crack at some point during the proposed project's life cycle. The proposed methods shall be compliant with applicable law and protective of human health and the environment. The plan shall have but not be limited to the following elements:

- **Worker Health and Safety Provisions and Handling Protocol.** This protocol shall address isolating workers from hazardous materials during the recovery of broken PV panels and shall include but not be limited to the following requirements:
  - Workers shall wear gloves during the handling of broken pieces of PV panels to prevent cuts.
  - If broken pieces are separated from the PV panel, the pieces shall be collected, and the areal extent of the collected pieces shall be compared to the broken area on the PV panel to ensure that all the pieces have been accounted for.
  - The broken pieces shall be placed in drums, sealed boxes, puncture-proof bags, or equivalent containers so as to prevent the broken pieces from tearing the containers and being rereleased into the environment.
- **Timing of removal.** The PV panels shall be inspected for breakage prior to each PV panel washing event. In the event that broken PV panels are discovered, the broken PV panels and any pieces shall be removed prior to washing any adjacent PV panels.
- **Recycling or disposal requirements.** If available, broken panels shall be sent to a PV panel manufacturing facility licensed for the recycling of PV panels; if recycling is unavailable, the broken panels shall be sent to a landfill licensed to receive broken PV panels. The plan shall identify the likely facility to receive broken panels.

The plan shall be submitted to the County for review and approval and shall be distributed to all construction crew members and temporary and permanent employees prior to construction and operation of the proposed project. All available data from the panel manufacturer(s) regarding materials used and safety procedures and concerns shall be appended to the plan to assist the County with identifying potential hazards and abatement measures.

### **Level of Significance After Mitigation**

Less Than Significant Impact with Mitigation Incorporated.

### **Hazardous Materials Site Listing**

---

**Impact HAZ-3**    **The proposed project would not be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, it would not create a significant hazard to the public or the environment.**

---

### **Impact Analysis**

The Phase I conducted for the proposed project concluded that that the project site is not included on a list of hazardous materials sites pursuant to GC Section 65962.5. The Phase I identified six listed nearby listings but determined that none of the parcels constitute a REC to the project site. The Phase I identified surface soil staining at six of the seven ASTs and at two trailer-mounted diesel-powered agricultural irrigation pumps on the project site. However, as shown on Figure 4.8-1, the identified areas are outside the developed areas and would not be impacted by construction activities. The identified RECs are typical of agricultural production with similar infrastructure and if the stained soil areas are left undisturbed during construction, there would be a less than significant impact.

### **Level of Significance Before Mitigation**

Less Than Significant Impact.

### **Mitigation Measures**

No mitigation is necessary.

### **Level of Significance After Mitigation**

Less Than Significant Impact.

### **Emergency Plans**

---

**Impact HAZ-4**    **The proposed project would not impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.**

---

### **Impact Analysis**

The construction, operation, and decommissioning of the proposed project would interfere with an adopted emergency response plan or emergency evacuation plan if the proposed project resulted in the complete or partial closure of roadways, interfered with identified evacuation routes, restricted access for emergency response vehicles, or restricted access to critical facilities such as hospitals or fire stations.

The proposed project is in a rural area with multiple access roads allowing for adequate egress and ingress to the project site in the event of an emergency. As further discussed in Section 4.14, Traffic and Transportation, the increase in project-related traffic would not cause a significant increase in congestion and would not significantly affect the existing level of service (LOS) on roadways in the proposed project area. The construction, operation, and decommissioning of the proposed project would not require the closure of public roads, which would inhibit access by emergency vehicles. During the construction and decommissioning of the proposed project, heavy construction-related vehicles could interfere with emergency response to the site or emergency evacuation procedures in the event of an emergency (e.g., by slowing vehicles travelling behind construction trucks). However, given that there are limited businesses and residences and no emergency response stations in the immediate vicinity of the project site, it is not considered likely that heavy construction-related traffic would result in inadequate emergency access. Therefore, impacts related to interfering with an adopted emergency response plan or emergency evacuation plan would be less than significant.

**Level of Significance Before Mitigation**

Less Than Significant Impact.

**Mitigation Measures**

No mitigation is necessary.

**Level of Significance After Mitigation**

Less Than Significant Impact.

**Wildland Fires**

---

**Impact HAZ-5    The proposed project would not expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands.**

---

**Impact Analysis**

The project site consists primarily of tomato production. Human activities are the primary reason that wildfires start (NPS 2019). As previously discussed, the project site is not designated in a State Responsibility Area, as defined by CAL FIRE. The project site region is classified as an “Unzoned” fire hazard severity zone, and the closest classified zone is the “Moderate” fire hazard severity zone, which is approximately 7 miles southwest (west of State Route [SR] 33) of the project site.

Proposed project construction would involve the use of heavy equipment, welding, and other activities that have the potential to ignite fires. Solar panels are manufactured from fire-resistant materials, and the associated electrical equipment would be enclosed in fire-resistant material. All wiring would be in accordance with current electrical codes, including clear-area setbacks from utility poles. The battery storage facility would be equipped with fire suppression systems, smoke detectors, and emergency stops. The primary access roads, running from the site entrance to the project substation and to the individual facilities, as well as a perimeter road, would be 12 feet wide and graveled using approximately 4 to 8 inches of aggregate base on compacted subgrade. The roads providing access to the inverter equipment pads would be

acceptable for CAL FIRE to access. The perimeter roads would be constructed to provide a fire buffer and facilitate onsite circulation for emergency vehicles.

Although not common, there is a potential for events causing fire onsite due to malfunctioning equipment or faulty electrical equipment that is capable of spontaneous ignition due to overheating. Overheating may be caused by electrical shorting, manufacturers' defect, poor design, or mechanical damage, among other causes. Additionally, the solar PV panels, battery storage facility, onsite substation, and associated electrical infrastructure, coupled with onsite vegetation and undergrowth, could result in a potential for fire hazards under hot, dry conditions. As such, pursuant to the Fresno County Solar Facility Guidelines, the Applicant would be required to implement a pest and weed management plan. Implementation of the pest and weed management plan would include the management and removal of combustible vegetation on and around the project site to minimize the project site's susceptibility to wildfires.

In the event of a fire, typical fire suppression methods would not be effective. As a result, anyone near the facility in the event of a fire could be injured, including project employees or fire personnel responding at the project site. Therefore, the proposed project would be required to implement Mitigation Measure HAZ-2 and prepare a fire protection plan. The Applicant would coordinate with CAL FIRE and the Fresno County Fire Protection District to provide fire responders and proposed project staff with appropriate fire response training. The intent of this training would be to familiarize both responders and proposed project staff with potential fire hazards and reduction processes associated with solar power and energy storage facilities. The fire protection plan would be submitted to the Fresno County Fire District for approval prior to the start of construction. Therefore, the risk of damage from wildland fires associated with the proposed project would be less than significant with the implementation of Mitigation Measure HAZ-2.

### **Level of Significance Before Mitigation**

Potentially Significant Impact.

### **Mitigation Measures**

**MM HAZ-2: Fire Protection Plan.** The Applicant shall prepare a Fire Protection Plan prior to issuance of construction permits. The Fire Protection Plan shall include but not be limited to the following measures:

- Internal combustion engines, stationary and mobile, shall be equipped with spark arresters in good working order.
- All personnel shall be trained in fire safety practices relevant to their duties.
- All construction and maintenance personnel shall be trained and equipped to extinguish small fires.
- Work crews shall have fire-extinguishing equipment on hand, as well as emergency numbers and cell phones or other means of contacting the Fire Department.
- Security gates shall be approved by the Fire Department and shall include the installation of a key switch or padlock, whichever is most appropriate.

- Smoking shall be prohibited while operating equipment and shall be limited to paved or graveled areas or areas cleared of all vegetation. Smoking shall be prohibited within 30 feet of any combustible material storage area (including fuels, gases, and solvents). Smoking shall be prohibited in any location during a Red Flag Warning issued by the National Weather Service for the project area.

### **Level of Significance After Mitigation**

Less Than Significant Impact with Mitigation Incorporated.

#### **4.8.4 Cumulative Impacts**

The geographic scope for considering project-related cumulative impacts related to hazards and hazardous materials is limited to a 0.25-mile buffer around the proposed project. The proposed project would have less than significant hazards and hazardous materials impacts during construction, operation and decommissioning due to the routine transport, use, or disposal of hazardous materials, accident conditions, hazardous materials site listing, emergency plans, and wildland fires. Cumulative impacts could occur if related projects would have the potential to cause an accidental release to the public or environment during transport, use, or disposal of hazardous materials, and any project that would potentially expose sensitive receptors to an accidental release of hazardous materials.

The Westlands Solar Park Project is the only related project identified that could cause similar impacts related to the potential for release of hazardous materials during routine use, transport, storage, and disposal for construction and operation, as it is located within 0.25 mile of the proposed project. Compliance with existing applicable laws would ensure that impacts related to exposure to hazardous materials would be minimized and/or avoided. The development, operation, and decommissioning of the proposed project would comply with these requirements resulting in cumulative effects that would be less than significant.

The construction, operation, and decommissioning of the proposed project would not require the closure of public roads, and thus would not inhibit access by emergency vehicles. During the construction and decommissioning of the proposed project, heavy construction-related vehicles could interfere with emergency response to the site or emergency evacuation procedures (e.g., slowing vehicles travelling behind construction trucks). However, given that there are limited businesses and residences and no emergency response stations in the immediate vicinity of the project site, it is not considered likely that heavy construction-related traffic would result in inadequate emergency access, and the proposed project would not contribute to cumulative impacts associated with impairing emergency response or evacuation plans.

Construction, operation, and decommissioning activities could result in a fire due to the increased presence of vehicles, equipment, and human activity in areas of elevated fire hazard severity, particularly during construction and decommissioning. If other projects are occurring concurrently that also pose a risk to fire safety, then there could be higher cumulative potential for wildland fires to occur. The proposed project and the Westlands Solar Master Plan Park Project are not located within an area subject to wildland fire risk; however, due to elevated risk of fire from increased presence of activities, the proposed project would implement fire protection and safety plans. This would minimize and reduce the cumulative wildfire risk to less than significant.

## 4.9 HYDROLOGY AND WATER QUALITY

This section describes the impacts on hydrology and water quality that would result from implementation of the Fifth Standard Solar Facility Project Complex (proposed project). Included is a review of existing conditions, a summary of applicable policies and regulations related to hydrology and water quality, and an analysis of the impacts of the proposed project on hydrology and water quality. Where applicable, Mitigation Measures are included for significant impacts. The County received the following scoping comments regarding Hydrology and Water Quality (Appendix A):

- No water from the proposed project shall flow into the state right-of-way without approval from Westland Water District's (WWD) Hydraulic Engineer.
- Stormwater is not allowed to be discharged to the state right-of-way.
- Since the proposed development/project involves 1 acre or more of ground disturbance, the Applicant shall contact the Central Valley Regional Water Quality Control Board (RWQCB) to determine whether a Notice of Intent (NOI) will be required.
- Adhere to Caltrans construction stormwater requirements if there is proposed work within the state right-of-way.
- The Fifth Standard Solar Project Complex lies within the WWD boundary. The project site currently receives an allocation of water from WWD's agricultural water service contract. Once the land use changes to non-agricultural, the land will no longer be eligible to receive an allocation of agricultural water from WWD. However, since the Applicant is proposing a solar development, the Applicant is eligible to receive water through the WWD's Municipal and Industrial (M&I) supply, and the land will continue to have access to the WWD's distribution system.
- WWD has adopted regulations governing the application for and use of M&I water. The regulations stipulate the quantity of water that will be made available to a water user from WWD's Central Valley Project contract supply. WWD will make available up to 5 acre-feet per 160 acres annually for solar development operations. The Applicant is responsible for acquiring more water if needed.
- The project location has WWD easements, water delivery points, and private water user pipelines. During the construction and operation of the facility, please do not disturb WWD property. Prior to any excavation, the Applicant should contact Underground Service Alert.
- The Applicant must comply with WWD's Backflow Prevention guidelines for this connection to the water system.



## 4.9.1 Regulatory Setting

### Federal

#### Clean Water Act

The Clean Water Act (CWA) (33 U.S. Code [USC] Section 1251 et seq.), formerly the Federal Water Pollution Control Act of 1972, was enacted with the intent of restoring and maintaining the chemical, physical, and biological integrity of the waters of the United States. The CWA requires states to set standards to protect, maintain, and restore water quality through the regulation of point source and certain nonpoint source discharges to surface water. Those discharges are regulated by the National Pollutant Discharge Elimination System (NPDES) permit process (CWA Section 402). Section 401 of the CWA regulates surface water quality, and a water quality certification is required for federal actions (including construction activities) that may entail impacts to surface water. In California, NPDES permitting authority is delegated to, and administered by, the nine RWQCBs.

#### National Pollutant Discharge Elimination System Program

The NPDES Program was established per 1972 amendments to the Federal Water Pollution Control Act to control discharges of pollutants from point sources (Section 402). As described above under Federal Regulations, 1987 amendments to the CWA created a new section devoted to stormwater permitting (Section 402[p]), with individual states designated for administration and enforcement of the provisions of the CWA and the NPDES permit program.

#### National Pollutant Discharge Elimination System Construction General Permit

Under the Construction General Permit, construction sites with 1 or more acres of disturbance are required either to obtain individual NPDES permits for stormwater discharges or to be covered by the construction general permit. Coverage under the construction general permit is accomplished by completing and filing a NOI with the State Water Resources Control Board (State Water Board). Each applicant under the Construction General Permit is required to prepare a Stormwater Pollution Prevention Plan (SWPPP) prior to the commencement of grading activities and to ensure implementation of the SWPPP during construction activities. The primary objective of the SWPPP is to identify, construct, implement, and maintain Best Management Practices (BMPs) to reduce or eliminate pollutants in stormwater discharges and authorized non-stormwater discharges from the construction site during construction activities. BMPs may include programs, technologies, processes, practices, and devices that control, prevent, remove, or reduce pollution. The SWPPP would also address BMPs developed specifically to reduce pollutants in storm water discharges following the completion of construction activities.

The BMPs are directed at implementing both sediment and erosion control measures and other measures to control potential contaminants. Examples of construction BMPs identified in SWPPPs include using temporary mulching, seeding, or other stabilization measures to protect uncovered soils; storing materials and equipment to ensure that spills or leaks cannot enter the storm drain system or surface water; developing and implementing a spill prevention and cleanup plan; installing traps, filters, or other devices at drop inlets to prevent contaminants from

entering storm drains; and using barriers, such as fiber rolls and silt fencing, to minimize the amount of uncontrolled runoff that could enter drains or surface water.

### Beneficial Uses and Water Quality Objectives

The Central Valley RWQCB is responsible for the protection of the beneficial uses of waters within the County. The RWQCB uses its planning, permitting, and enforcement authority to meet this responsibility and has adopted the Water Quality Control Plan for the Tulare Lake Basin (Basin Plan) to implement plans, policies, and provisions for water quality management. The RWQCB published the most recent version of the Basin Plan in May 2018 (Central Valley RWQCB 2018).

In accordance with state policy for water quality control, the RWQCB employs a range of beneficial use definitions for surface waters, groundwater basins, marshes, and mudflats that serve as the basis for establishing water quality objectives and discharge conditions and prohibitions. The Basin Plan identifies existing and potential beneficial uses supported by the key surface water drainages throughout its jurisdiction (Central Valley RWQCB 2018).

The two water bodies within the Basin Plan are Valley Floor Waters and the Westside Groundwater Basin. The Valley Floor Waters' designated beneficial uses include agricultural supply, industrial service supply, groundwater recharge, body contact recreation, noncontact recreation, wildlife habitat, freshwater habitat, and preservation of rare and endangered species. The Westside Groundwater Basin's designated beneficial uses include municipal and domestic supply, agricultural supply, and industrial service supply.

### State

#### Porter-Cologne Water Quality Control Act

The Porter-Cologne Water Quality Control Act (Porter-Cologne Act) (Water Code Section 13000 et seq.) establishes the State Water Board and each RWQCB as the principal state agencies with primary responsibility to coordinate and control water quality in California. The State Water Board establishes statewide policy for water quality control and provides oversight of the RWQCBs' operations. The RWQCBs have jurisdiction over specific geographic areas that are defined by watersheds.

The County is under the jurisdiction of the Central Valley RWQCB. In addition to other regulatory responsibilities, RWQCBs have the authority to conduct, order, and oversee investigation and cleanup where discharges or threatened discharges of waste to waters of the state could cause pollution or nuisance, including impacts to public health and the environment.

#### Waste Discharge Requirements

Actions that involve or are expected to involve discharge of waste may be subject to Waste Discharge Requirements (WDRs) under the Porter-Cologne Act. Chapter 4, Article 4 of the Porter-Cologne Act (Water Code Section 13260-13274) states that persons discharging or proposing to discharge waste that could affect the quality of waters of the state (other than into a community sewer system) shall file a report of waste discharge with the applicable RWQCB. However, the Central Valley RWQCB has issued a waiver for certain types of discharges, as discussed below.

### *Waiver for Specific Types of Discharges (Central Valley Regional Water Quality Control Board Resolution R5-2018-0085)*

The Central Valley RWQCB has adopted a waiver of WDRs (Resolution R5-2018-0085, *Approving Waiver of Reports of Waste Discharge and Waste Discharge Requirements for Specific Types of Discharge within the Central Valley Region*) to conditionally waive reports of waste discharge and/or WDRs for specific types of low-threat discharges to land. Construction dewatering and dredged material disposal to land are among the activities covered by this waiver, providing the subject activities meet the conditions specified within the waiver. Waivers serve much the same purpose as general permits (e.g., they are intended to describe a range of protective measures that could be applied to a broad category of activities). This waiver must be obtained from the RWQCB for any actions that would potentially involve dewatering and/or long-term storage of excavated material on the land surface.

### Sustainable Groundwater Management Act

In September 2014, Governor Jerry Brown signed the Sustainable Groundwater Management Act (SGMA). It provides a framework for sustainable management of groundwater resources by local authorities. SGMA required that all medium to critically over-drafted subbasins identified by the Department of Water Resources (DWR) would be managed by a Groundwater Sustainability Agency (GSA). The GSA is responsible for locally managing the groundwater subbasin through the development and implementation a Groundwater Sustainability Plan (GSP). Medium- and high-priority groundwater subbasins are required to submit their GSP by 2022, and critically overdrafted subbasins are required to submit their GSP by 2020. As the primary water purveyor and local agency overlying the Westside Subbasin, WWD is the designated GSA for the subbasin. DWR designated the Westside Subbasin as a critically overdrafted basin, which requires WWD to prepare a GSP by January 31, 2020.

### Local

#### Fresno County Solar Facility Guidelines

The Fresno County *Solar Facility Guidelines*, revised by the County Board of Supervisors on December 12, 2017 (County 2017a) include a number of provisions applicable to the process for the review of applications for solar facilities that are relevant to Hydrology and Water Quality. These include the following:

1. Information shall be submitted that identifies the source of water for the subject parcel (surface water from irrigation district, individual well(s), conjunctive system). If the source of water is via district delivery, the applicant shall submit information documenting the allocations received from the irrigation district and the actual disposition of the water (e.g., utilized onsite or moved to other locations) for the last 10 years. If an individual well system is used, provide production capacity of each well, water quality data, and data regarding the existing water table depth.
3. Identify (with supporting data) the current soil type and mapping units of the parcel pursuant to the standards of the DOC and the NRCS.

5. Provide a reclamation plan detailing the lease life, timeline for removal of the improvements, and specific measures to return the site to the agricultural capability prior to installation of solar improvements.

#### Fresno County General Plan

The following lists goals and policies from the Fresno County 2000 General Plan pertaining to hydrology and water quality that are applicable to the proposed project.

**Policy OS-A.25:** The County shall minimize sedimentation and erosion through control of grading, cutting of trees, removal of vegetation, placement of roads and bridges, and use of off-road vehicles. The County shall discourage grading activities during the rainy season unless adequately mitigated to avoid sedimentation of creeks and damage to riparian habitat.

**Policy OS-A.26:** The County shall continue to require the use of feasible and practical BMPs to protect streams from the adverse effects of construction activities and urban runoff.

### 4.9.2 Environmental Setting

#### Surface Water Hydrology and Quality

The proposed project is located on the western edge of the Tulare Lake watershed. The Tulare Lake watershed covers approximately 17,000 square miles and is bordered by the San Joaquin River Basin to the north, the Sierra Nevada mountains to the east, the Coast/Diablo Range to the west, and the Tehachapi Mountains to the south. The major surface water sources in the basin are the Kings, Kaweah, Tule, and Kern rivers, all of which flow from the Sierra Nevada Mountain Range. Historically, drainage in the Tulare Lake Basin flowed to Tulare Lake; however, due to agricultural demands and urban growth, surface waters in the basin have been redirected (Tulare Basin Wildlife Partners 2018).

The flow of surface water and runoff at the project site generally is from southwest to northeast, toward the Los Gatos Creek and the California Aqueduct. Surface water hydrology at the project site comprises four features that were identified during the wetland reconnaissance-level wetland assessment conducted by Environmental Science Associates, Inc. (ESA). According to the Biological Resources Technical Report prepared by ESA, the four water features could potentially meet the qualifications for federal or state jurisdictional waters. The southernmost of these features is identified as a Freshwater Pond in the National Wetlands Inventory (NWI). The other three features are irrigation canals that run north-south between Lassen Avenue and the northeastern most agricultural field (ESA 2016b). Additionally, the Biological Resources Technical Report describes the presence of additional irrigation drainage features that were recently excavated in agricultural areas and that do not drain to offsite areas. Based on further review of the vegetation and connectivity of the features, it was determined that they do not meet the qualifications for jurisdiction features (ESA 2016b).

#### Groundwater Hydrology and Quality

The San Joaquin Valley is bordered by the Southern Coast Range to the west and the Sierra Nevada Range to the east. The project site is within the Westside Subbasin, which is 1,000 square miles of the larger San Joaquin Valley Groundwater Basin (DWR 2006).

The Westside Subbasin is located between the Coast Range foothills on the west and the San Joaquin River watershed and Fresno Slough on the east. The aquifer system comprising the subbasin consists primarily of unconsolidated continental deposits, including the Corcoran Clay formation. The Corcoran Clay formation is the name given to the laterally extensive lacustrine clay. Corcoran Clay is distributed throughout the central and western valleys. The Corcoran Clay, which varies in thickness from a feather edge to about 160 feet beneath the present bed of Tulare Lake, confines a deeper aquifer system that comprises fine-grained aquitards interbedded with coarser aquifers. An aquitard is any geological formation of a rather semipervious nature that transmits water at slower rates than an aquifer. The Corcoran Clay divides the groundwater system into a lower confined aquifer and an upper semi-confined aquifer system, ranging in thickness from 20 to 200 feet (DWR 2006).

The depth to the Sub-Corcoran Piezometric Groundwater Surface—the groundwater surface—is approximately 200 to 400 feet below ground surface (bgs) at the project site, while the upper aquifer zone extends from approximately 0 to 500 feet bgs (WWD 2016a). Recharge to the aquifer system is primarily from the seepage of streams along the west portion of the subbasin and the deep percolation of applied water (DWR 2006).

Between 2011 and 2015, the average amount of groundwater pumped annually within WWD service area was about 319,693 acre feet (af) (WWD 2016a). With the increase in groundwater pumped in 2015-2016, totaling 660,000 af, the groundwater surface decreased to an average elevation of 120 feet below mean sea level (WWD 2016a).

The fine-textured soils at decreased elevations in the San Joaquin Valley Basin are characterized by low permeability and increased concentrations of water-soluble solids, primarily salts and trace elements (WWD 2016a). The principle water quality issue in the basin is salt accumulation. As discussed above, due to regional geology and hydrology characteristics, the western side of the southern San Joaquin Valley generally has the most poorly drained, saline soils. However, the project site is comprised of Westhaven loam, which has few limitations and is well drained.

Groundwater at the project site is generated by four active wells. Similar to the regional groundwater basin, the groundwater at the project site is characterized by high salt content. Due to the high salt content, the groundwater pumped at the project site is not ideal for crop irrigation; as the water table is drawn down and salinity levels increase, the groundwater must be diluted with surface water when available. This creates added stress to depleting surface water resources in the region.

The capacity of the four on-site wells ranges from 0.003 af per minute to 0.006 af per minute. The onsite wells would be used during construction and operation of the proposed project. Between 2008 and 2017, the project site has had an average annual water use of 3,100 af (with 2,800 af coming from groundwater).

## **Flooding**

The Federal Emergency Management Agency (FEMA) maps areas subject to flooding during a 100-year flood event, which are areas that would be inundated by a flood event having a 1% chance of being equaled or exceeded in any given year. According to the FEMA (2009) Flood

Insurance Rate Map (FIRM) panel 3275, the project site is in an area of minimal flood hazard (Zone X) and does not lie within a 100-year flood zone or any other special flood hazard zone.

### 4.9.3 Environmental Impacts

This section analyzes the proposed project's potential to result in significant impacts related to stormwater runoff patterns, groundwater conditions, and water quality. When an impact is determined to be significant, Mitigation Measures are identified that would reduce or avoid the impact.

#### Methodology

The valuation of potential hydrologic and water quality impacts was based on a review of existing information from previously completed documents that address water resources in the project vicinity, including the Fresno County General Plan and the Fresno County Solar Facility Guidelines. In addition, this evaluation is based on the Biological Resources Technical Report prepared for the proposed project by ESA (ESA 2016b). The information obtained from these sources was reviewed and summarized to determine existing conditions and to identify potential environmental effects, based on the standards of significance presented in this section.

Water quality impacts associated with temporary construction activities were assessed in a qualitative manner. The potential short-term, construction-related effects of grading and land disturbance were assessed based on the probability of seasonal exposure to rainfall and runoff, routes of exposure for contaminants to enter surface water, and the magnitude and duration of construction relative to the potential water quality parameters expected to be affected by the activity.

Regarding operational impacts, it is assumed that solar panels would function similar to or the same as a tree canopy by temporarily intercepting precipitation aboveground but not altering the volume of precipitation reaching the ground or changing runoff patterns.

#### Thresholds of Significance

In accordance with the California Environmental Quality Act (CEQA) Guidelines Appendix G Environmental Checklist, the following questions were analyzed and evaluated to determine whether impacts to hydrology and water quality were significant.

Would the proposed project:

- Violate any water quality standard or waste discharge requirements or otherwise substantially degrade surface or groundwater quality?
- Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?
- Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or through the addition of impervious surfaces, in a manner which would:



- i. result in substantial erosion or siltation on- or offsite;
  - ii. substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite;
  - iii. create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff;  
or
  - iv. impede or redirect flood flows?
- Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?

The following questions were determined to have no impact during the NOP scoping. These issues are summarized in Section 6.0, Effects Found Not To Be Significant, and are not discussed further in this section.

- In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?

### Project Impact Analysis and Mitigation Measures

This section discusses potential impacts to hydrology and water quality associated with the proposed project and provides Mitigation Measures where necessary.

#### Water Quality Standards and Requirements

---

**Impact HYD-1    The proposed project would not violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality.**

---

### Impact Analysis

#### Construction and Decommissioning Phases

Construction of the proposed project would require the use of heavy machinery for vegetation grubbing, grading, and installation of roads and other facilities. Construction activities would involve the use of bulldozers, graders, semi-trucks, and other types of heavy equipment to alter the site's topography. These activities would loosen existing surface soils and sediments, increasing the potential for erosion during storm events. In addition, the use of construction equipment may involve the accidental release of fuels, oils, greases, and other hazardous substances at the construction site. Further, application of water for dust suppression could generate runoff that may entrain and transport pollutants (e.g., sediment, dissolved solids). These pollutants could be delivered to surface waters during storm events and/or be infiltrated into groundwater and the underlying aquifer, resulting in the degradation of water quality standards defined by the RWQCB. Though it is unlikely runoff from the project site would reach federally jurisdictional waters under average conditions, it would be possible during an extreme event (e.g., a 25- or 50-year rainfall event). Project construction activities would disturb more than 1 acre, requiring the Applicant to obtain coverage under the NPDES Construction General Permit. The NPDES Construction General Permit includes the preparation of a SWPPP and incorporation of BMPs to control sedimentation, erosion, and hazardous materials from

contacting stormwater, with the intent of keeping all products of erosion from moving off-site into receiving waters.

In addition, water applied to onsite soils for dust suppression during construction activities would occur during dry conditions, when the generation of dust would be of concern. Up to 300 af of water would be used during construction activities for dust suppression and to condition the soils with moisture for proper compaction of roads and foundations, as well as for concrete mixing. This amount of water would likely absorb into the upper layer of onsite soils or evaporate due to the high levels of evapotranspiration (DWR 2014). Furthermore, the proposed project would be required to implement a Dust Control Plan in accordance with the San Joaquin Valley Air Pollution Control District's (SJVAPCD) Regulation VIII, requiring the Applicant to submit a Dust Control Plan to the SJVAPCD prior to the start of construction. The dust control plan would identify BMPs to ensure that water used for dust suppression would not have the potential to generate large quantities of runoff or percolate to the groundwater aquifers at the site. Therefore, impacts related to the degradation of water quality would be less than significant with regulatory compliance.

Decommissioning impacts would be similar to those described for construction, namely the potential for erosion and/or release of construction-related water quality pollutants. Decommissioning activities would be required to comply with the same applicable federal, state, and local water quality regulations that would apply during construction activities. Ground-disturbing activities during decommissioning would require coverage under the Construction General Permit and the required SWPPP to effectively control erosion, sedimentation, and the release of construction-related pollutants. Therefore, as with construction activities, the impacts related to the degradation of water quality would be less than significant with regulatory compliance with the Air District's Regulation VIII.

#### Operation and Maintenance Phase

##### *Panel Washing*

During the operation and maintenance phase, periodic panel washing could result in indirect impacts to surface water and/or groundwater quality. Water applied for panel washing could collect on the ground surface and, potentially contribute to runoff, potentially resulting in erosion and/or entrainment of pollutants. In contrast, water applied for panel washing could infiltrate the soils and increase the rate at which potential pollutants are leached to the shallow groundwater table. Over the short term, such potential impacts are unlikely to be significant, but when considered over the life of the proposed project the potential for significant or lasting impacts becomes greater. However, it is estimated that only up to 4 to 10 af of water would be used per year during the operation and maintenance phase (panel washing, maintenance, and dust suppression) and is not expected to result notable runoff, infiltration, or leaching at the project site. Therefore, this impact would be less than significant.

##### *Accidental Spills of Pollutants*

The proposed project would require limited use of certain hazardous materials during the operation and maintenance phase. The accidental release of such materials could include oils, greases, and fuels and could potentially impact water quality if the materials were to become entrained in stormwater. As discussed in Section 4.8, Hazards and Hazardous Materials, the

accidental release of hazardous materials would be managed through hazardous materials management measures in accordance with applicable federal, state, and local regulations. Through adherence to these management measures, impacts relating to accidental release of hazardous materials during operation would be less than significant. Adherence to the management measures requires implementation of standard protocols during the storage, transportation, and usage of any hazardous materials that would minimize and avoid the potential for significant upset and accident condition impacts. By limiting the likelihood that hazardous materials will be released, the impact associated with pollutants entering groundwater or other water sources is reduced to less than significant.

**Level of Significance Before Mitigation**

Less Than Significant Impact.

**Mitigation Measures**

No mitigation is required.

**Level of Significance After Mitigation**

Less Than Significant Impact.

**Groundwater Supplies and Recharge**

---

**Impact HYD-2    The proposed project would not substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin.**

---

**Impact Analysis**

During construction, the proposed project is anticipated to use approximately 300 af of water for soil conditioning and dust control. After construction, operation and maintenance of the proposed project would require approximately 4 to 10 af of water annually for panel washing, maintenance, and dust suppression. The project site currently has six wells, of which four are active. No new wells would be constructed as part of the proposed project. Water used for construction and operation activities would be acquired from the four onsite wells, which have a capacity ranging from 0.003 af per minute to 0.006 af per minute.

Multiple factors determine the rate and amount of recharge and surface runoff, including the amount and intensity of precipitation, the amount of other imported water that enters a watershed, and the amount of precipitation and imported water that infiltrates to the groundwater. Infiltration is determined by several factors, including soil type, antecedent soil moisture, rainfall intensity, the amount of impervious surfaces within a watershed, and topography. The rate of surface runoff is largely determined by topography and the intensity of rainfall over a given period. Changes in groundwater recharge alter the quantity of groundwater available to the environment, existing users, and proposed projects. Projects that grade the land surface, remove vegetation, alter the conveyance and control runoff, or cover the land with impervious surfaces alter the relationships between rainfall, runoff, infiltration, and evapotranspiration. Total project acreage is an indicator of the magnitude of the land surface disturbance and potential to alter runoff, infiltration, and transpiration. The proposed project would not alter any precipitation amounts or intensities, nor would it require any additional water to be imported from outside of the region into the project site.

The proposed access roads would be composed of compacted soils, which would become impervious to water infiltration. In addition, the posts constructed to support the solar panels would add a minor amount of additional impervious coverage. However, the solar panels themselves would not function as impervious coverage, but instead would function similarly to a tree canopy. Rainwater would be intercepted by the panels and ultimately run off the panels and onto the ground. Likewise, most of the rainwater that runs off the impervious project facilities (e.g., concrete pads or other impervious improvements) would run off onto the neighboring soils and infiltrate into the ground. The amount of land converted to impervious surfaces would be minimal, and proposed impervious surfaces would be dispersed throughout the project site and would not create a “blanket of impervious cover” (e.g., a parking lot) which would impact groundwater recharge.

Given that the amount of new impervious cover created by the proposed project would be minimal, it would not substantially interfere with groundwater recharge. Water identified for the proposed project would be sourced from the onsite wells. Between 2008 and 2017, the project site has had an average annual water use of 3,100 af (comprised of surface and groundwater) to serve existing agricultural operations (ESA 2018a). The amount of water needed during construction would be up to 300 af; during operation and maintenance would be up to 4 to 10 af of water annually. Accordingly, groundwater needs would be less than its previous use; therefore, the proposed project would not deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table. The impact would therefore be less than significant.

#### **Level of Significance Before Mitigation**

Less Than Significant Impact.

#### **Mitigation Measures**

No mitigation is necessary.

#### **Level of Significance After Mitigation**

Less Than Significant Impact.

#### **Alteration of Existing Drainage**

---

**Impact HYD-3**    **The project would not substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river through the addition of impervious surfaces, in a manner which would:**

- i. Result in substantial erosion or siltation on- or offsite;**
- 

#### **Impact Analysis**

As discussed in impact HYD-1, the proposed project would disturb more than 1 acre of land during construction. Construction activities would require grading and soil exposure at the project site, increasing the potential for erosion. If not controlled, the transport of these materials into local waterways could increase suspended sediment concentrations. In accordance with the NPDES Construction General Permit, the Applicant would be required to prepare and implement an SWPPP. As previously discussed, the SWPPP would identify BMPs such as include using temporary mulching, seeding, or other stabilization measures to protect uncovered soils; storing materials and equipment to ensure that spills or leaks cannot enter the storm drain

system or surface water; developing and implementing a spill prevention and cleanup plan; installing traps, filters, or other devices at drop inlets to prevent contaminants from entering storm drains; and using barriers, such as fiber rolls and silt fencing, to minimize the amount of uncontrolled runoff that could enter drains or surface water to implement during construction to reduce potential erosion impacts to a less than significant level.

Operation of the proposed project would alter existing onsite drainage patterns with the addition of new impervious surfaces at the project site. The addition of new impervious surfaces could increase the rate and volume of stormwater runoff at the project site and potentially cause erosion. However, the project site experiences very low annual rainfall (on average 7 to 8 inches per year [DWR 2014]), and as a result, the soils are rarely saturated to the point that any measurable runoff can be generated. Furthermore, most of the rainwater that would run off the impervious project facilities (e.g., concrete pads or other impervious improvements) would run off onto the neighboring soils and infiltrate into the ground. Therefore, the amount of land converted to impervious surfaces that would reduce water infiltration and potentially impact existing drainage would be minimal. The impact of the proposed project on the existing erosion or siltation processes would be less than significant.

---

**ii. Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite;**

---

The proposed project would alter existing onsite drainage patterns with the addition of new impervious surfaces at the project site. The addition of new impervious surfaces could increase the rate and volume of stormwater runoff at the project site and potentially cause on- or offsite flooding. Many of the natural drainage patterns emanating from the west (in the Southern Coast Range) have been disconnected and/or interrupted to some degree by the California Aqueduct. In addition, most channels and drainages surrounding the project site are ephemeral due to the seasonal nature of rainfall, low annual rainfall totals, irrigation demands, and the relatively high permeability of the valley floor alluvial deposits. Therefore, all native surface water supplies, imported water supplies, and direct precipitation percolate into valley groundwater if not lost through consumptive use, evapotranspiration, or evaporation (Central Valley RWQCB 2018). As such, the proposed project would not result in on- or offsite flooding, and impacts would be less than significant.

---

**iii. Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or**

---

The proposed project would be constructed to follow the existing topography of the project site to limit erosion potential and maintain existing drainage patterns. The site experiences very low annual rainfall (an average of 7 to 8 inches per year [DWR 2014]); as a result, the soils are rarely saturated to the point that any measurable runoff can be generated. As part of the SWPPP, the final drainage plan would be required to demonstrate the ability of the planned onsite storm drainage to adequately collect onsite stormwater flows in accordance with all applicable standards and requirements by minimizing impervious surfaces and directing flows according to BMPs. For these reasons, the proposed project would have no impact on the available capacity of existing storm drains or provide substantial additional sources of polluted runoff.

---

#### iv. Impede or redirect flood flows?

---

The project site is designated by FEMA by Panel no. 3275 as Zone X, which is outside both the 100-year and 500-year floodplains. No FEMA-designated Special Flood Hazard Areas or mapped regulatory floodways exist on or adjacent to the project site (FEMA 2009). Therefore, there would be no impact related to flood hazard areas.

#### **Level of Significance Before Mitigation**

Less Than Significant Impact.

#### **Mitigation Measures**

No mitigation is necessary.

#### **Level of Significance After Mitigation**

Less Than Significant Impact.

#### Water Quality Control Plan

---

**Impact HYD-4    The proposed project would not conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan.**

---

#### **Impact Analysis**

The proposed project is within the Tulare Lake Basin. The Water Quality Control Plan (WQCP) for the Tulare Lake Basin was last amended May 2018. The WQCP includes policies and objectives for protecting surface waters and groundwaters (Central Valley RWQCB 2018). As discussed in impact HYD-1, the proposed project would obtain coverage under the NPDES Construction General Permit and implement a SWPPP during construction and decommissioning activities. The SWPPP would implement BMPs to reduce potential impacts to water quality and therefore would be consistent with the policies and objectives of the Tulare Lake Basin WQCP.

The Sustainable Groundwater Management Act (SGMA), effective January 1, 2015, established a framework of priorities and requirements to facilitate sustainable groundwater management throughout the state. The intent of SGMA is for groundwater to be managed by local public agencies and newly-formed GSA to ensure that a groundwater basin is operated within its sustainable yield through the development and implementation of GSPs. The proposed project is within the WWD GSA. As of April 2019, the GSP for the WWD GSA is being developed and due January 31, 2020 (WWD 2016b). The GSP would define the sustainability goals for the Westside Subbasin and include projects and actions needed to achieve and/or maintain sustainable groundwater use. Because the plan has not been finalized, there is no relevant plan for the proposed project, and there would be no conflict with a water quality control plan or sustainable groundwater management plan. The impact would be less than significant.

#### **Level of Significance Before Mitigation**

Less Than Significant Impact.

#### **Mitigation Measures**

No mitigation is necessary.



## Level of Significance After Mitigation

Less Than Significant Impact.

### 4.9.4 Cumulative Impacts

The geographic scope for considering project-related cumulative impacts on hydrology and water quality is the Westlands hydrologic region for surface water and the Westside Subbasin for groundwater. The project-level analysis determined impacts related to hydrology and water quality were less than significant with the incorporation of mitigation. Cumulative impacts would occur if any related project would have the same or similar impacts as the proposed project related to water quality, drainage patterns, and groundwater supplies.

During construction, the other related projects would be subject to the requirements of the NPDES Construction General Permit and implement a SWPPP to minimize potential release of pollutants and control erosion. The implementation of a SWPPP is a regulatory requirement for projects disturbing 1 acre of land or more, which would include the State Route (SR) 269 Bridge Reconstruction Project, the Huron Wastewater Treatment Facility (WWTF) Improvements, the Los Gatos Tomato Processing Facility, and the Westlands Solar Park Project. Therefore, adherence to this existing regulation would ensure that the proposed project and other related projects would not impact water quality or contribute to a cumulative impact.

Water for the project would be supplied by onsite wells. The proposed project's water use during construction, operation, and decommissioning would be less than existing conditions and therefore would not substantially deplete groundwater resources. Furthermore, the amount of new impervious surfaces created by the proposed project would be less than 5%, which is minimal and would not substantially interfere with groundwater recharge or result in increased runoff which would combine with other related projects. The other related projects, including the SR 269 Bridge Reconstruction Project, the Huron WWTF Improvements, the Los Gatos Tomato Processing Facility, and the Westlands Solar Park Project would also be required to comply with similar drainage requirements and implement post-construction measures of the Construction General Permit to minimize drainage impacts that would increase the potential for erosion, flooding, or exceed capacity of existing drainage facilities. Adherence to these requirements would ensure that impacts related to erosion, drainage, and groundwater supplies would not be significant. Therefore, the proposed project would not combine with other related projects to contribute a cumulative impact.

Flooding related impacts are generally site-specific hazards. The proposed project would not impede or redirect flood flows as it is not located within a flood hazard area. Therefore, the proposed project would not combine with the other related projects to contribute a cumulative impact.

## 4.10 LAND USE AND PLANNING

This section describes the existing land use and potential effects that would result from implementation of the Fifth Standard Solar Facility Project Complex (proposed project). Included is a review of existing conditions, a summary of applicable policies and regulations, and analysis of environmental impacts of the proposed project related to land use and planning. Where applicable, Mitigation Measures are included for significant impacts. The County received no scoping comments pertaining to land use and planning (Appendix A).

### 4.10.1 Regulatory Setting

#### Federal

There are no federal land use plans directly applicable to the proposed project. However, the proposed project area does fall within the multi-regional 17,500-acre boundary of the U.S. Fish and Wildlife Service's (USFWS's) *Recovery Plan for Upland Species of the San Joaquin Valley, California* (Recovery Plan). The Recovery Plan was completed in 1998 (USFWS 1998), is applicable only to public and conservation lands, and therefore, does not apply to the proposed project.

#### State

No state regulations are applicable.

#### Local

##### Fresno County General Plan

The Fresno County General Plan is the County's long-range planning document. It consists of seven elements: Economic Development; Agriculture and Land Use; Transportation and Circulation; Public Facilities and Services; Open Space and Conservation; Health and Safety; and Housing. The Agriculture and Land Use Element describes the County's Land Use Diagram and related development standards for unincorporated land within the County and sets out goals, policies, and implementation programs for resource lands (including agriculture), rural development (non-agriculture), urban development, and administration (County 2000b).

The project site is designated as "Agriculture" in the General Plan, which provides for the production of crops and livestock and for the location of necessary agricultural commercial centers, agricultural processing facilities, and certain non-agricultural activities (see General Plan Table LU-3). General Plan policies that are relevant to the proposed project are discussed below.

##### Fresno County Zoning Ordinance Code

The project site is zoned AE-20 (Exclusive Agricultural, 20-acre minimum parcel size). Fresno County Zoning Ordinance Code Section 816.2.D identifies electrical transmission substations and electric distribution substations as uses permitted subject to approval of a Director Review and Approval Application (County 2004a). Solar facilities are not specified as an allowed use in the AE-20 zoning code; however, the County processes photovoltaic (PV) solar facility projects

through the Unclassified Conditional Use Permit (CUP) process for public utility and public services, structures, uses, and buildings, as described in Code Section 853.B.14 (County 2004b).

#### Fresno County Solar Facility Guidelines

The *Solar Facility Guidelines* (Solar Guidelines), adopted by the Fresno County Board of Supervisors on December 12, 2017, provide a list of information and standards for applicants for solar facilities to address as part of the application review process (County 2017a). The portion of those guidelines relevant to this land use and planning discussion are as follows:

1. Information shall be submitted regarding the historical agricultural operational/usage of the parcel, including specific crop type and crop yield, for the last ten years (if no agricultural operation in the last ten years, specify when land was last in agricultural use).
2. Information shall be submitted that identifies the source of water for the subject parcel (surface water from irrigation district, individual well(s), and conjunctive system). If the source of water is via district delivery, the applicant shall submit information documenting the allocations received from the irrigation district and the actual disposition of the water (i.e., utilized on-site or moved to other locations) for the last ten years. If an individual well system is used, provide production capacity of each well, water quality data and data regarding the existing water table depth.
3. Identify the current status of the parcel (Williamson Act contract, conservation easement, retired land, etc.), the purpose of any easement and limitations of the parcel. The applicant shall submit a Title Report or Lot Book Guarantee for verification.
4. The applicant must acknowledge the County's Right-to-Farm Ordinance and shall be required to record a Right-to-Farm Notice prior to issuance of any permits. This shall be included as a recommended condition of approval of the land use entitlement. Note: The life of the approved land use permit will expire upon expiration of the initial life of the solar lease. If the solar lease is to be extended, approval of a new land use permit will need to be obtained.

#### 4.10.2 Environmental Setting

The project site is in the western portion of unincorporated Fresno County on a 12-parcel site, all under private ownership. Surrounding land uses are primarily field crops. Additionally, 13 of the 15 parcels adjacent to the project site are under Williamson Act Contracts. The project site is near the following solar-related facilities: the Gates Substation (0.34 mile southwest), the existing West Gates Solar Facility (0.5 mile southwest), and the Gates Solar Facility (north and immediately adjacent to the project site). Interstate 5 (I-5) is located approximately 2 miles west of the site. The Pleasant Valley Ecological Reserve is located west of I-5, 6 miles west of the site.

In 2015, Los Gatos Tomato Processing Facility Products applied for and received a Classified CUP (CUP No. 3510) to allow an increase in land application area for processed wastewater from 4,676.66 acres to 6,263.08 acres (an additional 1,586.42 acres) for wastewater discharge from the existing tomato processing plant. The Fifth Standard parcels are within the area allowed to receive discharge water. Although a large land application area is permitted for the beneficial reuse of the effluent, only a fraction of that land area is used in a typical year. The

project site is classified as Prime Farmland and, with exception of 1.25 acres, is restricted by Williamson Act Contracts, which are being petitioned for cancellation under a separate process with the County. As discussed in Section 2, Project Description, the project site has a history of growing processing tomatoes, wheat, dehydrator bulb onions, garlic, and pima cotton. Since 2014, portions of the project site have been left fallow.

The site's recent crop rotation of tomatoes followed by wheat is typical of the region. The tomato beds are irrigated with subsurface drip, and the source of the irrigation water is a mix of surface water piped in from the irrigation district or from on-farm wells. In the case of wheat, sprinklers are used to irrigate the crop.

The majority of the soil on the project site (93.8%) is Westhaven loam and is of good quality to support agricultural production with few limitations. The remainder of the soil on the project site (6.2%) is Excelsior sandy loam, which is a lesser quality soil with some limitations, but it can be managed with conservation practices to support agricultural production. As described, the project site soil is considered Prime, according to California Department of Conservation's (DOC's) Important Farmland Map. Prime Farmland, as defined by the U.S. Department of Agriculture (USDA), is land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops and is available for these uses.

The irrigation infrastructure on the project site is suitable for effectively supporting the delivery and distribution of groundwater (in addition to surface water) for irrigation use. Surface water allocation from the Westlands Water District (WWD) has varied over the last 12 years, with an average of 40%. Groundwater has been used to supplement variability with surface water allocations. Prior to 1990, the project site received its entire allocation from WWD, with the exception of in 1977. Except for 4 years in the period from 1990 to 2018, groundwater was either the primary (50% or more) and at times, the only source of water for irrigation. As previously discussed, two of the parcels associated with this project were approved to receive effluent from the Los Gatos Tomato Processing Facility, which could be used to offset groundwater usage.

Notwithstanding the challenges of surface water allocation variability and groundwater quality, the project site has a history of producing agriculture crops that contribute to the agricultural economy that is important to the County, and could continue to do so. The landowner has entered into a long-term lease with the Applicant (35 years with the possibility of extensions) to develop the site to a solar electrical generation.

The Applicant has reached agreements with mineral rights owners to leave certain areas free of solar panels. The Applicant has either executed or intends to execute surface waiver agreements with most of the mineral rights owners and lessees. Under these agreements, the entities controlling the mineral rights waive the right to access the surface acreage being used by the proposed project. Figure 2-2 shows the drilling islands and access corridors that will provide access to the underlying recoverable minerals (if any).

### 4.10.3 Environmental Impact Analysis

This section analyzes the proposed project's potential to result in significant environmental impacts to land use and planning. When an impact is determined to be significant, Mitigation Measures are identified that would reduce or avoid the impact.

#### Methodology

The proposed project's effects were compared to the thresholds of significance to determine whether the proposed project would result in a significant change to land use and planning.

#### Thresholds of Significance

In accordance with the CEQA Guidelines Appendix G Environmental Checklist, the following questions were analyzed and evaluated to determine whether the impacts to land use and planning would be significant.

- Would the proposed project cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?

The following question was determined to have no impact during the NOP scoping. This issue is summarized in Section 6.0, Effects Found Not To Be Significant and is not discussed further in this section.

- Would the project physically divide an established community?

#### Project Impact Analysis and Mitigation Measures

##### Conflict with Applicable Plans, Policies, or Regulations

---

**Impact LUP-1    The proposed project would cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect.**

---

#### Impact Analysis

The Fresno County General Plan and the Fresno County Zoning Ordinance establish land use policies and regulations that are applicable to the proposed project. The following discussion evaluates the conformity of the proposed project to these plans, policies, and regulations.

##### Consistency with Zoning

The County is processing the permit application for the solar facility in accordance with the Unclassified CUP process for public utility and public services, structures, uses, and buildings, as described in Section 853.B.14 of the Zoning Code. The Applicant has filed three separate Unclassified CUPs to construct, operate, maintain, and decommission a PV electricity generating facility including ancillary facilities. The County's zoning may be interpreted as allowing a battery storage facility with a Director's Review Approval application; however, the proposed Blackbriar component would not be able to operate independent of the other Unclassified CUPs, and as such, the review of that component falls under the Solar Guidelines of the County. Each Unclassified CUP is summarized below:

- Unclassified CUP Application No. 3562 Fifth Standard Solar Facility: a 150-megawatt (MW) PV solar energy generation facility that is anticipated to require up to 1,400 acres of the site. A 230-kilovolt (kV) project gen-tie line would be constructed from the southwest portion of this site to the point of interconnect. The gen-tie line would consist of a 0.3-mile aboveground power line.
- Unclassified CUP Application No. 3563 Stonecrop Solar Facility: a 20-MW PV solar energy generation facility that would be located adjacent to the Fifth Standard Solar Facility and would require less than 200 acres of the site.
- Unclassified CUP Application No. 3564 Blackbriar Battery Storage Facility: an up to 100-MW battery storage facility that would be located adjacent to the Fifth Standard Solar Facility and the Stonecrop Solar Facility and would require less than 5 acres of the site.

Compliance with the conditions of approval for each Unclassified CUP would ensure that the proposed project would not conflict with zoning requirements.

The Applicant has addressed the County's Solar Guidelines through the implementation of several design features. For example, the proposed project would maintain a buffer between the proposed solar facility and adjacent agricultural operations and would implement a reclamation plan to return the site to agricultural use after project decommissioning. A complete list of the Solar Guidelines and the sections where they are addressed in this document is provided in Section 4.0, Environmental Impact Analysis (Table 4-2).

#### Consistency with the General Plan

The subject parcels are designated Agriculture by the Fresno County General Plan. The AE-20 Zone District is consistent with this designation.

Table 4.10-1 summarizes the proposed project's consistency with the applicable goals and policies of the General Plan. As shown in the table, the proposed project would not be consistent with all applicable goals and policies of the General Plan aimed at preservation of productive farmland in the County. Impacts would be potentially significant.



**Table 4.10-1: General Plan Consistency Analysis**

Chapter	Goal/Policy	Consistency Determination
<p>Agriculture and Land Use Element</p>	<p><b>Goal LU-A:</b> To promote the long-term conservation of productive and potentially productive agricultural lands and to accommodate agricultural support services and agriculturally related activities that support the viability of agriculture and further the County’s economic development goals.</p>	<p><b>Not Consistent.</b> The proposed project would convert an unprecedented amount of Prime farmland in favor of a solar facility.</p>
	<p><u>Policy LU-A.1:</u> The County shall maintain agriculturally-designated areas for agriculture use and shall direct urban growth away from valuable agricultural lands to cities, unincorporated communities, and other areas planned for such development where public facilities and infrastructure are available.</p>	<p><b>Not Applicable.</b> The proposed project does not involve the development of urban uses such as residential or commercial facilities that is traditionally associated with urban growth.</p>
	<p><u>Policy LU-A.2:</u> The County shall allow by-right in areas designated Agriculture, activities related to the production of food and fiber and support uses incidental and secondary to the on-site agricultural operation. Uses listed in Table LU-3 are illustrative of the range of uses allowed in areas designated Agriculture.</p>	<p><b>Not Consistent.</b> The project is not an activity related to the production of food and fiber, and solar facilities are not listed in Table LU-3. Therefore, the project is not consistent with this policy.</p>
	<p><u>Policy LU-A.3:</u> The County may allow by discretionary permit in areas designated Agriculture, special agricultural uses and agriculturally-related activities, including value-added processing facilities, and certain non-agricultural uses listed in Table LU-3. Approval of these and similar uses in areas designated Agriculture shall be subject to the following criteria[...]</p>	<p><b>Not Consistent.</b> Solar facilities are not included as a non-agricultural use listed in Table LU-3.</p>
	<p><u>Policy LU-A.13:</u> The County shall protect agricultural operations from conflicts with non-agricultural uses by requiring buffers between proposed non-agricultural uses and adjacent agricultural operations.</p>	<p><b>Consistent.</b> The proposed project would maintain a 50-foot buffer between the proposed project and adjacent agricultural operations.</p>
	<p><u>Policy LU-A.14:</u> The County shall ensure that the review of discretionary permits includes an assessment of the conversion of productive agricultural land and that mitigation be required where appropriate.</p>	<p><b>Consistent.</b> The proposed project evaluated the conversion of agricultural land in Section 4.2 Agriculture of this Draft EIR. Mitigation measures were incorporated into project; however, the impact was determined to remain significant and unavoidable.</p>

Chapter	Goal/Policy	Consistency Determination
<p>Transportation and Circulation Element</p>	<p><u>Policy TR-A.3:</u> The County shall require that new or modified access to property abutting a roadway and to intersecting roads conform to access specifications in the Circulation Diagram and Standards section. Exceptions to the access standards may be permitted in the manner and form prescribed in the Fresno County Zoning and Subdivision Ordinances, provided that the designed safety and operational characteristics of the existing and planned roadway facility will not be substantially diminished.</p>	<p><b>Consistent.</b> Primary access to the project site would be via Lassen Avenue (SR 269). The entrance road would be improved to 24 feet wide, two 10-foot travel lanes with two 2-foot shoulders, and an aggregate base surface. Design and construction of project access road intersections with SR 269 would be required to conform with the Caltrans Highway Design Manual. Other internal roads for access and connectivity would be sufficient for CAL FIRE access.</p>
	<p><u>Policy TR-A.5:</u> The County shall require dedication of right-of-way or dedication and construction of planned road facilities as a condition of land development, and require an analysis of impacts of traffic from all land development projects including impacts from truck traffic. Each such project shall construct or fund improvements necessary to mitigate the effects of traffic from the project. The County may allow a project to fund a fair share of improvements that provide significant benefit to others through traffic impact fees.</p>	<p><b>Consistent.</b> Primary access to the project site would be via Lassen Avenue (SR 269), which would be improved to 24 feet wide, two 10-foot travel lanes with two 2-foot shoulders, and an aggregate base surface. Design and construction of project access road intersections with SR 269 would be required to conform with the Caltrans Highway Design Manual. These access improvements would be paid for by the Applicant. Section 4.14, Transportation and Traffic, determined that no roadway improvements would need to be funded as mitigation. Mitigation Measure TRA-1 would be required to address construction traffic impacts and potential impacts to roadway conditions from the project's construction traffic. Mitigation Measure TRA-2 and Mitigation Measure TRA-3 require that the Applicant, prior to the start of construction, enter into a secured agreement with the County to ensure that any County roads that are demonstrably damaged by project-related activities are promptly repaired and, if necessary, paved, slurry-sealed, or reconstructed, as per requirements of the state and County.</p>
	<p><u>Policy TR-A.8:</u> The County shall ensure that land development that affects roadway use or operation or requires roadway access to plan, dedicate, and construct required improvements consistent with the criteria in the Circulation Diagram and Standards section of this element.</p>	<p><b>Consistent.</b> Primary access to the project site would be via Lassen Avenue (SR 269), which would be improved to 24 feet wide, two 10-foot travel lanes with two 2-foot shoulders, and an aggregate base surface. Design and construction of project access road intersections with SR 269 would be required to conform with the Caltrans Highway Design Manual. These access improvements would be paid for by the Applicant.</p>

Chapter	Goal/Policy	Consistency Determination
Public Facilities and Services Element	<p><u>Policy PF-C.3:</u> To reduce demand on the county’s groundwater resources, the County shall encourage the use of surface water to the maximum extent feasible.</p>	<p><b>Not Consistent.</b> The proposed project would rely on the existing onsite wells for water use during construction, operation, and decommissioning. Construction water demand would be 300 acre-feet total and operations would require 4 to 10 acre-feet per year. Decommissioning water demand would be comparable to construction demand at 300 acre-feet. From 2008 through 2017, groundwater use at the site has averaged 2,800 acre-feet per year. However, depending on available quantities, the Applicant may also be able to obtain water from the WWD. Therefore, the proposed project would not be consistent with this policy, as it would potentially continue to use groundwater.</p>
	<p><u>Policy PF-C.13:</u> In those areas identified as having severe groundwater level declines or limited groundwater availability, the County shall limit development to uses that do not have high water usage or that can be served by a surface water supply.</p>	<p><b>Consistent.</b> The site overlies the Westside Groundwater Subbasin, which covers more than 640,000 acres and is located within the San Joaquin Valley Groundwater Basin. This subbasin is a source of water for hundreds of farming operations in Fresno and Kings counties and is currently considered to be in an overdraft situation as a result of the following: 1) the ongoing drought in California; and 2) historic withdrawals exceeding recharge capacity. Water for construction, operation, and decommissioning of the proposed project would be obtained from onsite groundwater wells. Expected annual water consumption during operation would be 4 to 10 acre-feet per year, which is not considered a high water use.</p>
	<p><u>Policy PF-C.17:</u> The County shall, prior to consideration of any discretionary project related to land use, undertake a water supply evaluation. The evaluation shall include the following:</p> <ul style="list-style-type: none"> <li>a. A determination that the water supply is adequate to meet the highest demand that could be permitted on the lands in question. If surface water is proposed, it must come from a reliable source and the supply must be made “firm” by water banking or other suitable arrangement. If groundwater is proposed, a hydrogeologic investigation may be required to</li> </ul>	<p><b>Consistent.</b> Section 4.9, Hydrology, evaluated water supply. The project site has historically withdrawn 2,800 acre-feet of groundwater for farming operations. The proposed project would require substantially less during construction (300 acre-feet), operations (4 to 10 acre-feet), and decommissioning (300 acre-feet). However, depending on available quantities, the Applicant may also be able to obtain water from the WWD.</p> <p>Upon conversion of the land to non-agricultural use, the surface water allocation from the WWD would cease, and that water would be available to other users within the WWD. Groundwater usage associated with the project would</p>

Chapter	Goal/Policy	Consistency Determination
	<p>confirm the availability of water in amounts necessary to meet project demand. If the lands in question lie in an area of limited groundwater, a hydrogeologic investigation shall be required.</p> <p>b. A determination of the impact that use of the proposed water supply would have on other water users in Fresno County. If use of surface water is proposed, its use must not have a significant negative impact on agriculture or other water users within Fresno County. If use of groundwater is proposed, a hydrogeologic investigation may be required. If the lands in question lie in an area of limited groundwater, a hydrogeologic investigation shall be required. Should the investigation determine that significant pumping-related physical impacts will extend beyond the boundary of the property in question, those impacts shall be mitigated.</p> <p>c. A determination that the proposed water supply is sustainable or that there is an acceptable plan to achieve sustainability. The plan must be structured so that it is economically, environmentally, and technically feasible. In addition, its implementation must occur prior to long-term and/or irreversible physical impacts, or significant economic hardship, to surrounding water users.</p>	<p>be substantially less than what has historically been withdrawn. Since the volume of water withdrawn for the proposed project would be much lower, it would allow for the groundwater to recharge over the duration of the proposed project. The estimated usage and would be less than what the WWD considers to be the safe yield for the aquifer of 0.5 acre-feet per acre (WWD 2018). Based on the project site acreage, safe yield at the project site would be 797 acre-feet per year.</p>
	<p><u>Policy PF-E.5:</u> The County shall only approve land use-related projects that will not render inoperative any existing canal, encroach upon natural channels, and/or restrict natural channels in such a way as to increase potential flooding damage.</p>	<p><b>Consistent.</b> The proposed project would be constructed to follow the existing topography of the project site as much as possible to maintain existing drainage patterns. There are no existing canals or flood control features that would be affected.</p>
	<p><u>Policy PF-E.7:</u> The County shall require new development to pay its fair share of the costs of Fresno County storm drainage and flood control improvements within unincorporated areas.</p>	<p><b>Consistent.</b> No stormwater drainage facilities are proposed to be constructed as part of the project.</p>

Chapter	Goal/Policy	Consistency Determination
	<p><u>Policy PF-E.11:</u> The County shall encourage project designs that minimize drainage concentrations and maintain, to the extent feasible, natural site drainage patterns.</p>	<p><b>Consistent.</b> Construction, operation and maintenance, and decommissioning of the proposed project would result in very little change to the existing drainage pattern of the area. The site topography is relatively flat (the existing ground slope is generally less than 0.5%), and none of the new impervious surfaces would be adjacent to or otherwise directly connected to a distinct drainage channel. The amount of increased runoff generated from the impervious surfaces would be minimal and would likely infiltrate into the ground over a short distance. Rain falling onto the solar arrays would drain onto the ground underneath, which would remain pervious.</p>
	<p><u>Policy PF-E.21:</u> The County shall require the use of feasible and practical best management practices (BMPs) to protect streams from the adverse effects of construction activities and shall encourage the urban storm drainage systems and agricultural activities to use BMPs.</p>	<p><b>Consistent.</b> The Applicant shall prepare a SWPPP. The SWPPP would include measures to ensure that all pollutants and their sources are controlled, and non-stormwater discharges are identified and either eliminated, controlled, or treated. The SWPPP would ensure that site BMPs are effective and result in the reduction or elimination of pollutants in stormwater discharges and authorized non-stormwater discharges. Lastly, post-construction, the SWPPP would require BMPs be completed and maintained as necessary during operations to reduce or eliminate pollutants.</p>
	<p><u>Policy PF-F.1:</u> The County shall continue to promote maximum use of solid waste source reduction, reuse, recycling, composting, and environmentally-safe transformation of wastes.</p>	<p><b>Consistent.</b> The proposed project would be required to comply with the County's Construction and Demolition Debris Recycling Program through implementation of Reclamation Plans. A construction waste recycling program would be implemented with the objective of recycling at least 65% of the project waste (by weight), pursuant to the California Green Building Standards Code. At the end of the project life, the PV panels would either be resold, repurposed, or recycled.</p>

Chapter	Goal/Policy	Consistency Determination
	<p><u>Policy PF-F.4:</u> The County shall ensure that all new development complies with applicable provisions of the County's Integrated Waste Management Plan.</p>	<p><b>Consistent.</b> The proposed project would generate solid waste during construction, operation and maintenance, and decommissioning activities. All handling and processing of construction, demolition, and inert debris would be in accordance with applicable regulatory requirements.</p> <p>The Applicant would be required to complete a three-step process to meet the County's Construction and Demolition Recycling Program requirements. The first step would be to complete and submit a Waste Management Plan for recycling a minimum of 65% of all nonhazardous waste, scrap, and debris from construction. The second step would be to collect data during construction in a waste log that documents all weight/gate tags and receipts and invoices for disposal services. The third step would be to complete acknowledgement forms and provide the waste log and all supporting documentation 14 days prior to final inspection.</p>
	<p><u>Policy PF-G.2:</u> The County shall strive to maintain a staffing ratio of two (2) sworn officers serving unincorporated residents per 1,000 residents served. (This count of officers includes all ranks of deputy sheriff personnel and excludes all support positions and all sworn officers serving county wide population interests such as bailiffs, and sworn officers serving contract cities, and grant specific populations).</p>	<p><b>Not Applicable.</b> The proposed project would not conflict with the County's ability to meet the desired staffing ratio; the project would not result in new residents who could contribute to the demand for police services. Offsite staff would remotely monitor the project site to ensure site security and minimize the need for law enforcement response.</p>
	<p><u>Policy PF-H.5:</u> The County shall require that new development be designed to maximize safety and minimize fire hazard risks to life and property.</p>	<p><b>Consistent.</b> Section 4.8, Hazards and Hazardous Materials, includes an evaluation of potential fire hazards. The project is not located in a zone of high or very high fire severity hazard as defined by CAL FIRE. Regardless, fire prevention measures would be implemented to minimize fire risk. The project site would be annexed to the Community Facilities District No. 2010-01 of the Fresno County Fire Protection District. Additionally, the Applicant will coordinate with the Fresno County Fire District in the development of a Fire Prevention and Emergency Action Plan for the site to address potential exposure to fire and other hazards in the project site.</p>



Chapter	Goal/Policy	Consistency Determination
	<p><u>Policy PF-H.10:</u> The County shall ensure that all proposed developments are reviewed for compliance with fire safety standards by responsible local fire agencies per the Uniform Fire Code and other State and local ordinances.</p>	<p><b>Consistent.</b> The Applicant will coordinate with the Fresno County Fire District in the development of a Fire Prevention and Emergency Action Plan for the site to address potential exposure to fire and other hazards in the project site.</p>
<p>Open Space and Conservation Element</p>	<p><u>Policy OS-A.25:</u> The County shall minimize sedimentation and erosion through control of grading, cutting of trees, removal of vegetation, placement of roads and bridges, and use of off-road vehicles. The County shall discourage grading activities during the rainy season unless adequately mitigated to avoid sedimentation of creeks and damage to riparian habitat.</p>	<p><b>Consistent.</b> Section 4.6, Geology and Soils, includes an evaluation of potential erosion-related impacts and associated mitigation. The proposed project would be constructed to follow the existing topography of the project site as much as possible to limit erosion potential and maintain existing drainage patterns.</p>
	<p><u>Policy OS-G.2:</u> The County shall ensure that air quality impacts identified during the CEQA review process are fairly and consistently mitigated. The County shall require projects to comply with the County’s adopted air quality impact assessment and mitigation procedures.</p>	<p><b>Consistent.</b> Section 4.3, Air Quality, discusses the Mitigation Measures proposed to reduce impacts on air quality from construction and decommissioning of the proposed project. As evaluated in Section 4.3, project operations would not exceed emission thresholds.</p>
	<p><u>Policy OS-G.12:</u> The County shall continue, through its land use planning processes, to avoid inappropriate location of residential uses and sensitive receptors in relation to uses that include but are not limited to industrial and manufacturing uses and any other use which have the potential for creating a hazardous or nuisance effect.</p>	<p><b>Consistent.</b> Section 4.3, Air Quality, discusses the measures to reduce potential impacts from construction, operation, and decommissioning on sensitive receptors.</p>
	<p><u>Policy OS-G.13:</u> The County shall include fugitive dust control measures as a requirement for subdivision maps, site plans, and grading permits. This will assist in implementing the SJVUAPCD’s particulate matter of less than ten (10) microns (PM<sub>10</sub>) regulation (Regulation VIII). Enforcement actions can be coordinated with the Air District’s Compliance Division.</p>	<p><b>Consistent.</b> Construction of the proposed project would incorporate fugitive dust control measures, including a dust control plan, to reduce PM<sub>10</sub> emissions to the extent practicable.</p>
	<p><u>Policy OS-G.14:</u> The County shall require all access roads, driveways, and parking areas serving new commercial and industrial development to be constructed with materials that minimize particulate emissions and are appropriate to the scale and intensity of use.</p>	<p><b>Consistent.</b> All access roads would be aggregate base on a compacted subgrade. Dust control measures, including watering, stabilizing disturbed soils, and limiting traffic speeds, would be implemented during construction and operation. Refer to Section 4.3, Air Quality.</p>

Chapter	Goal/Policy	Consistency Determination
	<p><u>Policy OS-J.1:</u> The County shall require that discretionary development projects, as part of any required CEQA review, identify and protect important historical, archeological, paleontological, and cultural sites and their contributing environment from damage, destruction, and abuse to the maximum extent feasible. Project-level mitigation shall include accurate site surveys, consideration of project alternatives to preserve archeological and historic resources, and provision for resource recovery and preservation when displacement is unavoidable.</p>	<p><b>Consistent.</b> One cultural resource is located on the project site, but it is outside the area of direct impact. The cultural resource has been recommended as not historically significant under the CRHR and NRHP criteria and is not considered eligible for inclusion in the CRHR or NRHP. Therefore, the proposed project would not affect any known cultural resources. Section 4.5, Cultural Resources contains Mitigation Measures should an unknown resource be encountered during construction.</p>
	<p><u>Policy OS-J.2:</u> The County shall, within the limits of its authority and responsibility, maintain confidentiality regarding the locations of archeological sites in order to preserve and protect these resources from vandalism and the unauthorized removal of artifacts.</p>	<p><b>Consistent.</b> Section 4.5, Cultural Resources summarizes that no known archaeological resources are within the project’s area of direct impact. Section 4.5, Cultural Resources contains Mitigation Measures should an unknown resource be encountered during construction, including provisions to maintain confidentiality regarding the location of such finds.</p>
	<p><u>Policy OS-J.9:</u> In approving new development, the County shall ensure, to the maximum extent practicable, that the location, siting, and design of any project be subordinate to significant geologic resources.</p>	<p><b>Consistent.</b> The proposed project would be located on lands currently used for agricultural activities. Significant geologic resources are not present on the site. Refer to Section 4.6, Geology and Soils for additional discussion.</p>
	<p><u>Goal OS-K:</u> To conserve, protect, and maintain the scenic quality of Fresno County and discourage development that degrades areas of scenic quality.</p>	<p><b>Consistent.</b> The area is not located in a scenic area as designated by the County. Nevertheless, the proposed project would alter the existing visual characteristic of the site. Section 4.1, Aesthetics, determined that the project would not substantially degrade the existing visual character and quality of the site and surrounding areas.</p>
	<p><u>Policy OS-K.1:</u> The County shall encourage the preservation of outstanding scenic views, panoramas, and vistas wherever possible. Methods to achieve this may include encouraging private property owners to enter into open space easements for designated scenic areas</p>	<p><b>Consistent.</b> The project is not located adjacent to a scenic area, vista, or roadways. The segment of I-5 that passes within 2 miles to the west of the proposed project is a County-designated scenic roadway. As discussed in Section 4.1, Aesthetics, the size of the project could make it detectable in views from I-5, but it would likely appear as a dark-colored plane along the horizon, similar to other views from elevated roadways.</p>

Chapter	Goal/Policy	Consistency Determination
	<p><u>Goal OS-L</u>: To conserve, protect, and maintain the scenic quality of land and landscape adjacent to scenic roads in the County.</p>	<p><b>Consistent.</b> The project is not located adjacent to a scenic area, vista, or roadways. The segment of I-5 that is a County-designated scenic roadway passes within 2 miles to the west of the proposed project. As discussed in Section 4.1, Aesthetics, the size of the project could make it detectable in views from I-5, but it would likely appear as a dark-colored plane along the horizon, similar to other views from elevated roadways.</p>
	<p><u>Policy OS-L.3</u>: The County shall manage the use of land adjacent to scenic drives and scenic highways based on the following principles: [...] b. Proposed high-voltage overhead transmission lines, transmission line towers, and cell towers shall be routed and placed to minimize detrimental effects on scenic amenities visible from the right-of-way. [...]</p>	<p><b>Consistent.</b> The project is not located adjacent to a scenic area, vista, or roadways. The segment of I-5 that is a County-designated scenic roadway passes within 2 miles to the west of the proposed project. The proposed project would introduce new transmission lines and vertical poles in the visual landscape. However, such facilities would be subordinate to the industrial and agricultural character of the broader landscape.</p>
<p>Health and Safety Element</p>	<p><u>Policy HS-B.1</u>: The County shall review project proposals to identify potential fire hazards and to evaluate the effectiveness of preventive measures to reduce the risk to life and property.</p>	<p><b>Consistent.</b> Section 4.8 Hazards and Hazardous Materials, includes an evaluation of potential fire hazards. Fire prevention measures would be implemented to minimize fire risk. The Applicant would coordinate with the Fresno County Fire District in the development of a Fire Prevention Plan for the site to address potential exposure to fire and other hazards on the project site.</p>
	<p><u>Policy HS-B.5</u>: The County shall require development to have adequate access for fire and emergency vehicles and equipment. [...]</p>	<p><b>Consistent.</b> The project site would be accessible to emergency vehicles. The roads providing access to the inverter equipment pads would be sufficient for CAL FIRE access.</p>
	<p><u>Policy HS-C.8</u>: During the building permit review process, the County shall ensure project compliance with applicable Federal Emergency Management Agency (FEMA) standards pertaining to residential and non-residential development in the floodplain, floodway, or floodway fringe.</p>	<p><b>Consistent.</b> According to the FEMA (2009) FIRM panel 3275, the project site is in an area of minimal flood hazard and does not lie within a 100-year flood zone or any other special flood hazard zone.</p>

Chapter	Goal/Policy	Consistency Determination
	<p><u>Policy HS-D.3:</u> The County shall require that a soils engineering and geologic-seismic analysis be prepared by a California-registered engineer or engineering geologist prior to permitting development, including public infrastructure projects, in areas prone to geologic or seismic hazards (i.e., fault rupture, groundshaking, lateral spreading, lurchcracking, fault creep, liquefaction, subsidence, settlement, landslides, mudslides, unstable slopes, or avalanche).</p>	<p><b>Consistent.</b> Consistent with the County’s policies, a design-level geotechnical report will be prepared as a condition of approval prior to issuance of grading permits. The design-level geotechnical report will be prepared in conformance with California Building Code and Fresno County’s Grading Permit that require design to address any potential geologic or seismic hazards.</p>
	<p><u>Policy HS-D.4:</u> The County shall require all proposed structures, additions to structures, utilities, or public facilities situated within areas subject to geologic-seismic hazards as identified in the soils engineering and geologic-seismic analysis to be sited, designed, and constructed in accordance with applicable provisions of the Uniform Building Code (Title 24 of CCR) and other relevant professional standards to minimize or prevent damage or loss and to minimize the risk to public safety.</p>	<p><b>Consistent.</b> Consistent with the County’s policies, a design-level geotechnical report will be prepared as a condition of approval prior to issuance of grading permits. The design-level geotechnical report will be prepared in conformance with California Building Code and Fresno County’s Grading Permit that require design to address any potential geologic or seismic hazards.</p>
	<p><u>Policy HS-D.5:</u> Pursuant to the Alquist-Priolo Earthquake Fault Zoning Act (Public Resources Code, Chapter 7.5), the County shall not permit any structure for human occupancy to be placed within designated Earthquake Fault Zones unless the specific provisions of the Act and Title 14 of California Code of Resources have been satisfied.</p>	<p><b>Consistent.</b> While the project site is not within a mapped Seismic Hazard Zone, the site may be subject to strong earthquake-related ground shaking at some point during the lifetime of the facility due to the potential for relatively large earthquakes to the south and west of the project site. The proposed project will be constructed in compliance with the geotechnical and seismic design criteria required for construction in accordance with the California Building Code.</p>
	<p><u>Policy HS-D.8:</u> The County shall require a soils report by a California-registered engineer or engineering geologist for any proposed development, including public infrastructure projects, that requires a County permit and is located in an area containing soils with high “expansive” or “shrink-swell” properties. Development in such areas shall be prohibited unless suitable design and construction measures are incorporated to reduce the potential risks associated with these conditions.</p>	<p><b>Consistent.</b> The evaluation of soil characteristics and properties was based on the NRCS Web Soil Survey and Assessment. Soils present at the project site may be expansive because of the relatively high clay content. As required by the California Building Code and Fresno County Grading Permit requirements, construction of the project would be done in accordance with a final design-level geotechnical report that would include final site preparation measures to address any expansive soils identified onsite.</p>

Chapter	Goal/Policy	Consistency Determination
	<p><u>Policy HS-D.9:</u> The County shall seek to minimize soil erosion by maintaining compatible land uses, suitable building designs, and appropriate construction techniques. Contour grading, where feasible, and revegetation shall be required to mitigate the appearance of engineered slopes and to control erosion.</p>	<p><b>Consistent.</b> The proposed project would comply with a Construction General Permit, and implementation of a SWPPP would limit the impact of construction-related soil erosion by enacting BMPs to address sediment control and limit erosion, such as installation of silt fencing and implementation of temporary sediment disposal measures. The Fresno County Grading Ordinance stipulates safety and environmental control measures for construction practices. A Fresno County building official would conduct inspections of erosion control measures during construction. Operation of the proposed project would not include activities that are likely to cause erosion. Nevertheless, permanent BMPs, such as berming of the site, stabilized entrances, and stabilized access roads, may be implemented.</p>
	<p><u>Policy HS-F.1:</u> The County shall require that facilities that handle hazardous materials or hazardous wastes be designed, constructed, and operated in accordance with applicable hazardous materials and waste management laws and regulations.</p>	<p><b>Consistent.</b> The use, storage, transport, and disposal of hazardous materials in connection with the proposed project would be carried out in accordance with federal, state, and local regulations. The Applicant will prepare and implement a Broken PV Module Detection and Handling Plan. The energy storage facility would be remotely monitored and routinely inspected during site maintenance activities for potential leakage. The energy storage facility will be designed to address potential upset conditions.</p>
	<p><u>Policy HS-G.1:</u> The County shall require that all proposed development incorporate design elements necessary to minimize adverse noise impacts on surrounding land uses.</p>	<p><b>Consistent.</b> Short-term construction and decommissioning activities would be exempt from Fresno County’s noise policies and standards when activities occur between the hours of 6:00 AM and 9:00 PM on weekdays or 7:00 AM and 5:00 PM on Saturdays and Sundays. Mitigation Measures NOI-1 through NOI-4 address noise impacts during construction that would reduce construction noise impacts to a less than significant level. The noise study prepared by ESA for the project determined that the nearest sensitive land use, located approximately 1,100 feet from the project boundary would be exposed to a 45 dBA cumulative noise level during project operations (ESA 2019b). This would be below the</p>

Chapter	Goal/Policy	Consistency Determination
	<p><u>Policy HS-G.4:</u> So that noise mitigation may be considered in the design of new projects, the County shall require an acoustical analysis as part of the environmental review process where:</p> <ol style="list-style-type: none"> <li>a. Noise sensitive land uses are proposed in areas exposed to existing or projected noise levels that are “generally unacceptable” or higher according to the Chart HS-1: “Land Use Compatibility for Community Noise Environments;</li> <li>b. Proposed projects are likely to produce noise levels exceeding the levels shown in the County’s Noise Control Ordinance at existing or planned noise-sensitive uses.</li> </ol>	<p>County’s exterior sound limit threshold of 50 dBA <math>L_{eq}</math>.</p> <p><b>Consistent.</b> This project has the potential to exceed standards set by the County’s Noise Control Ordinance at existing noise sensitive land uses. A noise study was prepared by ESA to evaluate project impacts. Short-term construction and decommissioning activities would be exempt from Fresno County’s noise policies and standards when activities occur between the hours of 6:00 AM and 9:00 PM on weekdays or 7:00 AM and 5:00 PM on Saturdays and Sundays. Mitigation Measures NOI-1 through NOI-4 address noise impacts during construction that would reduce construction noise impacts to a less than significant level. The noise study prepared by ESA for the project determined that the nearest sensitive land use, located approximately 1,100 feet from the project boundary, would be exposed to a 45 dBA cumulative noise level during project operations (ESA 2019b). This would be below the County’s exterior sound limit threshold of 50 dBA <math>L_{eq}</math>.</p>
	<p><u>Policy HS-G.6:</u> The County shall regulate construction-related noise to reduce impacts on adjacent uses in accordance with the County’s Noise Control Ordinance.</p>	<p><b>Consistent.</b> Short-term construction and decommissioning noise are consistent with the County’s noise policies and standards because activities would occur between the hours of 6:00 AM and 9:00 PM on weekdays, and 7:00 AM and 9:00 PM on Saturdays and Sundays. Mitigation Measures NOI-1 through NOI-4 address noise impacts during construction that would reduce construction noise impacts to a less than significant level.</p>
	<p><u>Policy HS-G.8:</u> The County shall evaluate the compatibility of proposed projects with existing and future noise levels through a comparison to Chart HS-1, “Land Use Compatibility for Community Noise Environments.”</p>	<p><b>Consistent.</b> The noise study prepared for the project, and as summarized in Section 4.12, Noise, determined that construction, operation, and decommissioning of the proposed project would result in less-than-significant impacts with mitigation with respect to noise levels in excess of standards and would be consistent with Chart HS-1 “Land Use Compatibility for Community Noise Environments”. Furthermore, the only other potential project to result in a cumulative noise impact is the Westlands Solar Master Plan project. Concurrent</p>



Chapter	Goal/Policy	Consistency Determination
		construction, operation, and decommissioning of the proposed project and Westlands Solar Master Plan project could result in cumulatively considerable noise impacts at sensitive receptors. The nearest sensitive receptors to both the proposed project and the Westlands Solar Master Plan project are a group of three residences located approximately 1,100 feet and greater from the eastern project site boundary. These sensitive receptors are located over 0.50 mile from the Westlands Solar Park project, and at these distances, the potential for an exceedance of the noise standards is low.

Notes:

Applicant = ECR Solar Development, LLC  
 BMP = Best Management Practices  
 CCR = California Code of Regulations  
 CEQA = California Environmental Quality Act  
 County = Fresno County  
 CRHR = California Register of Historical Resources  
 dBA = A-weighted decibel  
 EIR = Environmental Impact Report  
 ESA = Endangered Species Act  
 FEMA = Federal Emergency Management Agency  
 FIRM = Flood Insurance Rate Map

CAL FIRE = California Department of Forestry and Fire Protection  
 Caltrans = California Department of Transportation  
 L<sub>eq</sub> = equivalent continuous sound level  
 NRCS = Natural Resources Conservation Service  
 NRHP = National Register of Historic Places  
 PV = photovoltaic  
 SJVAPCD = San Joaquin Valley Air Pollution Control District  
 SR = State Route  
 SWPPP = Stormwater Pollution Prevention Plan  
 WWD = Westlands Water District

Consistency with Agricultural Land Use and Williamson Act Contracts

As discussed in Section 4.2, Agriculture, the proposed project would convert 1,600 acres of Farmland to a non-agricultural use. Mitigation Measure AG-1 requires the preparation of a reclamation plan; however, given the extended life of the proposed project, loss of surface water from WWD and the loss of 1,600 acres of Prime Farmland, the impact to Farmland was determined to remain significant and unavoidable.

With the exception of a 1.25-acre parcel located in the interior of the site, the entire site is under Williamson Act Contracts. The purpose of the Williamson Act is to offer landowners tax incentives to keep their land in agricultural use. The proposed project is not permitted or compatible use on land enrolled in the Williamson Act Program; therefore, all the contracts are currently being petitioned for cancellation by the landowners. Government Code (GC) Sections 51280 through 51283 set forth procedures for cancelling a Williamson Act Contract. As discussed in Section 4.2, Agriculture, the proposed project conflicts with the existing Williamson Act Contracts; therefore, this is a significant impact.

## Summary

As discussed above, the project is not consistent with County's General Plan goals and policies for the protection of agricultural lands, specifically the following goals and policies:

- **Goal LU-A:** the project would convert a large acreage of Prime Farmland that has been actively farmed to a solar facility.
- **Policy LU-A.2:** The project is not an activity related to the production of food and fiber and is not a use that is incidental or secondary to the onsite agricultural production.
- **Policy LU-A.3:** the project is not a special agricultural use and is not agriculturally-related. Solar facilities are not included in the General Plan Table LU-3, which lists non-agricultural uses determined to be consistent with agricultural operations.
- **Policy PF-C.3:** The proposed project would rely on the existing onsite wells for water use during construction, operation, and decommissioning. Construction water demand would be 300 acre-feet total and operations would require 4 to 10 acre-feet per year. Decommissioning water demand would be comparable to construction demand at 300 acre-feet. However, depending on available quantities, the Applicant may also be able to obtain water from the WWD. Therefore, the proposed project would not be consistent with this policy, as it would potentially continue to use groundwater.

In addition to conflicting with the above goals and policies of the General Plan, the proposed project would also conflict with the existing Williamson Act contracts which the landowner entered into with the County of Fresno to preserve the agricultural use of the parcels. For these reasons the proposed project is not consistent with applicable County land use goals, policies, and regulations that have been adopted by the County Board of Supervisors for the purpose of protecting valuable and non-renewable productive agricultural lands in the County. This is a potentially significant impact.

### **Level of Significance Before Mitigation**

Potentially Significant Impact.

### **Mitigation Measures**

Implement Mitigation Measure AG-1.

### **Level of Significance After Mitigation**

Significant and Unavoidable Impact.

## **4.10.4 Cumulative Impacts**

The geographic scope of cumulative impacts for the project is the immediate project vicinity. Potential projects that could contribute cumulatively to land use impacts are the Westland Solar Park Project, the Huron Wastewater Treatment Facility (WWTF), the Los Gatos Tomato Processing Facility, and the State Route (SR) 269 Bridge Reconstruction Project.

The Huron WWTF did not have an impact on County land use goals and policies as the project was located on land under jurisdiction of the Bureau of Reclamation. This Huron WWTF expansion was done to comply with the order of the Regional Water Quality Control Board

which among other things required the city to reduce nitrogen (a byproduct of wastewater treatment) concentrations in its effluent by expanding the effluent disposal area by 200 acres and to grow non-human consumption crops to absorb the nitrate.

As described under the existing setting, the parcels within the Fifth Standard project area do not currently receive effluent water and are not currently needed to meet the land application area for the current amount of effluent produced. Although groundwater supply may be a concern in the future, under CUP No. 3510 issued for the Los Gatos Tomato Processing Facility, the areas would be allowed to receive tomato processing effluent water for irrigation to allow continued agricultural production, if the parcels were to return to agricultural production.

The Westlands Solar Park Project includes two gen-tie lines that would run through the County to the Gates substation. The land for the gen-tie routes is designated Agriculture by the Fresno County General Plan and zoned Exclusive Agriculture with a minimum lot size of 40 acres (AE-40). The Westland Solar Master Plan EIR determined that construction of the gen-tie lines would be consistent with Fresno County's General Plan Agriculture and Land Use Elements because the General Plan allows electrical substations in Agriculture-designated lands. Electrical transmission lines are not specifically addressed in the General Plan, but the Westlands Solar Master Plan presumed that they would be allowed since the County's zoning code permits utility structures such as transmission lines with an Unclassified CUP. As such, construction of the County's portion of the Westlands Solar Master Plan was determined to be consistent with applicable Fresno County General Plan and Zoning Code provisions; therefore, land use impacts would be less than significant.

The State Route 269 Bridge Reconstruction Project would raise the profile of SR 269 and construct three new bridges. The State Route 269 Bridge Reconstruction Project's Mitigated Negative Declaration found the project to be consistent with existing and future land use and with state, regional, and local plans including the 2013 State Highway Operation and Protection Program, the Fresno County General Plan, and the City of Huron General Plan. In summary, the list of projects considered for cumulative land use impacts would not have a cumulatively considerable contribution to land use impacts.

As discussed in Section 4.2, Agricultural Resources, the project would have a cumulatively considerable and significant impact to agricultural resources, which would result in a cumulatively considerable and significant impact to the Fresno County General Plan's goals and policies for the protection of agricultural resources. This would result in a cumulatively considerable significant impact to land use and the agricultural goals and policies of the County General Plan for protection of the limited supply of productive agricultural land in Fresno County.

## 4.11 MINERAL RESOURCES

This section describes the environmental and regulatory setting for mineral resources. Included is a review of existing conditions, a summary of applicable policies and regulations related to mineral resources, and analysis of environmental impacts of the Fifth Standard Solar Facility Project Complex (proposed project) on mineral resources. Where applicable, Mitigation Measures are included for significant impacts. The County received no scoping comments pertaining to mineral resources (Appendix A).

### 4.11.1 Regulatory Setting

#### Federal

No federal regulations pertaining to mineral resources apply to the proposed project.

#### State

State Surface Mining and Reclamation Act of 1975

The Surface Mining and Reclamation Act of 1975 (Public Resources Code [PRC] Section 2710 et. seq.) requires the California State Mining and Geology Board to map areas throughout the state that contain regionally significant mineral resources. This mapping helps to identify and protect mineral resources in areas of the state subject to urban expansion or other irreversible land uses that could preclude mineral extraction. The Surface Mining and Reclamation Act also classifies mineral resources in the state and provides information to local governments. Local governments are responsible for designating lands that contain regionally significant mineral resources in their local General Plans and for preserving such areas from encroachment or conversion to other uses. The law has resulted in the preparation of Mineral Land Classification maps delineating Mineral Resource Zones (MRZs) for aggregate resources (sand, gravel, and stone) (DOC 1999).

#### Local

Fresno County General Plan

The following lists goals and policies from the Fresno County 2000 General Plan pertaining to mineral resources that are applicable to the proposed project.

**Policy OS-C.1:** The County shall not permit incompatible land uses within the impact area of existing or potential surface mining areas.

**Policy OS-C.2:** The County shall not permit land uses incompatible with mineral resource recovery within areas designated as Mineral Resource Zone 2 (MRZ-2).

**Policy OS-C.10:** The County shall not permit land uses that threaten the future availability of mineral resources or preclude future extraction of those resources.

## 4.11.2 Environmental Setting

### Geologic Environment

As described in more detail in Section 4.6, Geology and Soils, the project site is located on sedimentary deposits of the Great Valley Geomorphic Province. California's geomorphic provinces are naturally defined geologic regions that display a distinct landscape or landform. Surface geology at the site consists of Quaternary alluvial deposits (unconsolidated and semi-consolidated soil or sediments, generally deposited during recent geologic time by a stream or other body of running water), which overlie very thick sediments deposited in the San Joaquin Valley over tens of millions of years. Mineral resources extracted in the County include aggregate products (sand and gravel), fossil fuels (oil and coal), metals (chromite, copper, gold, mercury, and tungsten), and other minerals used in construction or industrial applications. Aggregate products and petroleum are the County's most significant extractive resources (County 2000a).

### Onsite Mineral Resources Potential

According to the Mineral Resources Data System (MRDS), administered by U.S. Geological Survey (USGS), there are several non-metallic sites within 5 miles of the project site, and the development status of all are prospect, occurrence, or unknown at the time of reporting (USGS 2005)<sup>1</sup>. None of these operations or mining claims occur within the project site boundary. Based on the geological environment and historical trends, the potential for the occurrence of locatable minerals is low within the surrounding area and at the project site.

According to the MRDS online database, numerous land sections within the mountainous areas have active mining claims. However, no metallic resources and occurrences (such as mercury, gold, copper, and chromium) occur within 30 miles of the project site, and they are unlikely to be found within the geologic units that underlie the site or surrounding area. Furthermore, according to the General Plan Background Report and the California Department of Conservation (DOC) Office of Mines Reclamation Mineral Land Classification Database, neither the project site nor the surrounding area is identified within an MRZ (DOC 1988).

Most of the soils at the project site consist of clay, silt, and sand, which would not be used for aggregate resources. Based on the geologic setting, the only mineral resources with the potential to occur near the project site are aggregate resources. Alluvial geologic units in the

---

<sup>1</sup> The following definitions for development status are provided on the USGS data system:

- Occurrence is defined as "ore mineralization in outcrop, shallow pit or pits, or isolated drill hole. Grade, tonnage, and extent of mineralization essentially unknown. No production has taken place and there has been no or little activity since discovery with the possible exception of routine claim maintenance."
- Prospect is defined as "A deposit that has gone beyond the occurrence stage. That is, subsequent work such as surface trenching, adits, or shafts, drill holes, extensive geophysics, geochemistry, and/or geologic mapping has been carried out. Enough work has been done to at least estimate grade and tonnage. The deposits may or may not have undergone feasibility studies that would lead to a decision on going into production."
- Unknown is defined as "at the time of data entry, either the development status was unknown or the data source this record came from did not specify this value." (USGS 2005)

region are potential sources of sand and gravel that could have some value as a mineral resource commodity. Because sand and gravel are low-value, high-volume resources, the economic value and the feasibility of developing them is predicated on the existence of high local demand from the construction industry. There are several producers of sand and gravel approximately 5 miles west-southwest of the project site and many more within the Fresno Production-Consumption Region, approximately 25 miles to the east (USGS 2005). None of the past or current locations of sand and gravel production intersect the project site.

The California Division of Oil, Gas, and Geothermal Resources (DOGGR) indicates that there are no oil, gas, or geothermal resources present within the project site. Additionally, there are no existing or abandoned oil, gas, or geothermal wells on the project site (DOGGR 2014). A site visit conducted on October 5, 2017, by Stantec employee Mike Myers confirmed that there were no visible resources.

### **4.11.3 Environmental Impacts**

This section analyzes the proposed project's potential to result in significant impacts related to mineral resources. If an impact was determined to be significant, Mitigation Measures were identified that would reduce or avoid the impact.

#### **Methodology**

The evaluation of potential project impacts on mineral resources was based on a review of applicable policies, maps, and plans pertaining to the project site, which includes the General Plan, General Plan Background Report, DOC Office of Mines Reclamation Mineral Lands Classification Database, USGS Mineral Resources Data System database, and DOGGR Well Database. The following impact analysis evaluates whether known mineral resources of statewide, regional, or local importance occur within the project site and, if they do, assesses the extent to which the proposed project would result in the loss of their availability.

#### **Thresholds of Significance**

In accordance with the California Environmental Quality Act (CEQA) Guidelines Appendix G Environmental Checklist, the following questions were analyzed and evaluated to determine whether impacts to mineral resources are significant.

Would the proposed project:

- Result in the loss of availability of a known mineral resource classified MRZ-2 by the State Geologist that would be of value to the region and the residents of the state?
- Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?

#### **Project Impact Analysis and Mitigation Measures**

This section discusses potential impacts to mineral resources associated with the proposed project and provides Mitigation Measures where necessary.



---

**Loss of Availability of a Known Mineral Resource**

---

**Impact MIN-1      The proposed project would not result in the loss of availability of a known mineral resource classified MRZ-2 by the State Geologist that would be of value to the region and the residents of the state.**

---

**Impact Analysis**

The construction, operation, and maintenance of the proposed project would not result in significant impacts associated with the loss of availability of a known mineral resource that would be of value to the region and the residents of the state. As noted above, aggregate resources are widely available throughout the region; however, there is an indication that they would not be suitable for aggregate production of statewide or regional significance on the project site due to the fact that clay, sand, and silt have low value. Furthermore, neither the State Mining and Geology Board nor the County has officially designated the project site or the surrounding area as an aggregate resource area or mineral deposit of statewide or regional significance. Therefore, the construction, operation, and maintenance of the proposed project would have no impact on the availability of a known mineral resource that would be of value to the region and the residents of the state.

Nevertheless, the decommissioning of the proposed project would remove all above- and below-ground components of the proposed project, thereby making the land available for future exploration or production of aggregate materials. Therefore, there would be no impact on the availability of a known mineral resource from decommissioning activities.

**Level of Significance Before Mitigation**

No Impact.

**Mitigation Measures**

No mitigation is necessary.

**Level of Significance After Mitigation**

No Impact.

---

**Loss of Availability of a Locally Important Mineral Resource**

---

**Impact MIN-2      The proposed project would not result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan.**

---

**Impact Analysis**

According to the General Plan Background Report, Fresno County has not identified any locally important mineral resource recovery sites within or surrounding the project site. Additionally, given that deposits of similar age and lithology likewise underlie much of the San Joaquin Valley and there are no other local plans or land use plans that designate locally important mineral resource recovery sites, the proposed project would result in no impact on a locally important mineral resource recovery site.

**Level of Significance Before Mitigation**

No Impact.

### **Mitigation Measures**

No mitigation is necessary.

### **Level of Significance After Mitigation**

No Impact.

### **4.11.4 Cumulative Impacts**

The proposed project would have no impact on the availability of a known mineral resource from construction, operation, or decommissioning activities. The construction, operation, maintenance, and decommissioning of the proposed project would not result in the loss of availability of a locally important mineral resource recovery site. Therefore, the proposed project would not contribute to a cumulative impact to mineral resources.

**This page left intentionally blank.**

## 4.12 NOISE

This section describes the impacts related to noise that would result from implementation of the Fifth Standard Solar Facility Project Complex (proposed project). Included is a review of existing conditions, a summary of applicable policies and regulations related to noise, and analysis of environmental impacts of the proposed project. Where applicable, Mitigation Measures are included for significant impacts. The County received no scoping comments pertaining to noise (Appendix A).

### 4.12.1 Noise Background

Noise can be generally defined as unwanted sound. Sound is defined as any pressure variation in air that the human ear can detect. Sound, traveling in the form of waves from a source, exerts a sound pressure level (referred to as sound level) that is measured in decibels (dB), with zero dB corresponding roughly to the threshold of human hearing and 120 to 140 dB corresponding to the threshold of pain. Sound pressure fluctuations can be measured in units of hertz (Hz), which correspond to the frequency of a particular sound. Typically, sound does not consist of a single frequency but rather a broad band of frequencies varying in levels of magnitude (sound power). The sound pressure level, therefore, constitutes the additive force exerted by a sound corresponding to the frequency/sound power level spectrum.

The typical human ear is not equally sensitive to all frequencies of the audible sound spectrum. As a consequence, when assessing potential noise impacts, sound is measured using an electronic filter that de-emphasizes the frequencies below 1,000 Hz and above 5,000 Hz in a manner corresponding to the human ear's decreased sensitivity to low and extremely high frequencies compared to the mid-range frequency. This method of frequency weighting is referred to as "A" weighting and is expressed in units of A-weighted decibels (dBA). Frequency A-weighting follows an international standard methodology of frequency de-emphasis and is typically applied to community noise measurements. For this reason, the A-weighted sound level has become the standard tool of environmental noise assessment. Some representative noise sources and their corresponding A-weighted noise levels are shown in Table 4.12-1.

**Table 4.12-1: Representative Noise Sources**

COMMON OUTDOOR ACTIVITIES	NOISE LEVEL (dBA)	COMMON INDOOR ACTIVITIES
Jet flyover at 1,000 feet	110	Rock band
Gas lawnmower at 3 feet	100	
Diesel truck at 50 feet at 50 mph	90	Food blender at 3 feet
Noisy urban area, daytime	80	
Gas lawnmower at 100 feet	70	Garbage disposal at 3 feet
Commercial area		Normal speech at 3 feet
Heavy traffic at 300 feet	60	
Quiet urban daytime	50	Large business office
		Dishwasher in next room
Quiet urban nighttime	40	Theater, large conference room (background)
Quiet suburban nighttime		
	30	Library
Quiet rural nighttime		Bedroom at night, concert hall (background)
	20	
		Broadcast/recording studio
	10	
	0	

**4.12.2 Noise Exposure and Community Noise**

Noise exposure is a measure of noise over a period of time. Noise level is a measure of noise at a given instant in time. Community noise varies continuously over a period of time with respect to the contributing sound sources of the community noise environment. Community noise is primarily the product of many distant noise sources, which constitute a relatively stable background noise exposure with the individual contributors unidentifiable. The background noise level changes throughout a typical day but does so gradually, corresponding with the addition and subtraction of distant noise sources such as traffic and atmospheric conditions. What makes community noise constantly variable throughout a day besides the slowly changing background noise is the addition of short-duration single event noise sources (e.g., aircraft flyovers, motor vehicles, sirens), which are readily identifiable to the individual receptor. These successive additions of sound to the community noise environment result in variations to the community noise level from instant to instant, requiring the measurement of noise exposure over a period of time to legitimately characterize a community noise environment and evaluate cumulative noise impacts.

This time-varying characteristic of environmental noise is described using statistical noise descriptors. The most frequently used noise descriptors are summarized in Table 4.12-2.

**Table 4.12-2: Frequently Used Noise Descriptors**

Noise Descriptors	Definitions
L <sub>eq</sub>	The energy-equivalent sound level is used to describe noise over a specified period of time, typically 1 hour, in terms of a single numerical value. The L <sub>eq</sub> is the constant sound level that would contain the same acoustic energy as the varying sound level, during the same time period (i.e., the average noise exposure level for the given time period).
L <sub>max</sub>	The instantaneous maximum noise level for a specified period of time.
L <sub>50</sub>	The noise level that is equaled or exceeded 50% of the specified time period. L <sub>50</sub> represents the median sound level.
L <sub>90</sub>	The noise level that is equaled or exceeded 90% of the specific time period. This is considered the background noise level during a given time period.
L <sub>dn</sub>	A 24-hour day and night A-weighted noise exposure level, which accounts for the greater sensitivity of most people to nighttime noise by weighting noise levels at night (“penalizing” nighttime noises). Noise between 10:00 PM and 7:00 AM is weighted (penalized) by adding 10 dB to take into account the greater annoyance of nighttime noises.
CNEL	Similar to L <sub>dn</sub> , the community noise equivalent level (CNEL) adds a 5-dB “penalty” for the evening hours between 7:00 PM and 10:00 PM in addition to a 10-dB penalty between the hours of 10:00 PM and 7:00 AM.

Source: FHWA 2017

As a general rule, in areas where the noise environment is dominated by traffic, the L<sub>eq</sub> during the peak-hour traffic period is generally within one to two dB of the L<sub>dn</sub> at that location.

### 4.12.3 Effects of Noise on People

When a new noise is introduced to an environment, human reaction can be predicted by comparing the new noise to the ambient noise level, which is the existing noise level comprising all sources of noise in a given location. In general, the more a new noise exceeds the ambient noise level, the less acceptable the new noise would be judged by those hearing it. With regard to increases in the A-weighted noise level, the following relationships occur:

- Except in carefully controlled laboratory experiments, a change of 1 dB cannot be perceived.
- Outside of the laboratory, a 3 dB change is considered a just-perceivable difference.
- A change in level of at least 5 dB is required before any noticeable change in human response would be expected.
- A 10 dB change is subjectively heard as approximately a doubling in loudness and can cause adverse response.

The perceived increases in noise levels shown above are applicable to both mobile and stationary noise sources. These relationships occur in part because of the logarithmic nature of sound and the decibel system. The human ear perceives sound in a non-linear fashion, hence the dB scale was developed. Because the dB scale is based on logarithms, two noise sources



do not combine in a simple additive fashion, rather they are combined logarithmically. For example, if two identical noise sources produce noise levels of 50 dBA, the combined sound level would be 53 dBA, not 100 dBA.

#### 4.12.4 Noise Attenuation

Stationary point sources of noise, including stationary mobile sources such as idling vehicles, attenuate (lessen) at a rate between 6 dB for hard sites and 7.5 dB for soft sites for each doubling of distance from the source. Hard sites are those with a reflective surface between the source and the receiver, such as parking lots or smooth bodies of water. No excess ground attenuation is assumed for hard sites and the changes in noise levels with distance (drop-off rate) is simply the geometric spreading of the noise from the source. Soft sites have an absorptive ground surface, such as soft dirt, grass, or scattered bushes and trees. In addition to geometric spreading, an excess ground attenuation value of 1.5 dB (per doubling distance) is normally assumed for soft sites. Line sources (such as traffic noise from vehicles on a roadway) attenuate at a rate between 3 dB for hard sites and 4.5 dB for soft sites for each doubling of distance from the source (Caltrans 2013).

#### 4.12.5 Vibration

Operation of heavy construction equipment, particularly pile driving and other impact devices such as pavement breakers, create seismic waves that radiate along the surface of the Earth and downward into the Earth. These surface waves can be felt as ground vibration. Vibration from operation of this equipment can result in effects ranging from annoyance of people to damage of structures. Varying geology and distance results in different vibration levels, frequencies, and displacements. In all cases, vibration amplitudes decrease with increasing distance.

Perceptible groundborne vibration is generally limited to areas within a few hundred feet of construction activities. As seismic waves travel outward from a vibration source, they excite the particles of rock and soil through which they pass and cause them to oscillate. The actual distance that these particles move is usually only a few ten-thousandths to a few thousandths of an inch. The rate or velocity (in inches per second [in/sec]) at which these particles move is the commonly accepted descriptor of the vibration amplitude, referred to as Peak Particle Velocity (PPV). Table 4.12-3 summarizes typical vibration levels generated by construction equipment (FTA 2006).

**Table 4.12-3: Vibration Source Levels for Construction Equipment**

Equipment	Peak Particle Velocity at 25 feet (inches/second)
Pile driver (impact)	0.644 to 1.518
Pile driver (sonic/vibratory)	0.170 to 0.734
Vibratory roller	0.210
Hoe ram	0.089
Large bulldozer	0.089

Equipment	Peak Particle Velocity at 25 feet (inches/second)
Caisson drilling	0.089
Loaded trucks	0.076
Jackhammer	0.035
Small bulldozer	0.003

Source: Federal Transit Administration 2006

Vibration amplitude attenuates over distance and is a complex function of how energy is imparted into the ground and the soil conditions through which the vibration is traveling. The following equation can be used to estimate the vibration level at a given distance for typical soil conditions (FTA 2006). PPVref is the Reference Peak Particle Velocity from Table 4.12-3:

$$PPV = PPV_{ref} \times (25/Distance)^{1.5}$$

Table 4.12-4 summarizes guideline vibration annoyance potential criteria suggested by the California Department of Transportation (Caltrans) (Caltrans 2004). Transient sources create a single isolated vibration event, such as blasting. Continuous or frequent intermittent sources include impact pile drivers, pogo-stick compactors, crack-and-seat equipment, vibratory pile drivers, and vibratory compaction equipment.

**Table 4.12-4: Guideline Vibration Annoyance Potential Criteria**

Human Response	Maximum Peak Particle Velocity (inches/second)	
	Transient Sources	Continuous/Frequent Sources
Barely perceptible	0.04	0.01
Distinctly perceptible	0.25	0.04
Strongly perceptible	0.90	0.10
Severe	2.0	0.40

Source: Caltrans 2004

Table 4.12-5 summarizes guideline vibration damage potential criteria suggested by Caltrans (Caltrans 2004):

**Table 4.12-5: Guideline Vibration Damage Potential Criteria**

Structure and Condition	Maximum Peak Particle Velocity (inches/second)	
	Transient Sources	Continuous/Frequent Sources
Extremely fragile historic buildings, ruins, ancient monuments	0.12	0.08
Fragile buildings	0.20	0.10
Historic and some old buildings	0.50	0.25
Older residential structures	0.50	0.30
New residential structures	1.0	0.50
Modern industrial/commercial buildings	2.0	0.50

Source: Caltrans 2004

### 4.12.6 Regulatory Setting

#### Federal

There are no specific federal noise standards that would be applicable to the proposed project other than federal noise limits for medium and heavy trucks (more than 4.5 tons, gross vehicle weight rating) under 40 Code of Federal Regulations (CFR), Part 205, Subpart B. The federal truck passby noise standard is 80 dBA at 15 meters (approximately 50 feet) from the vehicle pathway centerline. These controls are implemented through regulatory controls on truck manufacturers.

#### State

The State of California does not have statewide standards for environmental noise, but the California Department of Health Services has established guidelines for evaluating the compatibility of various land uses as a function of community noise exposure. The purpose of these guidelines is to maintain acceptable noise levels in a community setting for different land use types. Noise compatibility by different land uses types is categorized into four general levels: “normally acceptable,” “conditionally acceptable,” “normally unacceptable,” and “clearly unacceptable.” For instance, a noise environment ranging from 50 to 65 dBA  $L_{dn}$  is considered to be “normally acceptable” for multifamily residential uses, while a noise environment of 75 dBA  $L_{dn}$  or above for multifamily residential uses is considered to be “clearly unacceptable.” In addition, Section 65302(f) of the California Government Code (GC) requires each county and city in the state to prepare and adopt a comprehensive long-range General Plan for its physical development, with Section 65302(g) requiring a Noise Element to be included in the General Plan. The noise element must do the following: (1) identify and appraise noise problems in the community; (2) recognize Office of Noise Control guidelines; and (3) analyze and quantify current and projected noise levels.

California Noise Act of 1973 (Health and Safety Code Sections 46000-46002)

The California Noise Act of 1973 sets forth a resource network to assist local agencies with legal and technical expertise regarding noise issues. The objective of the act is to encourage the establishment and enforcement of local noise ordinances. Chapter 8.40 of the Fresno County Development Code was adopted to implement noise control regulations.

## Local

Fresno County General Plan

The following lists goals and policies from the Fresno County 2000 General Plan pertaining to noise that are applicable to the proposed project.

**Policy HS-G.1:** The County shall require that all proposed development incorporate design elements necessary to minimize adverse noise impacts on surrounding land uses.

**Policy HS-G.4:** So that noise mitigation may be considered in the design of new projects, the County shall require an acoustical analysis as part of the environmental review process where:

- a) Noise-sensitive land uses are proposed in areas exposed to existing or projected noise levels that are “generally unacceptable” or higher according to the Chart HS-1: “Land Use Compatibility for Community Noise Environments” (Chart HS-1 is presented below as Table 4.12-7); and
- b) Proposed projects are likely to produce noise levels exceeding the levels shown in the County’s Noise Control Ordinance at existing or planned noise-sensitive uses.

**Policy HS-G.6:** The County shall regulate construction-related noise to reduce impacts on adjacent uses in accordance with the County’s Noise Control Ordinance.

**Policy HS-G.8:** The County shall evaluate the compatibility of proposed projects with existing and future noise levels through a comparison to Chart HS-1, “Land Use Compatibility for Community Noise Environments.” (Chart HS-1 is presented below as Table 4.12-7).

Land use categories and their corresponding maximum allowable noise exposure levels (in terms of CNEL) are shown in Table 4.12-7. This table indicates that the maximum allowable noise exposure level for residential land use is 60 dBA CNEL (County 2000b).

Fresno County Noise Ordinance

The Fresno County Noise Ordinance (Chapter 8.40 of the Fresno County Development Code) applies to noise sources that can be regulated by Fresno County (such as equipment related to commercial and industrial land uses). Table 4.12-6 summarizes the County’s exterior noise standards that would be applicable to the proposed project. As indicated in the table, it would be unlawful for project-related onsite operation and/or maintenance noise levels to exceed an L<sub>50</sub> of 50 dBA during daytime hours at the nearby residences. Noise sources associated with construction activities are exempt from the standards provided they take place after 6:00 AM and before 9:00 PM on Monday through Friday, or after 7:00 AM and before 5:00 PM on weekends. In addition to the exterior noise standards, the Fresno County Municipal Code

Chapter 8.40, Section 090 identifies a noise level limit of 50 dBA for electrical substations when measured 50 feet from an affected residence (County 2018).

**Table 4.12-6: Fresno County Exterior Noise Level Standards**

Cumulative min/hr ( $L_{xx}$ )	Daytime (7 AM to 10 PM)	Nighttime (10 PM to 7 AM)
30 ( $L_{50}$ )	50 dBA	45 dBA
15 ( $L_{25}$ )	55 dBA	50 dBA
5 ( $L_{8.3}$ )	60 dBA	55 dBA
1 ( $L_{1.7}$ )	65 dBA	60 dBA
0 ( $L_{max}$ )	70 dBA	65 dBA

Notes:

In the event the measured ambient noise level exceeds the applicable noise level standard in any category above, the applicable standard shall be adjusted so as to equal the ambient noise level.

dBA = A-weighted decibel

$L_{max}$  = Maximum Noise Level.





$L_{xx}$  = Percentile-Exceeded Sound Level

min/hr = minutes per hour

Source: County 2018

Table 4.12-7: Noise and Land Use Compatibility Matrix

Land Use Category	Community Noise Exposure Level (CNEL)					
	55	60	65	70	75	80
Land Use Receiving the Noise						
Residential: Low Density, Single Family, Duplex, Mobile Homes	Normally Acceptable	Normally Acceptable	Normally Acceptable	Conditionally Acceptable	Conditionally Acceptable	Land Use Discouraged
Residential: Multifamily	Normally Acceptable	Normally Acceptable	Normally Acceptable	Conditionally Acceptable	Conditionally Acceptable	Land Use Discouraged
Transient Lodging, Motels, Hotels	Normally Acceptable	Normally Acceptable	Normally Acceptable	Conditionally Acceptable	Conditionally Acceptable	Land Use Discouraged
Schools, Libraries, Churches, Hospitals, Nursing Homes	Normally Acceptable	Normally Acceptable	Normally Acceptable	Conditionally Acceptable	Conditionally Acceptable	Land Use Discouraged
Auditoriums, Concert Halls, Amphitheaters	Conditionally Acceptable	Conditionally Acceptable	Conditionally Acceptable	Conditionally Acceptable	Conditionally Acceptable	Land Use Discouraged
Sports Arena, Outdoor Spectator Sports	Conditionally Acceptable	Conditionally Acceptable	Conditionally Acceptable	Conditionally Acceptable	Conditionally Acceptable	Land Use Discouraged
Playgrounds, Neighborhood Parks	Normally Acceptable	Normally Acceptable	Normally Acceptable	Conditionally Acceptable	Conditionally Acceptable	Land Use Discouraged
Golf Courses, Riding Stables, Water Recreation, Cemeteries	Normally Acceptable	Normally Acceptable	Normally Acceptable	Conditionally Acceptable	Conditionally Acceptable	Land Use Discouraged
Office, Business, Retail Commercial	Normally Acceptable	Normally Acceptable	Normally Acceptable	Conditionally Acceptable	Conditionally Acceptable	Land Use Discouraged
Industrial Manufacturing, Agriculture, Utilities	Normally Acceptable	Normally Acceptable	Normally Acceptable	Conditionally Acceptable	Conditionally Acceptable	Land Use Discouraged

- 
**Normally Acceptable**  
 Specified land use is satisfactory, based on the assumption that any buildings involved are of normal construction, without any special noise insulation requirements.
  
- 
**Conditionally Acceptable**  
 New construction or development should be undertaken only after a detailed analysis of the noise reduction requirement is made and needed noise insulation feature included in the design. Conventional construction, but with closed windows and fresh air supply systems or air conditioning will normally suffice.
  
- 
**Generally Unacceptable**  
 New construction of development should generally be discouraged. If new construction of development does proceed, a detailed analysis of the noise reduction requirements must be made and needed noise insulation features included in the design.
  
- 
**Land Use Discouraged**  
 New construction or development clearly should not be undertaken.

Source: County 2000



## 4.12.7 Environmental Setting

### Existing Noise Environment

The noise environment of the area surrounding the project site is characterized by rural roadways, rural agricultural noise, existing solar facilities, and scattered residences. Existing noise sources are primarily low-volume traffic, including tractors, large trucks, and other farm equipment, both on- and off-road passenger vehicles, and distant high-volume traffic noise along Interstate-5. According to Federal Transit Administration's (FTA's) *Transit Noise and Vibration Impact Assessment*, in areas away from airports, major roads, and railroad tracks, ambient noise levels can be established using a relationship of population density (FTA 2006). Since there have been no ambient noise measurements conducted at the project site, the guidance found in the FTA's Transit Noise and Vibration Impact Assessment was used to estimate the baseline ambient noise levels in the vicinity of the project site. As shown in Figure 4.12-1, there are five residences located in the vicinity of the project site. Assuming up to five people reside in each residence, the population density near the project site would be 25 people per square mile. Using the guidance provided by the FTA and a population density of 25 people per square mile, the approximate day-night noise level in the vicinity of the project site was estimated to be 36 dBA  $L_{dn}$  (ESA 2019b).

### Sensitive Receptors

Noise-sensitive land uses are typically defined as residences, schools, institutions, places of worship, hospitals, care centers, and hotels. As shown in Figure 4.12-1, there are five sensitive receptors near the project site. The closest of these receptors, as shown on Figure 4.12-1, include receptors C, D, and E, which are single-family residences located approximately 1,100 feet east of the eastern edge of the project site on West Tractor Avenue. Two other single-family residences are located approximately 2,500 (receptor B) and 2,900 (receptor A) feet north of the northern edge of the project site (Figure 4.12-1).

## 4.12.8 Environmental Impacts

This section analyzes the proposed project's potential to result in significant impacts related to noise and vibration. When an impact is determined to be significant, Mitigation Measures are identified that would reduce or avoid the impact.

### Methodology

This analysis evaluates potential noise impacts of the proposed project based on review of sensitive receptors, ambient noise levels, and projected noise levels that would be associated with construction, operation, maintenance, and decommissioning of the proposed project. The evaluation of potential construction and operation impacts of the proposed project is based on the 2019 Noise Technical Report prepared by ESA (Appendix H). The Noise Technical Report prepared by ESA is based on project-specific construction and operation features, and the traffic analysis is provided in the Traffic Study prepared for the proposed project by ESA (ESA 2017c).

## Thresholds of Significance

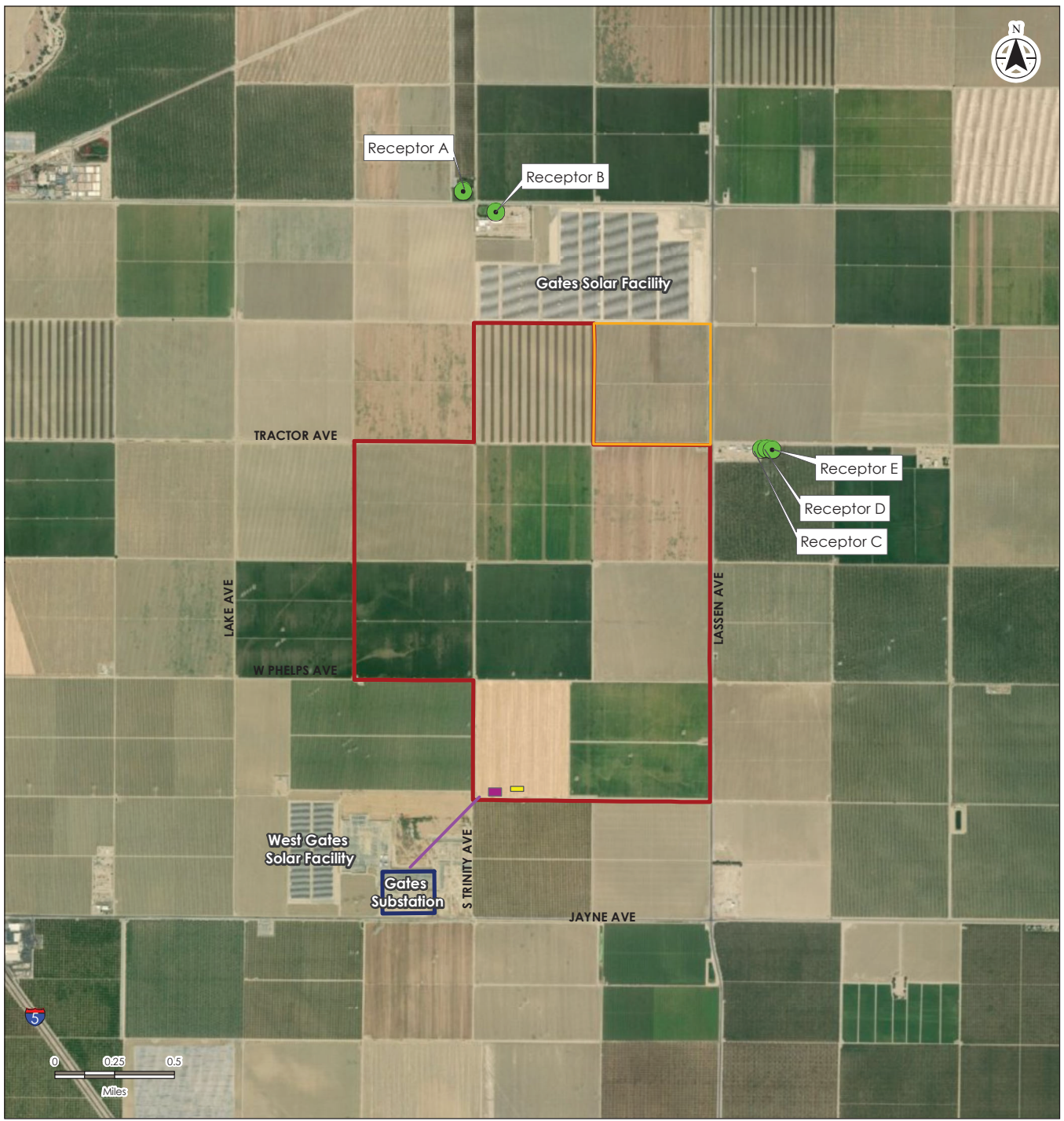
In accordance with the California Environmental Quality Act (CEQA) Guidelines Appendix G Environmental Checklist, the following questions were analyzed and evaluated to determine whether impacts related to noise would be significant.

Would the proposed project result in:

- Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?
- Generation of excessive groundborne vibration or groundborne noise levels?

The following questions were determined to have no impact during the Scoping Process. These issues are summarized in Section 6.0, Effects Found Not To Be Significant, and are not discussed further in this section.

- For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?



- Legend**
- Sensitive Receptor
  - Proposed Gen-tie 230 kV Line
  - Substation
  - Stonecrop Solar Facility
  - Gates Substation
  - Fifth Standard Solar Facility
  - Blackbriar Battery Storage Facility



Figure No.  
4.12-1

Title  
Noise Sensitive Receptor Locations

Project  
Fifth Standard Solar Project Complex

Data Source: ESA, 2017.  
Coordinate System: NAD 1983  
StatePlane California IV FIPS 0403 Feet.  
See complete reference in EIR.

Disclaimer: Stantec assumes no responsibility for data supplied in electronic format. The recipient accepts full responsibility for verifying the accuracy and completeness of the data. The recipient releases Stantec, its officers, employees, consultants and agents, from any and all claims arising in any way from the content or provision of the data.

## Project Impact Analysis and Mitigation Measures

This section discusses potential impacts to noise associated with the proposed project and provides Mitigation Measures where necessary.

### Noise Levels in Excess of Standards

**Impact NOI-1      The proposed project would not result in the generation of a substantial temporary or permanent increase in noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies.**

## Impact Analysis

### Construction Phase

#### Construction Equipment

Short-term noise would be generated by the proposed project as a result of onsite construction activities and traffic associated with equipment and materials delivery and worker commute trips. Construction activity noise levels at the project site would fluctuate depending on the particular type, number, and duration of use of various pieces of construction equipment. Construction of the proposed project would occur over 11 to 12 consecutive months, with an expected start date in late 2020 and an anticipated completion by the end of 2022.

Construction activities would include mobilization, construction grading and site preparation, installation of drainage and erosion controls, photovoltaic (PV) panel/tracker assembly, and solar field construction. Table 4.12-8 lists equipment that is expected to be used during project construction, along with the typical reference noise levels.

The mobilization, construction grading, and site preparation phases of construction would include extensive use of heavy earth-moving/excavating and compacting equipment, which would generate the highest noise levels. However, the operation of each piece of off-road equipment within the project site would not be constant throughout the day, as equipment would be turned off when not in use. Furthermore, most of the time over a typical work day, the equipment would be operating at different locations within the project site and would not likely be operating concurrently with other equipment at the same location. Nonetheless, for a more conservative assessment of construction noise levels at the closest sensitive receptor, it is assumed for this analysis that two of the loudest pieces of construction equipment would be operating simultaneously at a location on the project boundary that would be closest to each of the offsite sensitive receptors.

**Table 4.12-8: Reference Construction Equipment Noise Levels (50 feet from source)**

Type of Equipment	L <sub>max</sub>
Backhoe	80 dBA
Grader	85 dBA
Concrete Mixer Truck	85 dBA
Front Loader	80 dBA
Pneumatic Tools	85 dBA

Noise

Type of Equipment	L <sub>max</sub>
Air Compressor	80 dBA
Excavator	85 dBA
Rollers	85 dBA
Scrapers	85 dBA

Notes:

dBA = A-weighted decibel

L<sub>max</sub> = maximum noise level

Source: FHWA 2006

Most land uses surrounding the project site are agricultural. The nearest sensitive land uses to the project site are single-family residences, located approximately 1,100 feet to the east and 2,500 feet and 2,900 feet to the north of the project site. Using the reference noise levels provided in Table 4.12-8, an excavator and grader running at the same time and location could generate a maximum noise level of 88 dBA from a distance of 50 feet. Table 4.12-9 shows the maximum construction noise exposure at all identified sensitive receptors assuming a 7.5 dB drop off rate when the distance is doubled (ESA 2019b).

**Table 4.12-9: Construction Noise Levels at Existing Land Uses**

Sensitive Receptors	Distance to Nearest Sensitive Receptor (feet)	Maximum Noise Level (dBA) <sup>1</sup>
Single-family residence located east of the project boundary (receptor C, Figure 4.12-1)	1,100	54
Single-family residence located north of the project boundary (receptor B, Figure 4.12-1)	2,500	46
Single-family residence located north of the project boundary. (receptor A, Figure 4.12-1)	2,900	44

Notes:

<sup>1</sup>Assumed excavator and grader running at the same time.

dBA = A-weighted decibel

Source: FHWA 2006

Construction activities associated with the proposed project would be temporary and would occur for approximately 11 to 12 months. As shown in Table 4.12-9, construction activities would temporarily elevate ambient noise levels in and around the project site from 44 dBA to 54 dBA. To reduce potential impacts from temporary construction activities, the proposed project would implement Mitigation Measures NOI-1 through NOI-3, which would ensure that the proposed project considers the location of sensitive receptors when they are siting noise-generating equipment and by requiring the use of mufflers on loud equipment, where available. Additionally, the proposed project would implement Mitigation Measure NOI-4, which would ensure that construction activities are consistent with the County’s noise ordinance standards by restricting construction activities to between the hours of 6:00 AM and 9:00 PM on weekdays and 7:00 AM and 5:00 PM on Saturdays and Sundays. Therefore, noise generated by



temporary construction activities would be less than significant with implementation of Mitigation Measures NOI-1 through NOI-4.

*Project Construction Traffic*

Project construction traffic would primarily include the delivery of construction equipment, vehicles, and materials and daily construction worker trips. It is estimated that during the anticipated 334 total days of construction, the proposed project would result in an average of 600 daily one-way vendor and worker trips (ESA 2017c). At the peak of construction (when construction of two of the three facilities is underway) there could be up to 1,200 daily one-way trips. The existing traffic along roadways in the vicinity of the project site (i.e., Lassen Avenue, Jayne Avenue, and Dorris Avenue) ranges from 2,000 to 3,500 vehicle trips per day (Caltrans 2015, Fresno COG 2013). Existing and existing-plus-project construction traffic noise levels were calculated using the Federal Highway Administration’s (FHWA) traffic noise prediction equations (FHWA RD-77-108) along Lassen Avenue, Jayne Avenue, and Dorris Avenue. As shown in Table 4.12-10, proposed project construction-related traffic would increase existing traffic noise levels along local roadways by approximately 0 to 2 dB and would not result in a perceptible increase in traffic noise along local roadways in the vicinity of the project site. Therefore, overall short-term construction-related impacts associated with worker commute and equipment transport to the project site would be less than significant.

**Table 4.12-10: Predicted Traffic Noise Increases from Haul and Work Trips along Local Roadways**

Roadway Segment	Traffic Noise Level, dBA, L <sub>dn</sub> <sup>1</sup>		
	Existing (A)	Existing Plus Project (B)	Incremental Increase (B-A)
1. Lassen Avenue, north of Jayne Avenue	58	61	3
2. Jayne Avenue, east of I-5	60	61	1
3. Dorris Avenue, east of I-5	61	61	0

<sup>1</sup>Noise levels 100 feet from roadway were determined using FHWA Traffic Noise Prediction Model (FHWA RD-77-108). See Appendix H for modeling details.

dB = decibel

dBA = A-weighted decibel

FHWA = Federal Highway Administration

L<sub>dn</sub> = day-night noise exposure level (24-hour exposure level with a 10 dBA compensation for nighttime noises)

Source: ESA 2019b

Operation and Maintenance Phase

*Power Block*

PV solar facilities generally do not create much noise. Sources of noise include operation of the potential tracking motors that are used to rotate the panels to follow the sun, operation of the inverter/transformers, and noise generated by electricity discharge from the gen-tie lines, referred to as the corona effect. Any noise produced by the motors or the inverter/transformers would be limited to daytime hours when the solar arrays are generating electricity.



According to the County Ordinance, Chapter 8.40.040 (Exterior Noise Standards), it is unlawful for any person at any location within the unincorporated area of the County to create any noise or to allow the creation of any noise that causes the exterior noise level at a sensitive land use to exceed the County’s noise ordinance standards. In addition, according to County Ordinance, Chapter 8.40.090, noise sources associated with the operation of electrical substations shall not exceed 50 dBA  $L_{eq}$  as measured at the nearest sensitive land use. Therefore, to be conservative, this analysis applied the most restrictive applicable sound limits (50 dBA measured at 50 feet from the nearest sensitive receptor), as identified in County Ordinance Chapter 8.40.090, for the operation of the proposed project.

Transformers proposed to be located at the project substation typically generate a noise level of 58 dBA  $L_{eq}$  from a distance of 5 feet, and inverters/motors typically generate a noise level of 61 dBA  $L_{eq}$  at 5 feet. Based on the proposed project design and the nearest sensitive land use, located approximately 1,100 feet from the project boundary, the cumulative noise level of the transformers, inverters, and motors would be below the County’s exterior sound limit threshold of 50 dBA  $L_{eq}$  and would have a less than significant impact on the nearest sensitive receptor (Table 4.12-11).

**Table 4.12-11: Tracker System Operational Noise Levels at Nearest Existing Land Use, Located 1,100 Feet from Project Boundary**

Source	Reference Noise Level (dBA $L_{eq}$ ) <sup>1</sup>	Noise Exposure at the Nearest Sensitive Land Use Located 1,100 feet from the Project Boundary (dBA)
Transformer	58	24
Inverter	65	31
Motor	61	27
Corona Noise	65	45
<b>Cumulative Noise Level</b>		<b>45</b>

Notes:

<sup>1</sup>Assumed a far-field distance of 50 feet. The far-field is the region beyond the near field, where the effects of source dimensions are less important than the near field, and noise propagates with a simple relationship between sound level and distance.

dBA = A-weighted decibel

$L_{eq}$  = energy equivalent sound level

Source: NEMA 1993

*Substation*

According to the National Electrical Manufacturers Association (NEMA), a large transformer at a substation can generate a noise level of 71 dBA  $L_{eq}$  from a distance of 5 feet. Based on the project site plan, the nearest receptor to the proposed onsite substation is approximately 1,100 feet away. As such, it is anticipated that this sensitive receptor I would be exposed to approximately 36 dBA  $L_{eq}$  while the substation is in operation (ESA 2019b). Therefore, operational noise generated by the proposed onsite substation would not exceed Fresno

County's 50 dBA  $L_{eq}$  threshold, and potential noise impacts associated with the proposed onsite substation would be less than significant.

#### *Gen-tie Lines*

The proposed project would install an overhead, single-circuit 230-kilovolt (kV) generation tie (gen-tie) line to convey electricity generated at the project site to the Gates Substation for distribution to customers within the local and regional grid. The gen-tie line would be approximately 0.34 mile long. Gen-tie lines can produce an electrical discharge typically referred to as the corona effect. Corona-generated audible noise is characterized as a crackling, hissing, or humming noise, and is most noticeable during wet conductor conditions, such as rain or fog. During fair weather, audible noise is generally barely perceptible. As shown in Table 4.12-11, corona noise associated with the proposed gen-tie line has been estimated to be approximately 45 dBA at 1,100 feet. Therefore, the corona noise that would be associated with the gen-tie line would not exceed the County's exterior sound limit threshold of 50 dBA  $L_{eq}$  at the nearest residence, and noise impacts associated with the proposed gen-tie line would therefore be less than significant.

#### *Onsite Vehicles*

The full-time offsite staff for the proposed project is expected to consist of one site manager, four technicians, and six security personnel. The site manager and technicians would be located in Austin, Texas, and are not expected to travel to and from the project site. Security or operations personnel would be available for dispatch to the project site 24 hours per day, 7 days a week. Staff would be located within a 2-hour drive of the project site. Traffic trips to the project site would be by full-time staff (up to four employees) to wash the solar panels periodically. This would occur mainly during the summer months; if rainfall is sufficient to wash the panels clean during the winter, only a single cleaning would be required during the summer. If a winter is dry or soiling is greater than expected, more washing may be necessary, with correspondingly higher staffing requirements. Project trips generated by operation of the proposed project would result in a less than 1% increase of the total existing traffic volume along Jayne Avenue and Lassen Avenue, and would not expose nearby sensitive receptors to traffic noise levels that would cause a perceptible increase in ambient noise levels at the nearest residence locations. Therefore, traffic noise impacts associated with the operation of the proposed project would be less than significant.

#### *Decommissioning Phase*

The decommissioning phase would use similar types of construction equipment as analyzed for the construction phase described above. The decommissioning phase would last approximately 12 months and would include the removal of all aboveground structures and equipment, removal of belowground cabling, removal of concrete pads and foundations, removal of roads, and the scarification of compacted areas and regrading of the project site to pre-project conditions. To ensure that noise generated during the decommissioning phase is minimized, Mitigation Measures NOI-1 through NOI-4 would be implemented. Implementation of these Mitigation Measures would ensure that decommissioning activities are limited to the hours within the County's noise ordinance, require equipment to be properly maintained and fitted with best available noise suppression devices, and require stationary equipment and staging areas be located as far away as possible from sensitive receptors. Therefore, with implementation of

Mitigation Measures NOI-1 through NOI-4, noise impacts associated with the decommissioning phase of the proposed project would be less than significant.

### Level of Significance Before Mitigation

Potentially Significant Impact.

### Mitigation Measures

- MM NOI-1: Stationary Equipment.** All stationary equipment shall be placed so that emitted noise is directed away from sensitive receptors nearest to the project site during construction and decommissioning activities.
- MM NOI-2: Equipment Staging Areas.** Equipment staging shall be located in areas as far as feasible from noise-sensitive receptors nearest to the project site during all project construction and decommissioning activities.
- MM NOI-3: Construction and Decommissioning Equipment.** All construction and decommissioning equipment shall be equipped with manufacturer-approved mufflers and baffles.
- MM NOI-4: Construction and Decommissioning Hours.** During all project construction and decommissioning, all noise-producing construction-related activities shall be limited to the hours of 6:00 AM to 9:00 PM, Monday through Friday, and to the hours of 7:00 AM to 5:00 PM on Saturdays and Sundays.

### Level of Significance After Mitigation

Less Than Significant Impact with Mitigation Incorporated.

### Excessive Groundborne Vibration

---

**Impact NOI-2      The proposed project would not result in the generation of excessive groundborne vibration or groundborne noise levels.**

---

### Impact Analysis

#### Construction and Decommissioning Phases

Temporary sources of groundborne vibration and noise during construction would result from the operation of heavy construction equipment. Out of the variety of equipment that would be used during construction, the vibratory roller that would be used for the site preparation phase would produce the highest groundborne vibration levels. Large vibratory rollers produce PPV vibration levels of up to 0.21 in/sec at 25 feet (Caltrans 2004). The PPV threshold of 0.20 in/sec identified by Caltrans is used in this analysis to determine the significance of vibration impacts related to adverse human reaction and related to risk of architectural damage to buildings.

The nearest residence is located approximately 1,100 feet from the eastern project site boundary. PPV vibration levels at this distance would be reduced to approximately 0.0007 in/sec, which is well below the PPV threshold (see Table 4.12-4) and would not have the potential to cause structural damage to nearby buildings. Decommissioning activities would include the use of equipment similar to that used for construction and would similarly not have an impact on nearby sensitive receptors. As such, construction- and decommissioning-related vibration impacts would be less than significant.

Groundborne noise is the rumbling sound of structure surfaces caused by high vibration levels. Because construction of the proposed project would not result in exposure of persons to, or generation of, excessive groundborne vibration, the proposed project would also not expose sensitive receptors to the generation of excessive groundborne noise levels. Consequently, groundborne noise-related impacts associated with construction or decommissioning of the proposed project would be less than significant.

#### Operation and Maintenance Phase

O&M of the proposed project would not introduce any new sources of perceivable groundborne vibration. Therefore, there would be no operation- or maintenance-related vibration or groundborne noise impacts.

#### **Level of Significance Before Mitigation**

Less Than Significant Impact.

#### **Mitigation Measures**

No mitigation is necessary.

#### **Level of Significance After Mitigation**

Less Than Significant Impact.

### **4.12.9 Cumulative Impacts**

As effects of noise are highly localized, the geographic scope for considering cumulative noise impacts comprises related projects within 0.25 mile of the project. Construction, operation, and decommissioning of the proposed project would result in less-than-significant impacts with mitigation incorporated with respect to generation of noise levels in excess of standards. The proposed project would have less-than-significant impacts to excessive groundborne vibration, and an increase in permanent and temporary ambient noise levels. Cumulative noise impacts could occur from multiple projects resulting in exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or exposure to groundborne vibration and groundborne noise. The transmission corridor for the Westlands Solar Project is the only related project within 0.25 mile of the proposed project.

Concurrent construction, operation, and decommissioning of the proposed project and Westlands Solar Project could result in cumulatively considerable noise impacts at sensitive receptors. The nearest sensitive receptors to the proposed project are a group of three residences located approximately 1,100 feet and greater from the eastern project site boundary. These sensitive receptors are located more than 0.50 mile from the Westlands Solar Project, and at these distances, the potential for a cumulative noise impact is very low. Therefore, the cumulative noise impacts would be less than significant, and the contribution from the proposed project would not be cumulatively considerable.

**This page left intentionally blank.**

## 4.13 PUBLIC SERVICES

This section describes the impacts on public services that would result from implementation of the Fifth Standard Solar Facility Project Complex (proposed project). Included is a review of existing conditions, a summary of applicable policies and regulations related to public services, and analysis of environmental impacts of the proposed project. Where applicable, Mitigation Measures are included for significant impacts. The County did not receive any scoping comments pertaining to public services (Appendix A).

### 4.13.1 Regulatory Setting

#### Federal

No federal regulations pertaining to public services apply to the proposed project.

#### State

No state regulations pertaining to public services apply to the proposed project.

#### Local

Fresno County General Plan

The following lists goals and policies from the Fresno County 2000 General Plan pertaining to public services that are applicable to the proposed project.

**Goal PF-G:** To protect life and property by deterring crime and ensuring the prompt and efficient provision of law enforcement service and facility needs to meet the growing demand for police services associated with an increasing population.

**Policy PF-G.2:** The County shall strive to maintain a staffing ratio of two sworn officers serving unincorporated residents per 1,000 residents served. (This count of officers includes all ranks of deputy sheriff personnel and excludes all support positions and all sworn officers serving county wide population interests such as bailiffs, and sworn officers serving contract cities and grant-specific populations).

**Policy PF-G.6:** The County shall promote the incorporation of safe design features (e.g., lighting, adequate view from streets into parks) into new development by providing Sheriff Department review of development proposals.

**Goal PF-H:** To ensure the prompt and efficient provision of fire and emergency medical facility and service needs, to protect residents of and visitors to Fresno County from injury and loss of life, and to protect property from fire.

**Policy PF-H.1:** The County shall work cooperatively with local fire protection districts to ensure the provision of effective fire and emergency medical services to unincorporated areas within the county.



**Policy PF-H.2:** Prior to the approval of development projects, the County shall determine the need for fire protection services. New development in unincorporated areas of the County shall not be approved unless adequate fire protection facilities are provided.

**Policy PF-H.5:** The County shall require that new development be designed to maximize safety and minimize fire hazard risks to life and property.

**Policy PF-H.8:** The County shall encourage local fire protection agencies in the county to maintain the following as minimum standards for average first alarm response times to emergency calls:

- a. 5 minutes in urban areas;
- b. 15 minutes in suburban areas; and
- c. 20 minutes in rural areas.

**Policy PF-H.10:** The County shall ensure that all proposed developments are reviewed for compliance with fire safety standards by responsible local fire agencies per the Uniform Fire Code and other State and local ordinances.

**Policy PF-H.11:** The County shall encourage local fire protection agencies to provide and maintain advanced levels of emergency medical services to the public, consistent with current practice.

#### 4.13.2 Environmental Setting

##### Fire Protection

Fire protection services in the vicinity of the project site are provided by the Fresno County Fire Protection District. The Fresno County Fire Protection District serves a population of more than 220,000 in a service area encompassing approximately 2,655 square miles in the communities of Tarpey Village, Calwa, Easton, Malaga, Del Rey, Caruthers, San Joaquin, Tranquillity, Prather, Friant, Tollhouse, Wonder Valley, Cantua Creek, Three Rocks, Five Points, Centerville, Tivy Valley, and Sand Creek and the cities of San Joaquin, Parlier, Mendota, and Huron. In cooperation with the California Department of Forestry and Fire Protection (CAL FIRE), the Fresno County Fire Protection District provides fire suppression, emergency medical service, rescue, fire prevention, and education from 13 staffed fire stations and five paid call firefighter stations. A total of 48 firefighters are on duty daily (FCFPD 2017). While Fresno County Fire Protection District employs professionally trained firefighters, the Paid-Call Firefighter Program adds personnel to an already staffed fire apparatus to provide an augmentation of staff for each emergency response (FCFPD 2019). The nearest fire station to the project site is Station 94, located approximately 15 miles northwest of the project site at 24125 W. Dorris Avenue in Coalinga.

##### Police Protection

The Fresno County Sheriff's Department provides law enforcement services to the unincorporated areas of the County and several incorporated cities by contract. Patrol services are divided into four patrol areas, each commanded by a lieutenant who supervises field services from a substation located in each of the areas.

The project site is located within Patrol Area 1. Area 1 encompasses the cities of Coalinga, Huron, San Joaquin, Kerman, Mendota, and Firebaugh, as well as the unincorporated communities of Tranquillity, Biola, Five Points, Helm, Three Rocks, Cantua Creek, and Dos Palos. Area 1 personnel include one lieutenant, three sergeants, three community service officers, two robbery/property detectives, and 32 deputy sheriffs who provide 24-hour patrol and detective services, crime prevention, and vehicle abatement, as well as a host of community liaison functions (FSO 2017). The Area 1 substation office is located at 21925 W. Manning Avenue in San Joaquin, approximately 32 miles northwest of the project site.

### 4.13.3 Environmental Impacts

This section analyzes the proposed project's potential to result in significant impacts related to public services. When an impact is determined to be significant, Mitigation Measures are identified which would reduce or avoid the impact.

#### Methodology

The proposed project's effects were compared to the thresholds of significance to determine whether the proposed project would result in a significant impact on public services.

#### Thresholds of Significance

In accordance with the California Environmental Quality Act (CEQA) Guidelines Appendix G Environmental Checklist, the following questions were analyzed and evaluated to determine whether impacts to public services would be significant.

Would the proposed project result in:

- Substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities [or the] need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:
  - Fire protection?
  - Police protection?

The following questions were determined to have no impact during the NOP scoping. These issues are summarized in Section 6.0, Effects Found Not To Be Significant, and are not discussed further in this section.

- Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:
  - Schools?
  - Parks?
  - Other public facilities?

## Project Impact Analysis and Mitigation Measures

This section discusses potential impacts associated with the proposed project and provides Mitigation Measures where necessary.

### Governmental Facilities

---

**Impact PUB-1**    **The proposed project would not result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities or a need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives.**

---

## Impact Analysis

### Fire Protection Facilities

#### *Construction Phase*

The construction phase of the proposed project would occur over 11 to 12 consecutive months. The construction phases of the proposed project are expected to overlap, and the number of construction workers onsite is expected to range from 20 to 300 workers per day, with the peak number of workers onsite during months 8 and 9. The majority of the labor force would come from nearby communities in Fresno and Kings counties. This increase in people would temporarily affect the demand for fire protection and emergency response services due to the increased traffic associated with construction worker vehicle trips and the delivery of construction equipment, vehicles, and materials to the area. However, because the increased need would be temporary, no new or physically altered fire protection facilities would be required to meet service response times as described in General Plan Policy PF-H.8. Impacts associated with fire protection services would be less than significant during the construction phase of the proposed project.

#### *Operation and Maintenance Phase*

Once operational, the full-time offsite staff for the proposed project is expected to consist of one site manager, four technicians, and six security personnel. The site manager and technicians would be located in Austin, Texas, and are not expected to travel to and from the project site. Security or operations personnel would be available for dispatch to the project site 24 hours per day, 7 days a week. Staff would be located within a 2-hour drive of the project site. Additional support personnel would be employed as needed. Additional personnel may be either full-time employees of the Applicant or third-party local suppliers. Typical maintenance would be expected to require up to four full time employees for panel washing. This would occur mainly during the summer months if winter rainfall were sufficient to wash the panels clean such that only a single cleaning would be required during the summer. If a winter is dry or soiling is greater than expected, more washing may be necessary with correspondingly higher staffing requirements. The majority of the operational labor force is expected to be from Fresno and the surrounding communities, with an anticipated average commute of approximately 50 miles one-way.

The operation of the proposed project would be monitored by an onsite and offsite SCADA system. Onsite operations and maintenance personnel would use the onsite SCADA and monitoring system to monitor operation and control of the project facilities. Personnel at an offsite operations center would likely provide continuous monitoring coverage of the project facilities and would respond to real-time alerts and system upsets using advanced monitoring applications.

The nearest fire station to the project site is Fresno County Fire District Station 94. In accordance with General Plan Policy PF-H.8, local fire protection agencies are to maintain an average 20-minute first alarm response time to emergency calls. The project site is located 3 miles south of Station 93 with CA-269/Lassen Avenue as the most direct corridor for emergency access. The speed limit on Lassen Avenue ranges between 30-55 miles per hour; therefore, fire response would be provided within approximately 3 to 6 minutes. As such, the project site would be adequately served by the existing fire station. To ensure that there is appropriate fire safety onsite, the Applicant would coordinate with CAL FIRE and the Fresno County Fire Protection District to provide appropriate photovoltaic (PV) training to fire responders, as well as to construction, operational, and maintenance staff. The intent of this training would be to familiarize both responders and workers with the codes, regulations, associated hazards, and processes related to solar power and energy storage facilities.

Most of the components of the proposed project would be nonflammable and constructed of metal, glass, or fire-resistant plastic material. The energy storage facility would be designed to guarantee the highest safety standard, and containers would be equipped with fire suppression systems, smoke detectors, and emergency stops. Access roads would be sufficient for CAL FIRE to access. The perimeter roads would be constructed to provide a fire buffer to allow project operation and maintenance activities and facilitate onsite circulation for emergency vehicles. To limit fire risk, maintenance would include the management and removal of combustible vegetation on and around the project site boundary, as needed. The project site's perimeter roads would also act as firebreaks as further described in Section 4.8, Hazards and Hazardous Materials and Section 4.17, Wildfire. Overall, the design of the proposed project and remote monitoring system would reduce potential fire impacts. Therefore, potential impacts associated with fire protection services would be less than significant during the operation and maintenance phase of the proposed project.

#### *Decommissioning Phase*

Decommissioning activities would involve the removal all aboveground and belowground structures, and site reclamation, including restoration of topsoil, revegetation, and seeding. Decommissioning activities would require a similar number of employees as the construction phase and would temporarily increase the demand for fire protection services. However, because the increased need for fire protection services would be temporary, no new or physically altered fire protection facilities would be required to meet fire protection service response times as described in General Plan Policy PF-H.8. Therefore, potential impacts associated with fire protection services would be less than significant during the decommissioning phase of the proposed project.

## Police Protection Services

### *Construction Phase*

Similar to impacts related to fire protection services, the construction of the proposed project could temporarily affect the demand for police protection services but would not be significant enough to require the construction of new or altered police protection facilities, nor require or result in the hiring of additional police officers. Police protection may be required for incidents such as the theft of construction equipment or vandalism of the proposed project. The proposed project would install a 6- to 8-foot-high fence around the perimeter of the site for public safety and site security to prevent unauthorized entry. Because no new permanent residents would be living on the project site, the number of emergency law enforcement calls originating from the project site would be minimal; as such, there would be no need for expansion of police services. Impacts associated with police protection services would be less than significant during the construction phase of the proposed project.

### *Operation and Maintenance Phase*

During the operation of the proposed project, the project site would be fenced along all perimeters with a 6- to 8-foot chain-link galvanized metal fence topped with standard three-strand barbed wire. Access gates to the project site would remain securely locked when not in use. During normal business hours when the facility manager and maintenance staff would be onsite, staff would monitor the project site to deter theft and vandalism. During all other times, offsite security personnel would monitor the project site and provide rapid response to any incidents. Offsite security or operations personnel would be available for dispatch to the project site 24 hours per day, 7 days a week.

The Fresno County Sheriff's Department is responsible for law enforcement in unincorporated areas of the County. According to the General Plan Background Report, the Fresno County Sheriff's Department currently has a ratio of 1.89 officers per 1,000 residents (County 2000a). Response times vary based on call volume, proximity of the call to the nearest police office, and the nature of the call. The proposed project would not generate new permanent residents, and therefore the number of emergency law enforcement calls originating from the project site would remain low. Operation of the proposed project would not result in the need for additional police facilities or result in the hiring of additional law enforcement personnel. Impacts associated with police protection services would be less than significant during operation of the proposed project.

### *Decommissioning Phase*

Impacts associated with decommissioning activities would be similar to fire protection services and would require a similar number of employees as the construction phase. Decommissioning of the proposed project would temporarily increase the demand for police protection services. However, because the increased need for police protection services would be temporary, no new or physically altered police protection facilities would be required. Therefore, potential impacts associated with police protection services would be less than significant during the decommissioning phase of the proposed project.

### **Level of Significance Before Mitigation**

Less Than Significant Impact.

### **Mitigation Measures**

No mitigation is necessary.

### **Level of Significance After Mitigation**

Less Than Significant Impact.

#### **4.13.4 Cumulative Impacts**

The proposed project would have less than significant impacts to public services during construction, operation, and decommissioning. The proposed project would not result in the need for new or physically altered governmental facilities in order to maintain acceptable service ratios, response times, or other performance objectives for any of the public services. Cumulative impacts to public services could occur as a result of multiple related projects in the vicinity of the proposed project and affecting service ratios or response times.

Related projects exhibit similar low demand for public services, as none of the related projects are residential or commercial uses. During construction phases of the related projects, construction workers would be onsite and the increase in people could incrementally increase the potential need for fire or medical resource services if an emergency incident were to occur. However, the likelihood of an emergency incident is low, and the likelihood of simultaneous emergencies at multiple construction sites would be even lower. Additionally, because the increased need would be temporary, no new or physically altered public service facilities would be required to meet demand. Therefore, cumulative impacts would be less than significant, and the contribution from the proposed project would not be cumulatively considerable.



**This page left intentionally blank.**

## 4.14 TRANSPORTATION

This section describes the impacts on transportation that would result from implementation of the Fifth Standard Solar Facility Project Complex (proposed project). Included are a review of existing conditions, a summary of applicable policies and regulations related to transportation, and an analysis of environmental impacts of the proposed project. Where applicable, Mitigation Measures are included for significant impacts. The County did not receive any scoping comments regarding transportation (Appendix A).

### 4.14.1 Regulatory Setting

#### Federal

No federal regulations pertaining to transportation apply to the proposed project.

#### State

California Department of Transportation

The California State Department of Transportation (Caltrans) has jurisdiction over state highways and sets maximum load limits for trucks and safety requirements for oversized vehicles that operate on California highways. The County is under the jurisdiction of Caltrans District 6. The following Caltrans regulations apply to the potential transportation impacts of the project:

- California Vehicle Code, Division 15, Chapters 1 through 5 (Size, Weight, and Load). Includes regulations pertaining to licensing, size, weight, and load of vehicles operated on highways.
- California Street and Highway Code, Sections 660-711, 670-695. Requires permits from Caltrans for any roadway encroachment during truck transportation and delivery, includes regulations for the care and protection of state and county highways and provisions for the issuance of written permits, and requires permits for any load that exceeds Caltrans weight, length, or width standards for public roadways.

These state regulations would relate to the haul of heavy equipment and materials to the project site during construction. Trucking companies and the proposed project must comply with these regulations.

#### Local

Fresno County General Plan

The following lists goals and policies from the Fresno County 2000 General Plan pertaining to transportation that are applicable to the proposed project (County 2000b).

**Policy TR-A.3:** The County shall require that new or modified access to property abutting a roadway and to intersecting roads conform to access specifications in the Circulation Diagram and Standards section. Exceptions to the access standards may be permitted in the manner and form prescribed in the Fresno County Zoning and Subdivision Ordinances, provided that the

designed safety and operational characteristics of the existing and planned roadway facility will not be substantially diminished.

**Policy TR-A.5:** The County shall require dedication of right-of-way or dedication and construction of planned road facilities as a condition of land development, and require an analysis of impacts of traffic from all land development projects including impacts from truck traffic. Each such project shall construct or fund improvements necessary to mitigate the effects of traffic from the project. The County may allow a project to fund a fair share of improvements that provide significant benefit to others through traffic impact fees.

**Policy TR-A.8:** The County shall ensure that land development that affects roadway use or operation or requires roadway access to plan, dedicate, and construct required improvements consistent with the criteria in the Circulation Diagram and Standards section of this element.

The proposed project would require new and modified improvements to access roads that would be required to be designed to County road standards. The proposed project would dedicate right-of-way as necessary to the County and may be required to provide funding for improvements to mitigate project effects on transportation.

Fresno County Bicycle and Regional Trails Master Plan

The Bicycle and Regional Trails Master Plan provides a comprehensive, long-term planning horizon for development of an extensive regional bikeway and recreational trails network that connects cities and unincorporated areas countywide.

The plan was amended in 2013 to meet the requirements of the 2006 Measure C Transportation Sales Tax Extension, Local Transportation Program by adding recreational trails to the plan. The plan contains Policy BP-A.5, which requires development projects adjacent to designated bikeways to provide adequate rights-of-way or easements.

Lassen Avenue (State Route [SR] 269), which runs down the west side of the project site, is identified as a Class II Rural Bikeway.

Fresno Council of Governments Regional Transportation Plan

The latest Regional Transportation Plan (RTP) was prepared and adopted by the Fresno Council of Governments (Fresno COG) in July 2018. The RTP is a blueprint that establishes a set of regional transportation goals, policies, and actions intended to guide development of the planned multimodal transportation systems in the County (Fresno COG 2018).

Lassen Avenue (SR 269) is a rural transit route.

#### 4.14.2 Environmental Setting

The project site is in unincorporated Fresno County on the west side of SR 269 (Lassen Avenue) and approximately 2 miles east of Interstate 5 (I-5). Access to the project site is provided by the existing roadway network described below as analyzed in the Traffic Study Report included as Appendix I (ESA 2017c).

## Major Highways

SR 269 (Lassen Avenue) is an undivided conventional state highway that extends north/south for approximately 25 miles between SR 33 in the City of Avenal and SR 145 in the unincorporated community of Five Points. It intersects with SR 198 (Dorris Avenue) north of Huron and runs along the east side of the project site, extending south to its junction with I-5 south of the project site. SR 269 also connects with I-5 via Jayne Avenue, a two-lane road. SR 269 has two 12-foot-wide travel lanes and paved shoulders. According to the most recent data published by Caltrans, the average daily traffic volume on SR 269 in the vicinity of the project site is approximately 2,000 vehicles (about 14% trucks), with approximately 200 vehicles during the peak traffic hour (See Appendix I).

## Local Roads

There are two local county roads in the vicinity of the project site. These are W. Gale Avenue and W. Jayne Avenue. They are paved two-lane roads that cross from east to west to the north and south of the project site, respectively. There are three private roads in the vicinity of the project site. These are West Tractor Avenue, West Phelps Avenue, and South Trinity Avenue. W. Tractor and W. Phelps avenues are east-west alignments, and W. Trinity Avenue is a north-south alignment. These are rural unpaved roads providing access to the agricultural fields.

Local access to the project site would be provided from three points along Lassen Avenue: at Tractor Avenue, Phelps Avenue, and at an unnamed/unimproved road at the southeast corner of the project site. The site access roads would be improved to 24 feet in width, with two 10-foot-wide travel lanes and two 2-foot-wide shoulders (See Appendix I).

## Airports

There are no airports in the vicinity of the project site. New Coalinga Municipal Airport is located approximately 9 miles west of the project site. The nearest private airport is the Stone Land Company Airport, located approximately 6.6 miles southeast of the project site. There is a private airstrip approximately 0.5-mile north of the project site on the northwest corner of Gale and Trinity.

## Public Transportation Services

Public transportation in the project area is provided by the Fresno County Rural Transit Agency (San Joaquin Transit), which offers weekday dial-a-ride public transportation service for residents in communities such as Huron, Avenal, and Coalinga. Coalinga Transit operates on Lassen Avenue in the project area (See Appendix I).

## Non-Motorized Transportation

There are currently no dedicated pedestrian or bicycle facilities in the immediate vicinity of the project site or along the surrounding roadways or highways. SR 269 (Lassen Avenue) in the project area is shown as an "existing or planned bikeway" in the Fresno County General Plan (Transportation and Circulation Element) (See Appendix I). Bicycles are allowed on SR 269, and the shoulder is 2 to 8 feet along the rural two-lane highway.

### 4.14.3 Environmental Impacts

This section analyzes the potential impacts of the proposed project on transportation and traffic associated with the construction and operation of the proposed project. For impacts determined to be significant, Mitigation Measures are identified that would reduce or avoid the impact.

#### Methodology

Traffic impacts associated with the proposed project are primarily related to temporary construction and routine maintenance activities. This traffic assessment focuses on short-term traffic impacts associated with changes in traffic volumes and the increase in project-related traffic during construction, operation, and decommissioning of the facility. Traffic impacts during construction are quantified since construction would result in large numbers of trips for trucks and construction employee vehicles.

Roadway operating conditions are judged with respect to Level of Service (LOS), which is a qualitative measurement of operational characteristics of traffic flow on a roadway based on traffic volumes and road type. LOS is defined by six grades (from A to F), with LOS A representing the best (free-flowing) traffic conditions and LOS F representing the worst (substantially congested) traffic conditions. Table 4.14-1 provides the LOS characteristics for roadways.

**Table 4.14-1: Level of Service Descriptions**

Level of Service	Traffic Flow Characteristics
A	Free-flow operations. Little, if any, delays.
B	Reasonably free-flow operations; ability to maneuver within the traffic stream is only slightly restricted. Minimal delays.
C	Travel speeds are at or near free-flow, but the ability to maneuver within the traffic stream is noticeably restricted. Acceptable delays.
D	Travel speeds begin to decline with increasing flows. The ability to maneuver within the traffic stream is more noticeably limited, and minor incidents can be expected to create queuing. Queues dissipate rapidly without excessive delays.
E	Operation is at or near capacity, and therefore is volatile because there are virtually no useable gaps in the traffic stream. Maneuverability is extremely limited. Any disruption to the traffic stream, such as vehicles entering from ramps or side streets, can cause disruptions. Substantial delays.
F	Breakdown in traffic flow with queues forming behind major breakdown points, such as traffic incidents or recurring points of congestion. Delay may block upstream intersections.

Source: Transportation Research Board, Highway Capacity Manual 2000.

Roadway conditions were analyzed based on peak-hour traffic, volume-to-capacity (v/c) ratio, and LOS. The evaluation of traffic impacts from implementation of the project was undertaken by assessing trip generation (workers and trucks) for both the construction and operational phases of the project against existing traffic conditions.

## Thresholds of Significance

In accordance with the California Environmental Quality Act (CEQA) Guidelines Appendix G Environmental Checklist, the following questions were analyzed and evaluated to determine whether impacts to transportation impacts are significant.

Would the proposed project:

- Conflict with a plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?
- Would the project conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision(b)?
- Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?
- Result in inadequate emergency access?

## Project Impact Analysis and Mitigation Measures

This section discusses potential impacts associated with the proposed project and provides Mitigation Measures where necessary.

---

**Impact TRA-1    The proposed project would not conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities.**

---

### Impact Analysis

#### Construction Phase

The construction phasing for the project is listed below:

- Blackbriar Battery Storage Facility is projected to begin construction between late 2020 and late 2021.
- Fifth Standard Solar Facility is expected to begin construction between late 2020 and late 2021 and occur simultaneously with Blackbriar construction for several months, then continue beyond the completion of Blackbriar, and be completed between December 2021 and December 2022.
- Stonecrop Facility would begin after completion of Blackbriar but prior to the completion of Fifth Standard, thus running concurrently with Fifth Standard construction. Stonecrop construction is expected to begin between August 2021 and August 2022 and to be completed at the same time as Fifth Standard.

The timing where the construction periods overlap would produce the highest level of construction-related traffic, which is used in this analysis to conservatively predict impacts. The construction traffic includes construction workers, delivery of heavy equipment to the site and delivery of construction materials and these are used to develop trip generation.



Although carpooling would be encouraged, construction workers are assumed to commute individually and to arrive in the AM peak hour and leave during the PM peak hour each weekday. Heavy equipment would not be hauled to or from the project site daily, but rather would be hauled in at the beginning of construction and hauled out upon completion of construction. Construction trips would occur throughout the day, but because the proposed project does not require intense grading or offsite hauling, the majority of the trips would be associated with construction workers traveling to and from the project site and with daily deliveries (e.g., solar panels, various equipment, and materials). All other non-peak-hour activities (such as fuel deliveries) may occur sporadically throughout the construction duration, but they are not considered typical occurrences.

The specific equipment and material hauling route would be determined by the contractor. However, it is assumed that construction materials and worker trips would originate from the major urban areas in the region and nearby communities. Based on the existing roadway network serving the project area, it is assumed that trucks from the construction site would travel on I-5 (using the Jayne Avenue interchange to/from Lassen Avenue), SR 198 (east of Lassen Avenue), and SR 269 (Lassen Avenue). Deliveries of solar panels from the Port of Stockton or Port of Long Beach would be via I-5 to Jayne Avenue to SR 269. Miscellaneous deliveries of equipment and materials would come from the Fresno area and would reach the project site via SR 41, SR 198, and SR 269. Assuming that workers would be drawn from the Fresno area, it is anticipated that workers would use SR 198 (east of Lassen Avenue) and SR 269 (Lassen Avenue) to access the project site..

Project construction traffic would primarily include the delivery of construction equipment, vehicles and materials, and daily construction worker trips. A majority of the equipment (e.g., solar PV panels, inverters, tracker steel, transmission poles, substation circuit breakers, and substation steel) would be delivered to the project site in standard widths and lengths by trucks, vans, and covered flatbed trailers. Substation equipment, inverter enclosures, and cranes would be delivered to the project site on wide-load trailers.

It is anticipated that during the anticipated 334 total days of construction, the proposed project would result in an average of 600 daily one-way vendor and worker trips (Appendix I). At the peak of construction (when construction of two of the three facilities is underway), there could be up to 1,200 daily one-way trips. The existing traffic volumes along roadways in the vicinity of the project site (i.e., Lassen Avenue, Jayne Avenue, and Dorris Avenue) range from 2,000 to 3,500 vehicles per day (Appendix I). Existing peak-hour volumes are about 10% of the daily volumes (i.e., about 200 to 350 vehicles per hour).

For purposes of determining the peak-hour LOS of area roads, a capacity of 1,600 vehicles per hour per lane (i.e., 3,200 two-way vehicles per hour on two-lane roads) is assumed (Caltrans 2015). The above-cited peak-hour volumes (converting to passenger car equivalent [PCE] vehicles<sup>1</sup>) represent approximately 7% to 14% of the roadway capacity (v/c ratio of 0.07-0.14). Although project trips would be dispersed over different roads as construction workers and trucks travel to and from the project site, the analysis of potential project traffic impacts was

---

<sup>1</sup> PCE accounts for differences between trucks and passenger vehicles (i.e., trucks use more roadway capacity than passenger vehicles due to their larger size, slower start-up times, and reduced maneuverability). To account for those differences, a PCE factor of 2.0, based on Highway Capacity Manual adjustments for heavy vehicles, was used (Appendix I).

conducted on SR 269 because all project-generated trips would use SR 269. Also, the addition of peak-hour construction vehicles (i.e., up to approximately 440 PCE) would increase the v/c ratio by 14% to approximately 0.21–0.28, which is still considered LOS A. Therefore, traffic impacts associated with project construction would be less than significant.

Although construction and decommissioning activities associated with the proposed project would be short-term, with less than significant impacts, a Traffic Control and Management Plan would be required (Mitigation Measure TRA-1) and a road survey report (Mitigation Measure TRA-2), be prepared and submitted to the Fresno County Department of Public Works and Planning and the Caltrans District 6 office for approval. In addition, a road repair agreement (Mitigation Measure TRA-3) would be required as well.

#### Operations and Maintenance Phase

The proposed project would introduce additional traffic volumes to local roadways, particularly along Lassen Avenue. The full-time offsite staff for the proposed project is expected to consist of one site manager, four technicians, and six security personnel. The site manager and technicians would be located in Austin, Texas, and are not expected to travel to and from the project site. Security or operations personnel would be available for dispatch to the project site 24 hours per day, 7 days a week. Staff would be located within a 2-hour drive of the project site. Additional support personnel would be employed as needed. Additional personnel may be either full-time employees of the Applicant or third-party local suppliers. Up to four workers would be present at the project site to undertake panel washing, adding four more daily round trips. This would occur mainly during the summer months. If winter rainfall is sufficient to wash the panels clean only a single cleaning would be required during the summer. If a winter is dry or soiling is greater than expected, more washing may be necessary. On average a total of 15 round trips may occur in a single day with occasional added trips for deliveries. Because O&M activities would not generate a substantial number of trips that would have a significant effect on LOS and would be lower than the trips generated during project construction, traffic impacts associated with O&M would be less than significant.

#### Alternative Methods of Transportation

Fresno County's General Plan includes policies regarding access and the safety standards of roadway facilities, bike facilities, and public transit. Although the General Plan seeks to coordinate multiple forms of transportation, including cars, commercial vehicles, buses, transit, bicycles, and pedestrian traffic, the General Plan does not contain specific policies governing pedestrian traffic. The County also has adopted a *Regional Bicycle and Recreational Trails Master Plan* (County 2013) that addresses nonmotorized transportation systems and identifies barriers to trails and bikeways.

The proposed project would neither directly nor indirectly eliminate existing or planned alternative transportation corridors or facilities (e.g., transit, bike lanes) since the project would not add or remove any bike lanes or adversely affect the transit route along SR 269 (i.e., new access points to the project site from SR 269 would conform to County and state design standards). Therefore, the proposed project would not conflict with adopted policies, plans, and programs supporting alternative transportation. As described above, construction activities associated with the project would not generate a traffic volume that would significantly affect traffic flow on area roadways. The performance of public transit, bicycle, and pedestrian facilities

in the area likewise would not be adversely affected, and the impact on plans, ordinances, and policies, would be less than significant.

### **Level of Significance Before Mitigation**

Potentially Significant Impact.

### **Mitigation Measures**

#### **MM TRA-1: Construction and Decommissioning Traffic Control and Management Plan.**

Prior to issuance of construction permits, building permits, or encroachment permits, the Applicant and/or its construction contractors shall prepare and submit a traffic control and management plan to Fresno County Department of Public Works and Planning and the California Department of Transportation (Caltrans) District 6 office for approval. The traffic control and management plan shall be prepared in accordance with both the California's Manual on Uniform Traffic Control Divisions and Work Area Traffic Control Handbook and must include but not be limited to the following items:

- Specify timing of deliveries of heavy equipment and building materials.
- Direct construction traffic with a flagger.
- Place temporary signage, lighting, and traffic control devices, if required, including but not limited to appropriate signage along access routes to indicate the presence of heavy vehicles and construction traffic.
- Ensure access for emergency vehicles to the project site.
- Maintain access to adjacent property.
- Specify both construction-related vehicle travel and oversize-load haul routes, minimize construction traffic during the AM and PM peak hours, and avoid residential neighborhoods to the maximum extent feasible.
- Obtain all necessary permits from the appropriate agencies for work within the road right-of-way or use of oversized/overweight vehicles, which may require California Highway Patrol or a pilot car escort.
- Submit plans for any work on the proposed intersection improvements on Lassen Avenue at the site access driveways to the County and Caltrans District 6 for review and approval prior to the issuance of any encroachment or road improvement permit for the work.
- Clean or remove any material that is deposited onto the roadways as soon as possible and at least prior to the end of each working day.
- Obtain any access easements from private property owners necessary to perform required repair work.

**MM TRA-2: Preconstruction and Pre-Decommissioning Road Survey Report.** A preconstruction report and a pre-decommissioning report shall be prepared by a

qualified registered engineer to include a detailed analysis of road suitability to accommodate haul trucks during project construction. The report shall be submitted to the Fresno County Department of Public Works and Planning. Prior to initiating the preconstruction or decommissioning report, the proposed methodology shall be presented to the Fresno County Department of Public Works and Planning for review and approval. Improvements to existing roads may be necessary based on the findings of the report.

**MM TRA-3: Road Repair Agreement.** Prior to the start of construction, enter into a secured agreement with the County to ensure that the proposed project contributes its fair-share portion towards repairs of any County roads that are impacted by this project. The scope of impacts shall be determined in consultation with the County of Fresno and Caltrans District 6.

### Level of Significance After Mitigation

Less Than Significant Impact.

---

**Impact TRA-2    The proposed project would not conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b).**

---

### Impact Analysis

The CEQA Guidelines update became effective on December 28, 2018. Section 15064.3 was added to the CEQA Guidelines as part of the update to provide guidance for determining the significance of transportation impacts. Section 15064.3 provides the following criteria for determining a project's transportation impacts:

- (1) **Land Use Projects.** Vehicle Miles Traveled (VMT) exceeding an applicable threshold of significance may indicate a significant impact. Generally, projects within one-half mile of either an existing major transit stop or a stop along an existing high-quality transit corridor should be presumed to cause a less than significant transportation impact. Projects that decrease VMT in the project area compared to existing conditions should be presumed to have a less than significant transportation impact.
- (2) **Transportation Projects.** Transportation projects that reduce, or have no impact on, VMT should be presumed to cause a less than significant transportation impact. For roadway capacity projects, agencies have discretion to determine the appropriate measure of transportation impact consistent with CEQA and other applicable requirements. To the extent that such impacts have already been adequately addressed at a programmatic level, such as in a regional transportation plan EIR, a lead agency may tier from that analysis as provided in Section 15152.
- (3) **Qualitative Analysis.** If existing models or methods are not available to estimate the VMT for the particular project being considered, a lead agency may analyze the project's VMT qualitatively. Such a qualitative analysis would evaluate factors such as the availability of transit, proximity to other destinations, etc. For many projects, a qualitative analysis of construction traffic may be appropriate.
- (4) **Methodology.** A lead agency has discretion to choose the most appropriate methodology to evaluate a project's VMT, including whether to express the change in absolute terms per capita per household or in any other measure. A lead agency may use models to estimate a project's VMT and may revise those estimates to reflect professional judgment based on

substantial evidence. Any assumptions used to estimate VMT and any revisions to model outputs should be documented and explained in the environmental document prepared for the project. The standard of adequacy in Section 15151 shall apply to the analysis described in this section.

Section 15064.3 was intended to apply prospectively to projects; however, a lead agency may elect to be governed by the provisions of Section 15064.3 immediately. Beginning on July 1, 2020, the provisions of Section 15064.3 shall apply statewide.

The proposed project is not a traditional land use project that would generate VMT on a regular basis, and the County has not developed a threshold of significance for VMT. Therefore, criteria 1 is not applicable to the project.

The proposed project is not a transportation project, therefore criteria 2 would not be applicable to the project.

For this proposed project, a qualitative analysis of transportation impacts per criteria 3 with respect to VMT is provided. As discussed in Section 2, Project Description, of this Draft EIR, the number of construction workers onsite are expected to range between 20 and 300 workers per day, with the peak number of workers onsite during months 8 and 9. Local labor would be used to the maximum extent practicable. Workers would commute to and from the project site daily at an average one-way distance of 50 miles. During project operations, minimal onsite staff are anticipated for maintenance. Workers would be present at the project site to undertake panel washing. Typical maintenance would be expected to require up to four employees for panel washing. This would occur mainly during the summer months; if rainfall is sufficient to wash the panels clean during the winter, only a single cleaning would be required during the summer. If a winter is dry or soiling is greater than expected, more washing may be necessary, with correspondingly higher staffing requirements. Most of the operational labor force is expected to be from the City of Fresno and the surrounding communities, with an average anticipated commute of an average one-way distance of 50 miles. During decommissioning the anticipated labor force would be less than what is required during construction and would occur for a shorter period.

Given the rural nature of the proposed project location, the VMT for the construction, operations, and decommissioning would be comparable to other rural uses in the County. Workers employed in the rural areas of the County typically use strategies to reduce their reliance on single occupancy vehicles and thus reduce their commute costs, such as vanpools and carpools. It would be reasonable to expect that workers needed for the proposed project would likewise employ similar strategies that would also have the co-benefit of reducing VMT. Given that the proposed project does not have any characteristics that would result in greater VMT than other labor intensive uses in the County (e.g., farming) the proposed project would not conflict with or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b).

#### **Level of Significance Before Mitigation**

Less Than Significant Impact.

#### **Mitigation Measures**

No mitigation is necessary.

### Level of Significance After Mitigation

Less Than Significant Impact.

#### Hazards

---

**Impact TRA-3**    **The proposed project would not substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).**

---

### Impact Analysis

Construction of the proposed project would require the delivery of heavy construction equipment and facility materials, some of which may require transport by oversize vehicles. The use of oversize vehicles during construction can create a hazard to the public by limiting motorist views on roadways and by the obstruction of space. Construction-related oversize vehicle loads must comply with permit-related and other requirements of the California Vehicle Code and the California Streets and Highway Code. California Highway Patrol escorts may be required at the discretion of Caltrans and the County and would be detailed in respective oversize load permits. Due to the rural nature of the area roads and flat terrain, construction vehicles are not anticipated to incur hazards traveling to and from the project site; however, a Traffic Control and Management Plan would be required (Mitigation Measure TRA-1) and a road survey report (Mitigation Measure TRA-2) would be prepared and submitted to the Fresno County Department of Public Works and Planning and the Caltrans District 6 office for approval. In addition, a road repair agreement (Mitigation Measure TRA-3) would be required as well. Furthermore, the proposed project would not include a design feature or use vehicles with incompatible uses that would create a hazard on the roadways surrounding the project site.

Access to the project site would be provided from multiple points along Lassen Avenue (SR 269) on the eastern side of the project site. Design and construction of project access road intersections with SR 269 would be required to conform with the Caltrans Highway Design Manual (Caltrans 2012). Among the applicable requirements is corner sight distance at the SR 269 access intersections, although the flat terrain is not assumed to make sight distance an issue of concern. Impacts associated with hazards resulting from a proposed project design feature would be less than significant with incorporation of Mitigation Measures TRA-1, TRA-2, and TRA-3.

### Level of Significance Before Mitigation

Potentially Significant Impact.

### Mitigation Measures

Mitigation Measures TRA-1, TRA-2, and TRA-3 are required.

### Level of Significance After Mitigation

Less than Significant with Mitigation Incorporated.



---

## Emergency Access

---

### **Impact TRA-4    The proposed project would not result in inadequate emergency access.**

---

#### **Impact Analysis**

The proposed project would be located in a rural area with multiple access roads allowing adequate egress and ingress to the power blocks in the event of an emergency. Additionally, as part of the proposed project, internal access roadway improvements would be made. Therefore, the proposed project would allow for adequate emergency access.

As described above in impact TRA-2, increased project-related traffic would not cause a significant increase in congestion and would not significantly affect the existing LOS on area roads. Furthermore, the proposed project would not require closures of public roads that could inhibit access by emergency vehicles. During construction of the proposed project, heavy construction-related vehicles could interfere with emergency response to the site or evacuation procedures in the event of an emergency (e.g., slowing vehicles traveling behind the truck). However, a Traffic Control and Management Plan would be required (Mitigation Measure TRA-1). Impacts associated with emergency access would be less than significant with incorporation of Mitigation Measure TRA-1.

#### **Level of Significance Before Mitigation**

Potentially Significant Impact.

#### **Mitigation Measures**

Mitigation Measure TRA-1 is required.

#### **Level of Significance After Mitigation**

Less than Significant with Mitigation Incorporated.

### **4.14.4 Cumulative Impacts**

The cumulative assessment of transportation impacts includes existing traffic volumes, project-generated traffic, and traffic from future projects on roads and highways in the project vicinity. These include potential cumulative traffic impacts during construction and operations.

As described above, SR 269 with the proposed project's estimated construction traffic (3,200 daily round trips) would have a LOS of A—free flowing conditions. However, cumulative traffic impacts could occur during construction from related projects having overlapping construction timeframes, particularly if the related projects generated traffic on the same roads at the same time as the proposed project. The Westlands Solar Project would occur in the same general area and could occur in the same timeframe as the proposed project. The Westlands Solar Project is anticipated to generate 1,084 daily round trips during construction (other future projects are not expected to add much construction traffic due to their small size) (WWD 2017a). Access roads that might be impacted by construction traffic resulting from the two projects at the same time may include I-5, SR 198, SR 269, West Jayne Avenue, and Avenal Cutoff Road, depending on the routes used by construction traffic. Generally, construction-related traffic would be distributed across the road network, but there could be times, particularly during the peak hours when traffic levels on some segments of the road network experience a slight drop in level of service (it would not drop to LOS B) and

intersections experience slightly longer delays. It is not anticipated that there would be significant LOS issues largely due to the existing grade of LOS.

Any projects in the County that add access (driveways, streets) are required to provide access for emergency vehicles (including adequate turning movements). Similarly, construction zones must provide emergency vehicle access to and, if applicable, through the construction zone at all times. Thus, there would be no adverse effects on emergency access at a particular site. Emergency access along the road network may be slightly affected by cumulative construction traffic if vehicles are not able to move off the road quickly to allow emergency vehicles to pass by. Mitigation Measure TRA-1 would require a Traffic Control and Management Plan that would address emergency vehicle access.

Traffic associated with operation and maintenance activities of the proposed project is negligible—15 round trips per day. Other future projects would also generate little or no O&M traffic such as the bridge reconstruction improvement project, 100-foot monopole, and wastewater treatment facility improvements project. The Westlands Solar Project would generate 400 daily trips at full build out (WWD 2017a). Although this would increase the traffic levels on area roads, it would not result in a significant change in the LOS grade.

**This page left intentionally blank.**

## 4.15 TRIBAL CULTURAL RESOURCES

This section describes the impacts to tribal cultural resources that would result from implementation of the Fifth Standard Solar Facility Project Complex (proposed project) based on the Cultural Resources Survey Report prepared by Environmental Science Associates, Inc. (ESA) in June 2017 (Appendix E). The Cultural Resources Survey Report identifies the locations of cultural resources in the vicinity of the Fifth Standard Solar Project site in the County. Disclosure of this information to the public may be in violation of both federal and state laws; therefore, the report will be kept confidential. Individuals meeting the U.S. Secretary of the Interior's professional standards or the California State Personnel Board criteria for Associate State Archaeologist or State Historian II may request to review the report from the County.

Also included in this section is a review of applicable regulations related to tribal cultural resources, environmental setting, and analysis of environmental impacts of the proposed project. Where applicable, Mitigation Measures are included for significant impacts. The County completed required Assembly Bill (AB) 52 Native American consultations. No tribes provided information regarding known cultural resources on or near the project sites.

### 4.15.1 Regulatory Setting

Please refer to Section 4.5, Cultural Resources, for a complete discussion of applicable federal and state regulations and local policies pertaining to tribal cultural resources.

#### Assembly Bill 52 (Public Resources Code Section 21084.2)

AB 52 changed sections of the Public Resources Code (PRC) to add consideration of Native American culture within the California Environmental Quality Act (CEQA). The goal of AB 52 is to promote the involvement of California Native American Tribes in the decision-making process when it comes to identifying and developing mitigation for impacts to resources of importance to their culture. To reach this goal, the bill establishes a formal role for tribes in the CEQA process. CEQA lead agencies are required to consult with tribes about potential tribal cultural resources in the project area, the potential significance of project impacts, the development of project alternatives, and the type of environmental document that should be prepared. AB 52 specifically states that a project that may cause a substantial adverse change in the significance of a tribal cultural resource is a project that may have a significant effect on the environment.

### 4.15.2 Environmental Setting

An overview of the environmental setting is provided below. This information is provided as context within which to interpret tribal cultural resources in the vicinity of the project area. The following is from the Cultural Resources Survey Report prepared for the proposed project in 2017 by ESA (ESA 2017a).

#### Ethnographic Setting

At the time of Euroamerican contact, the Central Valley was occupied by speakers of the California Penutian language family, specifically the Yokuts. The Yokuts entered the San Joaquin Valley sometime prior to AD 1400, perhaps by force, as indicated by skeletal remains

with fatal wounds inflicted by projectile points. Historically, Yokuts have been divided into three cultural-geographical groupings: Northern Valley, Southern Valley, and Foothills. The project site is within the Southern Valley Yokuts territory, which included Tulare, Buena Vista, and Kern lakes and the lower portions of the Kings, Kaweah, Tule, and Kern rivers.

Southern Valley Yokuts established permanent settlements on high ground near larger bodies of water above flood levels. Housing consisted of small round or oval-shaped structures framed by light wooden poles tied together and topped with tule mats.

Southern Valley Yokuts relied heavily on tule reeds for basketry and making floor mats. Basketry tools, such as awls, were primarily manufactured from large mammal bones. Cordage was constructed from milkweed. Stone was less abundant in the Southern Valley Yokuts territory and lithic material and milling implements were generally obtained through trade. Other items acquired through trade with neighboring groups include Olivella and abalone shells, as well as clam disk monetary beads. Southern Valley Yokuts also used tule to construct watercraft.

Two large Southern Valley Yokuts villages, Golon and Poso de Chane, were located west of present-day Huron (approximately 3 and 5 miles, respectively, west of the project site). Golon appears to have been near the confluence of Los Gatos and Chino Creeks, where a small valley extends through the Gujarral Hills. Poso de Chane was centered on a large watering pool (poso)—in its natural state, the deep pool supported a large swamp attracting wildlife. Later, the area became home to a small Spanish/Mexican agricultural community, which became the town of Coalinga.

### **Assembly Bill 52 Consultations**

On October 27, 2017, the County sent letters via certified mail to the tribal representatives from the Dumna Wo Wah Tribal Government, Table Mountain Rancheria, Picayune Rancheria of Chukchansi Indians, and the Santa Rosa Rancheria Tachi Yokut Tribe notifying them that the project's application was deemed complete and informing the representatives of the 30-days from receipt of the letter to request consultation in writing with the County. Out of the four tribes to whom notification was sent, the County received two responses: Table Mountain Rancheria declined participation and the Dumna Wo Wah Tribe requested consultation in a letter received by the County on November 29, 2017. The County provided a copy of the Cultural Resources Survey Report prepared for this project and attempted to schedule a meeting and engage in discussion with representatives from the Dumna Wo Wah Tribal Government but were unsuccessful in receiving further responses. The County concluded consultation with the Dumna Wo Wah Tribe with a proposal to implement Mitigation Measure CUL-2: Inadvertent Discovery of Archeological or Tribal Cultural Resources. If archaeological or tribal cultural resources are inadvertently discovered, during the course of grading or construction, all ground-disturbing activities within 50 feet of the find will stop. A qualified archaeologist would evaluate the significance of the resources and recommend appropriate treatment measures.

### 4.15.3 Environmental Impact Analysis

#### Methodology

To identify tribal cultural resources within the project area, ESA conducted a records search at the Southern San Joaquin Valley Information Center (SSJVIC) for the proposed project, consulted background information and literature, and completed a pedestrian survey within the project area. The County conducted AB 52 Native American consultations.

#### Thresholds of Significance

According to the CEQA Guidelines Appendix G Environmental Checklist, the following questions were analyzed and evaluated to determine whether impacts to tribal cultural resources are significant.

Would the proposed project:

- Cause a substantial adverse change in the significance of a tribal cultural resource, defined by Public Resources Code Section 21047 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:
  - i) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in PRC Section 5020.1(k), or
  - ii) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of PRC Section 5024.1. In applying the criteria set forth in subdivision (c) of PRC Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe?

#### Project Impact Analysis and Mitigation Measures

This section discusses potential impacts to tribal cultural resources associated with the proposed project and provides Mitigation Measures where necessary.

##### Adverse Change to a Tribal Cultural Resources

---

<b>Impact TRI-1</b>	<b>The proposed project would not cause a substantial adverse change in the significance of a tribal cultural resource listed or eligible for listing in the California Register of Historical Resources, local register of historical resources as defined in Public Resources Code Section 5020.1(k), or by the lead agency pursuant to criteria set forth in Public Resources Code Section 5024.1(c).</b>
---------------------	--

---

#### Impact Analysis

The records search and survey performed as part of the cultural resources analysis did not result in the identification of known tribal cultural resources within or near the study area. Notice of the project was provided to the following tribal governments in compliance with AB 52: The Dumna Wo Wah Tribal Government, the Picayune Rancheria of the Chukchansi Indians, the Santa Rosa Rancheria Tachi Yokut Tribe, and the Table Mountain Rancheria Tribal Government. Only



the Dumna Wo Wah Tribal Government requested consultation. County staff provided the cultural report, which determined that there were no tribal cultural resources present at the project sites. The tribe did not offer any new information regarding the presence of other resources, and consultation was concluded on April 11, 2018. Thus, the proposed project is not anticipated to have an impact on any known tribal cultural resources.

However, subsurface construction activities such as trenching and grading associated with the proposed project could potentially damage or destroy previously undiscovered tribal cultural resources. Therefore, Mitigation Measure CUL-1, which involves retaining a qualified project archaeologist, and Mitigation Measure CUL-2, which includes protocol for inadvertent discovery of archaeological and tribal cultural resources, would be implemented for the proposed project throughout construction activities. With the implementation of Mitigation Measures CUL-1 and CUL-2, potential impacts would be reduced to a less than significant level.

#### **Level of Significance Before Mitigation**

Potentially Significant Impact.

#### **Mitigation Measures**

Mitigation Measures CUL-1 and CUL-2 would be required (see Section 4.5, Cultural Resources)

#### **Level of Significance After Mitigation**

Less Than Significant Impact with Mitigation Incorporated.

### **4.15.4 Cumulative Impacts**

The geographic scope of the cumulative impact analysis for cultural resources is the project site and a 0.5-mile buffer. The proposed project is not anticipated to have an impact on any known or potential tribal cultural resources during construction, operation, or decommission of the proposed project. However, subsurface construction activities such as trenching and grading associated with the proposed project could potentially damage or destroy previously undiscovered unique tribal cultural resources. As no identified tribal cultural resources would be impacted by the proposed project, this analysis of cumulative impacts on tribal cultural resources is limited to construction impacts on previously unidentified resources that could occur as a result of the proposed project and where the same unidentified resources could also be affected by the other related projects within the 0.5-mile buffer. The Westlands Solar Master Plan project includes construction of the gen-tie line at the Gates Substation, which would fall within the 0.5-mile buffer.

The Westlands Solar Master Plan project could take place in the immediate vicinity as the proposed project, and there is some potential that the proposed project and the Westlands Solar Master Plan project could affect unknown tribal cultural resource or result in cumulatively significant impacts on unknown tribal cultural resources. The Westlands Solar Master Plan would mitigate its potential impacts to tribal cultural resources through implementation of Mitigation Measures CUL-1 through CUL-3 from the Westlands EIR. Mitigation Measure CUL-1 from the Westlands Solar Master Plan EIR requires cultural resource surveys before ground disturbance, pre-construction worker training and tribal coordination, and implementation of procedures for inadvertent discovery of cultural resources. MM CUL-2 from the Westlands Solar Master Plan EIR includes protections and procedures for discovery of human remains, which may include Native American remains. MM CUL-3 includes measures for the protection of tribal

cultural resources through consultation with Native American tribes and mitigation for tribal cultural resources as individual projects from the Master Plan are developed. Therefore, with the implementation of mitigation, the total impact of the Westlands Solar Master Plan on unknown tribal cultural resources within the area of cumulative analysis would be less than significant, and the contribution from the proposed project would not be cumulatively considerable.

**This page left intentionally blank.**

## 4.16 UTILITIES AND SERVICE SYSTEMS

This section describes the impacts on utilities and service systems that would result from implementation of the Fifth Standard Solar Facility Project Complex (proposed project). Included is a review of existing conditions, a summary of applicable policies and regulations related to utilities and service systems, and analysis of the environmental impacts of the proposed project on utilities and service systems. Where applicable, Mitigation Measures are included for significant impacts. The County did not receive any scoping comments regarding utilities and service systems (Appendix A).

### 4.16.1 Regulatory Setting

#### Federal

No federal regulations pertaining to utilities and service systems apply to the proposed project.

#### State

##### California Integrated Waste Management Act

The Integrated Waste Management Act was enacted in 1989 as Assembly Bill (AB) 939 and codified in Public Resources Code (PRC) Section 40050 et seq. The Act requires cities and unincorporated portions of counties throughout California to divert a minimum of 25% of solid waste from landfills by 1995 and 50% by 2000. Diversion includes waste prevention, reuse, and recycling. The Act resulted in the creation of the California Integrated Waste Management Board, which now is known as CalRecycle. Under the Act, jurisdictions also have to submit solid waste planning documentation to CalRecycle. The Act also set into place a comprehensive statewide system of permitting, inspections, and maintenance for solid waste facilities and authorized local jurisdictions to impose fees based on the types and amounts of waste generated.

##### Title 22

Title 22 of the California Code of Regulations (CCR) discusses an array of requirements with respect to the disposal and recycling of hazardous and universal wastes. Specific standards and requirements are included for the identification, collection, transport, disposal, and recycling of hazardous wastes. Additional standards are included for the collection, transport, disposal, and recycling of universal wastes, defined as those wastes identified in Section 66273.9 of Title 22 of CCR, including batteries, electronic devices, mercury-containing equipment, lamps, cathode ray tubes, and aerosol cans. Requirements include recycling, recovery, returning spent items to the manufacturer, or disposal at an appropriately permitted facility. Division 4.5 of Title 22 also provides restrictions and standards relevant to waste destination facilities and provides authorization requirements for various waste handlers. Title 22 includes California's Universal Waste Rule, as well as other waste handling and disposal requirements.

##### Utility Notification Requirements

California Government Code (GC) Section 4216 et seq. requires owners and operators of underground utilities to become members of, participate in, and share the costs of a regional

notification center. Underground Service Alert North (USA North) is the notification center for the project area. USA North receives planned excavation reports and transmits the information to all participating members that may have underground facilities at the location of excavation. The USA North members will then mark or stake their facility, provide information, or give clearance to dig.

## Local

### Fresno County Solar Facility Guidelines

The Fresno County Solar Guidelines include the following item to address issues related to utilities and service systems:

- (2) Information shall be submitted that identifies the source of water for the subject parcel (surface water from irrigation district, individual well(s), conjunctive system). If the source of water is via district delivery, the applicant shall submit information documenting the allocations received from the irrigation district and the actual disposition of the water (i.e., utilized onsite or moved to other locations) for the last 10 years. If an individual well system is used, provide production capacity of each well, water quality data, and data regarding the existing water table depth (County 2017a).

### Fresno County Construction and Demolition Debris Recycling Program

The Fresno County Construction and Demolition Debris Recycling Program is intended to assist the County in compliance with AB 939 (discussed above) and to provide contractors with a way to document the waste reduction requirements included in the California Green Building Standards Code (24 CCR Part 11). The Construction and Demolition Debris Recycling Program would require the Applicant to submit a Waste Management Plan and generate a waste log during construction and demolition (County 2017c).

### Fresno County General Plan

The Fresno County General Plan Public Facilities and Services Element (County 2000b) contains the following policies related to utilities and service systems that are relevant to the proposed project:

**Policy PF-E.11:** The County shall encourage project designs that minimize drainage concentrations and maintain, to the extent feasible, natural site drainage patterns.

**Policy PF-E.13:** The County shall encourage the use of natural stormwater drainage systems to preserve and enhance natural drainage features.

**Policy PF-E.21:** The County shall require the use of feasible and practical best management practices (BMP) to protect streams from the adverse effects of construction activities and shall encourage the urban storm drainage systems and agricultural activities to use BMPs.

**Policy PF-F.4:** The County shall ensure that all new development complies with applicable provisions of the County Integrated Waste Management Plan.

## 4.16.2 Environmental Setting

### Water Supply

The water supply in the County is provided through a system of local groundwater and surface water management and delivery. There are approximately 370 entities providing domestic water in the unincorporated county, of which about 20 serve more than 200 connections. The San Joaquin River and the Kings River are the major sources of surface water for agricultural and urban purposes in the County.

The project site is located within the area served by the Westlands Water District (WWD) (WWD 2017b). Most of WWD's water is delivered through the Central Valley Project via the Sacramento-San Joaquin River Delta and the Delta-Mendota Canal to San Luis Reservoir. WWD has annual contracts for approximately 1,500,000 acre feet (af) of water for environmental, irrigation, and municipal and industrial use, which they distribute through the Central Valley Project to farms and municipalities on a prioritized basis with contract farms, such as the project site being last in line for water delivery. As described in Section 2.0, Project Description, between 2008 and 2017, the project site has had an average annual water use of 3,100 af (comprised of surface and groundwater combined) to serve existing agricultural operations.

#### Surface Water

WWD's regulations define the full allocation of agricultural water within its district. A 100% surface water allocation means that WWD made 2.6 af of water per acre available to farmers within the WWD service area. According to the U.S. Bureau of Reclamation and WWD, the WWD anticipates receiving 50% of its contractual water from the Central Valley Project in an average year (ESA 2018a). Over the past 42 years (1977-2018) the project site has received its full water allocation sixteen times and only once within the last 10 years for which data was provided through 2018. The landowner has diverted all WWD surface water allocation to other land holdings that are more profitable, except in years where the allocation was close to 100%.

#### Groundwater

WWD does not supply groundwater to farmers or control groundwater pumping (individuals pump their own groundwater). WWD does, however, survey the static water levels in the wells and the water quality and quantity of the pumped groundwater, as part of the Groundwater Management Plan completed under provisions of AB 3030 in 1996 (WWD 2012). In some years, irrigation needs have been completely supplied through the pumping of groundwater from four irrigation wells located near the project site. Except for 4 years in the period from 1990 to 2018, groundwater was either the primary (50% or more) and at times the only source of water for irrigation due to surface water being diverted as further described in Section 2.0, Project Description. However, the physical characteristics of the wells and aquifer create chemical imbalances, which result in water quality at the project site having a high salt content. The chemical imbalances can constrain plant growth. As noted previously in Section 2.0, Project Description, soils in the area have elevated salinity levels, which is a common condition among the soils on the west side of the County. Depending on the crop, elevated soil salinity can reduce yields and would require additional management measures, such as supplemental applications of water, fertilizer, and amendments for agricultural uses. The project site currently



has six wells, four of which are active. The proposed project would rely entirely on groundwater pumping; however, depending on available quantities, the Applicant may also be able to obtain water from the WWD. Table 4.16-1 provides a summary of the four irrigation wells' capacities.

**Table 4.16-1: Project Site Well Capacity**

Well ID	Standing Water Level (feet below ground surface)	Pumping Water Level (feet below ground surface)	Acre Feet per Minute
21-1	431	535	0.003
27-2	424	521	0.006
28-2	473	596	0.004
34-4	434	Data not available	0.005

#### Effluent Water

In 2015, Los Gatos Tomato Processing Facility applied for and received revised Classified Conditional Use Permit (CUP) No. 3510 to allow an increase in land application area for processed wastewater from 4,676.66 acres to 6,263.08 acres (an additional 1,586.42 acres) for wastewater discharge from the existing tomato processing plant. The Fifth Standard parcels are within the area allowed to receive discharge water. Although a large land application area is permitted for the beneficial reuse of the effluent, only a fraction of that land area is used in a typical year. Crops that may receive effluent include winter wheat, cotton, processing tomatoes, alfalfa, sorghum, sudangrass, or other suitable crops. Currently, the Los Gatos Tomato Processing Facility effluent produced only requires 480 acres of alfalfa to dispose of their effluent, and none of that acreage is within the project site.

The California Department of Water Resources issued its most recent Waste Discharge Requirement Order R5-2017-0022 on March 13, 2017. The order requires specific conditions and monitoring requirements that must be maintained by Los Gatos Tomato Processing Facility to ensure that wastewater effluent is of sufficient quality in terms of nutrient loads, salt content, solids, etc. to avoid degrading the groundwater in the land application area. Groundwater and soil monitoring occurs on a quarterly basis to ensure the protection of the land application areas.

#### Wastewater

Wastewater service is not currently provided at the project site. Within the County, rural areas generally use onsite septic systems for wastewater disposal. Portable sanitary facilities would be provided at the project site during construction and decommissioning. Sanitary wastes would be contained in portable facilities, collected at least weekly, and disposed of at an offsite disposal or treatment facility.

## Stormwater

The Project site is located within the scope of the *Water Quality Control Plan for the Tulare Lake Basin (Control Plan)*. Onsite water conveyance infrastructure consists of temporary agricultural ditches in several portions of the site. Other than these ditches, no drainage facilities that have connectivity to any natural water features are located onsite. As indicated in the *Control Plan*, direct precipitation typically percolates into valley groundwater if not lost through consumptive use, evapotranspiration, or evaporation (Central Valley RWQCB 2004). When adequate rainfall occurs on the project site to produce runoff, it likely drains from the project site and/or percolates directly into the ground after a relatively short travel distance. See Section 4.9, Hydrology and Water Quality, for further discussion of drainage.

## Solid Waste Management

The Fresno County Department of Public Works and Planning operates one landfill and one small transfer station for solid waste disposal. Collection throughout the county is divided into 13 service areas; the project site is located within the Mid Valley Disposal Company service area. The American Avenue Landfill is located approximately 4 miles southwest of the city of Kerman, approximately 33 miles north of the project site (County 2017d). The landfill is permitted to receive 2,200 tons of waste per day; it had a remaining capacity of approximately 29,358,535 cubic yards as of July 29, 2005, and is expected to reach its permitted capacity in 2031 (CalRecycle 2017).

### 4.16.3 Environmental Impacts

This section analyzes the proposed project's potential to result in significant impacts related to utilities and service systems. If an impact was determined to be significant, Mitigation Measures are identified that would reduce or avoid that impact.

#### Methodology

The proposed project's impacts were compared to the thresholds of significance to determine whether it would result in a significant change to utilities and service systems.

#### Thresholds of Significance

According to the CEQA Guidelines Appendix G Environmental Checklist, the following questions were analyzed and evaluated to determine if impacts to utilities and service systems would be significant:

Would the proposed project:

- Require or result in the relocation or construction of new or expanded water, wastewater treatment, or stormwater drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?
- Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry, and multiple dry years?

- Generate solid waste in excess of state or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?
- Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?

The following question was determined to have no impact during the NOP scoping. This issue is summarized in Section 6.0, Effects Found Not To Be Significant and is not discussed further in this section.

- Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?

### Project Impact Analysis and Mitigation Measures

This section discusses potential impacts to utilities and service systems associated with the proposed project and provides Mitigation Measures where necessary.

#### Water, Wastewater, Storm Drainage, Electric Facilities

---

**Impact USS-1    The proposed project would not result in the relocation or construction of new or expanded water, wastewater treatment or stormwater drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects.**

---

### Impact Analysis

#### Wastewater Treatment

The proposed project would not need any permanent wastewater treatment connection due to its general lack of population onsite during operation. Portable units would be provided during construction. The removal of these facilities would not affect the operation or function of wastewater treatment facilities that are located on or adjacent to the project site. The proposed project would not require the construction or expansion of any offsite wastewater treatment facilities because the project would not connect to an existing wastewater treatment system. The impact would therefore be less than significant.

#### Water Treatment

The proposed project would not require or result in the construction of new water treatment facilities or the expansion of existing water treatment facilities. During project construction and decommissioning, the primary use of water would be for dust control. The total water volume used during construction would be up to 300 af. During the operation and maintenance phase, water would be required for panel washing and maintenance. Expected annual water consumption during operation would be less than 4 to 10 af per year. This consumption is compared to the existing farmland uses at the project site (average annual water use of 3,100 af). The volume of groundwater extracted and applied to the project site over the past decade has been between this range. The project site currently has six wells, four of which are active, which would provide water for construction, operation, and decommissioning. No new wells would be constructed as part of the proposed project. Although panel-washing water may be

treated using a portable truck-mounted filtration system to reduce total dissolved solids concentrations, the proposed project would not construct permanent water treatment facilities and would not result in the need for expanded treatment facilities offsite. The proposed project would therefore have a less than significant impact related to the construction or expansion of water treatment facilities.

#### Stormwater Drainage

No stormwater drainage facilities are proposed to be constructed as part of the proposed project. Grading would be minimized as much as possible. The proposed project would be constructed to follow the existing topography of the project site to limit erosion potential and maintain existing drainage patterns. Battery storage systems would create new impervious surfaces that would represent less than 1% of the surface area of the project site, and the increase in runoff from these areas would represent only a small fraction of the potential runoff from the site. Panel wash water, which would be generated only during dry periods, would evaporate or be absorbed into the ground beneath the panels. Solar array mounts, brackets, and transformers would result in a minor increase in total onsite impervious surfaces. Therefore, the proposed project would not increase or alter runoff patterns such that new or expanded stormwater drainage facilities would be required. The impact would be less than significant.

#### Electric Power and Natural Gas

The proposed project would involve the construction, operation, and decommission of a 150-megawatt (MW) solar photovoltaic (PV) generation facility, a 20-MW solar PV generation facility, and an up to 100-MW energy storage facility. The proposed project would require the construction of a new 230-kV overhead, single-circuit gen-tie line, which would extend approximately 0.3 mile (1,800 feet) from the project substation at the southwestern corner of the project site to the Gates Substation, which is located on an adjacent PG&E-owned parcel. Thus, the electricity-generating facilities and connections proposed as part of the proposed project could result in environmental impacts, which are the subject of this Environmental Impact Report (EIR) (as outlined in Section 2.0, Project Description). The proposed project would receive service power from PG&E, as required, when the proposed project is not powered by onsite energy generation. In addition, solar PV projects do not require the use of natural gas for the power generation process. Due to the general lack of population onsite during operation, the proposed project would not need any permanent electric power and natural gas facilities. Therefore, impacts related to the construction of electric power facilities would be less than significant.

#### Telecommunication Facilities

The proposed project would be designed to employ a Supervisory Control and Data Acquisition (SCADA) system to allow remote control and monitoring of the proposed project's operation. Access to the project's SCADA system would be accomplished with wireless and/or hard-wired connections to locally available commercial service providers. Thus, the telecommunication facilities and connections proposed as part of the project could result in environmental impacts, which are the subject of this EIR (as outlined in Section 2.0, Project Description). Due to the general lack of population onsite during operation, the proposed project would not need any additional telecommunication facilities. Therefore, impacts related to the construction of telecommunication facilities are considered less than significant.

**Level of Significance Before Mitigation**

Less Than Significant Impact.

**Mitigation Measures**

No mitigation is necessary.

**Level of Significance After Mitigation**

Less Than Significant Impact.

**Water Supply**

---

**Impact USS-2**    **The proposed project would have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry, and multiple dry years.**

---

**Impact Analysis**

The total water volume used during construction may be up to 300 af. The project site currently has six wells, four of which are active. No new wells would be constructed as part of the proposed project. Construction water would be acquired from existing onsite wells, and the demand would be temporary.

After construction, operation and maintenance of the proposed project would require approximately 4 to 10 af of water annually for panel washing, maintenance, and dust suppression. Decommissioning activities would require an amount of water that is comparable to construction (300 af). This consumption is compared to the roughly 3,100 af of water that has been applied to the land over the last 12 years (based on 2 af per acre) (ESA 2018a). Since the proposed project would require a lower volume of water, the existing groundwater wells would be adequate, and no new or expanded entitlements would be required.

Similar to construction, water for operation would likely be obtained through existing onsite wells. However, depending on available quantities, the Applicant may also be able to obtain water from the WWD. The operational demand is not expected to result in adverse water supply reliability impacts as the estimated demand is lower than the existing demand for agricultural production, and sufficient water supply is available in the project area to meet project construction and operational requirements. The impact would therefore be less than significant.

**Level of Significance Before Mitigation**

Less Than Significant Impact.

**Mitigation Measures**

No mitigation is necessary.

**Level of Significance After Mitigation**

Less Than Significant Impact.

---

Landfill Capacity

---

**Impact USS-3**    **The proposed project would not generate solid waste in excess of state or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals.**

---

**Impact Analysis**

During construction, the proposed project would involve the transport of general construction materials (e.g., concrete, aggregate, wood, metal, and fuel), as well as the materials necessary to construct the proposed PV and battery storage systems. Solid waste generated during construction would include debris such as concrete, wood, brick, glass, plastics, scrap metal, and similar material. Construction waste that is generated at the project site would be sorted to separate recyclable and nonrecyclable materials. Such waste would be stored in dumpsters that would be serviced by a licensed solid waste hauler in the County. Non-hazardous construction debris generated would be disposed of in local landfills in accordance with applicable regulations. Soils from drilling, trenching, or excavation would be screened and separated for use as backfill at the site of origin to the maximum extent possible.

A construction waste recycling program would be implemented with the objective of recycling at least 65 percent of the project waste (by weight), pursuant to the California Green Building Standards Code. All solid construction wastes would be disposed of or recycled by qualified service providers. In order to accommodate directing of construction materials to proper end-point destinations, contractors and workers would be educated on waste sorting, appropriate recycling storage areas, and measures to reduce landfill waste.

Construction materials would be sorted onsite throughout construction and transported to appropriate waste management facilities. Non-hazardous construction materials that cannot be reused or recycled will be disposed of at municipal county landfills.

Operation and Maintenance of the proposed project is not expected to generate hazardous waste on a recurring basis. The transformers proposed to be located at the project substation would use mineral oil for cooling purposes, and certain battery technologies may include materials considered hazardous. Discussion of hazardous waste disposal at the site is located in Section 4.8, Hazards and Hazardous Materials.

Nonhazardous solid waste generated during operations would consist of paper, wood, plastic, cardboard, deactivated equipment and parts, defective or broken electrical materials, empty nonhazardous containers, and other miscellaneous solid wastes. The operator will remove solid waste on a regular basis.

At the end of the proposed project's life, the PV panels will be evaluated to determine their value in a secondary market. If not resold or repurposed, they would be recycled. The majority of the remaining proposed project components would be recycled. Equipment, such as drive controllers, inverters, transformers, and switchgear, can be either reused or their components recycled. Poured concrete pads would be removed and recycled or reused as clean fill.

Batteries are proposed for use as part of the solar facility. The use and disposal of batteries would be controlled via California's Universal Waste Regulations (Section 66273 of Title 22). As outlined in Section 4.8, Hazards and Hazardous Materials, there are several possible disposal and recycling locations including Recycle PV and First Solar. Disposal of these materials would



occur in accordance with applicable regulations. Proposed project construction and decommissioning would require disposal of up to 20 cubic yards of solid waste per week.

The American Avenue Landfill is permitted to receive 2,200 tons of waste per day and is expected to reach its permitted capacity in 2031 (CalRecycle 2017). Based on the anticipated landfill capacity, sufficient capacity would be available to handle disposal of nonrecyclable waste generated by the proposed project during construction and the majority of the proposed project's lifespan.

Throughout the project's lifespan, in order to comply with the California Integrated Waste Management Act, the County would continue to be required to demonstrate on a 5-year reporting cycle that it has at least 15 years of remaining landfill capacity available within the County and that waste is minimized through recycling and other diversion methods. Accordingly, the impact would be less than significant.

#### **Level of Significance Before Mitigation**

Less Than Significant Impact.

#### **Mitigation Measures**

No mitigation is necessary.

#### **Level of Significance After Mitigation**

Less Than Significant Impact.

#### Solid Waste Regulatory Compliance

---

**Impact USS-4    The proposed project would comply with federal, state, and local management and reduction statutes and regulations related to solid waste.**

---

#### **Impact Analysis**

The proposed project would generate waste during construction, operation, and decommissioning. Proposed project construction and decommissioning would require disposal of up to 20 cubic yards of solid waste per week. Construction waste would include the disposal of some material that could not be recycled or reused. As described under Impact USS-3, a construction waste recycling program would be implemented with the objective of recycling at least 65 percent of the project waste (by weight), pursuant to the California Green Building Standards Code. Such efforts would be consistent with the California Integrated Waste Management Act. All solid construction wastes would be disposed of or recycled by qualified service providers. In order to accommodate directing of construction materials to proper end-point destinations, contractors and workers would be educated on waste sorting, appropriate recycling storage areas, and measures to reduce landfill waste. The use and disposal of batteries would be controlled via California's Universal Waste Regulations (Section 66273 of Title 22), as further outlined in Section 4.8, Hazards and Hazardous Materials. During operation and decommissioning, project waste would be disposed of consistent with state and local requirements and policies. The nonrecyclable portion of waste generated would not be substantial and would be disposed of in the American Avenue Landfill or new facilities developed in accordance with the County's 5-year review of remaining landfill capacity. As a result, the proposed project would result in less than significant impacts related to conflicts with statutes and regulations regarding solid waste.

### **Level of Significance Before Mitigation**

Less Than Significant Impact.

### **Mitigation Measures**

No mitigation is necessary.

### **Level of Significance After Mitigation**

Less Than Significant Impact.

## **4.16.4 Cumulative Impacts**

The proposed project would have less than significant impacts to utilities and service systems during construction, operation, and decommissioning with respect to wastewater treatment requirements, expansion of water or wastewater, expansion of stormwater facilities, water supply, and landfill capacity. The proposed project would not exceed wastewater requirements, would not require the construction or expansion of any offsite wastewater treatment facilities, nor would it increase or alter runoff patterns such that new or expanded stormwater drainage facilities would be required; therefore, these topics are not discussed further in this cumulative analysis.

Cumulative impacts to utilities or service systems have the potential to occur within the utility service areas if multiple projects have a combined impact on local utility services or infrastructure. As discussed in Section 4.16.3 Environmental Impacts, during construction, it is anticipated that the total water volume used may be up to 300 af and would be acquired from existing onsite wells, and the demand would be temporary. Expected annual water consumption during operation would be 4 to 10 af per year. This consumption is compared to the existing farmland uses at the project site (average annual water use of 3,100 af). Water demand for the proposed project is not expected to result in adverse water supply reliability impacts because the estimated demand is lower than the existing demand for agricultural production and sufficient water supply is available. Therefore, the proposed project would not contribute to a cumulatively considerable impact.

Local area landfills could be impacted due to the increased cumulative need for disposal of construction debris. Based on the anticipated landfill capacity described in Section 4.16.2, Environmental Setting, sufficient capacity would be available to handle disposal of waste generated by the proposed project during construction and the majority of the proposed project's lifespan. In order to comply with the California Integrated Waste Management Act, the County would continue to be required to demonstrate on a 5-year reporting cycle that it has at least 15 years of remaining landfill capacity available within the County and that waste is minimized through recycling and other diversion methods. Accordingly, such requirements for waste diversion and recycling that would apply to the proposed project also would apply to other projects in the cumulative scenario, and the total volume of waste that would be landfilled under the cumulative scenario is not expected to exceed the permitted capacity of available landfills. Therefore, the proposed project's incremental contribution to capacity concerns would not be cumulatively considerable.

The proposed project would not result in impacts related to conflicts with statutes and regulations regarding solid waste; therefore, the proposed project would not contribute to a cumulative impact.

**This page left intentionally blank.**

## 4.17 WILDFIRE

This section describes potential wildfire impacts that may result from the construction and operation of the Fifth Standard Solar Facility Project Complex (proposed project). It also describes the existing wildfire conditions of the project site and surroundings, considers applicable goals and policies, analyzes potential environmental impacts, and includes Mitigation Measures to reduce or avoid adverse impacts where applicable.

### 4.17.1 Regulatory Setting

#### Federal

There are no federal regulations that apply to the proposed project pertaining to wildfire.

#### State

California Department of Forestry and Fire Protection

The California Department of Forestry and Fire Protection (CAL FIRE) protects the people of California from fires; responds to emergencies; and protects and enhances forest, range, and watershed values providing social, economic, and environmental benefits to rural and urban citizens. CAL FIRE's firefighters, fire engines, and aircraft responded to an average of more than 6,284 wildland fires in 2018 (CAL FIRE 2019b). The Office of the State Fire Marshal supports CAL FIRE's mission to protect life and property through fire prevention engineering programs, law and code enforcement, and education. The Office of the State Fire Marshal provides for fire prevention by enforcing fire-related laws in state-owned or operated buildings, investigating arson in California, licensing those who inspect and service fire protection systems, approving fireworks as safe and sane for use in California, regulating the use of chemical flame retardants, evaluating building materials against fire safety standards, regulating hazardous liquid pipelines, and tracking incident statistics for local and state emergency response agencies.

California Public Resources Code

*Fire Hazard Severity Zones – Public Resources Code Sections 4201–4204*

California Public Resources Code (PRC) Sections 4201–4204 and Government Code (GC) Sections 51175–89 direct CAL FIRE to map areas of significant fire hazards based on fuels, terrain, weather, and other relevant factors. These zones, referred to as fire hazard severity zones, were defined for the purpose of identifying measures to be taken to reduce the rate of spreading and the potential intensity of uncontrolled fires that threaten to destroy resources, life, or property. The project site is not within a very high fire hazard severity zone (CAL FIRE 2007a).

California Fire Code

The 2016 California Fire Code (Title 24, Part 9 of the California Code of Regulations [CCR]) establishes regulations to safeguard against the hazards of fire, explosion, or dangerous conditions in new and existing buildings, structures, and premises. The California Fire Code

also establishes requirements intended to provide safety for and assistance to firefighters and emergency responders during emergency operations. The provisions of the Fire Code apply to the construction, alteration, movement, enlargement, replacement, repair, equipment, use and occupancy, location, maintenance, removal, and demolition of every building or structure throughout California. The Fire Code includes regulations regarding fire-resistance-rated construction, fire protection systems such as alarm and sprinkler systems, fire services features such as fire apparatus access roads, means of egress, fire safety during construction and demolition, and wildland-urban interface areas. The County has adopted the California Fire Code in its Municipal Code as part of their building and construction regulations (Title 15, Chapter 15.10).

## Local

### Fresno County General Plan

The following lists goals and policies from the Fresno County 2000 General Plan pertaining to wildfire that are applicable to the proposed project.

**Goal HS-B:** To minimize the risk of loss of life, injury, and damage to property and natural resources resulting from fire hazards.

**Policy HS-B.1:** The County shall review project proposals to identify potential fire hazards and to evaluate the effectiveness of preventive measures to reduce the risk to life and property.

**Policy HS-B.3:** The County shall require that development in high fire hazard areas have fire resistant vegetation, cleared fire breaks separating communities or clusters of structures from native vegetation, or a long-term comprehensive vegetation and fuel management program. Fire hazard reduction measures shall be incorporated into the design of development projects in fire hazard areas.

**Policy HS-B.5:** The County shall require development to have adequate access for fire and emergency vehicles and equipment.

**Policy HS-B.8:** The County shall refer development proposals in the unincorporated County to the appropriate local fire agencies for review of compliance with fire safety standards. If dual responsibility exists, both agencies shall review and comment relative to their area of responsibility. If standards are different or conflicting, the more stringent standards shall apply.

### Fresno County Office of Emergency Services Operational Area Master Emergency Services Plan

The Fresno County Office of Emergency Services prepared the Operational Area Master Emergency Services Plan to serve as a guide for response to an emergency or disaster in the unincorporated areas of the County, and to coordinate and assist with the disaster response in jurisdictions both within and outside of the County. In addition to the *Fresno County Operational Area Master Emergency Services Plan*, hazard-specific response plans and standard operating procedures have been developed or are in the process of development to supplement this master plan with disaster- and emergency-specific response procedures and information. The Fresno County Emergency Operations Center is located at 1221 Fulton Street, approximately 40 miles northeast of the project site.

## 4.17.2 Environmental Setting

The project site is used entirely for agricultural production with a recent crop history of tomato and wheat. CAL FIRE does not identify the project site in a local or state responsibility area, or within an area classified within a very high fire hazard severity zone (CAL FIRE 2007a, 2007b). As discussed in the Fresno County General Plan, structural and wildland fires resulting from either natural or manmade causes occur in forests, brush, grasslands, fallow agricultural areas, and vacant lots. Such fires can cause widespread damage to the County's valuable range and forest lands, in addition to threatening the lives and personal property of persons residing in wildfire-prone areas (County 2000a).

## 4.17.3 Environmental Impacts

This section analyzes the proposed project's potential to result in significant impacts related to wildfire. If an impact was determined to be significant, Mitigation Measures are identified that would reduce or avoid that impact.

### Methodology

The following analysis is based on a review of documents pertaining to the project site, including the General Plan, and CAL FIRE's maps of fire hazard severity zones in state and local responsibility areas.

### Thresholds of Significance

According to the California Environmental Quality Act (CEQA) Guidelines Appendix G Environmental Checklist, the following questions were analyzed and evaluated to determine if impacts from wildfire would be significant.

If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:

- Substantially impair an adopted emergency response plan or emergency evacuation plan?
- Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?
- Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?
- Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?

### Project Impact Analysis and Mitigation Measures

This section discusses potential impacts to wildfire associated with the proposed project and provides Mitigation Measures where necessary.



---

Emergency Response or Evacuation Plan

---

**Impact WF-1      The proposed project would not substantially impair an adopted emergency response plan or emergency evacuation plan.**

---

**Impact Analysis**

The project site is not located in a state responsibility area or within a designated very high fire hazard severity zone (CAL FIRE 2007a, 2007b). The proposed project would not require the closure of any public roads during any phase. During construction of the project heavy construction-related vehicles could interfere with emergency response to the site or emergency evacuation procedures in the event of an emergency (e.g., by slowing vehicles traveling behind the truck). However, given that there are no businesses, few residences, and no emergency response stations in the immediate vicinity of the project site, it is not considered likely that heavy construction-related traffic would result in inadequate emergency access.

The County adopted the *Multi-Jurisdictional Hazard Mitigation Plan* (Hazard Mitigation Plan) in May 2018. The purpose of the Hazard Mitigation Plan was to reduce or eliminate long-term risk to people and property from hazards and make the residents of the County and other participating jurisdictions less vulnerable to future hazard events. Floods, wildfires, severe weather, drought, and agricultural hazards are among the hazards that can have a significant impact on the County. The Hazard Mitigation Plan identified goals and objectives for reducing the County's vulnerability to hazards. Those goals and objectives are related to the County's goals and policies within its general plan related to wildfire hazards, earthquake hazards, and flood hazards from dam inundation and flash floods. The proposed project is not within an area identified as having exposure to potential hazards or within an identified evacuation route. Additionally, the proposed project would implement measures compliant with the goals and objectives in the Hazard Mitigation Plan including adequate ingress and egress routes, development set-backs, pest management plans, and weed management plans. Therefore, the proposed project would not impair implementation of an adopted emergency response plan or evacuation plan, and impacts would be less than significant.

**Level of Significance Before Mitigation**

Less Than Significant Impact.

**Mitigation Measures**

No mitigation is necessary.

**Level of Significance After Mitigation**

Less Than Significant Impact.

---

Exacerbate Fire Risks

---

**Impact WF-2      The proposed project would not exacerbate wildfire risks, and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire due to slope, prevailing winds, and other factors.**

---

**Impact Analysis**

The project site is not located in a state responsibility area or within a designated very high fire hazard severity zone (CAL FIRE 2007a, 2007b). The nearest very high fire hazard severity zone is located 19 miles west of the project site, west of the City of Coalinga in the Coastal Mountain

Range. Given the intervening distance and prevailing wind direction to the south, the proposed project would not exacerbate potential fire conditions to the west of the project site. Therefore, due to its distant location from risk areas and limited onsite personnel, the proposed project would not expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of wildfire. No impact would occur.

#### **Level of Significance Before Mitigation**

No Impact.

#### **Mitigation Measures**

No mitigation is necessary.

#### **Level of Significance After Mitigation**

No Impact.

#### **Installation or Maintenance of Associated Infrastructure**

---

<b>Impact WF-3</b>	<b>The proposed project would not require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment.</b>
--------------------	---

---

#### **Impact Analysis**

The proposed project is not located in a state responsibility area or within a designated very high fire hazard severity zone (CAL FIRE 2007a, 2007b). The proposed project would involve the construction and operation of a solar facility. As discussed in Section 4.8, Hazards and Hazardous Materials, there is potential for the proposed project to cause fire onsite due to the malfunctioning of equipment or faulty electrical equipment that is capable of spontaneous ignition due to overheating. In addition, the proposed project components, coupled with onsite vegetation and undergrowth, could result in potential fire hazards if under hot and dry conditions. The project includes the preparation of a pest and weed management plan consistent with the County's Solar Guidelines. The Applicant would be required to implement the Pest and Weed Management Plan and remove vegetation from the project site to reduce the project's susceptibility to fire. The proposed project would also be required to implement Mitigation Measure HAZ-2, which requires the applicant to prepare a fire protection plan prior to issuance of construction permits. The Fire Protection Plan would include measures such as having internal combustion engines, stationary, and mobile equipped with spark arresters; training personnel in fire safety practices; and including fire-extinguishing equipment on-site. The Applicant would coordinate with CAL FIRE and the Fresno County Fire Protection District to provide fire responders and project staff with appropriate fire response training. The intent of this training would be to familiarize both responders and project staff with potential fire hazards and reduction processes associated with solar power and energy storage facilities. The fire protection plan would be submitted to the Fresno County Fire Protection District for approval prior to the start of construction. Therefore, installation of the proposed project would not exacerbate fire risk, and impacts would be less than significant with implementation of Mitigation Measure HAZ-2.

#### **Level of Significance Before Mitigation**

Potentially Significant Impact.

**Mitigation Measures**

Mitigation Measure HAZ-2 is required.

**Level of Significance After Mitigation**

Less Than Significant Impact with Mitigation Incorporated.

## Downstream Flooding or Landslides

---

**Impact WF-4**      **The proposed project would not expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes.**

---

**Impact Analysis**

The project site is not located in a state responsibility area or within a designated very high fire hazard severity zone (CAL FIRE 2007a, 2007b). In addition, the project site is in a flat area and is not subject to flooding or landslides. Therefore, the proposed project would not expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes. No impact would occur.

**Level of Significance Before Mitigation**

No Impact.

**Mitigation Measures**

No mitigation is necessary.

**Level of Significance After Mitigation**

No Impact.

**4.17.4 Cumulative Impacts**

The geographic scope of the cumulative impact analysis for wildfire is 1 mile. Cumulative impacts regarding wildfire could result from other related projects being located within a state responsibility area or within a designated very high fire hazard severity zone. The proposed project is not located within a state responsibility area, or within a designated very high fire hazard severity zone. However, introduction of the proposed electrical facilities could increase wildfire risk at the project site. As such, implementation of Mitigation Measure HAZ-2 would require the Applicant to implement a fire protection plan to reduce wildfire impacts to a less than significant level. None of the projects listed in Table 4-4 are located within a state responsibility area or a designated very high fire hazard severity zone. The Westlands Solar Park would involve the construction of new solar facilities within Kings County with a gen-tie line at the Gates Substation. The northern Westlands Solar Master Plan gen-tie project would be subject to moderate wildland fire risk in a small area where it crosses the California Aqueduct. Mitigation Measure HAZ-6 in the Westlands Solar Master Plan required the gen-tie project proponent to prepare a fire protection and safety plan to be implemented during all construction activities associated with the north gen-tie project and to coordinate with CAL FIRE and the affected county(s), as applicable. Future projects with the potential to impact wildfire would be reviewed under CEQA and would be required to prevent or minimize impacts to wildfire through the development of project alternatives, Mitigation Measures, and mitigation monitoring. Standard mitigation for solar projects includes the preparation of fire protection plans similar to the

proposed project and the Westlands Solar Master Plan. Other measures would include setbacks and fire breaks. The proposed project includes those measures as part of the site layout and fire protection plan. Therefore, the proposed project and other related projects would not result in cumulative impacts.

**This page left intentionally blank.**

## 4.18 ENERGY

The California Environmental Quality Act (CEQA) Guidelines amendment effective December 28, 2018, updated Section 15125.2, Consideration and Discussion of Significant Environmental Impacts, with a new subsection (b) that requires analysis of energy impacts. Pursuant to the CEQA Guidelines amendments, an Environmental Impact Report (EIR) must analyze whether project results in “wasteful, inefficient, or unnecessary” energy consumption, determine significance, and include energy efficiency measures, if necessary. This section of the Draft EIR responds to the new checklist questions included in Appendix G of the CEQA Guidelines.

### 4.18.1 Regulatory Setting

#### Federal

##### Federal Energy Regulatory Commission

The Federal Energy Regulatory Commission is an independent agency that regulates the interstate transmission of electricity, natural gas, and oil. The Federal Energy Regulatory Commission also reviews proposals to build liquefied natural gas terminals and interstate natural gas pipelines as well as licensing hydropower projects. Licensing of hydroelectric facilities under the authority of the Federal Energy Regulatory Commission includes input from state and federal energy and power generation, environmental protection, fish and wildlife, and water quality agencies.

##### Federal Energy Conservation Policy Act

The National Energy Conservation Policy Act (42 U.S. Code [USC] §8201 et seq.) serves as the underlying authority for federal energy management goals and requirements and is the foundation of most federal energy requirements. The National Energy Conservation Policy Act also established fuel economy standards for on-road motor vehicles in the United States. The National Highway Traffic Safety Administration (NHTSA) is responsible for establishing additional vehicle standards and for revising existing standards. NHTSA and the U.S. Environmental Protection Agency (EPA) are taking coordinated steps to enable the production of clean energy vehicles with improved fuel efficiency. NHTSA sets the Corporate Average Fuel Economy (CAFE) levels, which are rapidly increasing over the next several years to improve energy security and reduce fuel consumption. The first phase of the CAFE standards (for model years 2017 to 2021) is projected to require a range from 40.3 to 41.0 miles per gallon in model year 2021 on an average industry fleet-wide basis. The second phase of the CAFE program (for model years 2022 to 2025) is projected to require a range from 48.7 to 49.7 miles per gallon in model year 2025 on an average industry fleet-wide basis. The second phase of standards has not been finalized due to the statutory requirement that NHTSA set average fuel economy standards not more than five model years at a time.

#### State

##### California Public Utilities Commission Requirements

The California Public Utilities Commission (CPUC) is a state agency created by a constitutional amendment to regulate privately-owned utilities providing telecommunications, electric, natural



gas, water, railroad, rail transit, and passenger transportation services and in-state moving companies. The CPUC is responsible for ensuring that California utility customers have safe, reliable utility services at reasonable rates, while protecting utility customers from fraud. The CPUC regulates the planning and approval for the physical construction of electric generation, transmission, or distribution facilities; and local distribution pipelines of natural gas.

#### Warren-Alquist Energy Resources Conservation and Development Act

Initially passed in 1974 and amended since, the Warren-Alquist Energy Resources Conservation and Development Act (Warren-Alquist Act) created the California Energy Commission (CEC), California's primary energy and planning agency. The seven responsibilities of the CEC are forecasting future energy needs, promoting energy efficiency and conservation through setting standards, supporting energy-related research, developing renewable energy resources, advancing alternative and renewable transportation fuels and technologies, certifying thermal power plants 50 megawatts (MW) or larger, and planning for and directing state response to energy emergencies. The CEC regulates energy resources by encouraging and coordinating research into energy supply and demand problems to reduce the rate of growth of energy consumption. Additionally, the Warren-Alquist Act acknowledges the need for renewable energy resources and encourages the CEC to explore renewable energy options that would be in line with environmental and public safety goals (Warren-Alquist Act Public Resources Code (PRC) section 25000 et seq.)

#### California Integrated Energy Policy

Senate Bill (SB) 1389 requires the CEC to "conduct assessments and forecasts of all aspects of energy industry supply, production, transportation, delivery and distribution, demand, and prices. The Energy Commission shall use these assessments and forecasts to develop energy policies that conserve resources, protect the environment, ensure energy reliability, enhance the state's economy, and protect public health and safety." (PRC Section 25301(a)). The CEC adopts an Integrated Energy Policy Report every two years and an update every other year (CEC 2019). At the time of the Notice of Preparation (NOP) publication, the CEC had published its 2016 report in February 2017.

#### California Renewables Portfolio Standard

California's Renewables Portfolio Standard (RPS), established in 2002 by SB 1078, with the initial requirement that 20% of electricity retail sales be served by renewable resources by 2017. The program was accelerated in 2006 under SB 107, which required that the 20% mandate be met by 2010. In April 2011, SB 2 (1X) was signed into law, requiring electricity retailers in the state to procure 33% of their energy sources from renewable energy sources by the end of 2020 (CPUC 2019). In addition, SB 350, passed in 2015, directs California utilities to further increase the amount of renewable energy delivered to customers to 50% by 2030.

CPUC implements and administers RPS compliance rules for California's retail sellers of electricity, which include large and small investor-owned utilities, publicly owned utilities, electric service providers, and community choice aggregators. The CEC is responsible for the certification of electrical generation facilities as eligible renewable energy resources and adopting regulations for the enforcement of RPS procurement requirements of public owned utilities.

## Local

### Fresno County Solar Facility Guidelines

The Fresno County Board of Supervisors has adopted Solar Facility Guidelines that provide general guidelines and policies, as well as an outline for the process of evaluating solar facilities within the County. The Solar Facility Guidelines were revised December 2017. The overall goal of the Solar Facility Guidelines is to accommodate new renewable energy technology while protecting important farmlands and minimizing impacts to existing agricultural operations (County 2017a). This project's consistency with the Solar Facility Guidelines is discussed throughout Section 4 of this Draft EIR.

#### 4.18.2 Environmental Setting

Pacific Gas and Electric (PG&E) is an investor-owned utility company that provides electricity and natural gas supplies and services to approximately 16 million people throughout a 70,000 square-mile service area in northern and central California, which includes Fresno County (PG&E 2019).

California's RPS Program was enacted in 2002 and accelerated in 2006, requiring investor-owned utilities to obtain 20% of their electric supply from renewable energy sources, such as solar, by 2010. On April 12, 2011, Governor Brown signed SB 2X, requiring California retail electric providers, such as PG&E, to procure 33% of their retail energy sales from eligible renewable sources by 2020. Most recently, Governor Brown signed into legislation SB 350 in October 2015, which requires retail sellers and publicly owned utilities to procure 50% of their electricity from eligible renewable energy resources by 2030 (CPUC 2019). In February 2018, PG&E announced that it had reached California's 2020 renewable energy goal 3 years ahead of schedule, and now delivers nearly 80% of its electricity from greenhouse gas (GHG)-free resources. As of 2017, approximately 33% of PG&E's electricity comes from renewable resources including solar, wind, geothermal, biomass and small hydroelectric sources. Additionally, 78.8% of PG&E's total electric power mix is from GHG-free sources including nuclear, hydro, and renewable sources of energy (PG&E 2018).

The proposed project would involve construction and operation of a 150 MW photovoltaic (PV) solar facility, a 20 MW PV solar facility, and an up to 100 MW battery storage facility. These components would connect to PG&E's existing Gates Substation via a new 230 kilovolt (kV) overhead generation tie (gen-tie) line to distribute electricity to customers within the local and regional grid by PG&E. The proposed project would operate year-round to generate electricity from the PV facilities during daylight hours, and the battery storage system would be used to dispatch additional electricity during either daylight or non-daylight hours.

#### 4.18.3 Environmental Impacts

This section analyzes the proposed project's potential to result in significant impacts related to energy. If an impact was determined to be significant, Mitigation Measures are identified that would reduce or avoid that impact.

## Methodology

The proposed project's impacts were compared to the thresholds of significance to determine whether it would result in a significant impact to energy.

## Thresholds of Significance

According to the CEQA Guidelines Appendix G Environmental Checklist, the following questions were analyzed and evaluated to determine if impacts to energy would be significant.

Would the proposed project:

- Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources during project construction or operation?
- Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?

## Project Impact Analysis and Mitigation Measures

This section discusses potential impacts to energy associated with the proposed project and provides Mitigation Measures where necessary.

### Energy Consumption

---

**Impact EN-1      The proposed project would not result in potentially significant environmental impacts due to wasteful, inefficient, or unnecessary consumption of energy resources during project construction or operation.**

---

## Impact Analysis

### Construction and Decommissioning Energy Demand

EPA regulates non-road diesel engines. EPA has no formal fuel economy standards for non-road (e.g., construction) diesel engines but does regulate diesel emissions, which indirectly affect fuel economy. In 1994, EPA adopted the first set of emissions standards (Tier 1) for all new non-road diesel engines greater than 37 kilowatts (kW) (50 horsepower [hp]). The Tier 1 standards were phased in for different engine sizes between 1996 and 2000, reducing Nitrogen Oxides (NO<sub>x</sub>) emissions from these engines by 30%. EPA has since adopted more stringent emission standards for NO<sub>x</sub>, hydrocarbons, and particulate matter from new non-road diesel engines. This program includes the first set of standards for non-road diesel engines that are less than 37 kW. It also phases in more stringent Tier 2 emission standards from 2001 to 2006 for all engine sizes and adds yet more stringent Tier 3 standards for engines that are between 37 and 560 kW (50 and 750 hp) from 2006 to 2008. These standards will further reduce non-road diesel engine emissions by 60% for NO<sub>x</sub> and 40% for Particulate Matter (PM) from Tier 1 emission levels. In 2004, EPA issued the Clean Air Non-Road Diesel Rule. This rule, which took effect in 2008 and was fully phased in by 2014, will cut emissions from non-road diesel engines by more than 90%. These emission standards are intended to promote advanced clean technologies for non-road diesel engines that improve fuel combustion, but they also result in slight decreases in fuel economy.

The proposed project includes Mitigation Measure AIR-1, which would limit idling of equipment and vehicles on-site, however, the project's compliance with San Joaquin Valley Air Pollution Control District's (SJVAPCD's) Rule 9510 Indirect Source Review would reduce fuel usage through the implementation of cleaner off-road construction equipment to meet the required emission reductions pursuant to regulatory requirements.

Construction and decommissioning activities associated with the proposed project would result in the consumption of petroleum-based fuels. There are no unusual project characteristics that would necessitate the use of construction equipment that would be less energy efficient than at comparable construction sites in other parts of the state. Therefore, it is expected that construction fuel consumption associated with the proposed project would not be any more inefficient, wasteful, or unnecessary than at other construction sites in the region.

#### Long-Term Energy Demand

The proposed project would receive service power from PG&E to operate and would use a minimal amount of electricity per year. Based on the anticipated capacity of the proposed project to provide 170 MW (170,000 kW) alternating current, it is estimated the proposed project would generate approximately 347,480,000 kW hours per year. Therefore, the total power generation would offset the project's total energy consumption and would not result in the inefficient, wasteful, or unnecessary use of energy.

The full-time offsite staff for the proposed project is expected to consist of one site manager, four technicians, and six security personnel. The site manager and technicians would be located in Austin, Texas, and are not expected to travel to and from the project site. Security or operations personnel would be available for dispatch to the project site 24 hours per day, 7 days a week. Staff would be located within a 2-hour drive of the project site. Therefore, minimal daily vehicular fuel consumption would occur during project operation. Based on the GHG evaluation, the proposed project would offset its lifetime emissions from construction, operations (over the 35-year term) and decommissioning emissions after the first 7 months of operations. After all the proposed project's lifetime emissions have been offset, the proposed project would generate a natural gas equivalent of 1,541,143 million British Thermal Units per year (MMBTU/year) or 210,155 MMBTU/year of coal.

Because the proposed project would completely offset its energy demand in the first 7 months of operation and then contribute a substantial source of renewable energy to California's energy supply, the proposed project would have a less than significant impact on long-term energy demand.

#### **Level of Significance Before Mitigation**

Less Than Significant Impact.

#### **Mitigation Measures**

No mitigation is necessary.

#### **Level of Significance After Mitigation**

Less Than Significant Impact.

---

**State or Local Renewable Energy Plan**

---

**Impact EN-2      The proposed project would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency.**

---

**Impact Analysis**

The proposed project involves the construction, operation, and decommissioning of a solar facility that would produce a new renewable source of energy in the County. Therefore, the proposed project itself would support California's RPS goal of procuring additional renewable resources. The proposed project would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency and no impact would occur.

**Level of Significance Before Mitigation**

No Impact.

**Mitigation Measures**

No mitigation is necessary.

**Level of Significance After Mitigation**

No Impact.

**4.18.4 Cumulative Impacts**

The geographic scope of the cumulative impacts for energy is the State of California. The proposed project would construct, operate, and decommission a solar facility capable of producing 170 MW of renewable energy in support of California's RPS and assist California's utilities in meeting their obligations under CPUC's Energy Storage Framework by providing up to 100 MW of storage capacity. Additionally, the proposed project would offset its lifetime energy demands within the first seven months of operation. As such, the proposed project would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency. The proposed project's location near the Gates Substation also facilitates energy efficiency by minimizing energy loss, which occurs through transmission via lengthy (over a mile) gen-tie lines.

The Westlands Solar Park Project would have the greatest impact to energy resources. Like the proposed project, the Westland Solar Park Project would build, operate, and decommission solar projects capable of generating 2,000 MW on approximately 21,000 acres in west-central Kings County. The Westlands Solar Park Project includes an interconnection at the Gates Substation, and construction would involve consumption of fuels for vehicles and equipment. Like the proposed project, the efficient use of fuel is facilitated through compliance with SJVAPCD's Rule 9510 requiring the use of cleaner construction equipment that results in greater fuel efficiency. The Westlands Solar Park Project found that the buildout of its 2,000 MW plan would allow for the decommissioning of several equivalent natural-gas-fired power plants and would have a substantial beneficial effect in terms of reliance on fossil fuels and increasing reliance on renewable energy resources. The Westlands Solar Master Plan would not have an adverse effect in terms of energy conservation and would have a beneficial effect by contributing to the statewide RPS goal.

Both the proposed project and the Westlands Solar Master Plan would interconnect at the Gates Substation, thereby reducing the Substation's capacity to serve additional solar projects.

Future upgrades to utility systems to accommodate renewable energy sources are part of California's Integrated Energy Policy and would be subject to environmental review under CEQA and approval by CPUC and the California Independent System Operator (CAISO). Under CEQA, the CPUC and CAISO would require the prevention and minimization of impacts to energy resources through the development of project alternatives, Mitigation Measures, and mitigation monitoring.

Accordingly, the proposed project would provide a new source of renewable energy and would not result in the wasteful, inefficient, or unnecessary consumption of energy resources during project construction, operations, or decommissioning. As such, the proposed project, in conjunction with the other related projects would not have a cumulatively considerable impact on energy.



**This page left intentionally blank.**

## 5.0 COMPARISON OF ALTERNATIVES

### 5.1 INTRODUCTION

In accordance with the California Environmental Quality Act (CEQA) Guidelines Section 15126.6, this Environmental Impact Report (EIR) contains a comparative impact assessment of alternatives to the Fifth Standard Solar Facility Project Complex (proposed project). The primary purpose of an alternatives analysis is to provide decision-makers and the public with a reasonable number of feasible project alternatives that could attain most of the basic project objectives, while avoiding or reducing any of the project's significant adverse environmental effects. Important considerations for this alternative analysis are noted below (as stated in CEQA Guidelines Section 15126.6).

- An EIR need not consider every conceivable alternative to a project;
- An EIR should identify alternatives that were considered by the lead agency, but rejected as infeasible during the scoping process;
- Reasons for rejecting an alternative include:
  - Failure to meet most of the basic project objectives;
  - Infeasibility; or
  - Inability to avoid significant environmental effects.

#### 5.1.1 Significant Unavoidable Impacts

CEQA requires that alternatives to a proposed project have the potential to avoid or substantially lessen one or more significant effects of the project (CEQA Guidelines Section 15126.6). At the project and/or cumulative level, the Draft EIR has identified the following environmental issues that may result in significant impacts. This list only includes those impacts that were determined to be significant and unavoidable.

#### **Agricultural Resources**

- Convert Important Farmland to Non-Agricultural Use
- Conflict with Existing Zoning or Williamson Act Contract
- Pressures to convert farmland to non-agricultural use

#### **Land Use**

- Conflict with Applicable Plans, Policies, or Regulations

## 5.1.2 Alternatives to the Proposed Project

The three alternatives to the proposed project analyzed in this section are as follows:

**No Project Alternative:** The project site would not be developed and would remain in its existing condition and continue to experience a reduction in agricultural production from water resource allocation constraints.

**Reduced Acreage Alternative:** This alternative would eliminate the Stonecrop facility, reducing the footprint of the Fifth Standard complex. The total megawatt (MW) capacity at the project site would be reduced by 20 MW, and the project footprint would be reduced by approximately 317 acres (Figure 3.0-2).

**Site-West Alternative:** This alternative project site would consist of three noncontiguous parcels totaling 1,019.69 acres, located approximately 4 miles west of the proposed site on both sides of Interstate 5 (I-5), and not under an active Williamson Act Contract (non-contracted lands) (Figure 3.0-3).

## 5.2 PROJECT OBJECTIVES

The objectives of the proposed project are to do the following:

- Construct and operate a solar photovoltaic (PV) power-generating facility capable of producing up to 170 megawatts of alternating electrical current (MW<sub>ac</sub>) in a cost-competitive manner.
- Directly interconnect the California Independent System Operator (CAISO) high-voltage electrical transmission system (grid) to the Gates Substation.
- Assist California utilities in meeting their obligations under California's Renewable Portfolio Standard (RPS) Program, including 60% of retail sales from renewable sources by the end of 2030.
- Assist California utilities in meeting their obligations under the California Public Utilities Commission's (CPUC's) Energy Storage Framework and Design Program, including procurement targets of 1,325 MW by 2020, by providing up to 100 MW of storage capacity.
- Provide renewable-energy-related and diversified job opportunities that will help reduce local unemployment and benefit the local economy.

## 5.3 ALTERNATIVE 1 – NO PROJECT

Under the No Project Alternative, the site would remain in its existing condition.

### 5.3.1 Impact Analysis

The project site is used entirely for agriculture (since 2015, mostly used to produce tomato and wheat) and is classified as Prime Farmland (ESA 2018a). Except for a 1.25-acre parcel located in the interior of the project site, the entire site is under Williamson Act Contracts, all of which

are currently being petitioned for cancellation by the Applicant and landowners. The project site has a history of growing processing tomatoes, wheat, dehydrator bulb onions, garlic, and pima cotton. Since 2014, portions of the project site have been left fallow.

The site's recent crop rotation of tomatoes followed by wheat is typical of the region. The tomato beds are irrigated with subsurface drip, and the source of the irrigation water is a mix of surface water piped in from the irrigation district or from on-farm wells. In the case of wheat, sprinklers are used to irrigate the crop. As described in Section 2.0, Project Description, although groundwater supply may be a concern in the future, under Conditional Use Permit (CUP) No. 3510 issued for the Los Gatos Tomato Processing Facility that allowed an increase in land application area for processed wastewater from 4,676.66 acres to 6,263.08 acres (an additional 1,586.42 acres) for wastewater discharge from the existing tomato processing plant. The Fifth Standard parcels are within the area allowed to receive discharge water. Although a large land application area is permitted for the beneficial reuse of the effluent, only a fraction of that land area is used in a typical year. Notwithstanding the challenges of surface water allocation variability and groundwater quality, the project site has a history of producing agriculture crops that is clear priority to the County as documented in its General Plan policies under the Agricultural Element.

### **Aesthetics**

If the No Project Alternative is implemented, the proposed project would not be constructed or operated, and the project site would continue to be used for agriculture. Therefore, there would be no impact related to aesthetics.

### **Agricultural Resources**

If the No Project Alternative is implemented, the proposed project would not be constructed or operated, and the project site would continue to be used for agricultural production. Consequently, this alternative would result in no conversion of farmland, no conflicts with existing zoning or Williamson Act Contracts, and no physical changes in the environment that could result in the conversion of farmland to non-agricultural use. No impacts to agriculture would occur.

### **Air Quality**

The No Project Alternative would continue the existing farming on the project site and would continue to generate emissions from farm equipment and vehicles.

The proposed project would result in a temporary increase in criteria pollutants and carbon dioxide (CO<sub>2</sub>) from construction of the facility. However, upon operation of the site, the project would offset 170 MW of energy from more-polluting sources, resulting in reduction in emissions of nitrogen oxides (NO<sub>x</sub>), which would not occur under the No Project Alternative.

## Biological Resources

Under the No Project Alternative, the proposed project would not be constructed, operated, or decommissioned, and the project site would continue to be used for agriculture. Therefore, the No Project Alternative would not have an impact on biological resources.

## Cultural Resources

Under the No Project Alternative, the proposed project would not be constructed, operated, and maintained or decommissioned, and the project site would continue to be used for agriculture. Therefore, the no project alternative would have no impact on cultural or paleontological resources.

## Geology and Soils

If the No Project Alternative is implemented, the proposed project would not be constructed or operated, and the project site would continue to be used for agriculture; therefore, there would be no impact related to geology and soils.

## Greenhouse Gas Emissions

The No Project Alternative would continue the existing farming on the project site and would continue to generate greenhouse gas (GHG) emissions from farm equipment and vehicles.

The proposed project would result in a temporary increase in criteria pollutants and carbon dioxide from construction of the facility. However, upon operation of the site, the project would offset 170 MW of energy from more polluting sources. The proposed project would result in a net reduction of 96,168 metric tons of carbon dioxide equivalent (CO<sub>2</sub>e) per year, which would not occur under the no project alternative.

## Hazards and Hazardous Materials

If the No Project Alternative is implemented, the proposed project would not be constructed or operated, and the project site would continue to be used for agriculture; therefore, there would be no impact related to hazards or hazardous materials.

## Hydrology and Water Quality

If the No Project Alternative is implemented, the proposed project would not be constructed or operated; therefore, there would be no impact to hydrology and water quality.

## Land Use and Planning

Under the No Project Alternative, the proposed project would not be constructed, and the project site would remain in agricultural production. Similarly, the Williamson Act Contracts would not require cancellation but would be allowed to non-renew according to established regulations. The Fresno County General Plan designates the project site as Agricultural and the site has an Exclusive Agriculture 20-acre minimum size (AE-20) Zone District. The No Project Alternative would be consistent with the land use and zoning designations and would not conflict

with the Williamson Act Contract. Under the No Project Alternative, no impacts to agriculture would occur.

### **Mineral Resources**

Neither the State Mining and Geology Board nor the County has officially designated the project site or the surrounding area as an aggregate resource area or mineral deposit of statewide or regional significance. Under the No Project Alternative, the proposed project would not be constructed or operated, and the project site would continue to be used for agriculture; therefore, there would be no impact to mineral resources under either of the criteria.

### **Noise**

Under the No Project Alternative, the proposed project would not be constructed, operated, and maintained or decommissioned, and the project site would continue to be used for agriculture. Therefore, the No Project Alternative would have no impact related to noise.

### **Public Services**

If the No Project Alternative is implemented, the proposed project would not be constructed or operated, and the project site would continue to be used for agriculture; therefore, there would be no impacts related to public services.

### **Transportation**

Under the No Project Alternative, the proposed project would not be constructed, operated, and maintained or decommissioned, and the project site would continue to be used for agriculture; therefore, there would be no impacts related to transportation and traffic.

### **Tribal Cultural Resources**

Under the No Project Alternative, the proposed project would not be constructed, operated and maintained, or decommissioned, and the project site would continue to be used for agriculture.

### **Utilities and Service Systems**

Under the No Project Alternative, the proposed project would not be constructed, operated and maintained, or decommissioned, and the project site would continue to be used for agriculture. Physical impacts to utilities are usually associated with population growth in an area, which increases the demand for a particular service, leading to the need for expanded or new facilities. Under the No Project Alternative, solar arrays and other ancillary facilities would not be constructed on the proposed site, and no increased demand for utilities would result. However, under the No Project Alternative, water usage required to sustain the farming operations would remain as agricultural production would continue. This water usage would be much greater than what would be required under the operation of the proposed solar facility within the same footprint. Crop production may decrease in the future if water supply is impacted through reduced surface water allocation and groundwater restrictions, rendering the land fallow and underutilized. There would be no impacts to utilities under the No Project Alternative, while the



proposed project would result in less than significant impacts. However, the No Project Alternative also would not realize the proposed project's beneficial impact to water usage.

### **Wildfire**

Under the No Project Alternative, the proposed project would not be constructed, and the project site would continue to be used for agriculture and thus would not result in potential fire hazards due to the malfunctioning of equipment or faulty electrical equipment that is capable of spontaneous ignition due to overheating. The project site is not within a state responsibility area or a very high fire hazard safety zone. No impacts to wildfire would occur.

### **Energy**

Under the No Project Alternative, the energy use associated with farming activities would continue but would not result in a significant impact to energy usage. Under the No Project Alternative, there would not be the generation of renewable energy to help California meet its RPS Program commitments.

## **5.4 ALTERNATIVE 2 – REDUCED ACREAGE ALTERNATIVE**

Under the Reduced Acreage Alternative, the Stonecrop facility would not be constructed, and the footprint of the Fifth Standard facility would be reduced. The total MW capacity at the project site would be reduced by 20 MW, but would continue to include battery storage and the project footprint would be reduced by approximately 317 acres

### **5.4.1 Impact Analysis**

#### **Aesthetics**

If the Reduced Acreage Alternative is implemented, it would result in less impacts related to visual character and quality of the project site because the footprint of the facility would be reduced by approximately 317 acres. However, the lands surrounding the Reduced Acreage Alternative would be the same of that surrounding the proposed project and would consist of agricultural lands with minimal sensitive receptors within viewing distance of the solar facility. Substantial changes to the visual character or quality of the project area under the Reduced Acreage Alternative would not be expected as the agricultural lands surrounding the project site contain industrial operations and previously disturbed areas that would be consistent with the installation of a solar facility. Additionally, similar to the proposed project, the Reduced Acreage Alternative could also require nighttime work, which would require the implementation of Mitigation Measure AES-1 to reduce potential effects from onsite lighting to less than significant levels. Therefore, aesthetics impacts related to the Reduced Acreage Alternative would be less than significant with mitigation.

#### **Agricultural Resources**

If the Reduced Acreage Alternative is implemented, it would result in slightly less impacts related to agriculture than discussed for the proposed project. Under the proposed project, approximately 1,600 acres of farmland would be converted to non-agricultural use (including

Prime Farmland and Williamson Act Contracted lands). Under the Reduced Acreage Alternative, since the overall project footprint would be reduced by approximately 317 acres; this would mean that approximately 317 acres of farmland would not be impacted by the project and would remain open for future agricultural use. However, given the proposed site layout, it is highly likely that the acreage not converted to solar uses would face pressures to convert in the future, thus contributing to the significant cumulative impact to agriculture. Similar to the proposed project, the remainder of the Reduced Acreage Alternative lands would result in conversion of agriculture and even with the implementation of Mitigation Measure AG-1, which would require a Reclamation Plan for restoration of agricultural lands for project decommissioning. The proper cancellation of Williamson Act Contracted lands would continue to be required. Therefore, impacts related to agricultural resources as they related to the Reduced Acreage Alternative would be significant and unavoidable.

### **Air Quality**

The Reduced Acreage Alternative would result in slightly less air quality impacts than discussed for the proposed project for project-related construction, maintenance, and decommissioning. Since the Reduced Acreage Alternative would result in a smaller overall facility with a smaller project footprint and lower MW capacity size, this would result in fewer emissions generated during project construction, maintenance, and decommissioning. However, because the reduced action alternative would still result in localized and cumulative emissions that could exceed the thresholds for particulate matter less than 10 micrometers (PM<sub>10</sub>) and NO<sub>x</sub> identified by the San Joaquin Valley Air Pollution Control District (SJVAPCD), mitigation would be required to reduce these potential impacts to a less than significant level. As such, Mitigation Measures AIR-1 and AIR-2 would still be required and would implement air quality Best Management Practices (BMPs), enter in a Voluntary Emission Reduction Agreement (VERA) with SJVAPCD, prepare and implement a Dust Control Plan, and implement enhanced and additional control measures, respectively. Therefore, with the implementation of the above-mentioned Mitigation Measures, air quality impacts related to the Reduced Acreage Alternative would be less than significant.

### **Biological Resources**

Under the Reduced Acreage Alternative, the project footprint would be reduced overall by approximately 317 acres. This would result in fewer impacts to biological resources within the area. Similar biological resources impacts as discussed under the proposed project would apply to the Reduced Acreage Alternative including potential impacts to birds and lighting from construction and operation of the solar facility. Even with the reduced footprint of the project, impacts to nesting birds and nocturnal wildlife during construction could still occur within the project vicinity. Additionally, operational impacts to birds could occur from collisions with power lines and PV arrays. As such, Mitigation Measures BIO-1, BIO-2, BIO-3, and BIO-4 would be required to reduce construction-related impacts to nesting birds, reduce potential for aviation collisions with power lines, reduce avian collisions who PV array, and reduce impacts to nocturnal wildlife from lighting, respectively. The only potential jurisdictional waters identified on the project site run north-south between Lassen Avenue and the northeastern-most agricultural field. However, the four potentially jurisdictional features were determined to not to meet the qualifications for jurisdictional features. Consistent with the proposed project, the Reduced

Acreage Alternative was designed avoid the four areas (approximately 1.55 acres). Thus, no project-level impacts to state or federally protected waters of the U.S., including wetlands, would occur from the implementation of the Reduced Acreage Alternative. Therefore, impacts related to biological resources associated with the Reduced Acreage Alternative would be less than significant with mitigation.

### **Cultural Resources**

Similar to the proposed project, there is one cultural resource (Gates-Gregg 230-kilovolt [kV] transmission line/P-10-006640) that is outside the area of direct impact from the Reduced Acreage Alternative project footprint. Although this cultural resource is outside of the project area, as with the proposed project, there is still the possibility of undiscovered cultural resources to be encountered in other onsite locations during project construction. Therefore, Mitigation Measures CUL-1 and CUL-2 would be implemented and would require a qualified archaeologist for inadvertent discovery of archeological resources and tribal resources within the project area. Further, although unlikely, it is possible that human remains could be discovered during ground-disturbing activities. Mitigation Measure CUL-3 would be required and would include measures to be followed in the unlikely event that human remains are discovered during construction of the reduced acreage alternative. Therefore, impacts related to cultural resources, as they relate to the Reduced Acreage Alternative would be less than significant with mitigation incorporated.

### **Geology and Soils**

If the Reduced Acreage Alternative is implemented, impacts related to ground shaking, landslides, soil erosion, and unstable and expansive soils would be the same as described for the proposed project. Because the Reduced Acreage Alternative would be implemented in the same geographical area as the proposed project, the Reduced Acreage Alternative would have the same likelihood to be located on soils that could be subject to ground shaking, landslides, soil erosion, and unstable and expansive soils. A site-specific soils engineering and geologic-seismic analysis would be required for the Reduced Acreage Alternative to determine foundation and structural design requirements for the project. Additionally, as required for the proposed project, a Stormwater Pollution Prevention Plan (SWPPP) would also be required for the Reduced Acreage Alternative in order to prevent erosion and loss of topsoil. The SWPPP would be implemented in accordance with the requirements under the National Pollutant Discharge Elimination Service (NPDES) General Construction Permit and would be implemented throughout construction of the Reduced Acreage Alternative. Further as required for the proposed project, the Reduced Acreage Alternative would also require implementation of a reclamation plan for agricultural lands during decommissioning (Mitigation Measure AG-1), as well as implementation of a Dust Control Plan throughout construction activities (Regulation VIII). Additionally, there is also the possibility that paleontological resources could be discovered during project construction and decommissioning. As such, Mitigation Measures GEO-1, GEO-2, and GEO-3 would be implemented and would require that a qualified paleontologist remain onsite during construction, which includes ground-disturbance of at a depth of 10 feet or greater and would require pre-construction training for all personnel involved with ground-disturbing activities, as well as measures for inadvertent discoveries of paleontological resources within the project area. Therefore, impacts related to geology and soils as they

related to the Reduced Acreage Alternative would be less than significant with mitigation incorporated.

### **Greenhouse Gas Emissions**

The Reduced Acreage Alternative would result in less construction and operational-related GHG emissions because of the reduced footprint of the overall facility. Less construction equipment and construction duration would be required for the Reduced Acreage Alternative, which in turn would mean lower construction GHG emissions from the use of heavy-duty off-road equipment. However, because the Reduced Acreage Alternative would still require the use of construction equipment, Mitigation Measure GHG-1 would be required to reduce GHG emissions from construction activities. Additionally, because the Reduced Acreage Alternative would also require the use of circuit breakers during operation, Mitigation Measure GHG-2 would also be required to guarantee that leakage from these breakers is 0.5% a year or less. Therefore, construction and operational impacts related to GHG emissions from the Reduced Acreage Alternative would be less than significant with mitigation incorporated.

In contrast, the Reduced Acreage Alternative would also result in a lower capacity for displacement of GHG emissions because the total MW capacity would be reduced by 20 MW. This reduction in capacity would not result in a significant impact to overall GHG emissions for the project, however, the potential for a reduction in MW capacity reduces consistency with project goals.

### **Hazards and Hazardous Materials**

If the Reduced Acreage Alternative is implemented, it would result in similar but slightly reduced impacts related to hazards and hazardous materials as discussed for the proposed project due to the reduction in overall project footprint. Because of the reduced footprint, fewer hazardous materials would be needed for construction, operation, and decommissioning of the project, thus resulting in a reduction in overall impacts. However, because hazardous materials, such as electrical components, would be required for the Reduced Acreage Alternative, Mitigation Measure HAZ-1 would be required and would include a broken PV module detection and handling plan to protect works and the environment from potential release of electrical components. Finally, because the Reduced Acreage Alternative would require the use of heavy machinery and equipment that could cause sparks, Mitigation Measure HAZ-2 would be required to reduce the potential to fire hazards from project construction and decommissioning. Therefore, impacts related to hazards and hazardous materials from the Reduced Acreage Alternative would be less than significant with mitigation incorporated.

### **Hydrology and Water Quality**

If the Reduced Acreage Alternative is implemented, impacts related to hydrology and water quality, including impacts to water quality standards, groundwater supplies, drainage, runoff, and flooding would be similar to that of the proposed project. Regulation VIII for dust control would also be required for the Reduced Acreage Alternative to reduce runoff and erosion from construction activities. Therefore, impacts related to hydrology and water quality would be less than significant with mitigation incorporated. Additionally, a SWPPP would be required for the

Reduced Acreage Alternative to reduce erosion and runoff from the project and thus, water quality impacts resulting from project construction and decommissioning. Additionally, as discussed for the proposed project, the project area is not located within a flooding hazard zone; therefore, there would be no impact related to locating the project within a flooding hazard zone. Therefore, impacts related to hydrology and water quality would be less than significant with mitigation incorporated.

### **Land Use and Planning**

As discussed for the proposed project, the Reduced Acreage Alternative would also conflict with County policies related to protection of agricultural lands (including Williamson Act Contracted lands) and the use of surface water. Even with the implementation of Mitigation Measures AG-1 and AG-2 and the reduced size of the project footprint identified for the Reduced Acreage Alternative, impacts related to conflict with the Fresno County General Plan would still be significant and unavoidable.

### **Mineral Resources**

As discussed for the proposed project, the Reduced Acreage Alternative would result in no impact to mineral resources because there are no mineral resources located within the project area. Therefore, the Reduced Acreage Alternative would result in no impact to mineral resources.

### **Noise**

Under the Reduced Acreage Alternative, construction, operational, and decommissioning noise would be similar to the proposed project. However, the reduced project footprint under the Reduced Acreage Alternative would result in less overall construction, operational, and decommissioning noise and groundborne vibrations than the proposed project because there would be approximately 317 acres less of facilities to construct, operate, and decommission. Although noise and groundborne vibrations generated from the Reduced Acreage Alternative would be slightly less than as described for the proposed project, Mitigation Measures NOI-1, NOI-2, NOI-3, and NOI-4 would still be required for this alternative to reduce construction noise by placing stationary equipment and staging areas away from sensitive receptors, equipping construction equipment with mufflers and baffles, and limiting construction hours. Therefore, impacts related to noise and groundborne vibration would be less than significant with mitigation incorporated.

### **Public Services**

If the Reduced Acreage Alternative is implemented, impacts related to fire and police protection services would be similar to the proposed project since this alternative would be located in the same geographical area for these service providers. The Reduced Acreage Alternative would require slightly less overall fire and police protection services because the overall project footprint would be reduced by approximately 317 acres. A slight reduction in construction workers and overall project duration would be anticipated for this alternative, which would reduce the likelihood that police and fire services are required during construction.

## Transportation

Impacts related to transportation for the Reduced Acreage Alternative would be similar to that of the proposed project; however, due to the reduced overall project footprint under this alternative, there would be a slight reduction in truck trips and overall construction traffic associated with this alternative when compared to the proposed project. Because the Reduced Acreage Alternative would still require encroachment permits, the development and implementation of a Traffic Control and Management Plan would be required for this alternative to comply with County and California Department of Transportation (Caltrans) policies. The plan would be prepared and submitted to the Fresno County Division of Public Works and Planning and the Caltrans District 6 office for approval, who would ensure compliance with the plan. As discussed for the proposed project, the Reduced Acreage Alternative would not result in increased traffic volumes that would significantly affect traffic flows within the local roadways. In addition, there are currently no dedicated pedestrian, bicycle facilities, or transit stops in the immediate vicinity of the Reduced Acreage Alternative or along the surrounding roadways or highways. Therefore, impacts related to transportation associated with the Reduced Acreage Alternative would be less than significant.

## Tribal Cultural Resources

As discussed for the proposed project, tribal cultural resources were not identified within the project area, and consultation with tribes pursuant to Assembly Bill (AB) 52 did not further identify any important tribal cultural resources within the project area. These results would also apply to the Reduced Acreage Alternative because this alternative would be located within the same geographical area as the proposed project. Further, as discussed under the proposed project, construction activities for this alternative could result in impacts to previously undiscovered tribal cultural resources prior to mitigation. As such, Mitigation Measures CUL-1 and CUL-2 would be required for this alternative to retain a qualified archaeologist onsite during construction, conduct worker awareness training for cultural tribal resources, and implement protocols for any inadvertent discoveries of tribal cultural resources during construction. Therefore, impacts related to tribal cultural resources associated with the Reduced Acreage Alternative would be less than significant with mitigation incorporated.

## Utilities and Service Systems

Under the Reduced Acreage Alternative, impacts related to utilities and service systems would be similar to the proposed project. The Reduced Acreage Alternative would likely result in slightly less wastewater and solid waste than the proposed project due to the reduced project footprint and MW capacity of the facility. Additionally, no new or expanded wastewater treatment or stormwater facilities would be required for this alternative. The total water volume used during construction may be up to 300 acre-feet (af). Expected annual water consumption during operation would be 4 to 10 af per year. Decommissioning activities would require an amount of water that is comparable to construction. No mitigation would be required for the Reduced Acreage Alternative, and no impacts beyond what was previously described for the proposed project would occur to utilities and service systems. Therefore, impacts to utilities and service systems for the Reduced Acreage Alternative would be less than significant.



## Wildfire

The Reduced Acreage Alternative would be constructed in the same area as the proposed project, but on a smaller footprint. The project site is not within a state responsibility area or a very high fire hazard safety zone. Therefore, less than significant impacts to wildfire would occur with the Reduced Acreage Alternative.

## Energy

The Reduced Acreage Alternative would have similar but slightly less demands on energy resources during construction, operation, and decommissioning given the reduced project footprint. Impacts to energy resources would be less than significant and comparable to the proposed project. Although the Reduced Acreage Alternative would contribute to meeting the goals of the RPS Program, it would not provide as much renewable energy as the proposed project.

## 5.5 ALTERNATIVE 3 - SITE-WEST ALTERNATIVE

Under the Site-West Alternative, the PV electricity-generating facilities, a battery storage facility, and associated infrastructure would be constructed on three noncontiguous parcels totaling 1,109.69 acres approximately 4 miles west of the project site.

### 5.5.1 Impact Analysis

#### Aesthetics

Due to its closer proximity to I-5, Site-West may have greater impacts to visual character and quality because the viewshed would not have intervening topography compared to the proposed project. Site-West includes agricultural lands and uses that support the farming industry, which are visually dominant. Two industrial buildings that appear to support agricultural operations are located along South El Dorado Avenue and within 1 mile of Site-West. Substantial changes to the visual character or quality of the project area under the Site-West Alternative would not be expected. While construction of solar arrays and related storage and interconnection facilities would constitute a substantially different use onsite, it would not substantially alter the visual character within Site-West's immediate surroundings because the existing dominant visual character in the surrounding area would remain agricultural. Additionally, like the proposed project, the Site-West Alternative would also require the implementation of Mitigation Measure AES-1 to reduce potential effects from onsite lighting to less than significant levels. Therefore, aesthetics impacts related to the Site-West Alternative would be less than significant with mitigation.

#### Agricultural Resources

If the Site-West Alternative is implemented, it would result in slightly less impacts related to agriculture conversion than discussed for the proposed project. Under the proposed project, approximately 1,600 acres of farmland would be converted to non-agricultural use (including Prime Farmland). While Site-West is located on areas designated as Prime Farmland, Williamson Act Contract lands would not be converted, and the overall project footprint would be

reduced by approximately 600 acres. Similar to the proposed project, the Site-West lands would result in conversion of agriculture and even with the implementation of Mitigation Measure AG-1, which requires a reclamation plan for restoration of agricultural lands, impacts would be considered significant. No mitigation is available to address the loss of farmland; therefore, impacts related to agricultural resources as they related to the Site-West Alternative would be significant and unavoidable.

### **Air Quality**

Although the Site-West Alternative would result in fewer acres of land disturbed for the solar facility, the generation tie (gen-tie) line would be much longer and disturb more land. As such, air quality impacts would be comparable or possibly greater than discussed for the proposed project for project-related construction, maintenance, and decommissioning. Because the Site-West Alternative would still result in localized and cumulative emissions that could exceed the thresholds for PM<sub>10</sub> and NO<sub>x</sub> identified by the SJVAPCD, mitigation would be required to reduce these potential impacts to a less than significant level. As such, Mitigation Measures AIR-1 and AIR-2 would still be required and would implement air quality BMPs, enter into a VERA with SJVAPCD, prepare and implement a Dust Control Plan, and implement enhanced and additional control measures, respectively. Therefore, with the implementation of the above-mentioned Mitigation Measures, air quality impacts related to the Site-West Alternative would be less than significant.

### **Biological Resources**

Under the Site-West Alternative, the project would have a reduced overall project footprint by approximately 600 acres, but a greater footprint for the gen-tie line. Large raptors and other avian species are susceptible to collisions with power lines and PV arrays. Such facilities can result in injury or mortality to raptors due to collision and electrocution. This would result in more impacts to biological resources within the area. There would also be a potentially greater impact to wetlands because a major water feature passes through two of the parcels, while the water features identified within the proposed project area were able to be avoided by design. Similar biological resources impacts discussed under the proposed project would apply to the Site-West Alternative, including potential impacts to birds and onsite lighting from construction and operation of the solar facility. Impacts to nesting birds and wildlife during construction could still occur within the project vicinity. As such, Mitigation Measures BIO-1, BIO-2, BIO-3, and BIO-4 would be required to reduce construction-related impacts to nesting birds, reduce potential for avian collisions with power lines, reduce avian collisions with PV array, and reduce impacts to nocturnal wildlife from lighting, respectively. Therefore, impacts related to biological resources associated with the Site-West Alternative would be slightly greater than the proposed project, but less than significant with mitigation incorporated.

### **Cultural Resources**

The *Cultural Resources Survey Report* (ESA 2017a) identified one cultural resource (Gates-Gregg 230-kV transmission line/P-10-006640) that is outside the area of direct impact from proposed project and would be further from the Site-West project footprint. Although this cultural resource is outside of the project area, as with the proposed project, there is still the possibility

of undiscovered cultural resources to be encountered during project construction. Therefore, Mitigation Measures CUL-1 and CUL-2 would be implemented and would require measures for inadvertent discovery of archeological resources and tribal resources within the project area. As such, Mitigation Measures GEO-1, GEO-2, and GEO-3 would be implemented and would require that a qualified paleontologist remain onsite during construction at certain depths, require pre-construction training for all personnel involved with ground-disturbing activities, and measures for inadvertent discoveries of cultural resources within the project area. Further, although unlikely, it is possible that human remains could be discovered during ground-disturbing activities. Mitigation Measure CUL-3 would be required and would include measures to be followed in the unlikely event that human remains are discovered during construction of the Site-West Alternative. Therefore, impacts related to cultural resources as they relate to the Site-West Alternative would be less than significant with mitigation incorporated.

### **Geology and Soils**

If the Site-West Alternative is implemented, impacts related to ground shaking, landslides, soil erosion, and unstable and expansive soils would be the same as described for the proposed project. Because the Site-West Alternative would be implemented in the same geographical area as the proposed project, Site-West would have the same possibility to be located on soils that could be subject to ground shaking, landslides, soil erosion, and unstable and expansive soils. A site-specific soils engineering and geologic-seismic analysis would be required for the Site-West Alternative to determine foundation and structural design requirements for the project. Additionally, as required for the proposed project, a SWPPP would also be required for the Site-West Alternative to prevent erosion and loss of topsoil. The SWPPP would be implemented in accordance with the requirements under the NPDES General Construction Permit and would be implemented throughout construction of the Site-West Alternative. Further, as required for the proposed project, the Site-West Alternative would also require implementation of a reclamation plan for agricultural lands during decommissioning (Mitigation Measure AG-1), as well as implementation of a Dust Control Plan throughout construction activities (Regulation VIII). Additionally, there is also the possibility that paleontological resources could be discovered during project construction and decommissioning. As such, Mitigation Measures GEO-1 and GEO-2 would be implemented and would require that a qualified paleontologist remain onsite during construction at depths of 10 feet or greater, require pre-construction training for all personnel involved with ground-disturbing activities, and measures for inadvertent discoveries of paleontological resources within the project area. Therefore, impacts related to geology and soils as they related to the Site-West Alternative would be less than significant with mitigation incorporated.

### **Greenhouse Gas Emissions**

The Site-West Alternative would result in less construction and operational-related GHG emissions because of the reduced footprint of the overall facility. Fewer construction equipment and shortened construction duration would be required for the Site-West Alternative, which in turn would mean lower construction GHG emissions from the use of heavy-duty off-road equipment. However, because the Site-West Alternative would still require the use of construction equipment, Mitigation Measure GHG-1 would be required to reduce GHG emissions from construction activities. Additionally, because the Site-West Alternative would

also require the use of circuit breakers during operation, Mitigation Measure GHG-2 would be required for this alternative to guarantee leakage from these breakers is 0.5% per year or less. Therefore, construction and operational impacts related to GHG emissions from the Site-West Alternative would be less than significant with mitigation incorporated.

In contrast, the Site-West Alternative would result in a lower capacity for displacement of emissions GHGs because the total MW capacity would be reduced due to site configuration challenges. This reduction in capacity would not result in a significant impact to overall GHG emissions for the project; however, the potential for a reduction in MW capacity impacts this alternative's consistency with project objectives.

### **Hazards and Hazardous Materials**

If the Site-West Alternative is implemented, it would result in similar but slightly reduced impacts related to hazards and hazardous materials as discussed for the proposed project due to the reduction in the overall project footprint. Because of the reduced footprint, fewer hazardous materials would be needed for construction, operation, and decommissioning of the project, thus resulting in a reduction in overall impacts. In addition, the Site-West Alternative would continue to include implementation of battery storage capacity; therefore, Mitigation Measure HAZ-1 would be required and would include a broken PV module detection and handling plan to protect works and the environment from potential release of electrical components. Because the Site-West Alternative would require the use of heavy machinery and equipment that could cause sparks, Mitigation Measure HAZ-2 would be required to reduce the potential to fire hazards from project construction and decommissioning. Therefore, impacts related to hazards and hazardous materials would be less than significant with mitigation incorporated.

### **Hydrology and Water Quality**

If the Site-West Alternative is implemented, impacts related to hydrology and water quality, including impacts to water quality standards, groundwater supplies, drainage, runoff, and flooding would be slightly greater compared to that of the proposed project. A major water feature passes through two of the parcels. Constructing a project around these hydrologic features would introduce impacts to hydrology. One of the parcels is also entirely within the 100-year floodplain, which would trigger special engineering design and review standards in comparison to the proposed project.

Similar to the proposed project, compliance with SJVAPCD's Regulation VIII for dust control would be required for the Site-West Alternative to reduce runoff and erosion from construction activities. Therefore, impacts related to hydrology and water quality would be less than significant with mitigation incorporated for the Site-West Alternative. Additionally, as discussed under geology and soils impacts, a SWPPP would be required for the Site-West Alternative, which would reduce erosion and runoff from the project and thus, reduce water quality impacts from project construction and decommissioning. Therefore, impacts to the Site-West Alternative related to hydrology and water quality would be less than significant with mitigation incorporated.

## Land Use and Planning

The Site-West Alternative consists of three noncontiguous parcels zoned as Exclusive Agriculture, 40-acre minimum parcel size (AE-40). The California Department of Conservation (DOC) has also designated the site as Prime Farmland; however, Site-West is not under Williamson Act Contract. Similar to the proposed project, the Site-West Alternative would also require conversion of agricultural land that would also conflict with County policies related to the protection of agricultural lands. In comparison to the proposed project, the Site-West Alternative would not conflict with policies related to Williamson Act Contracts. However, the project would not be consistent with all applicable goals and policies of the General Plan aimed at preservation of scarce productive farmland in the County. Therefore, impacts from the Site-West Alternative related to land use would be significant and unavoidable.

## Mineral Resources

As discussed for the proposed project, the Site-West Alternative would result in no impact to mineral resources because there are no mineral resources located within the project area. Therefore, the Site-West Alternative would result in no impact to mineral resources.

## Noise

Under the Site-West Alternative, construction, operational, and decommissioning noise would be similar to the proposed project. The nearest sensitive receptors are located along West Gale Avenue, approximately 1 mile away from the northernmost portion of Site-West. However, the reduced project footprint under the Site-West Alternative would result in slightly fewer overall construction, operational, and decommissioning noise and groundborne vibrations than the proposed project because there would be approximately 600 fewer acres of facilities to construct, operate, and decommission. Although noise and groundborne vibrations generated from the Site-West Alternative would be slightly less than as described for the proposed project, Mitigation Measures NOI-1, NOI-2, NOI-3, NOI-4 would still be required for this alternative to reduce construction noise by placing stationary equipment and staging areas away from sensitive receptors, equipping construction equipment with mufflers and baffles, and limiting construction hours. Therefore, impacts to the Site-West Alternative related to noise and groundborne vibration would be less than significant with mitigation incorporated.

## Public Services

If the Site-West Alternative is implemented, impacts related to fire and police protection services would be similar to the proposed project since this alternative would be located in the same geographical area for these service providers. The Site-West Alternative would require slightly less overall fire and police protection services because the overall project footprint would be reduced by approximately 600 acres. A slight reduction in construction workers and overall project duration would be anticipated for this alternative, which would mean less need for fire and police protection services in terms of number of personnel and duration that their services may be required for the project. Therefore, impacts to the Site-West Alternative related to fire and police protection services would be less than significant.

## Transportation

Impacts related to transportation for the Site-West Alternative would be similar to that of the proposed project; however, due to the reduced overall project footprint under this alternative, there would be a slight reduction in truck trips and overall construction traffic associated with this alternative when compared to the proposed project. Because the Site-West Alternative would still require encroachment permits, the development and implementation of a Traffic Control and Management Plan would be required for this alternative to comply with County and Caltrans policies. As discussed for the proposed project, the Site-West Alternative would not result in increased traffic volumes that would significantly affect traffic flows within the local roadways. In addition, there are currently no dedicated pedestrian, bicycle facilities, or transit stops in the immediate vicinity of Site-West or along the surrounding roadways or highways. Although construction and decommissioning activities associated with the proposed project would be short-term, with less than significant impacts, a Traffic Control and Management Plan would still be required (Mitigation Measure TRA-1) and a road survey report (Mitigation Measure TRA-2), be prepared and submitted to the Fresno County Department of Public Works and Planning and the Caltrans District 6 office for approval. In addition, a road repair agreement (Mitigation Measure TRA-3) would be required as well. Therefore, impacts related to transportation associated with the Site-West Alternative would be less than significant with mitigation incorporated.

## Tribal Cultural Resources

The potential for the Site-West Alternative to encounter potential tribal cultural resources is low because tribal cultural resources were not identified within the project area. In addition, consultation with tribes pursuant to AB 52 did not identify any important tribal cultural resources within the project area. Accordingly, these results would likely be the same for the Site-West Alternative because Site-West would be located within the same geographical area as the proposed project. However, construction activities for this alternative could result in impacts to undiscovered tribal cultural resources prior to mitigation. As such, Mitigation Measures CUL-1 and CUL-2 would be required for this alternative to retain a qualified archaeologist onsite during construction, conduct worker awareness training for cultural tribal resources, and implement protocols for any inadvertent discoveries of tribal cultural resources during construction. Therefore, impacts related to tribal cultural resources associated with the Site-West Alternative would be less than significant with mitigation incorporated.

## Utilities and Service Systems

Under the Site-West Alternative, impacts related to utilities and service systems would be similar to the proposed project. The Site-West Alternative would likely result in slightly less wastewater and solid waste than the proposed project due to the reduced project footprint and MW capacity of the facility. Additionally, no new or expanded wastewater treatment or stormwater facilities would be required for this alternative, and water supplies required for this alternative would be slightly less than the 300 af per day required for construction of the proposed project. No mitigation would be required for the Site-West Alternative, and no impacts beyond what was previously described for the proposed project would occur to utilities and



service systems. Therefore, impacts to utilities and service systems for the Site-West Alternative would be less than significant.

**Wildfire**

The Site-West location is not within a state responsibility area or a very high fire hazard safety zone. The Site-West Alternative would have less than significant impacts to wildfire, similar to the proposed project.

**Energy**

Although the footprint for the Site-West Alternative may be smaller compared to the proposed project, the gen-tie connection would be much longer, and thus, energy demands during construction would be anticipated to be slightly greater than the proposed project. Impacts to energy use during construction would not be anticipated to be wasteful, but they may be more inefficient given the longer connection to the substation. Overall impacts to energy during construction, operation, and decommissioning would be less than significant. The Site-West alternative would contribute to meeting the goals of the RPS Program but would not provide as much renewable energy as the proposed project.

**5.6 CONCLUSION**

The qualitative environmental effects of each alternative in relation to the proposed project are summarized in Table 5-1. Table 5-2 summarizes the consistency of each alternative with the proposed project objectives.

**Table 5-1: Project Alternative Impacts Comparison**

<b>Environmental Resource Area</b>	<b>Proposed Project</b>	<b>No Project (Alternative 1)</b>	<b>Reduced Acreage (Alternative 2)</b>	<b>Alternative Site-West (Alternative 3)</b>
Aesthetics	Impacts determined to be less than significant with mitigation incorporated	Lesser impact than proposed project because the project would not be constructed, operated, or decommissioned.	Similar impact to proposed project, but reduced impact to visual character and quality due to reduced footprint.	Similar impact to proposed project, but potentially greater impacts due to proximity to I-5 and sensitive receptors on South El Dorado Avenue.
Agricultural Resources	Impacts determined to be significant and unavoidable	Lesser impact than proposed project because no conversion of farmland or conflicts with Williamson Act would occur.	Similar impact to proposed project, but reduced footprint would result in less conversion of farmland.	Similar impact to proposed project, but reduced footprint would result in less conversion of farmland. Williamson Act Contract lands

Environmental Resource Area	Proposed Project	No Project (Alternative 1)	Reduced Acreage (Alternative 2)	Alternative Site-West (Alternative 3)
				would not be converted, but site continues to include conversion of Prime Farmland.
Air Quality	Impacts determined to be less than significant with mitigation incorporated	Greater impact to proposed project because the No Project Alternative would continue to generate emissions from farm equipment.	Similar impact to proposed project, but reduced project footprint would result in fewer air quality emissions generated during construction, operation, and decommissioning and lower emission offsets during operation.	Similar or greater impact to proposed project. Although there would be reduced project footprint, increased distance of gen-tie line would lead to increased construction emissions.
Biological Resources	Impacts determined to be less than significant with mitigation incorporated	Lesser impact than proposed project because site would continue to be used for agriculture, and the proposed project would not be constructed, operated, or decommissioned.	Similar impact to proposed project, but reduced footprint would result in fewer impacts to biological resources.	Similar or greater impact to proposed project. Although there would be reduced project footprint, increased distance of gen-tie line could lead to increased avian collision. Also, a water feature passes through the site.
Cultural Resources	Impacts determined to be less than significant with mitigation incorporated	Lesser impact than proposed project because site would continue to be used for agriculture, and the proposed project would not be constructed, operated, or decommissioned.	Similar impact to proposed project, but reduced footprint would result in less potential to encounter undiscovered cultural resources. However, there is still the possibility to encounter such resources.	Similar impact to proposed project, but reduced footprint would result in less potential to encounter undiscovered cultural resources. However, there is still the possibility to encounter such resources.

Comparison of Alternatives

Environmental Resource Area	Proposed Project	No Project (Alternative 1)	Reduced Acreage (Alternative 2)	Alternative Site-West (Alternative 3)
Geology and Soils	Impacts determined to be less than significant with mitigation incorporated	Lesser impact than proposed project because site would continue to be used for agriculture, and the proposed project would not be constructed, operated, or decommissioned	Similar impact to proposed project because the geological and paleontological setting would be the same. The same potential that the site would be subject to ground shaking, landslides, erosion, unstable/expansive soils or inadvertent discovery of paleontological resources would occur.	Similar impact to proposed project because the geological and paleontological setting would be the same. The same potential that the site would be subject to ground shaking, landslides, erosion, unstable/expansive soils or inadvertent discovery of paleontological resources would occur.
Greenhouse Gas Emissions	Impacts determined to be less than significant with mitigation incorporated	Greater impact to proposed project because the No Project Alternative would continue to generate emissions from farm equipment.	Similar impact to proposed project, but reduced project footprint would result in fewer GHG emissions generated during construction, operation, and decommissioning.	Similar or greater impact to proposed project. Although there would be reduced project footprint, increased distance of gen-tie line would lead to increased construction emissions.
Hazards and Hazardous Materials	Impacts determined to be less than significant with mitigation incorporated	Lesser impact than proposed project because the site would continue to be used for agriculture, and the project would not be constructed, operated, or decommissioned.	Similar impact to proposed project, but reduced project footprint would require fewer hazardous materials to be used during construction, operation, and decommissioning.	Similar impact to proposed project, but reduced project footprint would require fewer hazardous materials to be used during construction, operation, and decommissioning.

Environmental Resource Area	Proposed Project	No Project (Alternative 1)	Reduced Acreage (Alternative 2)	Alternative Site-West (Alternative 3)
Hydrology and Water Quality	Impacts determined to be less than significant with mitigation incorporated	Lesser impact than proposed project because land would continue to be used for agriculture and would not require new impervious surface.	Similar impact to proposed project, because impacts related to water quality standards, groundwater supplies, drainage, runoff, and flooding would continue to occur.	Similar or greater impact to proposed project, because impacts related to water quality standards, groundwater supplies, drainage, runoff, and flooding would continue to occur. However, the site includes a water feature and is within a 100-year floodplain.
Land Use	Impacts determined to be significant and unavoidable	Lesser impact than proposed project because no conversion of farmland or conflicts with Williamson Act would occur.	Similar impact to proposed project, but reduced footprint would result in less conversion of farmland.	Similar impact to proposed project, but reduced footprint would result in less conversion of farmland. Williamson Act Contract lands would not be converted, but site continues to include conversion of Prime Farmland and would conflict with preservation policies.
Minerals	No Impact	Similar impact to proposed project because the project site does not contain important mineral resources.	Similar impact to proposed project because the project site does not contain important mineral resources.	Similar impact to proposed project because the project site does not contain important mineral resources.

Comparison of Alternatives

Environmental Resource Area	Proposed Project	No Project (Alternative 1)	Reduced Acreage (Alternative 2)	Alternative Site-West (Alternative 3)
Noise	Impacts determined to be less than significant with mitigation incorporated	Lesser impact than proposed project because the site would continue to be used for agriculture, and the proposed project would not be constructed, operated, or decommissioned.	Similar impact to proposed project, but reduced project footprint would result in less overall noise and vibration during construction, operation, and decommissioning.	Similar impact to proposed project, but reduced project footprint would result in less overall noise and vibration during construction, operation, and decommissioning.
Public Services	Impacts determined to be less than significant	Lesser impact than proposed project because the site would continue to be used for agriculture, and the proposed project would not be constructed, operated, or decommissioned. No new public services would be required.	Similar impact to proposed project; reduced project footprint would result in lesser need for fire and police protections services.	Similar impact to proposed project; reduced project footprint would result in lesser need for fire and police protections services.
Transportation	Impacts determined to be less than significant with mitigation incorporated	Lesser impact than proposed project because site would continue to be used for agriculture, and the proposed project would not be constructed, operated, or decommissioned and would not result in new transportation impacts.	Similar impact to proposed project, but reduced project footprint would result in less overall truck trips during construction and would not impact public transit, bicycle, or pedestrian facilities.	Similar impact to proposed project, but reduced project footprint would result in less overall truck trips during construction and would not impact public transit, bicycle, or pedestrian facilities.

Environmental Resource Area	Proposed Project	No Project (Alternative 1)	Reduced Acreage (Alternative 2)	Alternative Site-West (Alternative 3)
Tribal Cultural Resources	Impacts determined to be less than significant with mitigation incorporated	Lesser impact than proposed project because the site would continue to be used for agriculture, and the proposed project would not be constructed, operated, or decommissioned.	Similar impact to proposed project, but reduced footprint would result in less potential to encounter undiscovered tribal cultural resources. However, there is still the possibility to encounter such resources.	Similar impact to proposed project, but reduced footprint would result in less potential to encounter undiscovered tribal cultural resources. However, there is still the possibility to encounter such resources.
Utilities	Impacts determined to be less than significant	Lesser impact than proposed project because the site would continue to be used for agriculture, and the proposed project would not be constructed, operated, or decommissioned and no new utility infrastructure would be required. However, water usage required to sustain farming operation would continue, which would be greater than the project.	Similar impact to proposed project, but reduced footprint would result in less water use, wastewater generation, and solid waste generation. No new expanded wastewater treatment or stormwater facilities would be required.	Similar impact to proposed project, but reduced footprint would result in less water use, wastewater generation, and solid waste generation. No new expanded wastewater treatment or stormwater facilities would be required.



Comparison of Alternatives

Environmental Resource Area	Proposed Project	No Project (Alternative 1)	Reduced Acreage (Alternative 2)	Alternative Site-West (Alternative 3)
Wildfire	Impacts determined to be less than significant with mitigation incorporated	Lesser impact than proposed project because the proposed project would not be constructed, operated, or decommissioned and thus would not result in potential fire hazards due to the malfunctioning of equipment or faulty electrical equipment that is capable of spontaneous ignition due to overheating.	Similar impact to proposed project because the of the potential to result in fire hazards due to the malfunctioning of equipment or faulty electrical equipment that is capable of spontaneous ignition due to overheating.	Similar impact to proposed project because the of the potential to result in fire hazards due to the malfunctioning of equipment or faulty electrical equipment that is capable of spontaneous ignition due to overheating.
Energy	Impacts determined to be less than significant	Similar impact to proposed project because the No Project Alternative would continue to use energy for farming operations.	Similar impact to proposed project, but reduced project footprint would result in fewer energy demands during construction, operation, and decommissioning.	Similar impact to proposed project, but reduced project footprint would result in fewer energy demands during construction, operation, and decommissioning.

Notes:

GHG = greenhouse gas

I-5 = Interstate 5

**Table 5-2: Project Alternatives Comparison to Project Objectives**

Project Objectives	Proposed Project	No Project (Alternative 1)	Reduced Acreage (Alternative 2)	Alternative Location – A-18 Site (Alternative 3)
Construct and operate a solar PV power-generating facility capable of producing up to 170 MW <sub>ac</sub> in a cost competitive manner.	Meets objective; would generate approximately 170 MW <sub>ac</sub>	Does not meet objective; no energy produced	Does not meet objective; would generate approximately 150 MW <sub>ac</sub>	Does not meet objective; would generate approximately 150 MW <sub>ac</sub>
Directly interconnect the CAISO high-voltage electrical transmission system (grid) to the Gates Substation.	Meets objective; Interconnection would occur	Does not meet objective; no Interconnection would occur	Meets objective; interconnection would occur	Meets objective; interconnection would occur
Assist California utilities in meeting their obligations under California’s RPS Program, including 60% of retail sales from renewable sources by the end of 2030.	Meets objective; would generate renewable energy	Does not meet objective; no energy produced	Meets objective; would generate renewable energy	Meets objective; would generate renewable energy
Assist California utilities in meeting their obligations under the CPUC’s Energy Storage Framework and Design Program, including procurement targets of 1,325 MW by 2020, by providing up to 100 MW of storage capacity.	Meets objective; would include up to 100 MW of energy storage capacity	Does not meet objective; no energy produced or storage capacity	Meets objective; would include up to 100 MW of energy storage capacity	Meets objective; would include up to 100 MW of energy storage capacity
Provide renewable-energy-related and diversified job opportunities and training that will help reduce local unemployment and benefit the local economy.	Meets objective; would provide jobs during construction and operation	Does not meet objective; no created renewable energy-related job opportunities	Meets objective; would provide jobs during construction and operation	Meets objective; would provide jobs during construction and operation

Notes:

CAISO = California Independent System Operator  
CPUC = California Public Utilities Commission  
MW = megawatt

MW<sub>ac</sub> = megawatts alternating current  
RPS = Renewable Portfolio Standard

The No Project Alternative would have fewer impacts on resources than the proposed project. However, as noted previously, the No Project Alternative would not realize the air quality and GHG benefits of the proposed project. The No Project Alternative would not achieve any of the project objectives as shown below:

- The No Project Alternative would not construct and operate a solar PV power-generating facility capable of delivering 170 MW<sub>ac</sub> to the Gates Substation in a cost-competitive manner.
- The No Project Alternative would not directly interconnect the CAISO high-voltage electrical transmission system (grid) to the Gates Substation.
- The No Project Alternative would not assist California utilities in meeting their obligations under California's RPS Program, including 60% of retail sales from renewable sources by the end of 2030.
- The No Project Alternative would not assist California utilities in meeting their obligations under CPUC's Energy Storage Framework and Design Program, including procurement targets of 1,325 MW by 2020, by providing up to 100 MW of storage capacity.
- The No Project Alternative would not provide renewable-energy-related and diversified job opportunities that would help reduce local unemployment and benefit the local economy.

The Reduced Acreage Alternative would have fewer impacts on resources than the proposed project. However, as noted previously, the Reduced Acreage Alternative would not achieve the project objective shown below. This alternative would reduce but not eliminate significant and unavoidable impacts on agricultural resources.

- The Reduced Acreage Alternative would not construct and operate a solar photovoltaic power-generating facility capable of delivering 170 MW<sub>ac</sub> to the Gates Substation in a cost competitive manner.

The Site-West Alternative would have similar impacts to resources compared to the proposed project, with the exception of agriculture and land use where it would avoid impacts to Williamson Act Contract lands. However, the Site-West Alternative would still require conversion of prime farmland, which would conflict with County policies to preserve agricultural lands; therefore, the impact would continue to remain significant and unavoidable. The Site-West Alternative would result in greater impacts to aesthetics, biological resources, and hydrology and water quality in comparison to the proposed project. The Site-West Alternative would result in a reduced amount of renewable energy resources to help the state meet its renewable energy and GHG reduction targets. However, the Site-West Alternative would not achieve the project objective shown below.

- The Site-West Alternative would not construct and operate a solar photovoltaic power-generating facility capable of delivering 170 MW<sub>ac</sub> to the Gates Substation in a cost-competitive manner given the distance to the Gates Substation, the higher cost of land acquisition, and the need to address site constraints through enhanced engineering and design efforts.

## 5.7 ENVIRONMENTALLY SUPERIOR ALTERNATIVE

CEQA Guidelines Section 15126.6(e)(2) requires an EIR to identify an “environmentally superior alternative.” CEQA Guidelines Section 15126.6(e)(2) indicates that “if the environmentally superior alternative is the ‘no project’ alternative, the EIR shall also identify the environmentally superior alternative among the other alternatives.” The qualitative environmental effects of each alternative in relation to the proposed project are summarized in Table 5-1. The “environmentally superior alternative” is the Reduced Acreage Alternative (Alternative 2).

Identification of the “environmentally superior alternative” is an informational procedure, and the alternative selected may not be the alternative that best meets the project objectives. As shown in Table 5-2, the Reduced Acreage Alternative would have fewer impacts on resources than the proposed project owing to the reduced project footprint.

The Reduced Acreage Alternative would meet most of the project objectives, including the following:

- Directly interconnect directly the CAISO high-voltage electrical transmission system (grid) to the Gates Substation.
- Assist California utilities in meeting their obligations under California’s RPS Program, including 60% of retail sales from renewable sources by the end of 2030.
- Assist California utilities in meeting their obligations under the CPUC’s Energy Storage Framework and Design Program, including procurement targets of 1,325 MW by 2020, by providing up to 100 MW of storage capacity.
- Provide renewable-energy-related and diversified job opportunities and training that will help reduce local unemployment and benefit the local economy.

However, the Reduced Acreage Alternative would not construct and operate a solar photovoltaic power-generating facility capable of producing up to 170 MW<sub>ac</sub> and up to 100 MW in storage in a cost competitive manner.

**This page left intentionally blank.**

## 6.0 EFFECTS FOUND NOT TO BE SIGNIFICANT

Section 15128 of the California Environmental Quality Act (CEQA) Guidelines requires that an Environmental Impact Report (EIR) contain a brief statement disclosing why various possible significant effects were not discussed in detail in the EIR. The Notice of Preparation (NOP) for the Fifth Standard Solar Project Complex, dated September 15, 2017, and contained in Appendix A of this Draft EIR, evaluated each of the environmental factors listed in Appendix G of the CEQA Guidelines. As part of that evaluation, certain impacts were found to be less than significant due to the Fifth Standard Solar Facility Project Complex's (proposed project's) characteristics. This section provides a brief description of effects found not to be significant, based on the County's evaluation of potential impacts.

Would the Project...

### Section 4.2: Agriculture and Forestry Resources

- **Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code (PRC) Section 12220(g)), timberland (as defined by PRC Section 4526), or timberland zoned Timberland Production (as defined by Government Code (GC) Section 51104(g))?**

The project site is not zoned as forest land, timberland, or timberland production and does not meet the requirements of a timberland zone as defined by PRC Section 4526.

Therefore, no potential impacts associated with rezoning or causing rezoning of forest land or timberland would occur.

- **Result in the loss of forest land or conversion of forest land to non-forest use?**

The project site is currently used for agricultural purposes and does not contain forest land or forest land uses. Therefore, no potential impacts associated with the loss or conversion of forest land would occur.

### Section 4.3: Air Quality and Greenhouse Gases

- **Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?**

Operation of the proposed project would not create objectionable odors. However, construction and decommissioning of the proposed project would include fuels and other odor sources, such as diesel equipment, that could result in the creation of objectionable odors. Since these activities would be temporary and spatially dispersed and generally take place in rural areas, they would not affect a substantial number of people. Therefore, impacts from odors generated by construction and decommissioning of the proposed project would be less than significant.



#### Section 4.6: Geology and Soils

- **Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault?**

The project site does not contain, and is not located near, a defined Alquist-Priolo zone. The nearest zone is located more than 14 miles to the west. Therefore, the project site is not subject to rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map. No potential impacts associated with fault rupture would occur.

- **Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?**

The proposed project would not generate wastewater that would need to be disposed of in a septic or sewer system. During construction and any maintenance operations, portable restroom facilities would be provided for workers. Therefore, no potential impacts with respect to wastewater disposal systems would occur.

#### Section 4.8: Hazards and Hazardous Materials

- **Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?**

Solar facilities do not emit hazardous emissions; however, construction activities would include the use of hazardous materials such as gasoline, diesel, and solvents. Huron Elementary, the school nearest to the project site, is located approximately 2.8 miles to the north. As such, the proposed project is not located within one-quarter mile of an existing or proposed school. Therefore, no potential impacts associated with the emission of hazardous materials or substances within one-quarter mile of an existing or proposed school would occur.

- **For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?**

The project site is not located within 2 miles of a public airport. The nearest public airport is the New Coalinga Municipal Airport located approximately 9 miles west of the project site. Therefore, no potential impacts associated with aviation noise and safety at the project site would occur.

#### Section 4.9: Hydrology and Water Quality

- **In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?**

The project site would not be exposed to hazards associated with a seiche, tsunami, or mudflow because the project site is not located near large bodies of water, an ocean, or a

hillside. Therefore, no potential impacts associated with seiche, tsunami, or mudflow would occur.

#### Section 4.10: Land Use and Planning

- **Physically divide an established community?**

The project site is located in a rural, unincorporated area of the County that lacks any established community. Therefore, no potential impacts associated with the division of an established community would occur. Huron, located approximately 1.5 miles north of the project site, is the nearest established community.

#### Section 4.12: Noise

- **For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?**

New Coalinga Municipal Airport is located approximately 9 miles west of the project site. The nearest private airport is the Stone Land Company Airport, located approximately 6.6 miles southeast of the project site. There is a private airstrip approximately 0.5-mile north of the project site on the northwest corner of Gale and Trinity. The project would not include permanent onsite employees. Occasionally, workers would be present at the project site to undertake panel washing. Potential impacts associated with aviation noise at the project site would not be excessive as the exposure would be intermittent at best. The impact would be less than significant.

#### Population and Housing

Population and Housing was completely scoped out of the EIR through the NOP, thus there is no associated section in the EIR that includes Population and Housing.

- **Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?**

The proposed project does not propose new homes that would create unplanned growth or the extension of roads or other infrastructure that could indirectly induce unplanned population growth. The proposed project would generate temporary construction jobs that would be expected to be filled by the local workforce. During operations, workers would be present at the project site to undertake panel washing. Typical maintenance would be expected to require up to four full-time equivalent employees for panel washing up to three times per year. The maintenance staff would be expected to be filled by the local workforce that has readily available labor and would not induce unplanned population growth.

Therefore, the proposed project would not have the potential to cause substantial direct or indirect population growth

- **Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?**

The project site does not contain any residential uses or existing housing, and no residential uses are included in the proposed project. Because there are no existing residences on the project site, no houses or people would be displaced through the development and decommissioning of the project. The proposed project would generate temporary construction jobs that would be expected to be filled by the local workforce and not require the construction of new housing. Given the above project characteristics, the proposed project would not have the potential to displace people or housing, or require the construction of housing elsewhere.

#### **Section 4.13: Public Services**

- **Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the following public services:**

**Schools:** Construction and operation of the proposed project would not result in substantial direct or indirect population growth that would increase the school-aged population in the region and thus would not require the construction or expansion of school facilities. Therefore, there are no impacts associated with schools.

**Parks:** Construction and operation of the proposed project would not result in substantial direct or indirect population growth that would increase the use of parks in the region and thus would not require the construction or expansion of recreational facilities. Therefore, there are no impacts associated with parks.

**Other Public Facilities:** Construction and operation of the proposed project would not result in substantial direct or indirect population growth that would increase the use of other public facilities such as libraries in the region and thus would not require the construction or expansion of public facilities. Therefore, there are no impacts associated with other public facilities.

#### **Recreation**

Recreation was completely scoped out of the EIR through the NOP, thus there is no associated section in the EIR that includes Recreation.

**a) Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated? and**

**b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?**

The proposed project would not result in substantial direct or indirect population growth that would increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated. Furthermore, the proposed project does not include the construction or expansion of recreational facilities. These conditions preclude the possibility of the proposed project resulting in impacts related to recreational facilities.

#### **Section 4.16: Utilities and Service Systems**

- **Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?**

The proposed project does not involve the installation of permanent facilities for the treatment of wastewater; portable restroom facilities will be provided during construction and decommissioning. Occasionally, workers would be present at the project site to undertake panel washing during operations; portable restroom facilities will be located at the project site during operation. Therefore, the proposed project would not have the potential to cause impacts related to wastewater treatment capacity.

**This page left intentionally blank.**

## 7.0 OTHER CEQA CONSIDERATIONS

This section describes other statutorily required topics including growth-inducing impacts, significant and unavoidable impacts, significant irreversible environmental changes, and mandatory findings of significance. It also provides a discussion of energy conservation as required by Section 15126.4 of the California Environmental Quality Act (CEQA) Guidelines.

### 7.1 GROWTH-INDUCING IMPACTS

Section 15126.2(d) of the CEQA Guidelines requires that an Environmental Impact Report (EIR) evaluate the growth-inducing impacts of a proposed action. A project is identified as growth inducing if it “could foster economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment.”

Growth-inducing impacts can occur when development of a project imposes new burdens on a community by directly inducing population growth or by leading to the construction of additional development in the project area. Also included in this category are projects that would remove physical obstacles to population growth, such as the construction of a new roadway into an undeveloped area or a wastewater treatment plant with excess capacity to serve additional new development. Construction of these types of infrastructure projects cannot be considered isolated from the immediate development that they facilitate and serve. Projects that physically remove obstacles to growth or projects that indirectly induce growth are those that may provide a catalyst for future unrelated development in the area (such as a new residential community that requires additional commercial uses to support residents). The growth-inducing potential of a project could also be considered significant if it fosters growth in excess of what is assumed in the local master plans and land use plans or in projections made by regional planning agencies.

Potential growth-inducing components of the project addressed in this section relate to employment and population growth, increased power generation and regional population growth, and increased transmission capacity that serves renewable power development.

#### 7.1.1 Employment and Population Growth

##### Construction Workforce

Construction phases of the Fifth Standard Solar Facility Project Complex (proposed project) are expected to overlap, and the number of construction workers onsite is expected to range between 20 and 300 workers per day, with the peak number of workers onsite during the eighth- and ninth-months overlap. Workers are expected to be hired from within the County to the extent practicable. Some of the workers originating outside of the County would temporarily relocate to accommodations within the project area for the duration of construction activities. The vacancy rate for unincorporated Fresno County was 13.6% in 2010, which denotes a surplus of available housing (County 2016). Therefore, it's reasonable to assume that the demand for temporary accommodations during construction would be accommodated by existing housing in the region, and no new housing would be needed.



The County had a labor force of 417,900 workers and an unemployment rate of 5.8% in September 2019 (EDD 2019). A maximum of 300 workers, if all hired from within the county, would represent approximately 0.07% of the total labor force, although the construction workers are also expected to come from the surrounding areas. The construction phase would last for 11 to 12 months and would not trigger additional population growth in the area.

### **Operational Workforce**

No more than 11 full-time staff would be employed during operation of the proposed project. Considering the high vacancy rates in the county, it is anticipated that adequate housing would be available without necessitating the need for new housing. Therefore, project operation would not result in new growth in the area relating to the potential population increase.

There would be no new growth in employment and housing in the area from new restaurants, mobile home parks, convenience stores, or other services that would serve the workers during project construction, because existing facilities in the region would be adequate to accommodate both the construction and operations workforces.

### **7.1.2 Increased Power Generation**

While the proposed project would contribute to energy supply, which indirectly supports population growth, the development of the proposed project is responding to the state's need for renewable energy to meet its Renewable Portfolio Standards (RPS) while at the same time increase sources of renewable energy being produced locally in the County. Unlike a gas-fired power plant, the proposed project is not being developed as a source of base load power in response to growth in demand for electricity. The power generated would be added to the state's electricity grid, with the intent that it would allow for an overall reduction in power use by PG&E, as well as reduce the use of fossil-fueled power plants and their greenhouse gas emissions.

County planning documents permit and anticipate a certain level of growth and energy use growth. The purpose of the Fresno County General Plan and Zoning Ordinance is to address this anticipated growth. The anticipated growth drives energy production projects, not vice versa. The proposed project would supply energy to accommodate and support existing County and Pacific Gas and Electric (PG&E) customers' energy demands, but it would not foster any new growth for the following reasons: (1) the additional energy would be used to ease the burdens of meeting existing statewide energy demands within and beyond the project area; (2) it would ease the burdens of meeting existing energy demands; (3) the energy would be used to support already-projected growth; and (4) the factors affecting growth are so diverse that any potential connection between additional energy production and growth would necessarily be too speculative and tenuous to merit extensive analysis.

### **7.1.3 Increased Transmission Capacity**

The development of the proposed project would include a single onsite substation that would collect the medium voltage circuits that carry power from the solar facilities and prepare it for transmission to the point of interconnect. The power from the onsite substation would then be transferred to the Gates Substation via new 230-kilovolt (kV) overhead generation tie (gen-tie) line. This connection is described in detail in Section 2, Project Description. No upgrades are

proposed to the Gates Substation that would increase transmission capacity. PG&E is an investor-owned utility, regulated by the California Public Utilities Commission (CPUC). The utility's transmission system is operated by the California Independent System Operator (CAISO) under regulations established by the Federal Energy Regulatory Commission. When an electricity generator requests use of PG&E's transmission facilities, PG&E is required to provide access after completion of power flow and cost studies. The CPUC evaluates each PG&E project to ensure that its need and costs are justified and appropriate, and that financial effects on California electricity ratepayers are appropriate. Any transmission system upgrades that are required as a result of other solar projects would need to be evaluated by the CPUC in accordance with CEQA as a part of the CPUC permitting process. Because any potential transmission system upgrades would be speculative, the potential for population growth induced by the transmission system upgrades from other solar facilities would also be speculative. Therefore, the proposed project is not expected to be large enough to induce the development of other large solar projects and population growth in the region.

## 7.2 SIGNIFICANT AND UNAVOIDABLE IMPACTS

CEQA Guidelines Section 15126(b) requires an EIR to "describe any significant impacts, including those which can be mitigated but not reduced to a level of insignificance. Where there are impacts that cannot be alleviated without imposing an alternative design, their implications and the reasons why the project is being proposed, notwithstanding their effect, should be described."

Section 4.0, Environmental Impact Analysis, provides a description of the potential environmental impacts of the proposed project and recommends Mitigation Measures to reduce impacts to a less than significant level where possible. After implementation of the recommended Mitigation Measures, the following resource areas would have significant and unavoidable impacts:

### Agricultural Resources

- Convert Prime Farmland to non-agricultural use
- Conflict with existing zoning or Williamson Act Contract
- Pressures to convert farmland to non-agricultural use

### Land Use

- Conflict with applicable plans, policies, or regulations

## 7.3 SIGNIFICANT IRREVERSIBLE ENVIRONMENTAL CHANGES

Section 15126.2(c) of the CEQA Guidelines defines an irreversible impact as an impact that uses nonrenewable resources during the initial and continued phases of the project. Irretrievable commitments of resources should be evaluated to ensure that such consumption is justified. Irreversible impacts can result from loss of habitat of sensitive biological resources, change in land use, damage caused by environmental accidents associated with project construction or operation, or damage to cultural or paleontological resources.

As discussed in Section 4.2, Agriculture, construction of the proposed project would result in the long-term conversion of 1,600 acres of Prime Farmland. The Applicant has committed to restoring land back to agricultural use after project decommissioning and will submit a reclamation plan to the County. However, even with a reclamation plan, the proposed project would result in a conversion of Prime Farmland to non-agricultural use and result in the cancellation of Williamson Act contracts. Conversion of the site from an agricultural use to a non-agricultural use and cancellation of Williamson Act contracts would, therefore, be considered a significant irreversible commitment and loss of agricultural resources.

Construction of the proposed project would require a permanent commitment of natural resources from the direct consumption of fossil fuels, construction materials, and energy required for the production of materials, as well as the manufacture of new components; most project components would be recycled at the end of the project's useful life (see Section 2, Project Description). The proposed project would also result in significant impacts on air quality due to emissions of NO<sub>x</sub>, and PM<sub>10</sub> and greenhouse gases (GHGs) during construction. However, as discussed in Section 4.3, Air Quality, Mitigation Measures would be implemented that would reduce the impacts on air quality to a less than significant level. In addition, as discussed in Section 4.18, Energy, the project would offset its construction, operational lifetime, and decommissioning fuel and emissions use in seven months of operation. After all of the proposed project's lifetime emissions have been offset, the proposed project would generate a natural gas equivalent of 1,541,143 Million British Thermal Units per year (MMBTU/year) or a coal equivalent of 210,155 MMBTU/year.

Construction and operation of the proposed project would require the use of a limited amount of hazardous materials, such as fuel, lubricants, and cleaning solvents. During project construction and operation, preexisting soil staining identified in Phase I would be avoided. All hazardous materials would be stored, handled, and used in accordance with applicable federal, state, and local regulations. The Applicant would be required to develop and comply with a Stormwater Pollution Prevention Plan (SWPPP) as well as Best Management Practices. Appropriate implementation of these plans and practices, as well as Mitigation Measure HAZ-1, which addresses broken photovoltaic (PV) module detection and handling would reduce the potential for environmental accidents associated with the proposed project to less than significant levels. The proposed project is not expected to result in environmental accidents that would cause irreversible damage.

The primary objective of the proposed project is to construct and operate a solar PV power-generating facility capable of producing 170 megawatts (MW) in a cost-competitive manner. Other objectives include interconnecting at the Gates Substation because that would directly help lower the project costs facilitating the primary objective and assisting California in meeting its obligations under the RPS. Assisting with the RPS would help California meet its renewable energy goals, which have been developed to reduce the effects of global climate change and GHG emissions. The proposed project would develop a renewable source of power, helping to offset the use of nonrenewable resources and contribute to an overall reduction of nonrenewable resources currently used to generate electricity. As discussed above, resources that would be consumed as a result of project implementation include water, electricity, and fossil fuels during construction and operations; however, the amount and rate of consumption of these resources would not result in significant environmental impacts or the unnecessary, inefficient, or wasteful use of resources over the long-term. Compliance with all applicable

building codes as well as County policies and the Mitigation Measures identified in this EIR would ensure that natural resources are conserved to the extent feasible.

As previously discussed under Section 7.2, Significant and Unavoidable Impacts, the lone exception to the conservation of natural resources would be the conversion of productive Prime Agricultural Farmland.

## **7.4 SIGNIFICANT EFFECTS THAT CANNOT BE AVOIDED**

### **7.4.1 Significant Direct Effects**

Section 15126.2(b) of the CEQA Guidelines requires that an EIR describe any significant impacts, including those that can be mitigated but not reduced to less-than-significant levels. Potential environmental effects of the proposed project and proposed Mitigation Measures are discussed in detail in Section 4.0, Environmental Impact Analysis.

The proposed project would not directly or indirectly cause substantial adverse effects on human beings. Air quality, hazardous materials, and noise would have the only potential means through which the project could have a substantial effect on human beings. However, all potential impacts of the proposed project related to air quality and noise are identified as less than significant or less than significant with mitigation, respectively. With the exception of agricultural resources and land use, for all other resource areas, the proposed project would have no impact, no significant impact, or less than significant impacts with mitigation incorporated.

Impacts associated with Agricultural Resources and Land Use were determined to be significant and unavoidable. The proposed project would result in the conversion of 1,600 acres of Prime Farmland and would be inconsistent with existing Williamson Act contracts, thus requiring cancellation. The proposed project was determined to be inconsistent with Fresno County General Plan policies for the protection of agriculture and with the Williamson Act, and may result in pressure to convert farmland to non-agricultural uses. Impacts in Agricultural Resources and land use would be significant and unavoidable with construction and operation of the solar project, even with the incorporation of Mitigation Measures that attempt to reduce impacts to the extent feasible.

### **7.4.2 Significant Cumulative Effects**

According to Section 15355 of the State CEQA Guidelines, the term cumulative impacts “refers to two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts.” Individual impacts that may contribute to a cumulative impact may be from a single project or a number of separate projects. Individually, the impacts of a project may be relatively minor, but when considered along with impacts of other closely related or nearby projects, including newly proposed projects, the impacts could be cumulatively considerable.

The cumulative scenario and analysis methodology are included in Section 4.0, Environmental Impact Analysis. This EIR has considered the potential cumulative impacts of the proposed project for each issue area in Sections 4.1 through 4.18. Impacts of the proposed project are cumulatively considerable when they are combined with impacts from past, present, and

reasonable future projects. Impacts would be considered cumulatively significant for the following issue areas:

**Agricultural Resources**

- Convert important farmland to non-agricultural use
- Conflict with existing zoning or Williamson Act contract
- Pressures to convert farmland to non-agricultural use

**Land Use**

- Conflict with applicable plans, policies, or regulations

## 8.0 LIST OF PREPARERS AND ORGANIZATIONS CONSULTED

### LEAD AGENCY

County of Fresno

**Department of Public Works and Planning | Development Services and Capital Project Division**

Director ..... Steven E. White  
Principal Planner ..... Chris Motta  
Senior Planner ..... Marianne Mollring  
Planner ..... Christina Monfette

### CONSULTANT

Stantec Consulting Services, Inc.

Senior Principal ..... Trevor Macenski  
Senior Project Manager/Air Quality Scientist ..... Elena Nuño  
Senior Environmental Planner ..... Caitlin Schroeder  
Environmental Planner ..... Anna Radonich  
Senior Planner/Visual Impact Assessment ..... Josh Hohn  
Environmental Analyst ..... Kaela Johnson  
Environmental Analyst ..... Tina Garg  
Associate Scientist ..... Corinne Ackerman, Ph.D.  
Associate Scientist ..... Michael Myers  
Environmental Noise Analyst ..... Kate Gray  
Environmental Planner ..... Danielle Althaus  
Environmental Planner ..... Zoryana Pope  
Environmental Planner ..... Alissa Stillman  
Senior Project Biologist ..... Loni Cooper  
Biologist ..... Katelyn Peterson  
Archaeologist ..... Meagan Kersten  
GIS ..... Willow Campbell  
Technical Editor/Word Processor ..... Chris Broderick

### APPLICANT TEAM

RWE Solar Development, LLC (formerly known as EC&R Solar Development, LLC)

Director, Solar Development ..... Matt Stucky, PE  
Manager, Solar Development ..... Camila Goetze

ESA Environmental Science Associates

Senior Managing Associate ..... Julie Watson, AICP, LEED AP



## ORGANIZATIONS CONSULTED

Fresno County Department of Public Works and Planning

Federal Agencies

United States Army Corps of Engineers

United States Department of Agriculture, Natural Resources Conservation Service

United States Department of the Interior, Fish and Wildlife Services, Endangered Species Division

United States Environmental Protection Agency Region 9

United States Fish and Wildlife Service, San Joaquin Valley Division

State Agencies

California Department of Conservation

California Department of Fish and Wildlife

California Department of Forestry and Fire Protection Fresno-Kings Unit

California Department of Transportation (Caltrans District 6)

California Energy Commission

California Environmental Protection Agency Department of Toxic Substances Control

California Highway Patrol

California Native American Heritage Commission

California Public Utilities Commission

California Reclamation Board

California Regional Water Quality Control Board, Region 5

California State Clearinghouse

California State Office of Historic Preservation, Department of Parks and Recreation

Local Agencies

Central Valley Flood Protection Board

City of Huron Planning Department

Coalinga-Huron Mosquito Abatement District

Fresno County Fire Protection District

Fresno Council of Governments

Fresno Metropolitan Flood Control District

Golden Plains Unified School District

Pacific Gas & Electric, Land Services Department

San Joaquin Valley Air Pollution Control District

South San Joaquin Valley Archaeological Information Center

Westlands Water District

## 9.0 REFERENCES

- Applied EarthWorks Inc. 2016. *Cultural Resources Inventory and Evaluation for the Central Valley Power Connect Project, Fresno, Kings, and Madera Counties, California*. Prepared by K. Asselin, R. Baloian, A. Morlet, M. J. Mirro, J. Whiteman, J. Tibbet, and M. Baloian, Prepared for Pacific Gas and Electric Company. On file (FR- 02769), Southern San Joaquin Valley Information Center. May 2016.
- Avian Power Line Interaction Committee (APLIC). 2012. *Reducing Avian Collisions with Power Lines*. October 2012. Available online at [http://www.aplic.org/uploads/files/11218/Reducing\\_Avian\\_Collisions\\_2012watermark\\_LR.pdf](http://www.aplic.org/uploads/files/11218/Reducing_Avian_Collisions_2012watermark_LR.pdf). Accessed January 15, 2019.
- Boessenecker, R. W., and A. W. Poust. 2015. "Freshwater Occurrence of the Extinct Dolphin Parapontoporia (*Cetacea: Lipotidae*) from the Upper Pliocene Nonmarine Tulare Formation of California." *Palaeontology* 58:489-496.
- Bryant, W. A. and E. W. Hart. 2007. "Fault-Rupture Hazard Zones in California: Alquist-Priolo Earthquake Fault Zoning Act with Index to Earthquake Fault Zone Maps." *Special Publication 42. Interim Revision*. California Geological Survey. Sacramento, CA.
- California Air Resources Board (CARB). 2000. *Final Diesel Risk Reduction Plan*. Available online at <https://www.arb.ca.gov/diesel/documents/rrpapp.htm>. Accessed November 7, 2017.
- \_\_\_\_\_. 2009. *Climate Change Scoping Plan: A Framework for Change*. Published December 2008; amended version posted May 11, 2009 (included errata and Board requested modifications). Available online at [http://www.arb.ca.gov/cc/scopingplan/document/adopted\\_scoping\\_plan.pdf](http://www.arb.ca.gov/cc/scopingplan/document/adopted_scoping_plan.pdf). Accessed January 16, 2019.
- \_\_\_\_\_. 2016. *State of California 2030 Target Scoping Plan Update Concept Paper*. Available online at [https://www.arb.ca.gov/cc/scopingplan/document/2030\\_sp\\_concept\\_paper2016.pdf](https://www.arb.ca.gov/cc/scopingplan/document/2030_sp_concept_paper2016.pdf). Accessed November 8, 2017.
- \_\_\_\_\_. 2018. *Overview: Diesel Exhaust and Health*. Available online at <https://www.arb.ca.gov/research/diesel/diesel-health.htm>. Accessed August 29, 2018.
- \_\_\_\_\_. 2019. *California Greenhouse Gas Emission Inventory – 2019 Edition*. Available online at <https://ww3.arb.ca.gov/cc/inventory/data/data.htm>. Accessed August 20, 2019.
- California Air Pollution Control Officer's Association (CAPCOA). 2008. *Evaluating and Addressing Greenhouse Gas Emissions from Projects Subject to the California*

References

- Environmental Quality Act*. Available online at <http://www.capcoa.org/wp-content/uploads/2012/03/CAPCOA-White-Paper.pdf>. Accessed November 14, 2019.
- California Department of Conservation (DOC). 1988. *Mineral Land Classification: Aggregate Materials in the Fresno Production-Consumption Region*. Division of Mines and Geology. Special Report 185.
- \_\_\_\_\_. 1997. *California Agricultural Land Evaluation and Site Assessment Model Instruction Manual*. Available online at [http://www.conservation.ca.gov/dlrp/Pages/qh\\_lesa.aspx](http://www.conservation.ca.gov/dlrp/Pages/qh_lesa.aspx). Accessed November 27, 2017.
- \_\_\_\_\_. 1999. *Mineral Land Classification: Aggregate Materials in the Fresno Production-Consumption Region*. Office of Mines Reclamation. Available online at [ftp://ftp.consrv.ca.gov/pub/dmg/pubs/ofr/OFR\\_99-02/OFR\\_99-02\\_Text.pdf](ftp://ftp.consrv.ca.gov/pub/dmg/pubs/ofr/OFR_99-02/OFR_99-02_Text.pdf). Accessed October 18, 2017.
- \_\_\_\_\_. 2012. *Division of Land Resource Protection, Farmland Mapping and Monitoring Program. Fresno County Important Farmland*. Available online at <http://www.conservation.ca.gov/dlrp/fmmp>. Accessed February 3, 2015.
- \_\_\_\_\_. 2015. *California Farmland Conversion Report 2015*. September. Available online at [https://www.conservation.ca.gov/dlrp/fmmp/Documents/fmmp/pubs/2010-2012/FCR/FCR%202015\\_complete.pdf](https://www.conservation.ca.gov/dlrp/fmmp/Documents/fmmp/pubs/2010-2012/FCR/FCR%202015_complete.pdf). Accessed November 27, 2018.
- \_\_\_\_\_. 2016. *The California Land Conservation Act of 1965 2016 Status Report*. December. Available online at [https://www.conservation.ca.gov/dlrp/wa/Documents/stats\\_reports/2016%20LCA%20Status%20Report.pdf](https://www.conservation.ca.gov/dlrp/wa/Documents/stats_reports/2016%20LCA%20Status%20Report.pdf). Accessed November 27, 2018.
- California Department of Fish and Wildlife (CDFW). 2010. *Natural Communities*. Available online at <https://www.wildlife.ca.gov/Data/VegCAMP/Natural-Communities>. Accessed December 20, 2017.
- \_\_\_\_\_. 2015. *Central Region Pleasant Valley Ecological Reserve, Fresno County Map*. Available online at <https://www.wildlife.ca.gov/Lands/Places-to-Visit/Pleasant-Valley-ER>. Accessed October 23, 2017.
- \_\_\_\_\_. 2017a. *California Natural Diversity Database Special Animals List*. Available online at <https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=109406&inline>. Accessed December 20, 2017.
- \_\_\_\_\_. 2017b. *California Natural Diversity Database (CNDDDB) RareFind5*. CDFW's Electronic Database, Sacramento, California. Available online at <https://www.wildlife.ca.gov/Data/CNDDDB/Maps-and-Data>. Accessed December 20, 2017.
- \_\_\_\_\_. 2017c. *Mendota Wildlife Area*. Last updates: July 20, 2017. Available online at <https://www.wildlife.ca.gov/Lands/Places-to-Visit/Mendota-WA>. Accessed December 20, 2017.

- \_\_\_\_\_. 2017d. California Natural Diversity Database Special Vascular Plants, Bryophytes, and Lichens List. Available online at <https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=109383&inline>. Accessed December 20, 2017.
- California Department of Forestry and Fire Protection (CAL FIRE). 2007a. Fresno County Fire Hazard Severity Zones in State Responsibility Area. Available online at [https://osfm.fire.ca.gov/media/6671/fhszs\\_map10.pdf](https://osfm.fire.ca.gov/media/6671/fhszs_map10.pdf). Accessed April 9, 2019.
- \_\_\_\_\_. 2007b. Fresno County Draft Fire Hazard Severity Zones in Local Responsibility Area. Available online at [https://osfm.fire.ca.gov/media/6673/fhszl06\\_1\\_map10.pdf](https://osfm.fire.ca.gov/media/6673/fhszl06_1_map10.pdf). Accessed April 9, 2019.
- \_\_\_\_\_. 2019a. Map of State Responsibility Areas. Available online at: [https://frap.fire.ca.gov/media/2136/facilities\\_sra\\_map.pdf](https://frap.fire.ca.gov/media/2136/facilities_sra_map.pdf).
- \_\_\_\_\_. 2019b. Stats and Events. Available online at: <https://www.fire.ca.gov/stats-events/>
- California Department of Public Health. 2016. Valley Fever Fact Sheet. Available online at <https://www.cdph.ca.gov/Programs/CID/DCDC/CDPH%20Document%20Library/ValleyFeverFactSheet.pdf>. Accessed November 7, 2017.
- California Department of Resources Recycling and Recovery (CalRecycle). 2017. Facility/Site Summary Details: American Avenue Disposal Site (10-AA-0009). Available online at <https://www2.calrecycle.ca.gov/swfacilities/Directory/10-AA-0009>. Accessed October 18, 2017.
- \_\_\_\_\_. 2019. Facility/Site Summary Details: City of Clovis Landfill (10-AA-0004). Available online at <https://www2.calrecycle.ca.gov/swfacilities/Directory/10-AA-0004>. Accessed August 20, 2019.
- California Department of Transportation (Caltrans). 2004. *Transportation-and Construction-Induced Vibration Guidance Manual*. Available online at [http://www.trpa.org/documents/rseis/3.6%20Noise/3.6\\_Caltrans%202004\\_page%205\\_Transportation%20and%20Construction.pdf](http://www.trpa.org/documents/rseis/3.6%20Noise/3.6_Caltrans%202004_page%205_Transportation%20and%20Construction.pdf). Accessed October 19, 2017.
- \_\_\_\_\_. 2011. *Scenic Highway Guidelines*. Available online at [http://www.dot.ca.gov/hq/LandArch/16\\_livability/scenic\\_highways/guidelines/scenic\\_hwy\\_guidelines\\_04-12-2012.pdf](http://www.dot.ca.gov/hq/LandArch/16_livability/scenic_highways/guidelines/scenic_hwy_guidelines_04-12-2012.pdf). Last updated on September 8, 2011. Accessed December 20, 2017.
- \_\_\_\_\_. 2012. *Highway Design Manual*. January 2012.
- \_\_\_\_\_. 2013. *Technical Noise Supplement to the Traffic Noise Analysis Protocol*. September 2013. Available online at [http://www.dot.ca.gov/hq/env/noise/pub/TeNS\\_Sept\\_2013B.pdf](http://www.dot.ca.gov/hq/env/noise/pub/TeNS_Sept_2013B.pdf). Accessed October 2017.
- \_\_\_\_\_. 2015. *2015 Traffic Volumes on California State Highways*. Available online at [http://www.dot.ca.gov/trafficops/census/docs/2015\\_aadt\\_volumes.pdf](http://www.dot.ca.gov/trafficops/census/docs/2015_aadt_volumes.pdf). Accessed October 2017.

References

- California Department of Water Resources (DWR). 2006. "California's Groundwater, San Joaquin Valley Groundwater Basin, Westside Subbasin." *California Department of Water Resources Bulletin 118*. Last updated January 20, 2006.
- \_\_\_\_\_. 2014. *California Irrigation Management Information System*.
- California Division of Oil, Gas, and Geothermal Resources (DOGGR). 2014. Resources Well Finder Tool and GIS Data. Available online at <http://www.conservation.ca.gov/dog/maps/Pages/GISMapping2.aspx>. Accessed October 18, 2017.
- California Employment Development Department (EDD). 2019. Monthly EDD Press Release – Fresno Metropolitan Statistical Area (MSA) (Fresno County). Available online at: [https://www.labormarketinfo.edd.ca.gov/file/lfrmonth/frsn\\$pds.pdf](https://www.labormarketinfo.edd.ca.gov/file/lfrmonth/frsn$pds.pdf). Accessed August 20, 2019.
- California Energy Commission (CEC). 2014. Renewables Portfolio Standard (RPS) Proceeding. Docket # 11-RPS-01 and 03-RPS-1078. Available online at <https://efiling.energy.ca.gov/GetDocument.aspx?tn=67617&DocumentContentId=32602>. Accessed October 23, 2017.
- \_\_\_\_\_. 2019. *California Energy Commission Integrated Energy Policy Report*. Available online at: <https://www.energy.ca.gov/energypolicy/>. Accessed April 10, 2019.
- California Geological Survey (CGS). 2002. California Geomorphic Provinces. Available online at [https://www.conservation.ca.gov/cgs/Documents/Note\\_36.pdf](https://www.conservation.ca.gov/cgs/Documents/Note_36.pdf). Accessed October 19, 2017.
- \_\_\_\_\_. 2008. CGS Ground Motion Interpolator. Available online at <https://www.conservation.ca.gov/cgs/ground-motion-interpolator>. Accessed October 19, 2017.
- \_\_\_\_\_. 2010. 2010 Fault Activity Map of California. California Geological Survey, Geologic Data Map No. 6. Compilation and Interpretation by Charles W. Jennings and William A. Bryant. Graphics by Milind Patel, Ellen Sander, Jim Thompson, Barbara Wanish, and Milton Fonseca. Available online at <http://www.quake.ca.gov/gmaps/FAM/faultactivitymap.html>. Accessed October 19, 2017.
- California Green Building Standards Code. 2016. Chapter 5, Nonresidential Mandatory Measures. Division 5.1, Planning and Design. Available online at <https://codes.iccsafe.org/content/chapter/2058/>. Accessed October 23, 2017.
- California Public Utilities Commission (CPUC). 2006. General Order Number 128 Public Utilities Commission of the State of California Rules for Construction of Underground Electric Supply and Communication Systems. Available online at [http://docs.cpuc.ca.gov/PUBLISHED/GENERAL\\_ORDER/52591.htm](http://docs.cpuc.ca.gov/PUBLISHED/GENERAL_ORDER/52591.htm). Accessed October 19, 2017.
- \_\_\_\_\_. 2019. California Renewables Portfolio Standard. Available online at <http://www.cpuc.ca.gov/rps/>. Accessed April 10, 2019.

- Centers for Disease Control and Prevention. 2015. "Coccidioidomycosis among Workers Constructing Solar Power Farms, California, USA, 2011–2014." Available online at [http://wwwnc.cdc.gov/eid/article/21/11/15-0129\\_article](http://wwwnc.cdc.gov/eid/article/21/11/15-0129_article). Accessed November 7, 2017.
- Central Valley Regional Water Quality Control Board (Central Valley RWQCB). 2004. *Water Quality Control Plan for the Tulare Lake Basin*. Second edition. Revised January 2004. Available online at [http://www.waterboards.ca.gov/centralvalley/water\\_issues/basin\\_plans/tlbp.pdf](http://www.waterboards.ca.gov/centralvalley/water_issues/basin_plans/tlbp.pdf). Accessed October 2018.
- \_\_\_\_\_. 2018. *Water Quality Control Plan for the Tulare Lake Basin*. Third Edition. Revised May 2018.
- Dibblee, T. W., and J. A. Minch. 2007. Geologic Map of the Coalinga and Gujarral Hills Quadrangles, Fresno County, California. Dibblee Foundation Map DF-302. 1:24,000.
- Dundas, R. G., F. J. Harmsen, and J. Wakabayashi. 2009. "Mammuthus and Camelops from Pleistocene Strata along the Caltrans State Route 180 West Project, Fresno, California." Geological Society of America Annual Meeting, Portland. Paper No. 32-49.
- Dundas, R. G., R. B. Smith, and K. L. Verosub. 1996. "The Fairmead Landfill Locality (Pleistocene, Irvingtonian), Madera County, California: Preliminary report and Significance." *PaleoBios* 17:50–58.
- Ecology and Environment. 2015. *Results of Protocol-Level Burrowing Owl and Swainson's Hawk Surveys for the Phelps Solar Project*. July 2015.
- Environmental Science Associates (ESA). 2016a. *EC&R Solar Development LLC, Fifth Standard Project Complex Air Quality and Greenhouse Gas Evaluation Technical Report*.
- \_\_\_\_\_. 2016b. *Biological Resources Technical Report*. September 2016.
- \_\_\_\_\_. 2017a. *EC&R Solar Development, LLC Fifth Standard Solar Project Complex, Fresno County, California. Cultural Resources Survey Report*. Prepared for EC&R. June 2017.
- \_\_\_\_\_. 2017b. *EC&R Solar Development, LLC Fifth Standard Solar Project Complex, Fresno County, California. Paleontological Resources Survey Report*. Prepared for EC&R. June 2017.
- \_\_\_\_\_. 2017c. *EC&R Solar Development, LLC 5th Standard Solar Project Complex, Fresno County, California: Traffic Study Report*. July 2017.
- \_\_\_\_\_. 2018a. *EC&R Solar Development, LLC Fifth Standard Solar Project Complex Fresno County, California - Williamson Act Cancellation Petition Contract No. 2227*. February 2018.
- \_\_\_\_\_. 2018b. *Provision of Additional Information Pertaining to Consideration of Alternative Sites for the Fifth Standard Solar Project*. December 2018.



References

- \_\_\_\_\_. 2019a. *Assessment of Primary and Secondary Soils on the Fifth Standard Solar Project Site, Fresno County, California*.
- \_\_\_\_\_. 2019b. *Fifth Standard Solar Project Complex Noise Technical Study*. July 2019.
- Federal Emergency Management Agency (FEMA). 2009. Digital Flood Insurance Rate Map Database, Fresno County, California. February 18, 2009.
- Federal Highway Administration (FHWA). 1988. Visual Impact Assessment for Highway Projects. (FHWA-HI-88-054.) U.S. Department of Transportation.
- \_\_\_\_\_. 2017. *Noise Measurement Handbook*. Available online at <https://www.fhwa.dot.gov/Environment/noise/measurement/fhwahep18065.pdf>. Accessed November 13, 2019.
- Federal Transit Administration (FTA). 2006. *Transit Noise and Vibration Impact Assessment*. May 2006. Available online at [https://www.transit.dot.gov/sites/fta.dot.gov/files/docs/FTA\\_Noise\\_and\\_Vibration\\_Manual.pdf](https://www.transit.dot.gov/sites/fta.dot.gov/files/docs/FTA_Noise_and_Vibration_Manual.pdf). Accessed October 2017.
- First Solar. 2019. First Solar website accessed at: <http://www.firstsolar.com/Modules/Recycling>. Accessed December 18, 2019.
- Fredrickson, David A. 1974. "Cultural Diversity In Early Central California: A View from the North Coast Ranges." *Journal of Anthropology*. Available online at: <https://escholarship.org/content/qt8vg876v9/qt8vg876v9.pdf?t=krnkud>. Accessed December 18, 2019.
- Fresno Bee. 2015. "August is Valley Fever Awareness Month." August 4, 2015. Available online at <http://www.fresnobee.com/news/local/article29975289.html>. Accessed November 7, 2017.
- Fresno Council of Governments (Fresno COG). 2013. *Fresno County Regional Traffic Monitoring Report*. April 2013. Available online at [https://www.fresnocog.org/wp-content/uploads/publications/Modeling/TrafficCountReport\\_2007-2012.PDF](https://www.fresnocog.org/wp-content/uploads/publications/Modeling/TrafficCountReport_2007-2012.PDF). Accessed October 2017.
- \_\_\_\_\_. 2018. *2018 Regional Transportation Plan*. Adopted July 26, 2018.
- Fresno County (County), 2000a. *General Plan Background Report*.
- \_\_\_\_\_. 2000b. Adopted October 3, 2000. *Fresno County General Plan*. Available online at <http://www.co.fresno.ca.us/home/showdocument?id=18117>. Accessed October 19, 2017.
- \_\_\_\_\_. 2004a. Ordinance Code, County of Fresno. Part VII: Land Use Regulation and Planning, Chapter 1, General Provisions. Amended March 2, 2004. Available online at [http://www2.co.fresno.ca.us/4510/4360/zoning\\_ord/ZoneOrdinance04072004\\_CHAP T1s.pdf](http://www2.co.fresno.ca.us/4510/4360/zoning_ord/ZoneOrdinance04072004_CHAP T1s.pdf). Accessed October 17, 2017.

- \_\_\_\_\_. 2004b. Ordinance Code, County of Fresno. Chapter 3: General Conditions, Section 853B: Unclassified Conditional Use Permits. Amended March 2, 2004. Available online at [http://www2.co.fresno.ca.us/4510/4360/zoning\\_ord/ZoneOrdinance04072004\\_CHAP T3s.pdf](http://www2.co.fresno.ca.us/4510/4360/zoning_ord/ZoneOrdinance04072004_CHAP T3s.pdf). Accessed October 17, 2017.
- \_\_\_\_\_. 2013. *Fresno County Regional Bicycle and Recreational Trails Master Plan*. Available online at <https://www.co.fresno.ca.us/home/showdocument?id=8042>. Accessed December 18, 2019.
- \_\_\_\_\_. 2016. *Fresno Multi-Jurisdictional 2015-2023 Housing Element: A Regional Plan for Addressing Housing Needs*. Final Draft. Available online at [http://www.fresnocog.org/wp-content/uploads/publications/Housing/Final\\_Draft/MJHE\\_06-2D\\_Appendix\\_2D\\_Fowler\\_REV\\_2016-01-15v2\\_Track\\_Changes.pdf](http://www.fresnocog.org/wp-content/uploads/publications/Housing/Final_Draft/MJHE_06-2D_Appendix_2D_Fowler_REV_2016-01-15v2_Track_Changes.pdf). January 2016.
- \_\_\_\_\_. 2017a. *Solar Facility Guidelines*. Available online at <https://www.co.fresno.ca.us/departments/public-works-planning/divisions-of-public-works-and-planning/development-services-division/planning-and-land-use/photovoltaic-facilities-p-1621>. Accessed January 15, 2019.
- \_\_\_\_\_. 2017b. *Valley Fever*. Available online at <http://www.co.fresno.ca.us/departments/public-health/community-health/communicable-disease-investigation-program/valley-fever>. Accessed November 7, 2017.
- \_\_\_\_\_. 2017c. *Construction and Demolition Debris Recycling Requirements*. Available online at <https://www.co.fresno.ca.us/departments/public-works-planning/divisions-of-public-works-and-planning/resources-and-parks-division/recycling-and-solid-waste-disposal/construction->. Accessed October 24, 2017.
- \_\_\_\_\_. 2017d. *Public Works and Planning Department Landfill Operations*. Available online at <https://www.co.fresno.ca.us/departments/public-works-planning/divisions-of-public-works-and-planning/resources-and-parks-division/landfill-operations>. Accessed October 18, 2017.
- \_\_\_\_\_. 2018. Fresno County Code of Ordinances Chapter 8.40 Noise Control, Section 8.40.050, Interior Noise Standards.
- Fresno County Fire Protection District (FCFPD). 2017. FCFPD: About Us. Updated 2017. Available online at <http://fresnocountyfire.org/index.php?c=2>. Accessed October 18, 2017.
- \_\_\_\_\_. 2019. Paid Call Firefighters. Updated 2019. Available online at <https://www.fresnocountyfire.org/our-department/administration-and-support/paid-call-firefighters/>. Accessed August 19, 2019.
- Fresno County Sherriff's Office (FSO). 2017b. Fresno County Sherriff's Office Area 1 Profile. Updated 2017. Available online at <http://www.fresnosheriff.org/area-1.html>. Accessed October 18, 2017.

References

- Gobalet, K. W., and G. L. Fenenga. 1993. Terminal Pleistocene–Early Holocene Fishes from Tulare Lake, San Joaquin Valley, California, with Comments on the Evolution of Sacramento Squawfish (*Ptychocheilus grandis*: *Cyprinidae*). *PaleoBios* 15(1):1–8.
- Greif, S., and B. M. Siemers. 2010. “Innate Recognition of Water Bodies in Echolocating Bats.” November 2010. Available online at <https://www.nature.com/articles/ncomms1110>. Accessed December 20, 2017.
- Historic Aerials. 2019. <https://www.historicaerials.com/viewer>. Accessed November 4, 2019.
- Holland, R. F. 1986. *Preliminary Descriptions of the Terrestrial Natural Communities of California*. California Department of Fish and Game.
- Hoover, M. B., H. E. Rensch, E. G. Rensch, and W. N. Abeloe. 2002. *Historic Spots in California*. Revised by Douglas E. Kyle. Stanford University Press, Palo Alto, California.
- Horvath, G., M. Blaho, A. Egri, G. Kriska, I. Seres, and B. Robertson. 2010. *Reducing the Maladaptive Attractiveness of Solar Panels to Polarotactic Insects*. December 2010. Available online at <https://www.ncbi.nlm.nih.gov/pubmed/20455911>. Accessed December 20, 2017.
- ICF. 2019. Results of Groundwater and Irrigation Suitability Review for the Fifth Standard Solar Complex Project Site, Huron, Fresno County. February.
- Institute of Electrical and Electronics Engineers (IEEE). 2006. *IEEE Recommended Practice for Seismic Design of Substations*. IEEE Power Engineering Society, IEEE Std. 693-2005.
- Mayer, K. E., and W. F. Laudenslayer, Jr. 1988. *A Guide to the Wildlife Habitats of California*. California Department of Forestry and Fire Protection.
- McLeod, S. 2017. “Re: Paleontological Records Check for the Proposed EON Gates Solar Project.” Letter response to Sara Dietler. January 23, 2018.
- Meister Consultants Group. 2014. Solar PV and Glare Fact Sheet. Available online at [https://icma.org/sites/default/files/306952\\_Solar%20PV%20and%20Glare.pdf](https://icma.org/sites/default/files/306952_Solar%20PV%20and%20Glare.pdf). Accessed December 20, 2017.
- Meyer, J., and J. Rosenthal. 2007. *Geoarchaeological Overview of the Nine Bay Area Counties in Caltrans District 4*. Prepared for Caltrans District 4.
- Monfette, C. 2019. Personal Communication [January 30, 2019 email to E. Nuno, M. Mollring, E. DeVost, A. Radonich, and T. Macenski.] Planner, Department of Public Works and Planning; Development Services and Capital Projects Division. Fresno, CA.
- National Fish and Wildlife Forensics Laboratory (NFWFL). 2014. *Avian Mortality at Solar Energy Facilities in Southern California: A Preliminary Analysis*. April 2014 Available online at <https://alternativeenergy.procon.org/sourcefiles/avian-mortality-solar-energy-ivanpah-apr-2014.pdf>. Accessed December 20, 2017.

- National Park Service (NPS). 2019. *Wildfire Causes and Evaluations*. Available online at: <https://www.nps.gov/articles/wildfire-causes-and-evaluation.htm>. Accessed December 18, 2019.
- Natural Resources Conservation Service (NRCS). 2017. *Soil Survey Staff*. U.S. Department of Agriculture Web Soil Survey. Available online at <http://websoilsurvey.nrcs.usda.gov>. Accessed January 30, 2018.
- Ngo, M. M., J. A. Canchola, and R. G. Dundas. 2011. "Avifaunas of the Middle Pleistocene Irvingtonian and Fairmead Landfill Localities in California." Geological Society of America Cordilleran Section Meeting 45:10.
- North American Electric Reliability Corporation (NERC). 2013. *Critical Infrastructure*.
- Pacific Gas and Electric (PG&E). 2018. *PG&E Clean Energy Deliveries Already Meet Future Goals*. Available online at [https://www.pge.com/en/about/newsroom/newsdetails/index.page?title=20180220\\_pge\\_clean\\_energy\\_deliveries\\_already\\_meet\\_future\\_goals](https://www.pge.com/en/about/newsroom/newsdetails/index.page?title=20180220_pge_clean_energy_deliveries_already_meet_future_goals). Accessed April 10, 2019.
- \_\_\_\_\_. 2019. Pacific Gas and Electric Company Profile. Available online at [https://www.pge.com/en\\_US/about-pge/company-information/profile/profile.page](https://www.pge.com/en_US/about-pge/company-information/profile/profile.page). Accessed April 10, 2019.
- Randall, J. M., S. S. Parker, J. Moore, B. Cohen, L. Crane, B. Christian, D. Cameron, J. MacKenzie, K. Klausmeyer, and S. Morrison. 2010. *Mojave Desert Ecoregional Assessment*. Unpublished Report. The Nature Conservancy. San Francisco, California.
- Rosenthal, Jeffrey S., Gregory G. White, and Mark Q. Sutton. 2007. *The Central Valley: A View from the Catbird's Seat*. In *California Prehistory: Colonization, Culture, and Complexity*, edited by Terry L. Jones and Kathryn A. Klar, pp. 147–163. Lanham, Maryland: AltaMira Press.
- San Joaquin Valley Air Pollution Control District (SJVAPCD). 2002. *Guide for Assessing and Mitigating Air Quality Impacts Technical Document: Information for Preparing Air Quality Sections in EIRs*. Revision dated January 10, 2002; originally adopted August 20, 1998.
- \_\_\_\_\_. 2004. Regulation VIII (Fugitive PM<sub>10</sub> Prohibitions). August 19 and September 16, 2004. Available online at <https://www.valleyair.org/rules/currnrules/r8011.pdf>. Accessed November 7, 2017.
- \_\_\_\_\_. 2005. Rule 9510 (Indirect Source Review). December 15, 2005. Available online at <https://www.valleyair.org/rules/currnrules/r9510-a.pdf>. Accessed November 7, 2017.
- \_\_\_\_\_. 2007. *2007 Ozone Plan*. June 14, 2007. Available online at [http://www.valleyair.org/Air\\_Quality\\_Plans/AQ\\_Final\\_Adopted\\_Ozone2007.htm](http://www.valleyair.org/Air_Quality_Plans/AQ_Final_Adopted_Ozone2007.htm). Accessed November 7, 2017.
- \_\_\_\_\_. 2009a. *District Policy Addressing GHG Emission Impacts for Stationary Source Projects Under CEQA When Serving as the Lead Agency*. December 17, 2009.

- Available online at <http://www.valleyair.org/programs/CCAP/12-17-09/2%20CCAP%20-%20FINAL%20District%20Policy%20CEQA%20GHG%20-%20Dec%2017%202009.pdf>. Accessed November 8, 2017.
- \_\_\_\_\_. 2009b. *Guidance for Valley Land-use Agencies in Addressing GHG Emission Impacts for New Projects under CEQA*. December 17, 2009. Available online at <http://www.valleyair.org/programs/CCAP/12-17-09/3%20CCAP%20-%20FINAL%20LU%20Guidance%20-%20Dec%2017%202009.pdf>. Accessed November 8, 2017.
- \_\_\_\_\_. 2009c. *Climate Change Action Plan*. Available online at [http://www.valleyair.org/programs/CCAP/CCAP\\_menu.htm](http://www.valleyair.org/programs/CCAP/CCAP_menu.htm). Accessed November 8, 2017.
- \_\_\_\_\_. 2012. *2012 PM<sub>2.5</sub> Plan*. Available online at [http://www.valleyair.org/Air\\_Quality\\_Plans/PM25Plans2012.htm](http://www.valleyair.org/Air_Quality_Plans/PM25Plans2012.htm). Accessed November 7, 2017.
- \_\_\_\_\_. 2015. *2015 Plan for the 1997 PM<sub>2.5</sub> Standard*. Available online at [http://www.valleyair.org/Air\\_Quality\\_Plans/PM25Plans2015.htm](http://www.valleyair.org/Air_Quality_Plans/PM25Plans2015.htm). Accessed November 7, 2017.
- \_\_\_\_\_. 2016a. *2016 Plan for the 2008 8-Hour Ozone Standard*. Available online at [http://www.valleyair.org/Air\\_Quality\\_Plans/Ozone-Plan-2016/Adopted-Plan.pdf](http://www.valleyair.org/Air_Quality_Plans/Ozone-Plan-2016/Adopted-Plan.pdf). Accessed November 7, 2017.
- \_\_\_\_\_. 2016b. *Ambient Air Quality Standards & Valley Attainment Status*. Available online at <http://www.valleyair.org/airinfo/attainment.htm>. Accessed November 7, 2017.
- \_\_\_\_\_. 2018. *Particulate Matter Plans*. Available online at [http://www.valleyair.org/Air\\_Quality\\_Plans/PM\\_Plans.htm](http://www.valleyair.org/Air_Quality_Plans/PM_Plans.htm). Accessed August 29, 2018.
- Sawyer, J. O., T. Keeler-Wolf, and J. M. Evens. 2009. *A Manual of California Vegetation*. Second edition. California Native Plant Society.
- Spencer, W. D., P. Beier, K. Penrod, K. Winters, C. Paulman, H. Rustigian-Romsos, J. Strittholt, M. Parisi, and A. Pettler. 2010. *California Essential Habitat Connectivity Project: A Strategy for Conserving a Connected California*. Prepared for California Department of Transportation, California Department of Fish and Game, and Federal Highways Administration. February 2010.
- Stantec Consulting Services Inc. (Stantec). 2017. *Phase I Environmental Site Assessment*. December 2017.
- Sunpower. 2010. *PV Systems: Low Levels of Glare and Reflectance vs. Surrounding Environment*. Available online at <https://ww5.cityofpasadena.net/planning/wp-content/uploads/sites/56/2017/10/Sunpower-Corporation.-PV-Systems-Low-Levels-of-Glare-and-Reflectance-vs.-Surrounding-Environment-.pdf>. Accessed December 20, 2017.

- Traylor, R.B. and C. J. Pluhar. 2010. "High resolution magnetostratigraphy of the middle Pleistocene Turlock Lake Formation, California." American Geophysical Union, Fall Meeting 1:0764
- Tulare Basin Wildlife Partners. 2009. *A Conservation Vision for the Tulare Basin*. Available online at <http://www.tularebasinwildlifepartners.org/uploads/2/1/4/7/21473344/tbwpconservationvision072110.pdf>. Accessed February 23, 2017.
- \_\_\_\_\_. 2018. *One Watershed*. Available online at <http://www.tularebasinwildlifepartners.org/ow1-tb-watershed-intro.html>. Accessed August 29, 2018.
- U.S. Department of Agriculture (USDA). 1961. "Land-Capability Classification." Agriculture Handbook No. 210. Available online at [https://www.nrcs.usda.gov/Internet/FSE\\_DOCUMENTS/nrcs142p2\\_052290.pdf](https://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_052290.pdf). Accessed December 18, 2019.
- U.S. Department of Agriculture Natural Resources Conservation Service (USDA-NRCS). 2018. *National Soil Survey Handbook, Part 618 – Soil Properties and Qualities, Subpart B; Section 618.95, Wind Erodibility Groups (WEG) and Index*. Available online at [https://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/ref/?cid=nrcs142p2\\_054240.wba](https://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/ref/?cid=nrcs142p2_054240.wba).
- U.S. Department of the Interior (USDOI). 2017a. *The Secretary of the Interior's Historic Preservation Professional Qualification Standards*. Available online at <https://www.nps.gov/history/local-law/gis/html/quals.html>. Accessed January 3, 2017.
- \_\_\_\_\_. 2017b. *The Migratory Bird Treaty Act Does Not Prohibit Incidental Take*. Published December 22, 2017. Available online at <https://www.doi.gov/sites/doi.gov/files/uploads/m-37050.pdf>. Accessed December 20, 2017.
- U.S. Environmental Protection Agency (EPA). 1999. *Nitrogen Oxides (NOx): Why and How They are Controlled*. Available online at <https://www3.epa.gov/ttnca1/dir1/fnoxdoc.pdf>. Accessed November 7, 2017.
- \_\_\_\_\_. 2014. *Overview of Greenhouse Gases*. Available online at <https://www.epa.gov/ghgemissions/overview-greenhouse-gases>. Accessed November 8, 2017.
- \_\_\_\_\_. 2017. *RE-Powering America's Land: Siting Renewable Energy on Potentially Contaminated Lands, Landfills, and Mine Sites*. Updated November 14, 2017. Available online at <http://www.epa.gov/oswercpa/index.htm>. Accessed January 19, 2018.
- \_\_\_\_\_. 2018a. *Learn about Lead*. Available online at <https://www.epa.gov/lead/learn-about-lead>. Accessed December 20, 2017.



References

- \_\_\_\_\_. 2018b. *Complying with President Trump's Executive Order on Energy Independence*. Available online at <https://www.epa.gov/energy-independence>. Accessed June 11, 2019.
- U.S. Fish and Wildlife Service (USFWS). 1998. *Recovery Plan for the Upland Species of the San Joaquin Valley, California*. Published by Region 1 of the USFWS. Portland, Oregon. Available online at [https://ecos.fws.gov/docs/recovery\\_plans/1998/980930a.pdf](https://ecos.fws.gov/docs/recovery_plans/1998/980930a.pdf). Accessed December 20, 2017.
- \_\_\_\_\_. 2017a. Pixley National Wildlife Refuge. Last updated on October 11, 2017. Available online at <https://www.fws.gov/refuge/pixley/>. Accessed December 20, 2017.
- \_\_\_\_\_. 2017b. *Sacramento Fish and Wildlife Office, Endangered Species Program: Information for Planning and Consultation*. Available online at <http://ecos.fws.gov/ipac/>. Accessed December 20, 2017.
- \_\_\_\_\_. 2018. *Guidance on the recent M-Opinion affecting the Migratory Bird Treaty Act*. Published April 11, 2018. Available online at <https://theiwrc.org/wp-content/uploads/2018/05/m-opinion-memo.pdf>. Accessed December 20, 2017.
- U.S. Geological Survey (USGS). 2005. Mineral Resources Data System: U.S. Geological Survey, Reston, Virginia. MRDS Data for Fresno County. Last updated 2011. Available online at <http://mrdata.usgs.gov/mrds/>. Accessed October 18, 2017.
- \_\_\_\_\_. 2017. The Modified Mercalli Intensity Scale. Available online at <https://earthquake.usgs.gov/learn/topics/mercalli.php>. Accessed October 19, 2017.
- Western Regional Climate Center (WRCC). 2016. Five Points 5 SSW. Available online at <https://wrcc.dri.edu/cgi-bin/cliMAIN.pl?ca3083>. Accessed November 7, 2017.
- Westlands Water District (WWD). 2013. *Water Management Plan 2012*. Available online at <http://wwd.ca.gov/wp-content/uploads/2015/09/water-management-plan-2012.pdf>. Accessed October 18, 2017.
- \_\_\_\_\_. 2016a. *Drainage Settlement Docs*. Available online at <http://wwd.ca.gov/resource-management/drainage-settlement-documents/>. Accessed August 12, 2016.
- \_\_\_\_\_. 2016b. *Westlands Water District Groundwater Sustainability Plan Workshop Presentation*. Available online at <https://wwd.ca.gov/wp-content/uploads/2016/11/gsp-development-workshop.pdf>. Accessed April 9, 2019.
- \_\_\_\_\_. 2017a. *Westlands Solar Park Master Plan and Gen-Tie Corridors Plan, Volume I EIR Text and Appendices A and B*. Available online at <https://wwd.ca.gov/news-and-reports/environmental-docs/>. Accessed December 18, 2019.
- \_\_\_\_\_. 2017b. About Westlands. Available online at <http://wwd.ca.gov/wp-content/uploads/2014/09/Westlands-Blue-Map.compressed.pdf>. Accessed October 18, 2017.

\_\_\_\_\_. 2018. "Groundwater Management Strategy Concept – WWD Board Meeting."  
Available online at <https://wwd.ca.gov/wp-content/uploads/2019/01/gw-level-and-min-threshold.pdf>. Accessed November 13, 2019.

### Figure Coordinate System Source Data

Figure 2-1: Coordinate System: NAD 1983 StatePlane California IV FIPS 0403 Feet | Service Layer Credits: Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community. Copyright:© 2013 National Geographic Society, i-cubed

Figure 2-2: Coordinate System: NAD 1983 StatePlane California IV FIPS 0403 Feet | Service Layer Credits: Sources: Esri, HERE, Garmin, (c) OpenStreetMap contributors. Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Figure 4.0-1: Coordinate System: NAD 1983 StatePlane California IV FIPS 0403 Feet. | Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community. Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), ©OpenStreetMap contributors, and the GIS User Community.

Figure 4.1-1: Coordinate System: NAD 1983 StatePlane California IV FIPS 0403 Feet | Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community. Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community.

Figure 4.6-1: Coordinate System: NAD 1983 State Plane California IV FIPS 0403 Feet. | Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community. Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community.

Figure 4.8-1: Coordinate System: NAD 1983 State Plane California IV FIPS 0403 Feet. | Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community. Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community.

Figure 4.12-1: Coordinate System: NAD 1983 StatePlane California IV FIPS 0403 Feet. | Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community. Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community.

**This page left intentionally blank.**