

DRAFT
ENVIRONMENTAL IMPACT REPORT
for the
CAMPO VERDE SOLAR PROJECT



SCH. No. 2011111049
Conditional Use Permit (CUP) #11-0007
Variance #V12-0008



May 2012

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May 2012

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**DRAFT ENVIRONMENTAL IMPACT REPORT
CAMPO VERDE SOLAR PROJECT**

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APPENDICES

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A-2	General Agriculture
A-2-R	General Agriculture, Rural Zone
A-3	Heavy Agriculture
AB	Assembly Bill
AC	Alternating Current
ACEC	Area of Critical Environmental Concern
ACHP	Advisory Council on Historic Preservation
ACOE	United States Army Corps of Engineers
A.D.	Anno Domini (Year of Our Lord referring the year of Christ's birth)
ADT	Average Daily Trips
AG	Agriculture
AG-F	Agriculture - Fallow
ALUC	Airport Land Use Commission
ALUCP	Airport Land Use Compatibility Plan
AMSL	above mean sea level
ANSI	American National Institute Standards
APCD	Air Pollution Control District
APE	Area of Potential Effect
APN(s)	Assessor's Parcel Number(s)
AQIA	Air Quality Impact Assessments
AQMD	Air Quality Management District
AQMP	Air Quality Management Plan
AS	Arrow Weed Thicket
AS-D	Arrow Weed Thicket - Disturbed
ASTM	American Society for Testing and Materials
AW	Athel Tamarisk Type Woodland
AWWA	American Water Works Association
BAT	best available technology economically achievable
BBCS	Bird and Bat Conservation Strategy
BCT	best conventional pollutant control technology
BLM	Bureau of Land Management
BMP(s)	Best Management Practice(s)
BSS	Qual Brush Scrub
BSS	Qual Brush Scrub - Disturbed
BTR	Biological Technical Report
°C	Degrees Celsius
CAA(s)	Clean Air Act(s)
CAAQC	California Ambient Air Quality Standards
CAFE	Corporate Average Fuel Economy
CalEPA	California Environmental Protection Agency
CalOSHA	California Occupational Safety and Health Administration
Caltrans	California Department of Transportation
CAPCOA	California Air Pollution Control Officers Association

LIST OF ACRONYMS

CARB	California Air Resources Board
CAT	Climate Action Team
CBC	California Building Code
CBS	Creosote Bush – White Bursage Scrub
CBS-D	Creosote Bush – White Bursage Scrub-Disturbed
CCAs	community choice aggregators
CCR	California Code of Regulations
CCR	California Code of Regulations
CDCA	California Desert Conservation Area
CDFG	California Department of Fish and Game
CEC	California Energy Commission
CEQ	Council on Environmental Quality
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CFR	Code of Federal Regulations
CGS	California Geological Survey
CHRIS	California Historical Resources Information System
CLCA	California Land Conservation Act
CM	Cattail Marsh
CM-D	Cattail Marsh - Disturbed
CNEL	Community Noise Equivalent Level
CO	Carbon Monoxide
CO ₂	Carbon dioxide
CO _{2e}	Carbon dioxide equivalents
COM	construction, operations and maintenance plan
CPUC	California Public Utilities Commission
CRHP	California Register of Historic Places
CRM	Common Reed Marsh
CRM-D	Common Reed Marsh - Disturbed
CR _{DPM-70 yr dose}	Cancer risk, 70-year dose
CUP	Conditional Use Permit
CUPA	Certified Unified Program Agency
CWA	Clean Water Act
dB	decibel
dBA	A-weighted Sound Pressure Level
dB Leq	Decibel Equivalent sound level
DC	Direct Current
DCH	Designated Critical Habitat
DEIR	Draft Environmental Impact Report
DEV	Developed
DEV/DH	Developed/Disturbed
DHS	Department of Health Services
DOC	Department of Conservation

LIST OF ACRONYMS

DoD	Department of Defense
DOF	Department of Finance
DOGGR	Division of Oil, Gas and Geothermal Resources
DOI	Department of the Interior
DPM	Diesel particulate matter
DPR	Department of Parks and Recreation
DTSC	Department of Toxic Substances Control
DPS	Distinct Population Segment
DW	Disturbed Wetland
DWR	Department of Water Resources
EA	Environmental Assessment
EB	eastbound
EDR	Environmental Data Resources, Inc.
EHS	Extra high strength
EIA	Energy Information Administration
EIR	Environmental Impact Report
EMF	Electromagnetic field
EO	Executive Order
EOP	Emergency Operations Plan
EPA	Environmental Protection Agency
EPAct	Energy Policy Act
EPS	Emissions Performance Standards
EPRI	Electric Power Research Institute
ESA	Federal Endangered Species Act
°F	Degrees Fahrenheit
FAA	Federal Aviation Administration
FAA Tool	Federal Aviation Administration Notice Criteria Tool
FEMA	Federal Emergency Management Agency
FIFRA	Federal Insecticide, fungicide and Rodenticide Act
FIRM	Flood Insurance Rate Map
FLPMA	Federal land Policy and Management Act
FMMP	Farmland Mapping and Monitoring Program
FONSI	Finding of No Significant Impact
FPPA	Farmland Protection Policy
FPRP	Fire Prevention and Response Plan
FROG	fraction of reactive organic gases
FTHL	flat-tailed horned lizard
GCC	global climate change
GCR	Ground Coverage Ratio
GHG	greenhouse gases
GIS	Geographic Information Systems
GO	General Order
GPS	Global Positioning System

LIST OF ACRONYMS

G-S	Government/Special
GWh	Gigawatt hours
GWP	global warming potential
H ₂ O	Water vapor
H ₂ S	hydrogen sulfide
HCM	Highway Capacity Manual
HCP	Habitat Conservation Plan
HFC	Hydroflourocarbons
HMMP	Hazardous Materials Management Plan
HRA	Health Risk Assessment
HWCL	Hazardous Waste Control Law
I-8	Interstate 8
ICAPCD	Imperial County Air Pollution Control District
ICC	International Code Council
ICFD	Imperial County Fire Department
ICPDS	Imperial County Department of Planning and Development Services
ICS	Incident Command System
ID	Identification
IDFD	Imperial County Fire Department
ICE	International Electrotechnical Commission
IEEE	Institute of Electrical and Electronic Engineers
IGR	Intergovernmental Review
IID	Imperial Irrigation District
IM	Instruction Memorandum
IND	Industrial Service Supply
IOUs	independently owned utilities
IPCC	Intergovernmental Panel on Climate Change
IRF	Intermediate Regional Flood
KOP	Key Observation Point
kV	kilo-volt
LBP	Lead based paint
LCC	Land Capability Classification
LCFS	Low Carbon Fuel Standard
L _{min}	Minimum Sound Level
L _{max}	Maximum Sound Level
LE	Land Evaluation
LESA	Land Evaluation Site Assessment Model
LOS	Level of Service
MA	Management Areas
MANLAA	May affect, not likely to adversely affect
MBTA	Migratory Bird Treaty Act
MLD	most likely descendant
MMRP	Mitigation Monitoring and Reporting Program

LIST OF ACRONYMS

MMT	millions of metric tons
MOA	Memorandum of Agreement
MOV	metal oxide arrester
mph	miles per hour
MRZ	Mineral Resource Zone
msl	mean sea level
MUN	municipal and domestic supply
MT	metric tons
MW	Megawatts
MWAC	megawatt alternating current
MWh	Megawatt hours
NA	Not Available or Not Applicable
NAAQS	National Ambient Air Quality Standards
NACE	National Association of Corrosion Engineers
NAF/EC	Naval Air Facility/EI Centro
NAHC	Native American Heritage Commission
NCCP	Natural Community Conservation Plan
ND	Negative Declaration
NEMA	National Electric Manufacturers Association
NEPA	National Environmental Policy Act
NESC	National Electric Safety Code
NEXRAD	Next Generation Radar
NFIP	National Flood Insurance Program
NHPA	National Historic Preservation Act
NHMCAC	Natural History Museum of Los Angeles County
NIMS	National Incident Management System
NOAA	National Oceanic and Atmospheric Administration
NOA	Notice of Availability
NOC	Notice of Completion
NOI	Notice of Intent
NOP	Notice of Preparation
NO _x	Nitrogen Oxides
NO ₂	Nitrogen Dioxide
N ₂ O	Nitrous Oxide
NPDES	National Pollutant Discharge Elimination System
NPS	National Parks Service
NRCS	National Resources Conservation Service
NRHP	National Register of Historic Places
O&M	Operations and Maintenance
O ₃	Ozone
OA	Operational Area
OAQPS	Office of Air Quality Planning and Standards
OES	Office of Emergency Services

LIST OF ACRONYMS

OHV	Off-highway vehicle
OPGW	Optical Ground Wire
OSHA	Occupational Safety and Health Administration
OW	Open Water with Arrow Weed Thicket
PA	Programmatic Agreement
Pb	lead
PCBs	polychlorinated biphenyls
pci/l	Picocuries per litre
pcphpl	Passenger cars per hour per lane
PCS	Power Conversion Station
PFC(s)	Perfluorocarbon(s)
PFYC	Potential Fossil Yield Classification
PM10	Particulate Matter Less than 10 microns
PM2.5	Fine Particulate Matter
PPA	Power Purchase Agreement
ppb	parts per billion
ppm	parts per million
POD	Plan of Development
PSD	Prevention of Significant Deterioration
PRC	Public Resources Code
PV	Photovoltaic
PVC	polyvinyl chloride
PVCS	Photovoltaic Combining Switchgear
QSD	Qualified SWPPP Developer
QSP	Qualified SWPPP Practitioner
REC(s)	Recognized Environmental Concern(s)
RFI	Report of Facility Information
ROG(s)	reactive organic gas(es)
ROW	right-of-way
RPS	Renewable Portfolio Standard
RPW	Relatively permanent water
RWQCB	Regional Water Quality Control Board
S-1	Open Space/Recreation
S 29	Drew Road
S 30	Forester Road
SA	Site Assessment
SB	Senate Bill
SCADA	Supervisory Control and Data Acquisition
SCAG	Southern California Association of Governments
SCC	Site Communication Center
SCH. No.	State Clearinghouse Number
SCIC	South Coastal Information Center
SDD-D	Stabilized Desert Dunes-Disturbed

LIST OF ACRONYMS

SDG&E	San Diego Gas & Electric
SEMS	Standardized Emergency Management System
SF-299	Standard Form-299
SF ₆	sulfur hexafluoride
SHPO	State Office of Historic Preservation
SIP(s)	State Implementation Plan(s)
SO ₂	Sulfur Dioxide
SO _x	Sulfur Oxide
SPCC	Spill Containment, Countermeasure and Control
SR	State Route
SRRP	Site Reclamation and Revegetation Plan
SSAB	Salton Sea Air Basin
SVP	Society for Vertebrate Paleontology
SWFL	Southwestern Willow Flycatcher
SWPPP	Stormwater Pollution Prevention Plan
SWRCB	State Water Resources Control Board
T-BACT	Toxics Best Available Control Technology
TCPs	Traditional Cultural Practices
TDS	total dissolved solids
TOG	total organic gases
UNFCCC	United Nations Framework Convention on Climate Change
USC	United States Code
USDA	United States Department of Agriculture
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
V	volt
V/C	Volume to Capacity Ratio
VOC	Volatile Organic Compound
VRI	Visual Resource Inventory
VRM	Visual Resource Management
WB	westbound
WEAP	Worker Environmental Awareness Program
WQCP	Water Quality Control Plan
WSA	Water Supply Assessment
WSS	Web Soil Survey
YDMP	Yuha Desert Management Plan

LIST OF ACRONYMS

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EXECUTIVE SUMMARY

ES.1 PROJECT BACKGROUND

In 2002, California established a Renewable Portfolio Standard (RPS) requiring electric utilities in the State to increase procurement of eligible renewable energy resources to achieve a target of 20 percent of their annual retail sales by the year 2010. In 2008, by Executive Order (S-14-08), then Governor Arnold Schwarzenegger increased that target to 33 percent by the year 2020. In 2011, Governor Jerry Brown signed Senate Bill (SB) X1-2 into law. The Bill requires all California utilities, including independently owned utilities (IOUs), energy service providers, and community choice aggregators (CCAs), to generate electricity from renewable sources over a three-stage compliance period.

One form of renewable energy is solar energy as harnessed through the use of photovoltaic (PV) technology. PV power systems convert sunlight into electricity. The process begins with individual PV cells that combine to form PV modules. The modules are sealed and connected to each other with wires to form a PV array. The PV arrays convert solar radiation into direct current (DC) electricity. The direct current from the PV array is collected at an inverter and converted to alternating current (AC). AC electricity is consistent with the current flowing through the electrical grid.

The proposed project is a solar generation facility using PV technology proposed by Campo Verde Solar, LLC (hereafter referred to as "Applicant"). One hundred percent of the electricity generated by the proposed project will be eligible for use by California electric utilities to satisfy procurement obligations under the State's RPS program.

On March 24, 2011, the Applicant submitted an application for a CUP to the Imperial County Department of Planning and Development Services (ICPDS). The CUP application was submitted to allow construction and operation of a solar PV electric generation facility and associated transmission line in western Imperial County near the Imperial Valley Substation.

On September 12, 2011, the Applicant submitted an Application for Transportation and Utility Systems and Facilities on Federal Lands (Standard Form 299, or "SF-299") to the United States Bureau of Land Management (BLM). The SF-299 application requested a linear Right-of-Way (ROW) to construct and operate the gen-tie and associated facilities on land managed by the BLM.

A Notice of Preparation (NOP) for the Campo Verde Solar Draft Environmental Impact Report was issued by the ICPDS on November 15, 2011.

On February 7, 2012, the Applicant submitted a Variance Application to the ICPDS. The Variance Application was submitted to address gen-tie structures that may exceed the A-2 and A-3 zoning height limitation of 120 feet. If approved, the Variance would permit a maximum height of the gen-tie Line structures of 145 feet.

ES.2 PROJECT OVERVIEW

The proposed project consists of two primary components: 1) solar generation equipment and associated facilities on privately owned land (the "solar generation facility"); and, 2) 230-kilovolt (kV) aboveground, electric transmission line(s) and associated facilities (the "gen-tie") located on both private land and public land managed by the BLM. The gen-tie will connect the solar generation facility with the Imperial Valley Substation. BLM is conducting a separate environmental review of the proposed right-of-way (ROW) grant required for the gen-tie line under the National Environmental Policy Act ("NEPA"). The proposed permanent BLM ROW width is 160 feet. The solar generation facility and gen-tie are collectively referred to as the "proposed project" or "project." The area encompassing

EXECUTIVE SUMMARY

the solar generation facility and the gen-tie is referred to as the “project area.” The solar generation facility portion of the project (exclusive of the gen-tie segment on BLM land) is referred to as the “project site” or “solar generation facility site.”

ES.3 PROPOSED PROJECT

The project is a proposal to build a 140-plus megawatt alternating current (MWAC) solar generation facility using photovoltaic (PV) technology.¹ The project consists of the solar generation facility on private land and associated 230-kilovolt (kV) transmission line (gen-tie). The proposed gen-tie crosses both private and public land, the latter under the jurisdiction of the BLM. The gen-tie will connect the solar generation facility to the Imperial Valley Substation. The public lands crossed by the proposed gen-tie are managed by the BLM and located wholly within an area designated by the BLM for utilities and infrastructure corridors. A Right-of-Way (ROW) approval from the BLM is required to construct the proposed gen-tie.

The project includes PV solar modules, arrays, power conversion stations, an electrical collection system, a substation and switchyard. Other components of the project include an Operations and Maintenance Building, project support systems consisting of control systems, a communication system, lighting system, electric service, security, and fire system.

The gen-tie would be designed for two 230-kV circuits with three conductors per circuit (to accommodate a future second line if necessary for a separate project). The gen-tie would cross approximately 0.9 miles of BLM land.

ES.4 PURPOSE AND NEED

Pursuant to CEQA the following objectives have been identified for the proposed project. Section 15124 of the CEQA Guidelines requires that the EIR include a statement of objectives sought by the proposed project. These objectives identify the underlying purpose of the project and provide a basis for identification of alternatives evaluated in the EIR. A clearly written statement of objectives allows the lead agency to develop a reasonable range of alternatives to evaluate in the EIR and aids the decision-makers in preparing findings or a statement of overriding considerations, if necessary.

Demand for new forms of renewable electric energy continues to grow based on three factors. First, total electricity demand continues to grow as a result of population growth, economic growth and new applications offset only, in part, by energy efficiency programs. The 2010 United States Energy Information Administration (EIA) Annual Energy Outlook (“reference case”) forecast is for a 30 percent increase in total demand (from 3,873 billion kilowatt hours to 5,021 billion kilowatt hours, annually), between the years 2008 and 2035. Second, new generation facilities are required to not only meet this demand, but to replace the output of aging generation facilities which are to be retired during this period. Third, driven by federal incentives, regional greenhouse gas reduction targets, state renewable energy portfolio standards (RPS) requirements, and potential legislation, an increasingly greater portion of new generation will need to be supplied in the form of renewable energy. The EIA forecast for the period from 2008 to 2035 is for 41 percent of growth in generation to come from non-hydro renewables.

¹ To deliver 140 MWAC of electricity at the point of interconnection, the solar generation facility needs to be overbuilt to address the electrical demands of the facility, AC system losses, step-up transformer losses and transmission line losses.

This national trend is particularly evident in the West, the fastest growing region in the United States. Many Western states have adopted renewable energy standards and greenhouse gas (GHG) reduction goals.

California is a national leader in requiring a significant proportion of electricity to come from renewable sources. The 2010 requirement that 20 percent of electricity sales come from renewable energy was increased to 33 percent by 2020. With California's 33 percent mandate, combined with other mandated RPS requirements and regional sales growth, the total renewable energy sales for the US portion of the Western Electricity Coordinating Council region has been estimated at close to 150,000 Gigawatt hours (Gwh) by 2020 (not including Idaho, Utah and Wyoming). The proposed project will help California meet its statutory and regulatory goals for increasing renewable power generation and use.

The gen-tie component of the proposed project would provide the needed transmission capacity to connect the Campo Verde Solar Project with the Imperial Valley Substation. Renewable energy generated by the project would be conveyed to areas of demand.

The Campo Verde Solar Project qualifies as an Eligible Renewable Energy Resource as defined by the California Public Utilities Code and would assist the state in meeting current and planned goals for renewable energy development and use. The California Energy Commission (CEC) certified the Campo Verde Solar Project as an eligible renewable energy resource under the RPS and assigned it CEC-RPS identification (ID) number 60652C.

ES.5 OBJECTIVES

The proposed Campo Verde Solar Project has the following objectives:

- Meet the terms and requirements of the Project's Power Purchase Agreement (PPA) and Large Generator Interconnection Agreement.
- Deploy a technology that has been commercially proven and that is safe, readily available, efficient, and environmentally responsible.
- Generate electricity at a cost that is competitive on the renewable market.
- Provide a new source of renewable energy to assist the State of California in achieving the RPS.
- Provide local construction jobs for a variety of trades, reducing unemployment in the construction sector.
- Locate the project in Imperial County in close proximity to the existing California Independent System Operator (CAISO) electric transmission system at a location which has available capacity to deliver electricity to major load centers in California.
- Locate the project in an area that ranks among the highest in solar resource potential in the nation.
- Minimize the potential impact to the environment by:
 - Locating the project on disturbed land.
 - Maximizing the use of existing infrastructure (transmission lines, roads, and water sources).
 - Minimizing the potential impacts to threatened and endangered species by avoiding sensitive habitats and designated resource, reserves or protected areas.
 - Reducing the emission of GHGs from the generation of electricity by using renewable energy.

EXECUTIVE SUMMARY

The Campo Verde Solar Project was developed to sell its electricity and all renewable and environmental attributes to an electric utility purchaser under a long-term contract to help meet California RPS goals. The Applicant has a long-term PPA (20 years) with San Diego Gas and Electric (SDG&E) to purchase the initial output from the project.

The County's objectives include the following:

- Encourage economic investment in renewable energy activities.
- Increase opportunities for construction employment, reducing unemployment in one of the labor sectors most affected by the recession.
- Diversify Imperial County's economic base by developing environmentally-responsible non-agricultural activities.
- Increase tax revenue through sales, use and property taxes generated by renewable energy development within Imperial County.
- Reinforce Imperial County's position as a leader in renewable energy production.
- Expand the renewable energy sector in Imperial County's economy.

ES.6 ALTERNATIVES

This EIR considered three alternatives in addition to the proposed project:

ALTERNATIVE 1 - ALTERNATIVE GEN-TIE ACROSS BLM LAND

This alternative includes the same approximate 1,990 acre solar generation facility site as the proposed project and proposes a gen-tie that would follow the existing IID S-line and associated access road. A 0.9 mile Gen-tie is proposed including a 0.1 mile segment on the solar generation facility site. The gen-tie would also cross approximately 0.4 miles of BLM land and 0.4 miles of private land.

ALTERNATIVE 2 - PRIVATE LAND GEN-TIE ALTERNATIVE

This alternative includes the same approximate 1,990 acre solar generation facility site as the proposed project and proposes a 1.85 mile gen-tie that would originate from the western side of the solar generation facility site (0.1 mile segment) and cross approximately 1.75 miles of private lands to the west. The gen-tie would follow existing field roads and ditches to the Imperial Solar Energy Center West site. From this point, the proposed project would use available capacity on Imperial Solar Energy Center West's gen-tie line that has an approved right-of-way to the Imperial Valley Substation.

ALTERNATIVE 3 - NO ACTION ALTERNATIVE

This alternative would result in continued use of the project site for agricultural production. The proposed Campo Verde Solar Project would not be developed.

ES.7 SUMMARY OF IMPACTS

Table ES-1 summarizes the environmental impacts resulting from the proposed project pursuant to CEQA Guidelines Section 15123(b)(1).

**TABLE ES-1
SUMMARY OF IMPACTS**

IMPACT	LEVEL OF IMPACT/ SIGNIFICANCE BEFORE MITIGATION	MITIGATION MEASURES	LEVEL OF IMPACT/ SIGNIFICANCE AFTER MITIGATION
AESTHETICS			
<p>Adverse Effect on Scenic Vista Impact 4.1.1 The proposed project would change existing views of the solar generation facility site from surrounding lands and roadways. The project site is not considered a scenic vista nor does it contain any outstanding aesthetic features.</p>	LS	None required	LS
<p>Degrade Existing Visual Character or Quality of the Site Impact 4.1.2 The proposed project would convert agricultural fields to a solar generation facility thereby replacing vegetation with man-made structures. The project would alter the overall character of the project site and substantially alter views from several residences. Therefore, this impact is considered potentially significant.</p>	PS	<p>MM 4.1.2 Prior to issuance of construction permits, the Applicant shall work with affected landowners and ICPDS to develop a visual screening program that will screen views of the project from KOP #2, #8 and #9, if determined to be needed by each landowner.</p> <p>The extent of screening shall be determined for each KOP in consultation with the school and/or residents, ICPDS and the Applicant. If vegetative screening is used, xeriscape plants shall be selected from the "Imperial County Xeriscape Guide and Map." Initial xeriscape planting, if desired by the landowner, shall be the responsibility of the Applicant.</p>	LS

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EXECUTIVE SUMMARY

**TABLE ES-1
SUMMARY OF IMPACTS**

IMPACT	LEVEL OF IMPACT/ SIGNIFICANCE BEFORE MITIGATION	MITIGATION MEASURES	LEVEL OF IMPACT/ SIGNIFICANCE AFTER MITIGATION
		Landscape maintenance to check the health of the plants shall be performed by the landowner or Applicant, as needed and as determined by the agreement between the two parties.	
<p>New Source of Substantial Light or Glare Impact 4.1.3 The proposed project includes non-reflective PV panels are non-reflective which are not anticipated to create glare. Likewise, the lighting system will be designed to provide the minimum illumination. Therefore, impacts associated with creation of substantial light and glare are considered less than significant.</p>	LS	None required.	LS
<p>Cumulative Visual Impacts Impact 4.1.4 Implementation of the proposed project, in conjunction with existing, approved, proposed, and reasonably foreseeable projects in the vicinity of the project site, would alter the visual character of the area, resulting in a change to public views as well as increased daytime glare and nighttime lighting levels. Such impacts are typically addressed on a project-by-project basis. Therefore, cumulative impacts to visual resources are considered less than cumulatively considerable.</p>	LCC	Implement MM 4.1.2	LCC

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SUMMARY OF IMPACTS**

IMPACT	LEVEL OF IMPACT/ SIGNIFICANCE BEFORE MITIGATION	MITIGATION MEASURES	LEVEL OF IMPACT/ SIGNIFICANCE AFTER MITIGATION
LAND USE			
<p>Conflict With Any Applicable Land Use Plan, Policy, or Regulation Impact 4.2.1 The proposed project is consistent with the existing General Plan land use designation of Agriculture with a Conditional Use Permit and would not conflict with any County policies or regulations. Therefore, conflicts applicable land use plans, polices and regulations are considered a less than significant impact.</p>	LS	None required.	LS
<p>Cumulative Conflicts with Applicable Land Use Plans, Policies, or Regulations Impact 4.2.2 Development of the proposed project in combination with approved, proposed and reasonably foreseeable projects in the region would not incrementally add to conflicts with applicable land use plans, policies and regulations. Each project would be required to be consistent with the applicable plans that apply to the area in which it is located. Thus, this impact is considered less than cumulatively considerable.</p>	LCC	None required.	LCC
<p>Cumulative Land Use Compatibility/Conflict Impacts Impact 4.2.3 Development of the proposed project in combination with approved, proposed and</p>	LCC	None required.	LCC

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**TABLE ES-1
SUMMARY OF IMPACTS**

IMPACT	LEVEL OF IMPACT/ SIGNIFICANCE BEFORE MITIGATION	MITIGATION MEASURES	LEVEL OF IMPACT/ SIGNIFICANCE AFTER MITIGATION
<p>reasonably foreseeable projects in the region would change the land use patterns, present potential land use conflicts, and result in conversion of agricultural lands to a solar facility. This impact is considered less than cumulatively considerable.</p>			
TRANSPORTATION AND CIRCULATION			
<p>Impacts to Intersection, Roadway and Freeway Segment LOS (Year 2011 Plus Project) Impact 4.3.1 Implementation of the proposed project would add traffic to existing traffic volumes on study area intersections, roadways and freeways during construction. This impact is considered less than significant.</p>	LS	None required.	LS
<p>Impacts to Intersection, Roadway and Freeway Segment LOS (Year 2013) Impact 4.3.2 Implementation of the proposed project would add traffic to study area intersections, roadways and freeways during peak construction. This impact is considered less than significant.</p>	LS	None required.	LS
<p>Cumulative Impacts to Intersection, Roadway and Freeway Segment LOS (Year 2013) Impact 4.3.3 Implementation of the proposed project's construction traffic in combination with year</p>	PCC	MM 4.3.3 If all cumulative projects occur concurrently, the proposed project shall pay a fair share contribution toward necessary improvements as	LCC

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SUMMARY OF IMPACTS**

IMPACT	LEVEL OF IMPACT/ SIGNIFICANCE BEFORE MITIGATION	MITIGATION MEASURES	LEVEL OF IMPACT/ SIGNIFICANCE AFTER MITIGATION
<p>2013 volumes would add traffic to study area intersections, roadways and freeways during peak construction. LOS at two intersections would operate below LOS C. This impact is considered potentially cumulatively considerable.</p>		<p>follows:</p> <ol style="list-style-type: none"> 1) The fair share participation is based on the project's temporary construction traffic volume that is significantly higher than the project's traffic volume after completion of construction. At the intersection of Forrester Road at I-8 eastbound ramp, the construction traffic fair share responsibility is 6.2% and 0.5% when based on permanent operation employees (Table 4.3-29). LOS and fair share calculations are included in Appendix R of the <i>Draft Traffic Impact Analysis</i>. This document is provided on the attached CD of Technical Appendices as Appendix B of this EIR. <p>The project fair share responsibility shall be validated at month 7 and yearly during the entire construction period. If the intersection of Forrester Road/I-8 EB Ramp is calculated to</p>	

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EXECUTIVE SUMMARY

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SUMMARY OF IMPACTS**

IMPACT	LEVEL OF IMPACT/ SIGNIFICANCE BEFORE MITIGATION	MITIGATION MEASURES	LEVEL OF IMPACT/ SIGNIFICANCE AFTER MITIGATION
		<p>operate at an unacceptable LOS during the validation period, then the Applicant shall pay the fair share amount based on project construction traffic. If the intersection of Forrester Road/I-8 EB Ramp is calculated to operate at acceptable LOS, then the Applicant should not be required to pay the fair share amount because the intersection would be documented to operate at acceptable LOS.</p> <p>It is recommended that the Applicant enter into an agreement with the County to fulfill the CEQA cumulative mitigation requirement, but not be obligated to pay a fair share if the cumulatively impacted intersection never reaches failing conditions during the project's construction period.</p>	
AIR QUALITY			
<p>Conflict with or Obstruct Air Quality Plan/Violate Air Quality Standard</p> <p>Impact 4.4.1 Implementation of the proposed project would increase air pollutant emissions. This is considered a potentially significant impact.</p>	PS	<p>MM 4.4.1a The following mitigation requirements shall be implemented to reduce construction related PM₁₀ impacts to a level below significance during worst-</p>	LS

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SUMMARY OF IMPACTS**

IMPACT	LEVEL OF IMPACT/ SIGNIFICANCE BEFORE MITIGATION	MITIGATION MEASURES	LEVEL OF IMPACT/ SIGNIFICANCE AFTER MITIGATION
		<p>case construction:</p> <ol style="list-style-type: none"> 1. Apply water during grading/grubbing activities to all active disturbed areas at least three times daily. 2. Apply water to all onsite roadways at least three times daily or use of magnesium chloride or other County-approved dust suppression additives and apply water one-time daily. 3. Reduce all construction related traffic speeds onsite to below 15 Miles per Hour (MPH). <p>MM4.4.1b The following mitigation requirements shall be implemented to reduce construction related NO_x impacts to a level below significance during worst-case construction:</p> <ul style="list-style-type: none"> • Use Diesel Oxidation Catalyst or alternative devices that achieve equivalent NO_x emission reduction on all large diesel construction equipment as required by ICAPCD. 	

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IMPACT	LEVEL OF IMPACT/ SIGNIFICANCE BEFORE MITIGATION	MITIGATION MEASURES	LEVEL OF IMPACT/ SIGNIFICANCE AFTER MITIGATION
		<p>MM 4.4.1c All construction sites in excess of 5 acres must implement the following standard mitigation measures:</p> <p><i>Fugitive PM₁₀ Control</i></p> <ul style="list-style-type: none"> • All disturbed areas, including Bulk Material storage which is not being actively utilized, shall be effectively stabilized and visible emissions shall be limited to no greater than 20 percent opacity for dust emissions by using water, chemical stabilizers, dust suppressants, tarps or other suitable material such as vegetative ground cover. • All on-site and off-site unpaved roads shall be effectively stabilized. Visible emissions shall be limited to no greater than 20 percent opacity for dust emissions by paving, chemical stabilizers, dust suppressants and/or watering. • All unpaved traffic areas one acre or more in size with 75 or more average 	

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SUMMARY OF IMPACTS**

IMPACT	LEVEL OF IMPACT/ SIGNIFICANCE BEFORE MITIGATION	MITIGATION MEASURES	LEVEL OF IMPACT/ SIGNIFICANCE AFTER MITIGATION
		<p>vehicle trips per day shall be effectively stabilized and visible emission shall be limited to no greater than 20 percent opacity for dust emissions by paving, chemical stabilizers, dust suppressants and/or watering.</p> <ul style="list-style-type: none"> • The transport of bulk materials shall be completely covered unless six inches of freeboard space from the top of the container is maintained with no spillage and loss of bulk material. In addition, the cargo compartment of all haul trucks is to be cleaned and/or washed at delivery site after removal of bulk material. • All track-out or carry-out shall be cleaned at the end of each workday or immediately when mud or dirt extends a cumulative distance of 50 linear feet or more onto a paved road within an urban area. • Movement of Bulk Material handling or transfer shall be stabilized prior to 	

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		<p>handling or at points of transfer with application of sufficient water, chemical stabilizers or by sheltering or enclosing the operation and transfer line.</p> <ul style="list-style-type: none"> The construction of any new unpaved road is prohibited within any area with a population of 500 or more unless the road meets the definition of a temporary unpaved road. Any temporary unpaved road shall be effectively stabilized and visible emissions shall be limited to no greater than 20 percent opacity for dust emission by paving, chemical stabilizers, dust suppressants and/or watering. <p><i>Construction Combustion Equipment</i></p> <ul style="list-style-type: none"> All construction equipment, including all off-road and portable diesel powered equipment, shall use alternative fuel or be catalyst equipped. 	

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		<ul style="list-style-type: none"> • Idling time shall be minimized either by shutting equipment off when not in use or reducing the time of idling to 5 minutes as a maximum. • The hours of operation of heavy duty equipment and/or the amount of equipment in use shall be limited, to the extent feasible. • Fossil fueled equipment shall be replaced with electrically driven equivalents (provided they are not run via a portable generator set). 	
<p>Expose Sensitive Receptors to Substantial Pollutant Concentrations Impact 4.4.2 Exhaust generated during construction could result in elevated levels of DPM. This is considered a potentially significant impact.</p>	PS	The project would be required to use equipment meeting T-BACT specifications. In addition, mitigation measures identified to reduced NO _x and PM ₁₀ (MM 4.4.1a, 4.4.1b and 4.4.1c) would also be classified as T-BACT measures for reducing DPM.	LS
<p>Violate Air Quality Standard/Cause Air Quality Violation Impact 4.4.3 The proposed project would generate criteria pollutant emissions during construction. However, the project would be required to comply with recommended and required mitigation to reduce emissions to meet threshold levels. Therefore, the project would</p>	LCC	Implement MM 4.4.1a, MM 4.4.1b and MM 4.4.1c.	LCC

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result in a less than cumulatively considerable impact with regard to violating an air quality standard.			
Cumulative Substantial Pollutant Concentrations Impact 4.4.4 Implementation of the proposed project would not coincide with peak construction of other cumulative projects. Therefore, the proposed project would have a less than cumulatively considerable impact on DPM.	LCC	The project would be required to use equipment meeting T-BACT specifications. In addition, mitigation measures identified to reduced NO _x and PM ₁₀ (MM 4.4.1a, 4.4.1b and 4.4.1c) would also be classified as T-BACT measures for reducing DPM.	LCC
CLIMATE CHANGE AND GREENHOUSE GAS EMISSIONS			
Generation of Greenhouse Gas Emissions Impact 4.5.1 The proposed project would generate greenhouse gas emissions. This impact is considered less than significant .	LS	None required.	LS
Conflict with an Applicable Plan, Policy, or Regulation Adopted to Reduce Greenhouse Gas Emissions Impact 4.5.2 The project would not conflict with an applicable plan, policy, or regulation adopted to reduce greenhouse gas emissions. There is no impact .	NI	None required.	NI
GEOLOGY AND SOILS			
Strong Seismic Ground Shaking Impact 4.6.1 The project site is located in a seismically active region and would be subject to strong seismic ground shaking in the event of an earthquake.	PS	MM 4.6.1 The proposed development shall be designed in accordance with seismic considerations contained in the 2010 California Building Code, 2010 Uniform	LS

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This is considered a potentially significant impact .		Building Code or the standards of care established by the Structural Engineers Association of California and the County of Imperial building requirements.	
Liquefaction/Unstable Soils Impact 4.6.2 Soils on the project site could be subject to liquefaction. However, if liquefaction were to occur, it will only be in small areas of the site and result in ¼-inch differential settlement of the arrays. This is considered a less than significant impact .	LS	None required.	LS
Erosion Impact 4.6.3 Construction activities would result in earth disturbance and potential for erosion and loss of top soil. Multiple requirements have been established to address erosion which the Applicant must comply with. Therefore, this impact is considered less than significant .	LS	None required.	LS
Expansive Soils Impact 4.6.4 Some of the soils identified on the project site have expansive characteristics. This is considered a potentially significant impact .	PS	MM 4.6.4 The proposed solar generation facility and gen-tie shall be designed in accordance with a Final Geotechnical Evaluation report that will be prepared by a licensed professional engineer during the final design phase. The Final Geotechnical Evaluation report will be	LS

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		submitted to Imperial County Department of Planning and Development Services for review and approval prior to issuance of building permits as required by the Imperial County. The Final Geotechnical Evaluation report will include an analysis and recommendations regarding design for expansive soil conditions.	
<p>Soil Capability to Support Septic Systems Impact 4.6.5 The project proposes to construct a septic system to accommodate wastewater flows generated on the project site. The project will be engineered in compliance with County Environmental Health Department standards. Therefore, soil capability to support septic systems is considered a less than significant impact.</p>	LS	None required.	LS
<p>Soil Corrosivity Impact 4.6.6 Soils within the project site are severely corrosive. Portions of metal structures coming in contact with these soils could be damaged. This is considered a potentially significant impact.</p>	PS	MM 4.6.6 A Field Resistivity and Ground Potential Rise Evaluation shall be prepared by a qualified engineer, which shall include specific measures to address corrosion impacts. Potential measures may include, but are not limited to,	LS

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		galvanization, epoxy coatings, thicker steel, and cathodic protection.	
<p>Cumulative Exposure to Geologic and Seismic Impacts Impact 4.6.7 Implementation of the proposed project, in combination with existing, approved, proposed, and reasonably foreseeable development, may result in cumulative exposure to geologic and seismic hazards. This is considered a less than cumulatively considerable impact.</p>	LS	Implement MM 4.6.2, MM 4.6.4 and MM 4.6.6	LS
CULTURAL RESOURCES			
<p>Changes in Setting to the Westside Main Canal System Impact 4.7.1 Implementation of the proposed project would result in changes in the setting of the Westside Main Canal system. This impact is considered less than significant.</p>	LS	None required.	LS

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<p>Impact to Archaeological Site CA-IMP-11758 Impact 4.7.2 Archaeological site CA-IMP-11758 could be damaged inadvertently during construction of the adjacent solar field. This is considered a potentially significant impact.</p>	<p>PS</p>	<p>MM 4.7.2 A qualified and experienced archaeological monitor, will monitor the installation of temporary orange construction fencing around the boundaries of archaeological site CA-IMP-11758. The on-site Construction Manager (who is defined as the individual with the authority to halt all construction-related activities) shall be required to stake in advance the line where the fence will be installed and will provide a minimum of 48 hours advance notice to the archaeological monitor before fence installation occurs. The Construction Manager shall be responsible for maintaining the fencing in working order throughout the duration of construction, which may include periodic maintenance or replacement. The Construction Manager shall not allow passage of non-authorized personnel to enter the site through the fence. The archaeological monitor will monitor the effectiveness of the protective</p>	<p>LS</p>

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		<p>measures described in this measure at least twice per month during construction to ensure that unanticipated effects are avoided. If an unanticipated effect is discovered, the monitor will immediately notify the Construction Manager and give interim directions for protecting the site from further effects, which may include mandatory cessation of activity within 100 feet or more of the discovery. The Construction Manager will be responsible for promptly implementing those interim measures. The archaeological monitor will monitor the removal of the temporary fencing after construction is completed. The Construction Manager shall be required to provide a minimum of 48 hours advance notice to the archaeological monitor before fence removal occurs.</p>	

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<p>Impacts to Unrecorded Subsurface Archaeological Resources</p> <p>Impact 4.7.3 Unrecorded subsurface archaeological resources could be damaged during construction. This is considered a potentially significant impact.</p>	<p>PS</p>	<p>MM 4.7.3 If subsurface deposits believed to be cultural in origin are discovered during construction, then all work must halt within a 200-foot radius of the discovery. A qualified professional archaeologist shall be retained to evaluate the significance of the find. A Native American monitor, following the Guidelines for Monitors/Consultants of Native American Cultural, Religious, and Burial Sites established by the Native American Heritage Commission, may also be required. Work cannot continue at the discovery site until the archaeologist conducts sufficient research and data collection to make a determination that the resource is either 1) not cultural in origin; or 2) not potentially significant or eligible for listing on the NRHP or CRHR. If a potentially-eligible resource is encountered, then the archaeologist, lead agency, and project proponent shall arrange for either 1) total avoidance of the resource, if possible; or 2) test excavations to evaluate eligibility for the CRHR and, if eligible, data recovery as mitigation.</p>	<p>LS</p>

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<p>Impacts to Subsurface Human Remains Impact 4.7.4 Subsurface human remains could be impacted during construction. This is considered a potentially significant impact.</p>	<p>PS</p>	<p>MM 4.7.4 In the event that evidence of human remains is discovered, construction activities within 200 feet of the discovery will be halted or diverted and the Imperial County Coroner will be notified (Section 7050.5 of the Health and Safety Code). If the Coroner determines that the remains are Native American, the Coroner will notify the Native American Heritage Commission which will designate a Most Likely Descendant (MLD) for the Project (Section 5097.98 of the Public Resources Code). The designated MLD then has 48 hours from the time access to the property is granted to make recommendations concerning treatment of the remains (AB 2641). If the landowner does not agree with the recommendations of the MLD, the NAHC can mediate (Section 5097.94 of the Public Resources Code). If no agreement is reached, the landowner must rebury the remains where they will not be further disturbed (Section</p>	<p>LS</p>

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		<p>5097.98 of the Public Resources Code). This will also include either recording the site with the NAHC or the appropriate Information Center; using an open space or conservation zoning designation or easement; or recording a document with the county in which the property is located (AB 2641).</p>	

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<p>Impacts to Fossil Remains Impact 4.7.5 Fossil remains could be destroyed by excavation and other earth-moving activities. This is considered a potentially significant impact.</p>	<p>PS</p>	<p>MM 4.7.5 Ground-disturbing activities in the Lake Cahuilla sediments, Quaternary alluvium, and the Brawley Formation must be monitored by a qualified paleontological monitor. Paleontological monitors will be equipped to salvage fossils as they are unearthed (to help avoid construction delays) and to remove samples of sediments that are likely to contain the remains of small fossil invertebrates and vertebrates. Monitors are empowered to temporarily halt or divert equipment to allow removal of abundant or large specimens. Recovered specimens will be prepared to a point of identification and permanent preservation, including washing of sediments to recover small invertebrates and vertebrates. Fossil specimens will be curated by accessioning them into an established, accredited museum repository with permanent retrievable paleontological storage. A report of findings with an</p>	<p>LS</p>

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		appended itemized inventory of specimens will be prepared. The report and inventory, when submitted to the Imperial County Department of Planning and Development Services, along with confirmation of the curation of recovered specimens into an established, accredited museum repository, will signify completion of the program to mitigate impacts to paleontological resources.	
<p>Cumulative impacts to Archaeological and Historic Resources Impact 4.7.6 Implementation of the proposed project, in combination with existing, approved, proposed, and reasonably foreseeable development in the cumulative setting, has the potential to result in impacts to archaeological and historic resources. However, impacts are addressed on a project-by-project basis. Therefore, this is considered a less than cumulatively considerable impact.</p>	LCC	None required.	LCC
<p>Cumulative Impacts to Paleontological Resources Impact 4.7.7 Implementation of the proposed project in combination with existing, approved, proposed, and reasonably foreseeable development in the cumulative setting, has the potential to result in</p>	LCC	None required.	LCC

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<p>impacts to fossil remains and fossil bearing geological formations. However, such impacts are addressed on a project-by-project basis. Therefore, this is considered a less than cumulatively considerable impact.</p>			
NOISE			
<p>Noise Levels in Excess of Standards/Substantial Temporary Noise Increase Impact 4.8.1 Heavy equipment and traffic generated during construction would generate short-term increases in noise on and in the vicinity of the project site. This impact is considered less than significant.</p>	LS	None required.	LS
<p>Noise Levels in Excess of Standards/Substantial Permanent Noise Increase Impact 4.8.2 The proposed project would generate noise associated with operation of on-site equipment. This impact is considered less than significant.</p>	LS	None required.	LS

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<p>Cumulative Noise Increases Impact 4.8.3 Construction and operation of the proposed project could incrementally contribute to the existing noise environment. This impact is considered less than cumulatively considerable.</p>	LCC	None required	LCC
AGRICULTURAL RESOURCES			
<p>Conversion of Prime Farmland, Unique Farmland, or Farmland of Statewide Importance Impact 4.9.1 The proposed project would temporarily convert Prime Farmland, Unique Farmland, Farmland of Statewide Importance, and Farmland of Local Importance to non-agricultural uses. This is considered a potentially significant impact.</p>	PS	<p>MM 4.9.1a Prior to the issuance of a grading permit or building permit (whichever is issued first) for the proposed project, the mitigation of temporary impacts to agricultural lands shall be accomplished via one of the following options:</p> <p><u>Non-Prime Farmland</u></p> <ul style="list-style-type: none"> • Option 1: The Permittee shall procure Agricultural Conservation Easements on a 1 to 1 basis on land of equal size, of equal quality of farmland, outside the path of development. The Conservation Easement shall meet the State Department of Conservation's 	LS

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		<p>regulations and shall be recorded prior to issuance of any grading or building permits.</p> <ul style="list-style-type: none"> ● Option 2: The Permittee shall pay an “Agricultural In-Lieu Mitigation Fee” in the amount of 20% of the fair market value per acre for the total acres of proposed site based on five comparable sales of land used for agricultural purposes as of the effective date of the permit, including program costs on a cost recovery/time and material basis. The Agricultural In-Lieu Mitigation Fee, will be placed in a trust account administered by the Imperial County Agricultural Commissioner’s office and will be used for such purposes as the acquisition, stewardship, preservation and enhancement of agricultural lands within Imperial County. ● Option 3: If the Permittee and County voluntarily enter into a 	

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		<p>Public Benefit Agreement that includes an Agricultural Benefit Fee payment that is equal to or greater than the amount that would be due under option 2 of this mitigation measure and the public benefit agreement requires that the Agricultural Benefit Fee be used for such purposes as the acquisition, stewardship, preservation and enhancement of agricultural lands within Imperial County, then this mitigation measure may be satisfied by the payment of a voluntarily agreed amount to the Agricultural Benefit Fee.</p> <p>Prime Farmland</p> <ul style="list-style-type: none"> • Option 1: Agricultural Conservation Easements on a "2 to 1" basis on land of equal size, of equal quality farmland, outside of the path of development. The Conservation Easement shall meet the State Department of Conservation's regulations and shall be recorded 	

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		<p>prior to issuance of any grading or building permits; or</p> <ul style="list-style-type: none"> • Option 2: The Permittee shall pay an "Agricultural In-Lieu Mitigation Fee" in the amount of 30% of the fair market value per acre for the total acres of the proposed site based on five comparable sales of land used for agricultural purposes as of the effective date of the permit, including program costs on a cost recovery/time and material basis. The Agricultural In-Lieu Mitigation Fee, will be placed in a trust account administered by the Imperial County Agricultural Commissioner's office and will be used for such purposes as the acquisition, stewardship, preservation and enhancement of agricultural lands within Imperial County. • Option 3: If the Permittee and County voluntarily enter into a Public Benefit Agreement that 	

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		<p>includes an Agricultural Benefit Fee payment that is equal to or greater than the amount that would be due under option 2 of this mitigation measure and the public benefit agreement requires that the Agricultural Benefit Fee be used for such purposes as the acquisition, stewardship, preservation and enhancement of agricultural lands within Imperial County, then this mitigation measure may be satisfied by the payment of a voluntarily agreed amount to the Agricultural Benefit Fee; or</p> <ul style="list-style-type: none"> • Option 4: The Permittee must revise their CUP Application/Site Plan to avoid Prime Farmland. <p>MM 4.9.1b In addition to Options 1, 2 or 3 identified in association with Prime Farmland and Non-Prime Farmland, the Applicant shall submit to Imperial County a Reclamation Plan to return the site to its current agricultural condition prior to the issuance of a</p>	

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		<p>certificate of occupancy for the Operations and Maintenance building. The Reclamation Plan shall include a site reclamation cost estimate prepared by a California-licensed general contractor or civil engineer. The Permittee shall provide a financial assurance/bonding in the amount equal to the site reclamation cost estimate to return the land to its current agricultural condition after the solar facilities ceases operations and closes.</p>	

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<p>Indirect Environmental Effects of Conversion of Farmland Impact 4.9.2 The proposed project would involve indirect changes to the existing environment that could temporarily affect farmlands. This is considered a potentially significant impact.</p>	<p>PS</p>	<p>MM 4.9.2 Prior to the issuance of a grading permit or building permit (whichever occurs first), a Weed and Pest Control Plan shall be developed by the Project Applicant and approved by the County of Imperial Agricultural Commissioner. The Plan shall provide the following:</p> <ol style="list-style-type: none"> 1) Monitoring, preventative, and management strategies for weed and pest control during construction activities at the CSE Facility and portions of the gen-tie line that are adjacent agricultural lands; 2) Control and management of weeds and pests in areas temporarily disturbed during construction where native seed will aid in site revegetation; and, 3) A long-term strategy for weed and pest control and management during the operation of the CSE Facility and portions of the gen-tie line that are adjacent agricultural 	<p>LS</p>

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		lands. Such strategies may include, but are not limited to: a. Use of specific types of ground cover and maintenance (mowing, replacement, etc.) of such ground cover; b. Use of specific types of herbicides and pesticides on a scheduled basis; and c. Maintenance and management of project site conditions to reduce the potential for a significant increase in pest-related nuisance conditions on adjacent agricultural lands.	
<p>Cumulative Agricultural Resources Impacts Impact 4.9.3 Implementation of the proposed project would incrementally add to the temporary conversion of agricultural land in Imperial County. Temporary impacts to agricultural resources are mitigated on a project-by-project basis through payment of in-lieu fees, conservation easements and/or execution of Public Benefit Agreements. Therefore, temporary impacts to agricultural</p>	LCC	Implement MM 4.9.1a, MM 4.9.1b and MM 4.9.2.	LCC

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resources are considered less than cumulatively considerable .			
Hazards and Hazardous Materials			
Hazardous Materials Transport, Use, Disposal and Accidental Release			
Impact 4.10.1 The proposed project could create a significant hazard to the public or the environment through the transport, use, or disposal of hazardous materials. This is considered a less than significant impact .	LS	None required.	LS
Hazard Through Upset/Release of Hazardous Materials Impact 4.10.2 The proposed project site contained some residual hazardous materials, pesticide residue and several other features that could be considered hazardous. Therefore, this impact is considered potentially significant .	PS	MM 4.10.2a Empty herbicide bags and any trash or debris shall be removed from the property according to applicable regulations prior to commencing earthmoving activities. MM 4.10.2b ASTs containing sulfuric acid, ammonium nitrate solution, and anhydrous ammonia shall be removed from the following locations and wherever else present on the project site prior to commencing earth moving activities: east central side of APN 051-360-32; northwest and northeast side, southeast corner and northeast corner of APN 051-310-40;	LS

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		<p>southern edge of APN 051-360-04; southwest corner of APN 051-310-50; northeast corner of APN 051-310-40; east-central side of APN 051-360-32; southeast corner of APN 051-360-03; and the southeast corner of APN 051-360-02.</p> <p>MM 4.10.2c If on-site the transformers are found to contain PCBs, the owner and responsible party for the transformers shall be required to handle and dispose of the waste dielectric fluid according to applicable regulations.</p> <p>MM 4.10.2d Utility poles, associated base and stained soil adjacent to ASTs shall be removed and disposed of in an approved manner by the owner/utility prior to commencing earthmoving activities. The locations include material located in the northeast corner of APN 051-360-02, stained soil on the southern edge of APN 051-360-04 and the east central side of APN 051-360-32.</p> <p>MM 4.10.2e Suspect LBP shall be evaluated by a</p>	

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		California Certified Lead Inspector/Assessor prior if structures are to be removed. As applicable, confirmed LBP shall be handled by a licensed LBP contractor and disposed of according to appropriate regulations.	
<p>Emit Hazardous Emissions Impact 4.10.3 The proposed project is located within a quarter mile of an existing school. The project would use limited amounts of hazardous materials on occasion that would be handled in accordance with all applicable regulations and standards. Therefore, impacts associated with emitting hazardous materials within one-quarter mile of a school are considered less than significant.</p>	LS	None required.	LS
<p>Cumulative Hazards and Hazardous Materials Impact Impact 4.10.4 The proposed project, in combination with other reasonably foreseeable projects in the vicinity of the project site, would increase the density of development in the area, thus potentially increasing the potential for the presence hazards and use of hazardous materials. However, this is considered to be a less than cumulatively considerable impact.</p>	LCC	MM 4.10.2a and MM 4.10.2b would reduce residual hazards on the project site from prior agricultural activities; MM 4.10.2c, MM 4.10.2d, and MM 4.10.2e would address and remove potential hazards associated with potential presence of PCBs, stained soil and lead-based paint)	LCC

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HYDROLOGY AND WATER QUALITY			
<p>Violate Water Quality Standards or Waste Discharge Requirements Impact 4.11.1 Implementation of the proposed project would generate small amounts of runoff during construction, and operation and maintenance. This impact is considered less than significant.</p>	LS	None required.	LS
<p>Result in Substantial Erosion or Siltation On- or Off-site Impact 4.11.2 Implementation of the proposed project could generate erosion during construction. Compliance with the provisions of the Construction General Stormwater Permit and Stormwater Pollution Prevention Plan would address erosion or siltation on or off-site. Therefore, this impact is considered less than significant.</p>	LS	None required.	LS
<p>Result in Substantial Flooding On- Or Off-Site/Create or Contribute Runoff Exceeding Capacity Impact 4.11.3 Implementation of the proposed project would generate on-site runoff. Existing drainage patterns would be maintained and the site would remain pervious. Sufficient capacity is available in receiving IID drains. Therefore, impacts associated with flooding or exceedance</p>	LS	None required.	LS

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of existing drainage capacity are considered less than significant .			
Cumulative Impact to Hydrology and Water Quality Impact 4.11.4 The proposed project, in combination with approved, proposed and other reasonably foreseeable projects in the Salton Sea watershed would contribute to the cumulative effects of degradation of water quality and changes in runoff patterns ultimately discharging to the Salton Sea. This impact is considered less than cumulatively considerable .	LCC	None required.	LCC
BIOLOGICAL RESOURCES			
Impacts to Special-Status Species – Plants Impact 4.12.1 The proposed solar generation facility site has been previously disturbed in association with past and current agricultural operations. The gen-tie corridor is not anticipated to contain special-status plants based on previous surveys within the corridor. Therefore, no impacts to special status plant species are expected to occur as a result of project implementation.	NI	None required.	NI
Impacts on Special Status Species – Birds (Southwestern Willow Flycatcher) Impact 4.12.2 Implementation of the proposed project has the potential to impact SWFL. This is considered a	PS	MM 4.12.2 Implement the following measures to address potential impacts to avian species, including SWFLs: <ul style="list-style-type: none"> • The Applicant shall prepare and 	LS

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<p>potentially significant impact.</p>		<p>implement a Bird and Bat Conservation Strategy (BBCS) outlining conservation measures for construction and O&M activities that reduce potential impacts to migratory birds, bats and raptors. Conservation measures shall be developed based on, USFWS guidelines and input from the USFWS. Construction conservation measures to be addressed in the BBCS include:</p> <ul style="list-style-type: none"> ➤ Minimizing disturbance to vegetation to the maximum extent practicable. ➤ Clearing vegetation outside of the breeding season. If construction occurs between February 1 and September 15, an approved biologist shall conduct a pre-construction clearance survey for nesting birds in suitable nesting habitat that occurs within the proposed area of impact. Pre-construction nesting surveys will 	

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		<p>identify any active migratory birds (and other sensitive non-migratory birds) nests. Direct impact to any active migratory bird nest should be avoided.</p> <ul style="list-style-type: none"> ➤ Minimize wildfire potential. ➤ Minimize activities that attract prey and predators. ➤ Control of invasive plants. ➤ Apply APLIC design guidelines for overhead utilities by incorporating recommended or other methods that enhance the visibility of the lines to avian species. <p>Operations and maintenance conservation measures to be incorporated into the BBCS include:</p> <ul style="list-style-type: none"> ➤ Preparation of a Raven Control Plan that avoids introducing water and food resources in the area surrounding the solar generation facility. ➤ Incorporate APLIC guidelines for overhead utilities as appropriate to minimize avian collisions with 	

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		<p>Gen-tie Line facilities.</p> <ul style="list-style-type: none"> ➤ Minimize noise. ➤ Minimize use of outdoor lighting. ➤ Implement post—construction avian monitoring that will incorporate the Wildlife Mortality Reporting Program. <p>The BBCS shall also address disturbance minimization, timing of construction, minimization of activities that would attract prey and predators, lighting, noise, and incorporation of a Wildlife Mortality Reporting Program and Raven Control Plan discussed below.</p> <ul style="list-style-type: none"> • The Applicant shall prepare a <i>Raven Control Plan</i> that details specific measures for storage and disposal of all litter and trash produced by the Campo Verde Solar project site and its employees. This plan shall be designed to discourage scavengers that may also prey on wildlife in the vicinity. All employees shall be familiar with this plan and littering shall be 	

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		<p>prohibited. This plan will be reviewed and approved by the BLM and CDFG.</p> <ul style="list-style-type: none"> • Prepare a <i>Wildlife Mortality Reporting Program</i> to identify and report any dead or injured animals observed by personnel conducting O&M activities within the solar generation facility and along the gen-tie line. An appropriate reporting format for dead or injured special status wildlife observed within the solar generation facility and along the gen-tie line shall be developed in coordination with CDFG, USFWS and the BLM. In addition, reporting of any dead or injured avian species found along the gen-tie line shall follow the existing USFWS Bird Fatality/Injury Reporting Program (https://birdreport.fws.gov/). Species requiring reporting will be decided in consultation with CDFG, BLM and USFWS. • Establish annual formal Worker Education Training for all employees and any subcontractors at the Campo 	

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		Verde Solar project site to provide instruction on sensitive species identification; measures to avoid contact, disturbance, and injury; and reporting procedures in the case of dead and/or injured wildlife species. The USFWS and the BLM shall be notified per approved guidelines and channels of authority if mortality should occur. Species requiring reporting will be decided in consultation with CDFG, BLM and USFWS and will be detailed in the <i>Wildlife Mortality Reporting Program</i> .	
Impacts on Special Status Species – Birds (Yuma Clapper Rail) Impact 4.12.3 Implementation of the proposed project has the potential to impact YCR. This is considered a potentially significant impact .	PS	Implement MM 4.12.2	LS
Impacts on Special Status Species – Birds (Greater Sandhill Crane) Impact 4.12.4 Implementation of the proposed project has the potential to impact Greater Sandhill Crane. This is considered a potentially significant impact .	PS	Implement MM 4.12.2	LS
Impacts on Special Status Species – Birds (Mountain Plover) Impact 4.12.5 Implementation of the proposed project has the	PS	Implement MM 4.12.2	LS

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<p>potential to impact Mountain Plover during construction, and operation and maintenance. This is considered a potentially significant impact.</p>			
<p>Impacts on Special Status Species – Raptors (Burrowing Owls) Impact 4.12.6 Implementation of the proposed project has the potential to impact Burrowing Owls during construction, and operation and maintenance. This is considered a potentially significant impact.</p>		<p>MM 4.12.6a The following measures will avoid, minimize, or mitigate potential impacts to Burrowing Owls during construction activities: 1) To the extent practicable, initial grading and clearing within the project footprint shall occur between September 1 and January 31 to avoid impacts to any breeding Burrowing Owls. Occupied burrows shall not be removed during the nesting season (February 1 through August 31) unless a qualified biologist approved by CDFG verifies through non-invasive methods that either: (a) the birds have not begun egg-laying and incubation; or (b) that juveniles from the occupied burrows are foraging independently and are</p>	

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		<p>capable of independent survival. If initial grading and clearing within the project footprint is to begin during the breeding season (February 1 through August 31), measures 2 through 4 below will be implemented.</p> <p>2) Within 30-days prior to initiation of initial grading and clearing, pre-construction clearance surveys for Burrowing Owl shall be conducted by qualified and agency-approved biologists to determine the presence or absence of this species within the grading area. The proposed grading areas shall be clearly demarcated in the field or via GPS by the project engineers and Designated Biologist prior to the commencement of the pre-construction clearance survey. The surveys shall follow the protocols provided in the <i>Burrowing Owl Survey Protocol and Mitigation</i></p>	

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		<p><i>Guidelines.</i></p> <p>3) When removal of occupied burrows is unavoidable, the following mitigation measures shall be implemented outside of the breeding season:</p> <ul style="list-style-type: none"> • Passive relocation methods are to be used by the biological monitors to move the owls out of the impact zone. This includes covering or excavating all burrows and installing one-way doors into occupied burrows. This will allow any animals inside to leave the burrow, but will exclude any animals from re-entering the burrow. A period of at least one week is required after the relocation effort to allow the birds to leave the impacted area before excavation of the burrow can begin. The burrows should then be excavated and filled in to prevent their reuse. 	

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		<ul style="list-style-type: none"> • The removal of active burrows on-site requires construction of new burrows or the enhancement of existing unsuitable burrows (i.e., enlargement or clearing of debris) at a mitigation ratio of 2:1 at least 50 meters from the impacted area and must be constructed as part of the above-described relocation efforts. <p>4) As the project construction schedule and details are finalized, an approved biologist shall prepare a Burrowing Owl Mitigation and Monitoring Plan that will detail the approved, site-specific methodology proposed to minimize and mitigate impacts to this species. Passive relocation, destruction of burrows, and construction of artificial burrows can only be completed upon prior approval by and in cooperation with the CDFG.</p>	

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		MM 4.12.6b The Applicant shall consult with CDFG to determine the amount and conditions of compensatory mitigation for foraging habitat lost as a result of project implementation. A mitigation and monitoring plan shall be prepared that could include a combination of (or one of) on-site mitigation, off-site mitigation, or contributions to National Fish and Wildlife Foundation’s Impact-Directed Environmental Accounts program. Exact mitigation acreages will be determined in consultation with CDFG.	
Impacts on Special Status Species – Raptors (Golden Eagles) Impact 4.12.7 Implementation of the proposed project has the potential to impact Golden Eagles during operation and maintenance. This is considered a potentially significant impact .	PS	Implement MM 4.12.2	LS
Impacts to Nesting Raptors Impact 4.12.8 Implementation of the proposed project has the potential to impact nesting raptors during construction, operations and maintenance. This	PS	MM 4.12.8 To prevent nesting raptors from noise associated with project construction, the following shall be implemented:	

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<p>is considered a potentially significant impact.</p>		<ul style="list-style-type: none"> • To the extent practicable, initial grading and clearing within the project site shall take place outside the raptors’ breeding season of February 1 to July 15. • If construction occurs between February 1 and July 15, an approved biologist shall conduct a pre-construction clearance survey for nesting raptors in suitable nesting habitat (e.g., tall trees or transmission towers) that occurs within 500 feet of the survey area. If any active raptor nest is located, the nest area will be flagged, and a 500-foot buffer zone delineated, flagged, or otherwise marked. No work activity may occur within this buffer area, until an approved biologist determines that the fledglings are independent of the nest. 	

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<p>Impacts on Special Status Species – Mammals (Pallid Bats and California Leaf-nosed Bats) Impact 4.12.9 Implementation of the proposed project has the potential to impact pallid bats and California leaf-nosed bats during construction, and operation and maintenance. This is considered a potentially significant impact.</p>	PS	Implement MM 4.12.2.	LS
<p>Impacts on Special Status Species – Reptiles (Flat tailed horned lizard) Impact 4.12.10 Implementation of the proposed project has the potential to impact Flat tailed horned lizard during construction, and operation and maintenance. This is considered a potentially significant impact.</p>	PS	<p>MM 4.12.10a In accordance with the <i>FTHL Rangewide Management Strategy</i>, the measures proposed below are designed to avoid, minimize, and/or compensate for potential direct and indirect effects construction of the proposed project may have on FTHL. The following will be implemented when conducting construction activities within the creosote bush-white burr sage scrub and other native vegetation types in the gen-tie ROW:</p> <ol style="list-style-type: none"> 1. Prior to ground-disturbing activities, an individual shall be 	LS

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		designated and approved by the BLM as the Designated Biologist ² (i.e. field contact representative) along with approved Biological Monitors as needed for construction, particularly within the Yuha MA. The Designated Biologist will be designated for the period during which on-going construction and post-construction monitoring and reporting by an approved biologist is required, such as annual reporting on habitat restoration. Each successive Designated Biologist will be approved by the BLM's Authorized Officer (i.e., BLM field manager, El Centro). The Designated Biologist will have the authority to ensure compliance	

² A qualified Designated Biologist must have (1) a bachelor's degree with an emphasis in ecology, natural resource management, or related science; (2) three years of experience in field biology or current certification of a nationally recognized biological society, such as The Ecological Society of America or the Wildlife Society (3) previous experience with applying terms and conditions of a biological opinion; and, (4) the appropriate permit and/or training if conducting focused or protocol surveys for listed or proposed species.

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		<p>with the conservation measures for the FTHL and will be the primary agency contact for the implementation of these measures. The Designated Biologist will organize and oversee the work of the biological monitors and have the authority and responsibility to halt activities that are in violation of the conservation measures. An organizational chart shall be provided to BLM prior to ground-disturbing activities with a clear chain of command and contact information (cell phones). A detailed list of responsibilities for the Designated Biologist is summarized below. To avoid and minimize impacts to biological resources, the Designated Biologist will:</p> <ul style="list-style-type: none"> • Notify BLM’s Authorizing Officer at least 14 calendar days before initiating ground 	

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		<p>disturbing activities.</p> <ul style="list-style-type: none"> • Immediately notify BLM’s Authorized Officer in writing if the project Applicant is not in compliance with any conservation measures, including but not limited to any actual or anticipated failure to implement conservation measures within the time periods specified. • Conduct compliance inspections at a minimum of once per month during on-going construction after clearing, grubbing, and grading are completed, and submit a monthly compliance report to BLM’s Authorized Officer until construction is complete. <p>2. The boundaries of all areas to be disturbed (including staging areas, access roads, and sites for temporary placement of spoils) will be delineated with stakes</p>	

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		<p>and flagging prior to construction activities. Where feasible, the areas shall be cleared of FTHL and fenced (according to the Strategy) to exclude FTHL from re-entering these construction areas, particularly in the MA and other high-use areas such as for staging of equipment or parking areas. Spoils will be stockpiled in disturbed areas lacking native vegetation or where habitat quality is poor, such as the agricultural fields rather than native desert. To the extent possible, disturbance of shrubs and surface soils due to stockpiling will be minimized. All disturbances, vehicles, and equipment will be confined to the flagged and cleared areas. To the extent possible, surface disturbance will be timed to minimize mortality to FTHL.</p> <p>3. Approved Biological monitor(s)</p>	

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		<p>will assist the Designated Biologist in conducting pre-construction surveys and in monitoring of mobilization, ground disturbance, grading, construction, operation, closure, and restoration activities. The biological monitor(s) will have experience conducting FTHL field monitoring, have sufficient education and field experience to understand FTHL biology, be able to identify FTHL scat, and be able to identify and follow FTHL tracks. The Designated Biologist will submit the resume, at least three references, and contact information of the proposed biological monitors to the BLM for approval. To avoid and minimize impacts to biological resources, the Biological Monitors will assist the Designated Biologist with the following activities on BLM</p>	

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		<p>managed lands:</p> <ul style="list-style-type: none"> • Be present during construction (e.g., grubbing, grading,) activities that take place in FTHL habitat to avoid or minimize take of FTHL. Activities include, but are not limited to, ensuring compliance with all impact avoidance and minimization measures, monitoring for FTHLs and removing lizards from harm's way, and checking avoidance areas (e.g., washes) to ensure that signs, and stakes are intact and that human activities are restricted in these avoidance zones. • At the end of each work day, inspect all potential wildlife pitfalls (trenches, bores and other excavations) for wildlife and then backfill. If backfilling is not feasible, all trenches, bores, and other excavations 	

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		<p>will be contoured at a 3:1 slope at the ends to provide wildlife escape ramps, or completely and securely covered to prevent wildlife access.</p> <ul style="list-style-type: none"> • During construction, examine areas of active surface disturbance periodically, at least hourly, when surface temperatures exceed 29°Celsius (C; 85°F) for the presence of FTHL. <p>4. Prior to project initiation of construction of the gen-tie on BLM managed lands, a Worker Environmental Awareness Program (WEAP) will be developed and implemented, and will be available in both English and Spanish. Wallet-sized cards summarizing this information will be provided to all construction, operation, and maintenance personnel. The education program will include the</p>	

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		<p>following aspects:</p> <ul style="list-style-type: none"> • biology and status of the FTHL, • protection measures designed to reduce potential impact to the species, • function of flagging designating authorized work areas, • reporting procedures to be used if a FTHL is encountered in the field, and • driving procedures and techniques, for commuting to, and driving on, the Project site, to reduce mortality of FTHL on roads. <p>5. FTHLs will be removed from harm's way during all construction activities, per item #6 below. To the extent feasible, methods to find FTHLs will be designed to achieve a maximal capture rate and will include, but not be limited to using strip transects, tracking, and raking around shrubs. During</p>	

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		<p>construction, the minimum survey effort will be 30 minutes per 0.40 ha (30 minutes per 1 ac). Persons that handle FTHLs will first obtain all necessary permits and authorization from the CDFG. If the species is federally listed, only persons authorized by both CDFG and USFWS will handle FTHLs. FTHL removal surveys will also include:</p> <ul style="list-style-type: none"> • A Horned Lizard Observation Data Sheet and a Project Reporting Form, per Appendix 8 of the RMS, will be completed. During construction, quarterly reports describing FTHL removal activity, per the reporting requirements, will be submitted to the BLM. <p>6. The removal of FTHLs out of harm's way will include relocation to nearby suitable habitat in low-impact (e.g., away from roads and</p>	

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		<p>solar panels) areas of the Yuha MA. Relocated FTHLs will be placed in the shade of a large shrub in undisturbed habitat. If surface temperatures in the sun are less than 24° Celsius (C) 75° Fahrenheit (F) or exceed 38°C (100° F), the Designated Biologist or biological monitor, if authorized, will hold the FTHL for later release. Initially, captured FTHLs will be held in a cloth bag, cooler, or other appropriate clean, dry container from which the lizard cannot escape. Lizards will be held at temperatures between 75° F and 90° F and will not be exposed to direct sunlight. Release will occur as soon as possible after capture and during daylight hours. The Designated Biologist or biological monitor will be allowed some judgment and discretion when relocating lizards to maximize survival of FTHLs found</p>	

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		<p>in the project area.</p> <p>7. To the maximum extent practicable, grading in FTHL habitat will be conducted during the active season, which is defined as March 1 through September 30, or if ground temperatures are between 24°C (75° F) and 38 °C (100° F). If grading cannot be conducted during this time, any FTHLs found will be removed to low-impact areas (see above) where suitable burrowing habitat exists, (e.g., sandy substrates and shrub cover).</p> <p>8. Temporarily disturbed areas associated with gen-tie construction and staging areas on federal lands, will be re-vegetated according to the Site Reclamation and Revegetation Plan (SRRP) approved by the BLM. The SRRP must be approved in writing by the BLM prior to any vegetation-disturbing activities. Restoration</p>	

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		<p>involves re-contouring the land, replacing the topsoil (if it was collected), and maintaining (i.e., weeding, replacement planting, supplemental watering, etc.), and monitoring the restored area for a period of 5 years (or less if the restoration meets all success criteria). Components of the SRRP will typically include:</p> <ul style="list-style-type: none"> • The incorporation of Desert Bioregion Revegetation/Restoration Guidance measures. These measures generally include alleviating soil compaction, returning the surface to its original contour, pitting or imprinting the surface to allow small areas where seeds and rain water can be captured, planting seedlings that have acquired the necessary root mass to survive without watering, planting seedlings in 	

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		<p>the spring with herbivory cages, broadcasting locally collected seed immediately prior to the rainy season, and covering the seeds with mulch.</p> <p>MM 4.12.10b In accordance with the <i>FTHL Rangewide Management Strategy</i>, the measures proposed below are designed to avoid, minimize, and/or compensate for potential direct and indirect effects operations and maintenance of the proposed project may have on FTHL. In order to reduce the potential impact to FTHL during O&M, the following will be implemented when conducting O&M along the gen-tie:</p> <ol style="list-style-type: none"> 1. At least 15 days prior to the commencement of construction and within 15 days following completion of construction activities, the Designated Biologist will provide the BLM a Project FTHL Status Report, which will include, at a 	

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		minimum: <ul style="list-style-type: none"> • A general description of the status of the project site within the MA. • A copy of the table in the project biological monitoring report with notes showing the current implementation status of each conservation measure. • An assessment of the effectiveness of each completed or partially completed measure in avoiding and minimizing project impacts. • A completed a Project Reporting Form from the Flat-tailed Horned Lizard Rangewide Management Strategy. • A summary of information regarding any FTHL mortality in conjunction with the Project's Wildlife Mortality Reporting Program. • Recommendations on how 	

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		<p>conservation measures might be changed to more effectively avoid, minimize, and offset future project impacts on the FTHL.</p> <p>2. The Designated Biologist or biological monitor(s) will evaluate and implement the best measures to reduce FTHL mortality along access and maintenance roads, particularly during the FTHL active season (March 1 through September 30). These measures will include:</p> <ul style="list-style-type: none"> • A speed limit of 15 miles per hour when driving access roads within suitable FTHL habitat. The Designated Biologist may reduce this speed limit to 10 mph in areas identified as active wildlife corridors as needed to reduced mortality. All vehicles required for O&M within suitable FTHL habitat must remain on the designated 	

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		<p>access/maintenance roads. Cross country vehicle and equipment use outside of designated work areas in suitable FTHL habitat shall be prohibited.</p> <ul style="list-style-type: none"> • O&M activities occurring within suitable FTHL habitat including weed abatement or any other O&M activity that may result in ground disturbance will be conducted outside of the FTHL active season whenever feasible. If any O&M activities must be conducted during the FTHL active season that may result in ground disturbance within suitable FTHL habitat, such as weed abatement or vehicles requiring access outside of a designated access road, a biological monitor will be present during activities to reduce FTHL impacts. 	

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		<p>MM 4.12.10c In accordance with the <i>Flat-tailed Horned Lizard Rangewide Management Strategy</i>, compensatory mitigation would be required for impacts to FTHL habitat. FTHL are known to occur in the native vegetation along the proposed gen-tie ROW. In accordance with the <i>Rangewide Management Strategy</i>, compensation for permanent impact to this habitat within the MA will be at a 6:1 ratio. Acreages of proposed disturbance to FTHL habitat can be found in Table 4.12-9.</p> <p>Implement MM 4.12.11, below, would address impacts to FTHL as a result of invasive, exotic plant species.</p>	
<p>Impacts on Special Status Species – Reptiles (Colorado Desert fringe-toed lizard) Impact 4.12.11 Implementation of the proposed project has the potential to impact Colorado Desert fringe-toed lizard during construction, and operation and maintenance. This is considered a potentially significant impact.</p>	<p>PS</p>	<p>Implement MM 4.12.10a, MM 4.12.10b, and MM 4.12.10c.</p>	<p>LS</p>

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<p>Substantial Adverse Effect on Riparian Habitat or Other Sensitive Natural Community Impact 4.12.12 Implementation of the proposed project has the potential to impact riparian habitat or special status communities. This is considered a potentially significant impact.</p>	<p>PS</p>	<p>MM 4.12.12a To minimize the introduction and spread of weed species, a Weed Management Plan shall be developed and implemented. The weed management plan shall include a discussion of specific weeds identified on site that will be targeted for eradication or control as well as a variety of measures that will be undertaken during construction and O&M activities to prevent the introduction and spread of new weed species as a result of the project. A <i>Weed Management Plan</i> for the solar generation facility will be prepared and implemented that describes specific on-going measures to remove invasive plant species from the solar generation facility. This plan will be approved by the County. A companion Weed Management Plan will be prepared for the gen-tie that will be approved by BLM.</p>	<p>LS</p>

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		<p>MM 4.12.12b The following measures shall be implemented to prevent the spread of weeds:</p> <ul style="list-style-type: none"> • Limit disturbance areas during construction to the minimal required to perform work and limit ingress and egress to defined routes • Implement vehicle wash and inspection procedures and closely monitor the types of materials brought onto the site to minimize the potential for weed introduction • Use of certified weed free mulch, straw wattles, hay bales and seed mixes • Reestablish native vegetation along the gen-tie as quickly as practicable on disturbed sites to avoid weed invasions • Monitor and rapidly implement control measures to ensure early detection and eradication for weed invasions 	

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		<p>Weed control methods that may be used include both physical and chemical control. Physical control methods include manual hand pulling of weeds, or the use of hand and power tools to uproot, girdle, or cut plants. Herbicide applications are a widely used, effective control method for removing infestations of invasive weed species. However, inadvertent application of herbicide to adjacent native plants must be avoided, which can often be challenging when weeds are interspersed with native cover. Before applying herbicide, contractors will be required to obtain any required permits from state and local authorities. Only a State of California and federally certified contractor will be permitted to perform herbicide applications. All herbicides will be applied in accordance with</p>	

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		applicable laws, regulations, and permit stipulations. Only herbicides and adjuvants approved by the State of California and Imperial County will be used to control invasive species at the energy facility site. Invasive plants species on BLM lands would be prevented, controlled, and treated through an Integrated Pest Management approach per the <i>Vegetation Treatments on Bureau of Land Management Lands in 17 Western States Programmatic Environmental Report</i> . Only herbicides approved by BLM in California will be used on BLM lands. Herbicide application can only occur on BLM lands with an approved Pesticide Use Proposal (PUP).	
<p>Substantial Adverse Effect on Federally Protected Wetlands Impact 4.12.13 Implementation of the proposed project has the potential to impact jurisdictional waters. This is considered a potentially significant impact.</p>	PS	<p>MM 4.12.13 The Applicant shall coordinate with the CDFG to obtain a Section 1600 Streambed Alteration Agreement as necessary to address any impacted</p>	LS

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		CDFG-jurisdictional water, and provide the appropriate (CDFG approved) compensatory mitigation for permanent and temporary impacts to CDFG jurisdictional riparian habitat. Mitigation for permanent impacts to CDFG riparian habitat is typically at a 2:1 ratio, while mitigation for temporary impacts to CDFG riparian habitat is typically at a 1:1 ratio.	
<p>Interfere with Migratory Fish or Wildlife Movement/Impede the Use of Native Wildlife Nursery Sites Impact 4.12.14 Implementation of the project would inhibit the ability of medium and large mammals to move through the solar generation facility site. However, the proposed project would not inhibit wildlife movement through the Yuha Basin or surrounding agricultural lands. Therefore, this impact is considered less than significant.</p>	LS	None required.	LS

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IMPACT	LEVEL OF IMPACT/ SIGNIFICANCE BEFORE MITIGATION	MITIGATION MEASURES	LEVEL OF IMPACT/ SIGNIFICANCE AFTER MITIGATION
<p>Conflict with Local Policies or Ordinances Protecting Biological Resources Impact 4.12.15 Implementation of the project is not anticipated to conflict with any local polices or ordinances protecting biological resources. Therefore, this impact is considered less than significant.</p>	<p>LS</p>	<p>None required.</p>	<p>LS</p>

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<p>Conflict with the Provisions of a Habitat Conservation Plan Impact 4.12.16 Implementation of the project would is not anticipated to conflict with the California Desert Conservation Area Plan. Therefore, this impact is considered less than significant.</p>	<p>LS</p>	<p>None required.</p>	<p>LS</p>

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<p>Cumulative Impacts to Biological Resources Impact 4.12.17 Implementation of the proposed project could have cumulative impacts on special status species, sensitive natural communities, and protected waters. However, mitigation measures are proposed to help ensure that the proposed project does not cumulatively affect any of these biological resources. Therefore, cumulative impacts are considered less than cumulatively considerable.</p>	<p>LS</p>	<p>Implement MM 4.12.2 (to mitigate impacts to special status birds including SWFL), MM 4.12.6a and MM 4.12.6b (to mitigate impacts to BUOW), MM 4.12.8 (to mitigate impacts to nesting raptors), MM 4.12.10a, MM 4.12.10b and MM 4.12.10c (to mitigate impacts to FTHL), MM 4.12.11 (to mitigate impacts to Colorado Desert fringe-toed lizard), MM 4.12.12a, MM 4.12.12b (to mitigate impacts to riparian habitat or other sensitive natural community) and MM 4.12.13 (to mitigate impacts to CDFG jurisdictional waters)</p>	<p>PS</p>

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CHAPTER 1.0

INTRODUCTION

1.1 PURPOSE OF THE DOCUMENT

The California Environmental Quality Act (CEQA) requires State and local public agencies to prepare an Environmental Impact Report (EIR) prior to approving any project that may have a significant effect on the environment. According to CEQA, a “project” is defined as the whole of an action that has the potential to result in a direct physical change or a reasonably foreseeable indirect physical change in the environment (State CEQA Guidelines Section 15378[a]). The Campo Verde Solar Project is in Imperial County and meets the definition of a “project” as defined by CEQA.

The County of Imperial is the lead agency for the preparation of this EIR under CEQA and is responsible for conducting the environmental review and certifying the EIR. Likewise, consistent with the requirements of CEQA, the County will use the EIR as a decision-making tool to assist with its determination whether to approve, modify, or deny the project. The County also has discretionary authority to issue a Conditional Use Permit (CUP) for the project.

The Campo Verde Solar Project EIR (State Clearinghouse Number [SCH. No.] 2011111049) is a public document for a renewable energy project, specifically a solar generation facility. This Draft EIR describes the existing environment and evaluates the project-specific and cumulative impacts of the proposed project and alternatives in accordance with the provisions set forth in CEQA and the CEQA Guidelines. This EIR will be used to address potentially significant environmental issues and recommend adequate and feasible mitigation measures, where possible, that could reduce or eliminate potentially significant environmental impacts.

1.2 PROJECT BACKGROUND

In 2002, California established a Renewable Portfolio Standard (RPS) requiring electric utilities in the State to increase procurement of eligible renewable energy resources to achieve a target of 20 percent of their annual retail sales by the year 2010. In 2008, by Executive Order (S-14-08), then Governor Arnold Schwarzenegger increased that target to 33 percent by the year 2020. In 2011, Governor Jerry Brown signed Senate Bill (SB) X1-2 into law. The Bill requires all California utilities, including independently owned utilities (IOUs), energy service providers, and community choice aggregators (CCAs), to generate electricity from renewable sources over a three-stage compliance period (refer to subsection 1.6.1, item “A. Renewables Portfolio Standard Program”).

One form of renewable energy is solar energy as harnessed through the use of photovoltaic (PV) technology. PV power systems convert sunlight into electricity. The process begins with individual PV cells that combine to form PV modules. The modules are sealed and connected to each other with wires to form a PV array. The PV arrays convert solar radiation into direct current (DC) electricity. The direct current from the PV array is collected at an inverter and converted to alternating current (AC). AC electricity is consistent with the current flowing through the electrical grid.

The proposed project is a solar generation facility using PV technology proposed by Campo Verde Solar, LLC (hereafter referred to as “Applicant”). One hundred percent of the electricity generated by the proposed project will be eligible for use by California electric utilities to satisfy procurement obligations under the State’s RPS program.

1.0 INTRODUCTION

On March 24, 2011, the Applicant submitted an application for a CUP to the Imperial County Department of Planning and Development Services (ICPDS). The CUP application was submitted to allow construction and operation of a solar PV electric generation facility and associated transmission line in western Imperial County near the Imperial Valley Substation.

On September 12, 2011, the Applicant submitted an Application for Transportation and Utility Systems and Facilities on Federal Lands (Standard Form 299, or "SF-299") to the United States Bureau of Land Management (BLM). The SF-299 application requested a linear Right-of-Way (ROW) to construct and operate the gen-tie and associated facilities on land managed by the BLM.

A Notice of Preparation (NOP) for the Campo Verde Solar Draft Environmental Impact Report was issued by the ICPDS on November 15, 2011.

On February 7, 2012, the Applicant submitted a Variance Application to the ICPDS. The Variance Application was submitted to address gen-tie structures that may exceed the A-2 and A-3 zoning height limitation of 120 feet. If approved, the Variance would permit a maximum height of the gen-tie Line structures of 145 feet.

1.3 PROJECT OVERVIEW

The proposed project consists of two primary components: 1) solar generation equipment and associated facilities on privately owned land (the "solar generation facility"); and, 2) 230-kilovolt (kV) aboveground, electric transmission line(s) and associated facilities (the "gen-tie") located on both private land and public land managed by the BLM. The gen-tie will connect the solar generation facility with the Imperial Valley Substation. BLM is conducting a separate environmental review of the proposed right-of-way (ROW) grant required for the gen-tie line under the National Environmental Policy Act ("NEPA"). The proposed permanent BLM ROW width is 160 feet. The solar generation facility and gen-tie are collectively referred to as the "proposed project" or "project." The area encompassing the solar generation facility and the gen-tie is referred to as the "project area." The solar generation facility portion of the project (exclusive of the gen-tie segment on BLM land) is referred to as the "project site" or "solar generation facility site."

1.3.1 PROJECT LOCATION

The proposed project site is in unincorporated Imperial County approximately 7 miles southwest of the community of El Centro, California. The project site is located generally south of Interstate 8 (I-8), west of Drew Road, and north and east of the Westside Main Canal.

1.4 OBJECTIVES, PURPOSE AND NEED FOR THE PROPOSED PROJECT

Pursuant to CEQA the following objectives have been identified for the proposed project. Section 15124 of the CEQA Guidelines requires that the EIR include a statement of objectives sought by the proposed project. These objectives identify the underlying purpose of the project and provide a basis for identification of alternatives evaluated in the EIR. A clearly written statement of objectives allows the lead agency to develop a reasonable range of alternatives to evaluate in the EIR and aids the decision-makers in preparing findings or a statement of overriding considerations, if necessary.

Demand for new forms of renewable electric energy continues to grow based on three factors. First, total electricity demand continues to grow as a result of population growth, economic growth and new applications offset only, in part, by energy efficiency programs. The 2010 United States Energy Information Administration (EIA) Annual Energy Outlook (“reference case”) forecast is for a 30 percent increase in total demand (from 3,873 billion kilowatt hours to 5,021 billion kilowatt hours, annually), between the years 2008 and 2035. Second, new generation facilities are required to not only meet this demand, but to replace the output of aging generation facilities which are to be retired during this period. Third, driven by federal incentives, regional greenhouse gas reduction targets, state renewable energy portfolio standards (RPS) requirements, and potential legislation, an increasingly greater portion of new generation will need to be supplied in the form of renewable energy. The EIA forecast for the period from 2008 to 2035 is for 41 percent of growth in generation to come from non-hydro renewables.

This national trend is particularly evident in the West, the fastest growing region in the United States. Many Western states have adopted renewable energy standards and greenhouse gas (GHG) reduction goals.

California is a national leader in requiring a significant proportion of electricity to come from renewable sources. The 2010 requirement that 20 percent of electricity sales come from renewable energy was increased to 33 percent by 2020. With California’s 33 percent mandate, combined with other mandated RPS requirements and regional sales growth, the total renewable energy sales for the US portion of the Western Electricity Coordinating Council region has been estimated at close to 150,000 Gigawatt hours (Gwh) by 2020 (not including Idaho, Utah and Wyoming). The proposed project will help California meet its statutory and regulatory goals for increasing renewable power generation and use.

The gen-tie component of the proposed project would provide the needed transmission capacity to connect the Campo Verde Solar Project with the Imperial Valley Substation. Renewable energy generated by the project would be conveyed to areas of demand.

The Campo Verde Solar Project qualifies as an Eligible Renewable Energy Resource as defined by the California Public Utilities Code and would assist the state in meeting current and planned goals for renewable energy development and use. The California Energy Commission (CEC) certified the Campo Verde Solar Project as an eligible renewable energy resource under the RPS and assigned it CEC-RPS identification (ID) number 60652C.

1.4.1 OBJECTIVES

The proposed Campo Verde Solar Project has the following objectives:

- Meet the terms and requirements of the Project’s Power Purchase Agreement (PPA) and Large Generator Interconnection Agreement.
- Deploy a technology that has been commercially proven and that is safe, readily available, efficient, and environmentally responsible.
- Generate electricity at a cost that is competitive on the renewable market.
- Provide a new source of renewable energy to assist the State of California in achieving the RPS.

1.0 INTRODUCTION

- Provide local construction jobs for a variety of trades, reducing unemployment in the construction sector.
- Locate the project in Imperial County in close proximity to the existing California Independent System Operator (CAISO) electric transmission system at a location which has available capacity to deliver electricity to major load centers in California.
- Locate the project in an area that ranks among the highest in solar resource potential in the nation.
- Minimize the potential impact to the environment by:
 - Locating the project on disturbed land.
 - Maximizing the use of existing infrastructure (transmission lines, roads, and water sources).
 - Minimizing the potential impacts to threatened and endangered species by avoiding sensitive habitats and designated resource, reserves or protected areas.
 - Reducing the emission of GHGs from the generation of electricity by using renewable energy.

The Campo Verde Solar Project was developed to sell its electricity and all renewable and environmental attributes to an electric utility purchaser under a long-term contract to help meet California RPS goals. The Applicant has a long-term PPA (20 years) with San Diego Gas and Electric (SDG&E) to purchase the initial output from the project.

The County's objectives include the following:

- Encourage economic investment in renewable energy activities.
- Increase opportunities for construction employment, reducing unemployment in one of the labor sectors most affected by the recession.
- Diversify Imperial County's economic base by developing environmentally-responsible non-agricultural activities.
- Increase tax revenue through sales, use and property taxes generated by renewable energy development within Imperial County.
- Reinforce Imperial County's position as a leader in renewable energy production.
- Expand the renewable energy sector in Imperial County's economy.

1.4.2 REVIEW & CERTIFICATION PROCESS

A. NOTICE OF PREPARATION

Due to the potential for significant impacts to result from the proposed Campo Verde Solar Project, the County determined that an EIR would be necessary. The County prepared an Initial Study (Code of California Regulations [CCR] §15063b (1)(A)) and subsequently issued a Notice of Preparation (NOP) for the preparation of an EIR (SCH. No. 2011111049) for the Campo Verde Solar Project on November 15, 2011 (discussed further in subsection 1.7.1, below). The NOP was

distributed to city, county, state and federal agencies, other public agencies, and various interested private organizations and individuals to define the scope of the EIR. The NOP was also published in the Holtville Tribune on Sunday, November 13, 2011. The purpose of the NOP was to identify public agency and public concerns regarding the potential impacts of the proposed project, and the scope and content of environmental issues to be addressed in the EIR. Circulation of the NOP ended on December 16, 2011.

B. DRAFT EIR

The Draft EIR includes a detailed description of the proposed project, description of the environmental setting, identification of project impacts, cumulative impacts, and mitigation measures for impacts found to be significant. An analysis of project alternatives is also provided as well as a discussion of cumulative impacts; and other CEQA required considerations. Upon completion of the Draft EIR, a Notice of Completion (NOC) will be filed with the State Office of Planning and Research by the County. The NOC signals the start of the public review period for the Draft EIR (CCR §15085).

C. PUBLIC NOTICE/PUBLIC REVIEW

The Draft EIR public review and comment period should be no less than 30 days and no longer than 60 days. In the case of the proposed project, the review period will be 50 days (45 day minimum per CEQA, plus five days per County of Imperial Guidelines).

On May 15, 2012 a NOC was filed with the State Clearinghouse for the Draft EIR, initiating the 50-day public review period of the Draft EIR document and associated technical appendices. The public review period on the Draft EIR ends on July 3, 2012 after which time all comments received will be responded to (refer to item D, "Response to Comments/Final EIR," below).

Concurrent with filing the NOC, the County is also required to provide notice to the public, agencies, organization and other interested parties of the availability of the Draft EIR for review and comment. A Notice of Availability (NOA) was published on May 13, 2012 in the Imperial Valley Press newspaper as well as posted at the County's website and libraries. Public comment on the Draft EIR will be accepted in written form. Details on where to send questions or comments are provided in subsection 1.8, below.

D. RESPONSE TO COMMENTS/FINAL EIR

A Final EIR (FEIR) will be prepared following the public review and comment period for the Draft EIR. The Final EIR will respond to written comments received during the public review and comment period and to oral comments made at any public hearings to take comments on the Draft EIR.

E. CERTIFICATION OF THE EIR

The Final EIR will be independently reviewed and considered by the County. If the Final EIR is deemed "adequate and complete," the County may certify the EIR at a public hearing. In general, the rule of adequacy holds that the EIR can be certified if it demonstrates a good faith effort at full disclosure of environmental information and provides sufficient analysis to allow decisions to be made regarding the project in terms of its environmental consequences.

1.0 INTRODUCTION

Following review and consideration of the Final EIR, the County may take action to approve, conditionally approve, revise, or reject the project. Written findings would accompany a decision to approve or conditionally approve the project (CCR §15091). Likewise a statement of overriding considerations would be prepared if necessary (CCR §15093). A Mitigation Monitoring and Reporting Program (MMRP), as described below, would also be adopted for mitigation measures that have been incorporated into or imposed upon the project to reduce or avoid significant effects on the environment.

F. MITIGATION MONITORING AND REPORTING PROGRAM

The County must adopt a Mitigation Monitoring and Reporting Program (MMRP) for mitigation measures that have been incorporated into or imposed upon the project to reduce or avoid significant effects on the environment (CCR §15097). This program will be designed to ensure that these measures are carried out during project implementation.

The specific reporting or monitoring program required by CEQA is not required to be included in the EIR. However, any mitigation measures adopted by the County as part of the certified Final EIR will be considered as conditions of approval for the project and will be included in the MMRP to ensure and verify compliance.

1.5 AGENCY ROLES AND RESPONSIBILITIES

1.5.1 IMPERIAL COUNTY

Private land on which the solar generation facility is proposed is zoned A-2 - General Agriculture, A-2-R - General Agriculture, Rural Zone, and A-3 - Heavy Agriculture. The application for the proposed project requests approval of a CUP by Imperial County to allow the construction and operation of the proposed solar generation facility on a project site consisting of 27 legal parcels zoned for agriculture. The Imperial County Code of Ordinances Title 9, Division 5 (Zoning Areas Established), identifies permitted uses within various zones as well as uses requiring a CUP.

Imperial County Code Section 90508.0 addresses uses in the A-2 and A-2-R zone. The following uses are permitted subject to approval of a CUP from Imperial County: solar energy electrical generator, electrical power generating plant, major facilities relating to the generation and transmission of electrical energy, and resource extraction and energy development.

Section 90509.01 identifies the following permitted uses in the A-3 zone: "Transmission lines, including supporting towers, poles, microwave towers, utility substations."

In addition to a CUP, the proposed project would require approval of a variance by Imperial County to allow the proposed transmission pole structures to potentially exceed the 120-foot height limit. No rezoning is required to implement the proposed project.

Pursuant to CEQA, the proposed project may require the following County authorizations:

- Certification of the EIR;
- Adoption of a project MMRP;
- Approval of CEQA Findings pursuant to CEQA Guidelines Section 15091;
- Approval of project Site Plan
- Conditional Use Permit (CUP11-0007)

- Abandonment of Rights-of-Way
- Development Agreement/Public Benefit Agreement
- Subdivision Map Approvals
- The project will require a lot line adjustment for the easement for the gen-tie line on private property.
- Public Water System Permit
- Private Sewage Disposal Permit
- Site Plan
- Variance (V12-0008)
- Grading Permits
- Construction Traffic Control Plan
- Building Permits
- Septic System Permits
- Occupancy Permits
- Encroachment Permits

1.5.2 OTHER AGENCY REVIEWS AND/OR CONSULTATIONS

The project would require permits and approvals from various federal, state and local regulatory agencies. The agencies, potential permits and approvals are identified below.

A. FEDERAL

BUREAU OF LAND MANAGEMENT

Approval of Grant of Right-of-Way

Approval of Environmental Assessment

UNITED STATES ARMY CORPS OF ENGINEERS

The United States Army Corps of Engineers (ACOE) possesses jurisdiction over waters of the United States and jurisdictional wetlands pursuant to the federal Clean Water Act. The ACOE regulates the discharge of dredge/fill material into such waters, including ditches and drains that could be jurisdictional. The Applicant has submitted a jurisdictional determination report to the ACOE to determine the scope of potential jurisdictional waters and, if required by the ACOE, will obtain permit coverage for any impacts to federal jurisdictional waters. .

UNITED STATES FISH AND WILDLIFE SERVICE

The United States Fish and Wildlife Service (USFWS) is responsible for oversight of the Federal Endangered Species Act (ESA) and the Migratory Bird Treaty Act (MBTA). USFWS is being consulted regarding the project's potential to impact federally-listed endangered/threatened or

1.0 INTRODUCTION

proposed species or their critical habitat. If the project may affect a listed species, the Applicant will obtain appropriate take authorization under the ESA, if necessary.

BLM AND CALIFORNIA STATE HISTORIC PRESERVATION OFFICE (SHPO)

The BLM will comply with Section 106 of the National Historic Preservation Act (NHPA). Public Resources Code (PRC) Section 5024 requires consultation with the State Office of Historic Preservation (SHPO) when a project may impact historical resources on state-owned land. The proposed project does not impact a historical resource on state-owned land and as such, consultation is not required.

BLM is in the process of initiating formal Section 106 process because the Class III cultural resources study for the gen-tie is in the process of being finalized.

The BLM will consult with the SHPO and Advisory Council on Historic Preservation (ACHP) to evaluate the effect of the project on resources listed or eligible for listing under the National Register of Historic Places and California Register of History Places. Depending upon the results of this process, the agencies may enter into a Programmatic Agreement (PA), a Memorandum of Agreement (MOA) or other agreement to address and resolve any potential adverse effects.

U.S. DEPARTMENT OF DEFENSE (DOD) AND/OR FEDERAL AVIATION ADMINISTRATION (FAA)

The military attended the BLM's pre-application meeting and did not identify any concerns about height or airspace hazards. No further consultation with Department of Defense is necessary and no Corridor Conflict Analysis is required. However, the Applicant prepared an Air Hazards Analysis using the FAA Notice Criteria Tool. The results from the screening tool indicate that notice to the FAA would not be required for the proposed gen-tie, or any of the alternatives (ENValue, 2012, p. 3).

B. STATE

CALIFORNIA DEPARTMENT OF FISH AND GAME

The California Department of Fish and Game (CDFG) is responsible for overseeing the California Endangered Species Act, approving Streambed Alteration Agreements (Section 1602 of the California Fish and Game Code), and enforcing the California Native Plant Protection Act. The CDFG would take action associated with any activity where a listed candidate, threatened or endangered species under California Endangered Species Act (CESA) may be present in the project area and a state agency is acting as lead agency for CEQA compliance. CDFG would also consider issuance of a Section 2081 incidental take permit for state-only listed species and a Section 2081.1 consistency determination for the effects on species that are both state and federally listed.

CDFG is in the process of reviewing the project for potential effects on State listed species and determining the extent of its jurisdiction under Section 1602 Streambed Alteration Agreement for impacts on drainages from construction, if applicable.

CDFG will review the mitigation agreement and mitigation plan for plants listed as rare, if applicable, as part of California Native Plant Protection Act requirements.

CALIFORNIA STATE HISTORIC PRESERVATION OFFICE

The California State Historic Preservation Office (SHPO) is responsible for coordinating with BLM regarding compliance with the NHPA Section 106 consultation process; issuance of cultural resources use permits; and field use authorization or an Archaeological Resources Protection Act Permit, if required.

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD (RWQCB), COLORADO RIVER BASIN REGION 7

The California Regional Water Quality Control Board (RWQCB), Colorado River Basin Region 7 is responsible for regulating water quality. Construction of the project would be covered under General Permit for Discharges of Storm Water Associated with Construction Activity (NPDES No. CAS000002) (Construction General Permit Order 2010-2014-DWQ, effective February 14, 2011). The permit requires the applicant to file a public Notice of Intent (NOI) to discharge stormwater and to prepare and implement a Stormwater Pollution Prevention Plan (SWPPP).

CALIFORNIA DEPARTMENT OF TRANSPORTATION (CALTRANS)

The California Department of Transportation (Caltrans) has jurisdiction over all State highways and roads. No new utility crossings on Caltrans facilities (such as placement of electric line across, within, under or over state highway ROW) are proposed as part of the project.

CALIFORNIA DEPARTMENT OF TOXIC SUBSTANCES CONTROL (DTSC)

The California Department of Toxic Substances Control (DTSC) oversees toxic substances procedures and remediation. DTSC will review the Hazardous Materials Management Plan or Program, the Spill Containment, Countermeasure, and Control (SPCC) Plan and hazardous materials transportation plans, if applicable.

CALIFORNIA ENVIRONMENTAL PROTECTION AGENCY

The California Environmental Protection Agency (CalEPA) oversees various aspects of environmental protection throughout the State. CalEPA will review the Hazardous Materials Management Plan, Environmental Health and Safety Plan, and Spill Containment, Countermeasure, and Control (SPCC) Plan.

CALIFORNIA NATIVE AMERICAN HERITAGE COMMISSION

The California Native American Heritage Commission (NAHC) strives for the preservation and protection of Native American human remains and associated grave goods. The NAHC has been consulted to conduct a Sacred Lands file search.

CALIFORNIA OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION

The California Occupational Safety and Health Administration (CalOSHA) is responsible for protecting workers and the public from safety hazards. CalOSHA will review the Hazardous Materials Management Plan or Program, if applicable.

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C. LOCAL

IMPERIAL COUNTY AIR POLLUTION CONTROL DISTRICT

Imperial County Air Pollution Control District (ICAPCD) is responsible for enforcing air emission requirements in the County. The ICAPCD will review the proposed project for consistency with the ICAPCD CEQA Air Quality Handbook, the 1991 Air Quality Attainment Plan, and the State Implementation Plan for PM₁₀ in the Imperial Valley. The project will obtain a Dust Control Permit to comply with Rule 801 of Imperial County's Rules and Regulations for Construction and Earthmoving Activities.

IMPERIAL COUNTY FIRE DEPARTMENT

The Imperial County Fire Department would provide fire protection service to the project. The Department received a copy of the NOP, and was consulted during preparation of this EIR. The Department identified general requirements regarding fire suppression in the O&M Building, road access and array requirements (Estrada, 2012). The Department will review the project including the final design of the proposed fire system.

IMPERIAL COUNTY SHERIFF'S OFFICE

The Imperial County Sheriff's Office would provide law enforcement service to the project, as necessary. The Office received a copy of the NOP and will review the project, including the final design, for adequate emergency access. The Office was also contacted for input regarding ability to serve the project. The Sheriff noted that solar panel projects encounter a high volume of thefts which results in increased demand for the Sheriff's Office to respond to the project site and conduct a theft investigation. Once the theft investigation is completed the solar panel(s) make, model, and serial numbers have to be entered into the *California Department of Justice, Stolen Property Data Base* and a theft report needs to be completed. This process can be lengthy and time consuming depending on the circumstances of each case. To minimize or eliminate the thefts, the Sheriff's Office recommends that solar projects include security features such as: an electronic surveillance security system, alarm system, perimeter security fencing with controlled access gates, regular security guard vehicle patrols, and solar panel engraving noting the company information. Implementation of these security safeguards is considered sufficient to mitigate law enforcement impacts to a less than significant level (Gutierrez, 2012).

IMPERIAL IRRIGATION DISTRICT

The Imperial Irrigation District (IID) has infrastructure on and surrounding the project site including drains, canals and overhead infrastructure. IID will review the project and will use the Final EIR in its approval of encroachment permits for crossings of IID canals, permits for construction water and power, and contracts for project water use and power during operation. IID may also review and approve agreements to transfer or quitclaim easements and/or fee parcels, for drainage, restrict surface access, and to abandon delivery gates and service pipes.

1.6 RELATIONSHIP TO STATUTES, REGULATIONS AND OTHER PLANS

1.6.1 STATE

A. RENEWABLES PORTFOLIO STANDARD PROGRAM

This Renewables Portfolio Standard Program requires investor-owned utilities to obtain 33 percent of the power supplied to their customers to be generated from renewable sources by the year 2010. Senate Bill (SB) X1 2 established a three-stage compliance period: 20 percent by December 31, 2013, 25 percent by December 31, 2016, and 33 percent by December 31, 2020.

B. CALIFORNIA GLOBAL WARMING SOLUTIONS ACT OF 2006, ASSEMBLY BILL (AB) 32

This California Global Warming Solutions Act, AB 32 (Statutes 2006; Chapter 488; Health and Safety Code Sections 38500 et. seq) requires the California Air Resources Board (CARB) to enact standards that will reduce GHG emissions to 1990 levels by 2020. Electricity production facilities are regulated by the CARB.

C. TITLE 17 CALIFORNIA CODE OF REGULATIONS (CCR)

Title 17 CCR, Subchapter 10, Article 2, Sections 95100 et seq. are CARB regulations that implement mandatory GHG emissions reporting as part of the California Global Warming Solutions Act of 2006.

D. CALIFORNIA ENDANGERED SPECIES ACT

The California Endangered Species Act (CESA) is codified at Fish and Game Code Section 2050. That section prohibits "take" of any species listed as an endangered or threatened species. Take is defined in Section 86 of the Fish and Game Code as "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill."

CESA allows for take incidental to otherwise lawful activity through take authorization issued by CDFG. CESA emphasizes early consultation to avoid potential impacts to rare, endangered, and threatened species. Early consultation is also helpful in developing appropriate mitigation to offset losses of listed species populations and their essential habitats. The Applicant has been in consultation with CDFG regarding any issues arising under CESA.

E. CALIFORNIA LAKE AND STREAMBED PROGRAM

The Department of Fish and Game (CDFG) is responsible for conserving, protecting, and managing California's fish, wildlife, and native plant resources. The California Lake and Streambed Program (Fish and Game Code Sections 1601 to 1603) requires an entity to notify CDFG prior to constructing any project that would divert, obstruct or change the natural flow, bed, channel, or bank of any river, stream, or lake. CDFG is required to propose reasonable project changes and/or mitigation to protect the resource in cases where an existing fish or wildlife resource may be substantially adversely affected. Changes or mitigations are formalized in a Streambed Alteration Agreement that becomes part of the plans, specifications, and bid documents for the project. The Applicant has been in discussion with CDFG regarding all aspects of the project.

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1.6.2 LOCAL

A. IMPERIAL COUNTY GENERAL PLAN AND LAND USE ORDINANCE

The Imperial County General Plan provides guidance on future growth in the County. Any development within the jurisdiction of the County must be consistent with the General Plan and the Land Use Ordinance (Title 9, Division 2). The BLM-managed lands surrounding the gen-tie portion of the project are not subject to the requirements of the General Plan because the BLM is a Federal agency. However, the BLM regulations require that resource management plans be consistent with local governments' officially approved resource related plans (Federal Land Policy and Management Act, Sec. 202(c) (9)).

B. IMPERIAL COUNTY AIR POLLUTION CONTROL DISTRICT

Imperial County Air Pollution Control District is responsible for enforcing rules and regulations regarding air emissions to protect public health. These regulations apply to various activities including construction, farming, and operational activities associated with various land uses.

1.7 PUBLIC PARTICIPATION OPPORTUNITIES/COMMENTS AND COORDINATION

Several opportunities for agency input and public involvement have occurred as part of the environmental review process and will continue to occur going forward. The Applicant held a BLM pre-application meeting on October 12, 2011 from 10:00 a.m. to 11:30 p.m. in the BLM El Centro Field Office. Representatives from various agencies including the BLM, Imperial County, Border Patrol, California Department of Fish and Game, United States Fish and Wildlife Service, the United States Army Corps of Engineers, the United States Navy/DoD, and the Applicant's team were present. The Applicant specifically extended an invitation for Native American tribes to attend the meeting. However, no tribes were in attendance.

Imperial County conducted a scoping process to fulfill the intent and requirements of CEQA Guidelines Section 15082 (described in detail under subsection 1.7.2, below), including a scoping meeting held on November 22, 2011 at the Board of Supervisors meeting room to gather input from the public.

Lastly, the Applicant held an Open House in El Centro to allow stakeholders to meet the project sponsor and learn about the Campo Verde Solar Project. This Open House took place on Tuesday, December 6, 2011 from 4 p.m. to 7 p.m at the SDG&E Renewable Office.

1.7.1 NOTICE OF PREPARATION

The Notice of Preparation (NOP) for the Campo Verde Solar Project EIR was issued by the Imperial County Department of Planning and Development Services on November 15, 2011. Six letters were received in response to the NOP from various agencies and individuals. A list of the letter writers and summary of the areas of controversy or issue raised in these letters is summarized in **Table 1.0-1**. The NOP and written comments received during the public review period for the NOP are included on the attached CD of Technical Appendices as **Appendix A** of this EIR.

**TABLE 1.0-1
SUMMARY OF NOP COMMENTS**

Agency/Individual	Issue Noted or Area of Controversy
<p>Scott Morgan, Director Governor’s Office of Planning and Research, State Clearinghouse and Planning Unit</p>	<ul style="list-style-type: none"> Responsible agencies requested to comment on NOP.
<p>Dave Singleton, Program Analyst Native American Heritage Commission</p>	<ul style="list-style-type: none"> No cultural resources identified as part of Native American Heritage Commission Sacred Lands File Search Absence of identified resources does not preclude their existence On-going consultation between Native American tribes, lead agency, project proponents and contractors recommended Provided list of Native American contacts in Imperial County <p><i>The above issues are addressed in Section 4.7, Cultural Resources.</i></p>
<p>Jacob M. Armstrong, Chief Development Review Branch Caltrans</p>	<ul style="list-style-type: none"> Document any glint and glare impacts that could affect motorists on I-8. <i>(This issue is discussed in Section 4.1, Aesthetics).</i> No new utility crossings of Caltrans facilities would occur.
<p>Donald Vargas, Environmental Specialist Imperial Irrigation District</p>	<ul style="list-style-type: none"> Concerns over crossings of IID irrigation canals <i>(The potential environmental impacts caused by the project crossing IID canals are considered as applicable in the various sections of the EIR).</i> Project prohibited from using IID banks for access <i>(The potential environmental impacts caused by the project crossing IID canals are considered as applicable in the various sections of this EIR).</i> Concerns about “piecemealing” of solar projects <i>(The Campo Verde Solar Project is not part of the LCRIF filed by SDG&E. The facilities identified in the LCRIF are to the south and east of the Imperial Valley Substation. Campo Verde Solar is proceeding with interconnection to the SDG&E system independently of any other projects. Any potential environmental impacts associated with the interconnection</i>

1.0 INTRODUCTION

**TABLE 1.0-1
SUMMARY OF NOP COMMENTS**

Agency/Individual	Issue Noted or Area of Controversy
<p>Donald Vargas, Environmental Specialist Imperial Irrigation District</p>	<p><i>are analyzed as project-specific impacts in this EIR. The potential environmental impacts of other solar projects in the Imperial Valley, including those in the LCRIF, are analyzed as applicable as part of the cumulative projects list as required by CEQA Guidelines §15130. The proposed project will not require additional permits related to the LCRIF. The scope of this EIR is limited to the project components described in Chapter 2.0. Thus, only the potential environmental impacts from the proposed Campo Verde Solar Project construction and operation are analyzed in this EIR).</i></p> <ul style="list-style-type: none"> • Draft EIR should address cumulative impacts of non-agricultural water use and associated reduction of inflow conveyed to the Salton Sea (<i>This issue is addressed in Section 4.11, Hydrology and Water Quality</i>). • Draft EIR should address impacts to IID drains; Increased runoff and fewer IID drains to accommodate (<i>Potential impacts to IID drains will be addressed in Section 4.11, Hydrology and Water Quality. The site will be designed to comply with applicable standards for stormwater runoff and retention. First Solar is in discussion with IID Water Engineering staff to address these issues. First Solar will obtain required permits and approvals for stormwater runoff and retention, including those required by IID. The EIR includes an assessment of the project’s potential hydrologic impacts, including any impacts to IID’s facilities</i>). • Requirement of IID encroachment permit to use surface water drain pipe connects and receive drainage service (<i>First Solar is in the process of coordinating encroachment permits with IID. Any potential environmental impacts from granting such permits or using IID’s rights-of-way are</i>

**TABLE 1.0-1
SUMMARY OF NOP COMMENTS**

Agency/Individual	Issue Noted or Area of Controversy
<p>Donald Vargas, Environmental Specialist Imperial Irrigation District</p>	<p><i>analyzed in the EIR. The project will apply for all required permits from Colorado River Basin RWQCB).</i></p> <ul style="list-style-type: none"> • New, relocated, modified or reconstructed IID facilities must be addressed as part of the CEQA analysis (<i>First Solar and IID have identified IID facilities and improvements required to support the project. These are included in Chapter 2.0 and potential impacts and mitigation measures, if necessary, are identified in the EIR).</i>
<p>Douglas Wayne Skains, Jr. and Heather Skains, Residents at 1280 Drew Road</p>	<ul style="list-style-type: none"> • Impacts to scenic views (<i>A detailed visual assessment of the project, including visual simulations, is provided in Section 4.1, Aesthetics).</i> • Erosion and whether landscaping and grass will be used to stabilize soils (<i>Concerns regarding erosion are addressed in Section 4.6, Geology and Soils and Section 4.11, Hydrology and Water Quality).</i> • Concerns regarding dust suppressant (<i>Possible dust palliatives may include: DustGuard by Terra Novo; EarthGuard by Terra Novo; Gorilla Snot (economy grade version of Soiltac); Soil-Sement; Soil Tech products: Chlor-Tex, Ecco-Tex, and PlasTex. Material safety data can be made available upon request).</i> • Chemicals for weed control (<i>Periodic application of herbicides, if necessary, are not anticipated to result in exposure levels worse than currently experienced in association with the currently ongoing agriculture in the area).</i> • Runoff and potential flooding (<i>This issue is addressed in Section 4.10, Hydrology and Water Quality).</i> • Change in temperature as a result of the solar panels (<i>The “heat island” effect is a term used to describe elevated</i>

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**TABLE 1.0-1
SUMMARY OF NOP COMMENTS**

Agency/Individual	Issue Noted or Area of Controversy
<p>Douglas Wayne Skains, Jr. and Heather Skains, Residents at 1280 Drew Road</p>	<p><i>temperatures in metropolitan areas resulting from large expanses of asphalt, structures that store heat during the day, and mechanical systems that generate “waste heat”. Solar PV modules are designed to convert the sun’s light into electricity by absorbing as much light as possible. First Solar has collected temperature data at its Sarnia Solar Power Plant in Ontario, Canada, which confirmed that there were no statistically significant temperature differences within the solar field and the surrounding area. No increases in temperature are anticipated to result from the proposed project).</i></p> <ul style="list-style-type: none"> • <i>Construction noise (This issue is fully discussed in Section 4.8, Noise).</i> • <i>Impacts to Burrowing Owls (A detailed burrowing owl assessment was conducted and the results are discussed in Section 4.12, Biological Resources).</i> • <i>Construction traffic and associated greenhouse gas emissions (A detailed traffic study was prepared and the results are discussed in Section 4.3, Transportation and Circulation).</i> • <i>Property value being negatively impacted by the project (Numerous studies conclude that the potential for energy generation and transmission line projects to have an effect on property value is difficult to quantify due to the individuality of properties and their respective locations, as well as differences in the personal preferences of individual buyers, and the weight of other factors that contribute to a person’s decision to purchase a property. Studies indicate that other property-specific factors such as neighborhood features, square footage, size of lot, and irrigation potential are substantially more likely than the presence of energy infrastructure to be</i>

**TABLE 1.0-1
SUMMARY OF NOP COMMENTS**

Agency/Individual	Issue Noted or Area of Controversy
<p>Douglas Wayne Skains, Jr. and Heather Skains, Residents at 1280 Drew Road</p>	<p><i>major determinants of the sales price of property (Kroll and Priestley, 1992). Studies on this topic have found no conclusive evidence that views of wind facilities or distance to homes had any consistent, measurable, and statistically significant influence on property values. Studies have generally concluded that over time, potential adverse effects to property value tend to diminish to a point of being negligible within five years. Residents adjacent to the project once in operation could potentially have property values affected. However, there is no way to quantify the impact of the project for residents that would be surrounded by the project).</i></p> <ul style="list-style-type: none"> • Displacement of farmworker employment (<i>A Fiscal Impact Analysis is being prepared for the proposed project separately from the EIR).</i> • Concerns regarding fire hazards and toxicity of solar panels (<i>The project will develop a Fire Protection Plan and is coordinating with the Imperial County Fire Department to ensure the final design of the project meets all fire safety requirements. PV modules are primarily made of glass and are not flammable or combustible. Ground-mounted solar PV arrays proposed as part of the project are mounted on racking systems that are typically made of steel or aluminum. The clips are generally made of aluminum and a small rubber sleeve. Due to the lack of combustible materials used in project facilities, the risk of a fire is extremely low.</i> <p><i>First Solar’s PV modules undergo rigorous electrical safety testing and all electrical system wiring will be installed according to required code. If a wiring problem were to occur causing an electrical short, it would</i></p>

1.0 INTRODUCTION

**TABLE 1.0-1
SUMMARY OF NOP COMMENTS**

Agency/Individual	Issue Noted or Area of Controversy
<p>Douglas Wayne Skains, Jr. and Heather Skains, Residents at 1280 Drew Road</p>	<p><i>likely cause the module to stop producing electricity. In the thousands of installations that have been deployed, containing millions of modules, First Solar is not aware of a single fire being caused by a PV module.</i></p> <p><i>During the manufacturing process, the semiconductor material, comprised primarily of the stable compound cadmium telluride (CdTe), is bonded to a sheet of glass using a proprietary Vapor Transport Deposition process. The use of an industrial laminate material and a second sheet of glass sequesters the semiconductor material between two sheets of glass.</i></p> <p><i>Numerous independent studies have evaluated the environmental, health, and safety aspects of CdTe PV modules. These studies consistently conclude that during normal operations, CdTe PV modules do not present an environmental risk (French MEEDAT 2009). Specifically, it has been demonstrated that there are no cadmium emissions to air, water or soil during standard operation of CdTe PV systems.</i></p> <p><i>Conditions that could cause a significant amount of CdTe to be released from the modules during a fire are unlikely to occur in ground-mount projects due to the lack of fuel on the site to support a sustained wildfire. Grass fires are the most likely fire exposure for ground-mounted PV systems and there would be no grass on the project site during operation. As a result, fires are unlikely to expose PV modules to prolonged temperatures high enough to volatilize CdTe (which has an extremely high melting point of 1,041 degrees Celsius). Moreover, even if a grass fire could reach that temperature, the actual loss of CdTe from a module would be insignificant (approximately 0.04%). CdTe has an extremely low vapor</i></p>

**TABLE 1.0-1
SUMMARY OF NOP COMMENTS**

Agency/Individual	Issue Noted or Area of Controversy
<p>Douglas Wayne Skains, Jr. and Heather Skains, Residents at 1280 Drew Road</p>	<p><i>pressure and a high melting point, higher than the temperature at which glass softens. As a result, CdTe diffuses into the glass matrix when exposed to fire rather than being emitted in significant quantities.</i></p> <p><i>The risk of fire caused by lightning strikes is remote. Lightning strikes are part of nature and the frequency or intensity of lightning strikes will not be affected by the project. The potential for fire from lightning or any other source is extremely low because of the lack of flammable materials and the potential for CdTe emissions from modules exposed to fire are equally very low).</i></p> <ul style="list-style-type: none"> • <i>Earthquake damage to panels (The design of the PV modules encapsulates the thin layer of CdTe making release during an earthquake unlikely. The risk of release is further diminished by durability of the PV modules. As discussed above, the CdTe is bound to the top sheet of glass by vapor deposition, coated with an industrial laminate material, followed by a second sheet of glass. Furthermore, the laminate layer strengthens the modules and makes them break similar to safety glass, with a grid-like shattering as opposed to breakages that would expose large areas of the semiconductor. This breakage pattern significantly minimizes the potential that CdTe could be exposed to the environment. Methods used to inspect, gather, and contain broken PV modules would also minimize the potential release of the semiconductor material. Routine inspections of PV modules and power output monitoring reduce the likelihood that a broken PV module may remain undetected in the field.)</i> • <i>Project affect on emergency plan (No area roadways would be altered or in any way inhibited from allowing access to/from the</i>

**TABLE 1.0-1
SUMMARY OF NOP COMMENTS**

Agency/Individual	Issue Noted or Area of Controversy
	<p><i>Power Purchase Agreement with SGD&E. The project will have no effect on local utility bills. Please refer to response to the third bullet, above).</i></p>

1.7.2 SCOPING MEETING

A public scoping meeting was held for the proposed project to solicit input on the scope and content of the EIR. CEQA Guidelines Section 15082(c)(2) addresses parties to be included in a scoping meeting. The initial scoping meeting conducted by Imperial County took place on November 22, 2011 at 4:00 pm at the Board of Supervisors meeting room to gather input from the public. Oral comments were received from seven individuals at the meeting. The individuals and their comments are summarized in **Table 1.0-2**.

**TABLE 1.0-2
SUMMARY OF SCOPING MEETING ORAL COMMENTS**

Agency/Individual	Issue Noted or Area of Controversy
<p>Carol Childers 1905 West Wixom Road</p>	<ul style="list-style-type: none"> • Questions regarding other neighboring solar projects <i>(These comments were not relevant to the proposed project. The individual was referred to environmental review to be conducted for the referenced projects).</i> • Expressed support for proposed project
<p>Rocky Vandergrift 1651 Westside Road</p>	<ul style="list-style-type: none"> • Concerned about proposed project's location <i>(The impacts from the project on nearby properties are discussed in the sections of the EIR describing the various resources. Visual impacts are described in Section 4.1, Aesthetics).</i>
<p>Wayne Skains 1280 Drew Road</p>	<ul style="list-style-type: none"> • Concerns regarding temperature increases associated with wind blowing across solar panels <i>(The issue of temperature increases was previously addressed. Please refer to in Table 1.0-2, Douglas Wayne Skains, Jr. and Heather Skains comments).</i> • Concerns regarding visual changes/alteration of views <i>(Visual simulations have been prepared and are discussed in Section 4.1, Aesthetics).</i> • Transmission line noise <i>(Overhead electrical</i>

1.0 INTRODUCTION

**TABLE 1.0-2
SUMMARY OF SCOPING MEETING ORAL COMMENTS**

Agency/Individual	Issue Noted or Area of Controversy
	<p><i>line noise is referred to as the Corona affect and is associated with the electrical ionization of the air that occurs near the surface of the energized conductor and suspension hardware due to very high electric field strength. This audible power line noise is generated from electric Corona discharge, which is usually experienced as a random crackling or hissing sound. Noise from transmission lines is normally associated with only high voltage lines and addressed in Section 4.8, Noise).</i></p>
<p>Donna Tisdale Morningstar Ranch, Wildomar</p>	<ul style="list-style-type: none"> • <i>Against converting agricultural lands to solar fields (Agricultural conversion is addressed in Section 4.9, Agricultural Resources).</i> • <i>Requested cumulative map for all projects in the valley (A map of cumulative solar projects in the Imperial Valley is provided as Figure 3.0-2 in Chapter 3.0 of this EIR).</i> • <i>Requested study on stray voltage from solar projects (Per CEQA Guidelines §15151, Standards for Adequacy of an EIR: “An EIR should be prepared with a sufficient degree of analysis to provide decision makers with information which enables them to make a decision which intelligently takes account of environmental consequences. An evaluation of the environmental effects of a proposed project need not be exhaustive, but the sufficiency of an EIR is to be reviewed in the light of what is reasonably feasible.”)</i> • <i>Groundbreaking nature projects – any examples of similar sized projects impacts on people (Refer to CEQA Guidelines §15151, Standards for Adequacy of an EIR described in prior bullet).</i> • <i>Quantification of project noise and emissions quantification (Noise and Air Quality studies have been prepared for the project. The findings are discussed in Section</i>

**TABLE 1.0-2
SUMMARY OF SCOPING MEETING ORAL COMMENTS**

Agency/Individual	Issue Noted or Area of Controversy
<p>Donna Tisdale Morningstar Ranch, Wildomar</p>	<p>4.4, Air Quality and Section 4.8, Noise).</p> <ul style="list-style-type: none"> • Concerned about cumulative impacts (<i>Cumulative impacts are discussed in Sections 4.1 through 4.12 and summarized in Chapter 5.0, Cumulative Impacts Summary</i>). • Economic impacts (<i>A Fiscal Impact Analysis is being prepared for the proposed project separately from the EIR</i>). • Impacts on farmland (<i>This issue is discussed in Section 4.9, Agricultural Resources</i>). • Consideration of alternatives (<i>Potential alternatives to the proposed project are discussed in Chapter 6.0, Alternatives</i>). • Concerned about tax dollars used for solar projects that convert prime farmland (<i>No tax dollars are used to fund the proposed project</i>).
<p>Carolyn Allen 19 Crestview, Brawley</p>	<ul style="list-style-type: none"> • Aesthetic impacts if project is abandoned (<i>The project has a long-term contract to provide power. After the contract is completed, the project will be decommissioned as described in the subsection 2.14, item F of Chapter 2.0, Project Description. All PV panels will be recycled in accordance with First Solar’s pre-funded recycling program</i>). • Views impacted by solar (<i>Visual simulations have been prepared and are discussed in Section 4.1, Aesthetics</i>). • Concerns expressed by other countries where solar has been implemented (<i>Refer to CEQA Guidelines §15151, Standards for Adequacy of an EIR discussed in response to Donna Tisdale comments</i>). • Electrified fencing, no employees on site (<i>No electrified fencing is proposed as part of the project. Four to 10 workers would be on-site during operations</i>). • Health concerns – exposure of humans and

1.0 INTRODUCTION

**TABLE 1.0-2
SUMMARY OF SCOPING MEETING ORAL COMMENTS**

Agency/Individual	Issue Noted or Area of Controversy
<p>Carolyn Allen 19 Crestview, Brawley</p>	<p>animals (<i>Hazards and potential health concerns are discussed in Section 4.10, Hazards and Hazardous Materials. When the gen-tie is brought on-line and starts to transmit electricity, electromagnetic fields [EMFs] would be generated in proximity to the line. Currently, there is no agreement among scientists regarding the potential health risk related to EMFs. In addition, there are no people living or working in the proximity of any of the gen-tie lines. However, in response to a situation of scientific uncertainty and possible public concerns regarding EMFs, an EMF Management Plan would be developed that specifies, where needed and feasible, measures to reduce exposure from the gen-tie.</i>)</p> <ul style="list-style-type: none"> • <i>Currently, there is no agreement among scientists regarding the potential health risk related to EMFs).</i> • <i>Conversion of agricultural land (This issue is discussed in Section 4.9, Agricultural Resources).</i> • <i>Conversion of agricultural land from 10 to 40 years not considered temporary by the Department of Conservation (The Agricultural Reclamation Plan is described as part of decommissioning in subsection 2.1.4, item F in Chapter 2.0, Project Description).</i> • <i>Solar considered an industrial use (This is addressed in Section 4.2, Land Use).</i> • <i>Analyze impacts to surrounding lands and agricultural industry (This is addressed in Section 4.2, Land Use and Section 4.9, Agricultural Resources. Potential economic impacts to the agriculture industry will be addressed in the Fiscal Impact Analysis).</i> • <i>Air quality construction impacts quantification (Construction emissions are</i>

**TABLE 1.0-2
SUMMARY OF SCOPING MEETING ORAL COMMENTS**

Agency/Individual	Issue Noted or Area of Controversy
<p>Carolyn Allen 19 Crestview, Brawley</p>	<p><i>discussed in Section 4.4, Air Quality).</i></p> <ul style="list-style-type: none"> • Analysis of impacts to Burrowing owl (<i>Potential impacts to Burrowing Owl are discussed in Section 4.12, Biological Resources).</i> • Analysis of impacts to cultural resources (<i>Section 4.9, Cultural Resources, address this issue).</i> • Proposed use is not allowed under General Plan As <i>discussed in the Initial Study for this Project, the project parcels are currently zoned A-2 (General Agriculture), A-2-R (General Agricultural Rural Zone) and A-3 (Heavy Agriculture) and designated by the General Plan as "Agriculture." Solar energy facilities are allowed uses within these zones subject to a Conditional Use Permit. The Applicant is not proposing a change in the Land Use Designation or zoning of the project parcels. Furthermore, the A-2 and A-3 zones allow for the development of solar energy farms. Thus, the project does not conflict with existing zoning for agriculture.</i> • Impacts of high traffic volumes on area roadways (<i>Project traffic impacts are discussed in Section 4.3, Transportation and Circulation).</i> • Cumulative impacts of locating transmission lines in Imperial County on resident health (<i>Health risks from transmission lines are discussed in Section 4.9, Hazards and Hazardous Materials).</i>
<p>Brent Boutwell 1444 Drew Road</p>	<ul style="list-style-type: none"> • Concerns about taxpayer funding (<i>The proposed solar project result in a net increase in tax revenue compared to the existing agricultural use) with no taxpayer funding).</i> • Long-term impacts of solar as an industrial use on recreational opportunities (<i>Minimal recreational use on local farmlands as private landowners control these properties.</i>

1.0 INTRODUCTION

**TABLE 1.0-2
SUMMARY OF SCOPING MEETING ORAL COMMENTS**

Agency/Individual	Issue Noted or Area of Controversy
<p>Brent Boutwell 1444 Drew Road</p>	<p><i>Recreation on public lands would not be affected by the proposed project).</i></p> <ul style="list-style-type: none"> • Suggest locating solar on desert/government land (<i>Solar projects are proposed on both public and private lands throughout southern California. Public lands in this immediate area are within the Yuha Desert Management Area for the flat-tailed horned lizard which limits the acres of these lands that can be impacted).</i> • Farmland taken out of production reverts to its natural state; difficult to bring farmland back after taken out of production for long periods (<i>This land would be actively managed and would not return to a natural state. Because of the presence of local irrigation infrastructure and the previous leveling conducted on these parcels, returning this land to agriculture would be simpler than when it was originally developed for agriculture).</i>
<p>Tim Kelley Imperial Valley Economic Development Corporation</p>	<ul style="list-style-type: none"> • Possibility of clustering solar projects near Imperial Valley Substation to reduce impacts to neighboring farmland and preserve agricultural land (<i>This project is located as close to the Imperial Valley Substation as possible).</i>

The County also sent an NOP to responsible agencies (e.g., Imperial County Sheriff's Office) to provide input on the project during the 30-day comment period (November 15 thru December 16, 2011). Notification letters were sent to Native American Tribes by the BLM in October 2011. Another letter was sent with the cultural resources report and the Environmental Assessment in April, 2012.

1.7.3 AIRPORT LAND USE COMMISSION MEETING

The proposed project was presented and discussed at the County's Airport Land Use Commission (ALUC) Meeting held on February 15, 2012. The ALUC reviewed the proposed application, including the variance for transmission tower height described in subsection 1.2, above. The Commission found the proposed project consistent with the 1996 Airport Land Use Compatibility Plan (ALUCP) with no conditions.

1.8 AVAILABILITY OF REPORTS

This Draft EIR, appendices, and documents incorporated by reference are available for public review at the Imperial County Planning and Development Services Department, 801 Main Street, El Centro, California, 92243. Copies are also available for review at the City of El Centro Public Library, 539 State Street, El Centro, California. Documents at these locations may be reviewed during regular business hours. This document is available for review online at the Imperial County Planning and Development Services website: <http://www.icpds.com>.

All comments on the Draft EIR should be directed to:

David Black, Planner IV
Imperial County Planning and Development Services Department
801 Main Street
El Centro, California 92243

Comments received during the public scoping meeting were reviewed and addressed in this Draft EIR. The Draft EIR will be reviewed by the Imperial County Planning Commission and Board of Supervisors as a part of the procedure to adopt the EIR. Additional information on this process may be obtained by contacting the Imperial County Planning and Development Services Department at (760) 482-4236.

1.9 STRUCTURE OF THIS EIR

1.9.1 DRAFT EIR

The structure of this Draft EIR is identified in the Table of Contents. The Draft EIR is organized into nine Chapters and the Executive Summary.

Executive Summary. This chapter provides a summary of the proposed project, including a summary of project impacts, mitigation measures, and project alternatives.

Chapter 1.0 - Introduction. This chapter provides a brief introduction of the proposed project; objectives and purpose and need; relationship to statutes, regulations and other plans; public participation opportunities; availability of reports; and, comments received on the Draft EIR.

Chapter 2.0 - Project Description. This chapter provides a detailed explanation of the proposed project and its various components. It also identifies alternatives under consideration, the intended uses of the EIR and authorizing actions. This section includes the project location and legal description, project objectives, project characteristics and details of the construction work.

Chapter 3.0 - Introduction to the Environmental Analysis and Assumptions Used. This chapter provides an introduction to the environmental impacts analyses and general assumptions used in the project-specific and cumulative analyses contained in the ensuing sections.

Chapter 4.0 – Environmental Analysis. This chapter provides a brief overview of the twelve ensuing sections and orients the reader to the order of the analysis.

Section 4.1 - Aesthetics. This section examines the potential change in visual character measured against the existing setting and visual conditions of the project area. Project visibility, scale, additional light and glare, and community character are considered relative to the existing agricultural character of the area.

1.0 INTRODUCTION

Section 4.2 - Land Use. This section focuses on the potential impacts on, and conflicts with, land use that may result from the project, and evaluates the consistency of the project with the County of Imperial General Plan, Zoning, and any other applicable plans or documents.

Section 4.3 - Transportation and Circulation. This section identifies existing roadway and intersection traffic volumes and levels of service. The analysis examines potential impacts on the area roadway network, including roadway segments and intersections as a result of project construction, and operation and maintenance.

Section 4.4 - Air Quality. This section describes existing air quality in the region. It also addresses the requirements of the Imperial County Air Pollution Control District and analyzes local and regional air quality impacts associated with project implementation including short-term construction impact (grading, etc.), as well as long-term operational emissions.

Section 4.5 - Climate Change and Greenhouse Gases. This section describes the existing setting and regulatory conditions of the County of Imperial and surrounding area in terms of greenhouse gases and climate change. Potential increases in greenhouse gas emissions or factors that would affect climate change as a result of implementation of the proposed project are discussed.

Section 4.6 - Geology and Soils. This section describes the current setting of the project seismically and geologically. Engineering constraints and general soil suitability for the proposed land uses are discussed.

Section 4.7 - Cultural Resources. This section describes the setting of the project site with regard to cultural and historic resources. The analysis examines the presence or absence of cultural resources, including Native American sacred lands, and assesses their significance and potential for damage as a result of the proposed project.

Section 4.8 – Noise. This section describes the existing noise setting of the project site. Potential noise impacts resulting from construction, and operations and maintenance of the facility and associated gen-tie are discussed.

Section 4.9 - Agricultural Resources. This section describes the agricultural setting of the County and the site. The analysis focuses on potential impacts of the conversion of farmland on the project site as well as potential for conversion of adjacent farmland. The analysis also identifies any land use compatibility conflicts associated with the proposed project adjacent to farmland.

Section 4.10 - Hazardous and Hazardous Materials. This section examines the potential presence of residual pesticides or stored chemicals related to current and historical agricultural operations. Potential impacts and mitigation measures are identified.

Section 4.11 - Hydrology and Water Quality. This section describes the current drainage of the project site and assesses potential impacts of the proposed project on hydrology, storm drainage, and water quantity. The analysis identifies existing drainage patterns and estimates storm drainage runoff that would be generated by the conversion of the site from agricultural to a solar generation facility.

Section 4.12 - Biological Resources. This section describes the existing biological resources on and in the vicinity of the project site. Potential impacts to plants and wildlife in the affected area including listed, proposed, candidate threatened and endangered species are examined.

Chapter 5.0 – Cumulative Impacts Summary. This chapter summarizes the cumulative impacts for each resource area identified in Section 4.1 through 4.12.

Chapter 6.0 – Alternatives. This chapter qualitatively analyzes impacts associated with alternatives to the proposed project relative to impacts resulting from the proposed project. A summary matrix of impacts for each issue area is included to facilitate comparison of each alternative relative to the proposed project (better, similar, worse).

Chapter 7.0 - Other CEQA Required Considerations. This chapter provides an analysis of any significant irreversible environmental changes, growth inducing impacts, and unavoidable significant environmental impacts. It also identifies effects found not to be significant (i.e. all issues determined to be less than significant under CEQA).

Chapter 8.0 - EIR Preparers. This chapter lists all the individuals involved in the preparation of the EIR.

Chapter 9.0 – References. This chapter lists the data references used in preparing the EIR as well as the individuals and agencies consulted and cited in the text.

1.9.2 TECHNICAL APPENDICES

The technical reports for agricultural resources; air quality; biological resources; cultural resources; geology/soils; greenhouse gas emissions; hazards and hazardous materials; hydrology and water quality; noise; and, transportation/circulation are provided on the attached CD found on the back cover of this Draft EIR. These reports are referenced within the relevant environmental analysis sections of this document. Incorporation by reference is permitted by Section 15150 of the CEQA Guidelines. Other documents, reference sources, and individuals cited in the preparation of this Draft EIR are identified in Chapter 9.0, References. The baseline physical conditions as analyzed in these reports are the conditions that existed at the time of the issuance of the NOP for the EIR (CEQA Guideline Section 15125 (a)).

1.10 ISSUES TO BE ADDRESSED

The issues evaluated in this EIR include the physical, biological, cultural, and other resources that have the potential to be affected by activities related to the proposed project. The issues were identified through the preparation of an Initial Study:

- Aesthetics
- Land Use
- Transportation and Circulation
- Air Quality
- Climate Change and Greenhouse Gases
- Geology and Soils
- Cultural Resources
- Noise
- Agricultural Resources
- Hazards and Hazardous Materials
- Hydrology and Water Quality
- Biological Resources

1.11 ISSUES SCOPED OUT FROM FURTHER ENVIRONMENTAL REVIEW

The Initial Study for the proposed Campo Verde Solar Project prepared by the County of Imperial concluded that the project would not cause significant impacts related to various topics addressed in the CEQA Environmental Checklist (included in **Appendix A** of this EIR). Therefore, those topics are not addressed in this EIR. The reasons for concluding that no significant impacts would occur related to those topics are disclosed in the Initial Study, which was distributed with

1.0 INTRODUCTION

the NOP November 15 through December 16, 2011. CEQA Environmental Checklist topics not addressed in this EIR, and the rationale for their exclusion, are identified below:

Aesthetics

- Substantially damage scenic resources, including, but limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?

The project site consists of agricultural parcels of land that have been cultivated and disturbed. As a result, development of the project site is not anticipated to substantially damage scenic resources, including, but limited to, trees, rock outcroppings, and historic buildings. Moreover, the project site is not located adjacent to a scenic highway. A segment of I-8 between the San Diego County line and its junction with SR 98 is slated for Scenic Highway Designation status in the future. However, this segment of I-8 is over 16 miles southwest of the western boundary of the project site. Therefore, no impact is anticipated and impacts to resources within a state scenic highway will not be discussed in the EIR.

Agriculture and Forestry Resources

- Conflict with existing zoning for agricultural use, or a Williamson Act contract?

The land encompassed by the project parcels is currently zoned A-2 (General Agriculture), A-2-R (General Agricultural Rural Zone) and A-3 (Heavy Agriculture) and designated by the General Plan as "Agriculture." Solar energy facilities are allowed uses within these zones subject to a CUP. . Thus, the project does not conflict with existing zoning for agriculture. The original configuration of the project site included an additional four parcels encompassing approximately 286 acres which are subject to the Williamson Act. After discussions with the County and other stakeholders, these parcels were removed from the project. Therefore, conversion of land under a Williamson Act Contract is not an issue and is not discussed in the EIR.

- Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 511 04(g))?

Based on the Imperial County General Plan, Conservation and Open Space Element, mixed chaparral, pinyon-juniper habitats, and the montane hardwood-conifer forest are located in restricted areas of the County. Mixed chaparral and pinyon-juniper habitats are located in the extreme southwestern corner of Imperial County; montane hardwood-conifer forest is in the extreme northwestern corner of Imperial County. Thus, there are no existing forest lands, timberlands, or timberland zoned Timberland Production either on the project site or in the immediate vicinity that would conflict with existing zoning or cause rezoning. Therefore, no impact is identified for this issue and it is not discussed in the EIR.

- Result in the loss of forest land or conversion of forest land to non-forest use?

There are no existing forest lands either on-site or in the immediate vicinity of the project site. The proposed project would not result in the loss of forest land or conversion of forest land to non-forest use. Therefore, no impact is identified for this issue and it is not discussed in the EIR.

Biological Resources

- Interfere substantially with the movement of any 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?

The proposed solar facility includes the installation of a 7-foot tall chain link perimeter security fence which would inhibit medium- and large- sized mammals from moving through the site. Small mammals would not be inhibited from moving through the solar facility.

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? Refer to Division of Mines and Geology Special Publication 42.

The project site is not located within a State of California, Alquist-Priolo Earthquake Fault Zone. Thus, no impact is identified for this issue and it is not discussed in the EIR.

Hazards and Hazardous Materials

- 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, would it create a significant hazard to the public or the environment?

The project site is not listed as a hazardous materials site pursuant to Government Code, Section 65962.5. No impact is identified for this issue and it is not discussed in the EIR.

- 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?
- For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?

The project site is not located within two miles of a public airport or a private airstrip. Thus, no impact is identified for these issues and they are not discussed in the EIR.

- Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

As identified in the Seismic and Public Safety Element of the County of Imperial General Plan, the "Imperial County Emergency Plan" addressed Imperial County's planned response to extraordinary emergency situations associated with natural disasters, technological incidents, and nuclear defense operations. The proposed circulation plan for the project site will be required to provide emergency access points and safe vehicular travel. In addition, local building codes would be followed to minimize flood, seismic, and fire hazard. Thus, the proposed project would not impair the implementation or physically interfere with any adopted emergency response plans or emergency evacuation plans. No impact is identified for this issue and it is not discussed in the EIR.

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- 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?

The project site is not characterized as an area of urban/wildland interface. According to the Imperial County Natural Hazard Disclosure (Fire) Map prepared by the California Department of Forestry and Fire Protection (CDF, 2000) the project site does not fall into an area characterized as either: (1) a wildland area that may contain substantial forest fire risk and hazard; or (2) very high fire hazard severity zone. Thus, the project site would not expose people or structures to significant risk of loss injury or death involving wildland fire. No impact is identified for this issue area and it is not discussed in the EIR.

Hydrology and Water Quality

- Substantially 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 *level* (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits *have* been granted)?

The proposed project does not propose the use of groundwater. Water will continue to percolate through the ground, as a majority of the surfaces on the project site will remain pervious. No impact is identified for this issue and it is not discussed in the EIR.

- Place housing within a 100-year flood hazard area as mapped on a Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?
- Place within a 100-year flood hazard area structures which would impede or redirect the flood flows?

According to the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map, the majority of the project site is located in Zone X, which is an area determined to be outside of the 0.2 percent annual chance of a flood. A portion of the project site is located in Zone A, which is an area subject to 1 percent annual chance of a flood. However, the project does not propose the placement of housing or structures within a 100-year flood hazard area. Thus, no impact is identified for these issues and they are not discussed in the EIR.

- Expose people or structures to a significant risk of loss injury or death involving flooding, including flooding as a result of the failure of a levee or dam?
- No dams or levees are in the vicinity of the project site. Thus, no impact is identified relative to the failure of a levee or dam.
- Inundation by seiche, tsunami, or mudflow?

No bays or lakes are located within a two-mile radius of the project site. Furthermore, the project site is over 100-miles inland from the Pacific Ocean. In addition, the project site is relatively flat and level. Therefore, there is no potential for the project site to be inundated by seiches, tsunamis, or mudflows. Thus, no impact is identified for these issues and they are not discussed in the EIR.

Land Use

- Physically divide an established community?

The proposed project is located in a rural portion of the County dominated by agriculture. As such, the proposed project does not physically divide any established community. Thus, no impact is identified for this issue and it is not discussed in the EIR.

Mineral Resources

- Result in the loss of availability of a known mineral resource 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?

The project site is used for agriculture. According to the Conservation and Open Space Element of the County of Imperial General Plan, no known mineral resources occur within the project site nor does the project site contain mapped mineral resources. IID has retained the mineral rights for geothermal resources under much of the project site and the Applicant has agreed to provide IID access for future resource evaluation at defined locations throughout the site. As such, the proposed project would not adversely affect the availability of any known mineral resources within the project site. Thus, no impact is identified for these issues and they are not discussed in the EIR.

Noise

- Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?

The proposed project is a solar facility development. Operation of the facility would not create excessive groundborne vibration or noise levels. In addition, grading associated with project construction is unlikely to generate groundborne vibration or noise levels through blasting or other construction related activity, as the project is characterized by flat topography. Therefore, no impact is identified for this issue and it is not discussed in the EIR.

- 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 expose people residing or working in the project area to excessive noise levels?
- For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?

The project site is not located within two miles of a public airport or a private airstrip. Thus, the project site would not be exposed to excessive aircraft noise. No impacts have been identified for these issues and they are not discussed in the EIR.

Population and Housing

- Induce substantial 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)?

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The project, as a solar generation facility, does not propose the development of housing on the project site. The project would require approximately 4 to 8 full-time personnel for operations and maintenance of the solar facility and one security guard. Thus, the proposed project would not result in substantial population growth as the number of employees required to operate and maintain the facility is minimal. The project would provide electricity to off-set a portion of current electricity generated by fossil-fuel sources. Thus the project would not induce substantial population growth. No impact would occur for this issue and it is not discussed in the EIR.

- Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?
- Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?

The proposed project site is currently used for agriculture and there are no farmhouses on the project parcels. As a result, development of the proposed solar generation facility would not displace substantial numbers of existing housing or people requiring construction of replacement housing elsewhere. No impact would occur for these issues and they are not discussed in the EIR.

Public Services

- 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 fire, police, schools, parks, or other public facilities?

The proposed solar facility would not result in a substantial increase in population because it neither includes a residential component nor would it generate the need for new housing to accommodate workforce population. Based on the nature of the project as a solar facility, no increase in schools, parks, or other public facilities are anticipated. As such, the proposed project would not have an adverse physical effect on the environment because the project does not require new or significantly altered services or facilities to be constructed. Therefore, no impact is identified for this issue and it is not discussed in the EIR.

Fire Protection

The project site is within the jurisdiction of the Imperial County Fire Department (ICFD). The proposed project will pose a very low fire risk. All vegetation will be removed from the site and the solar generation facility would not be constructed of flammable materials. The project includes an on-site O&M building as well as electrical equipment (inverters and transformers) throughout the solar generation facility site. Inverters and transformers would be located within pre-fabricated enclosed structures.

The Applicant met with staff from the ICFD on April 10, 2012 to discuss fire requirements for the proposed project and site design. The project proposes roadways between the arrays in both the north/south and east/west directions. These internal roadways will connect to the perimeter access road surrounding the block of arrays. All roads will be a minimum of 20 feet

wide. ICFD determined that 70 foot by 90 foot turnaround areas would not be required because the project includes both north/south and east/west internal circulation (Cable, 2012).

ICFD's "General Layout for Road Access" also shows that the 20 foot alley spacing must be "+/- 300 feet to 500 feet" when the roads are laid out in only one direction. After reviewing the road spacing in each direction on the project site plan, it was also agreed that the project roadway separations in one direction (north/south or east/west) could be wider than 500 feet as long as the spacing in the other direction was no more than 500 feet maximum (Cable, 2012).

The Applicant prepared exhibits demonstrating that fire equipment could navigate 90 degree turns from north/south to east/west roads in the array area. Six of the eight movements can be made with a Wildland Type III fire pumper. The only movements that would be restricted are the southbound to eastbound and westbound to northbound turns. The other 6 movements can use the extra space provided by the PCS shelter "cut out" to make the turning movements (Cable, 2012).

The Applicant discussed row spacing of the modules at the proposed project in based on spacing at similar projects that the ICFD had visited. Based on discussions, the unobstructed 6-foot row spacing between modules is understood to be approved by ICFD. Project roadways will be constructed in compliance with ICFD requirements that will be determined based on the capital and engineering design decisions (Cable, 2012).

The project will include the construction of an Operations and Maintenance Building (O&M Building) that is estimated to be approximately 3,000 square feet. The exact size of the building will be determined during final design. Based on an estimated 3,000 square foot building size, a 10,000 gallon water storage tank dedicated for fire department use will be installed near the O&M Building according to ICFD standards. The final size of the water storage tank will be based on the size, volume, materials and use of the building which will be determined at the final design stage. If the final building is different in size, height, use, or construction materials than what has been estimated for the project, the size of the tank will be determined by ICFD based on the National Fire Protection Association (NFPA) codes and standards (Cable, 2012).

The final site plan would be designed in accordance with ICFD requirements for access. Thus, the project would not impact the ICFD's ability to provide emergency access to the site nor would the project hinder access nearby properties. Thus, impacts to fire protection are considered less than significant and are not discussed further in the EIR.

Police Protection

Police protection to the project site would be under the jurisdiction of the Imperial County Sheriff's Office. The project site incorporates a variety of security features to protect the site including a chain-link security fence approximately 7 feet high (approximately 6 feet high with one-foot consisting of three strands of barbed-wire on the top). Site security will be provided with a small guard station provided at the gated access points. Security cameras may be deployed throughout the site and monitored at the guard station and remotely by a security service at night. Lights, triggered by motion sensors and powered by station power will also be installed at each entry gate and at each Power Conversion Station (PCS). Thus, impacts to police protection are considered less than significant and are not discussed further in the EIR.

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Recreation

- Would the project increase the use of the existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?
- Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse effect on the environment?

The proposed project is a solar generation facility and would not create a demand for recreation or parks in the County. No impact is identified for these issues and they are not discussed in the EIR.

Transportation/Traffic

- Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?

The proposed project would not result in changes to existing air traffic patterns through an increase in traffic levels or change in location. Thus, no impact is identified for this issue and it not discussed further in the EIR.

- Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?

The proposed project would not change the existing surrounding circulation network. Thus, no impact with regard to an increase in hazards due to a design feature or incompatible uses is identified for this issue and it is not discussed further in the EIR.

- Conflicts with adopted policies, plans, programs, regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?

The proposed project would not conflict with any adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities. Thus, no impact is identified for this issue and it is not discussed further in the EIR.

Utilities and Service Systems

Wastewater Treatment

- Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?
- 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 project would include an on-site O&M building with a septic system, which requires a permit from the Imperial County Public Health Department. During construction, portable toilets and a septic tank for temporary construction offices will be used to provide sanitary facilities. Thus, a less than significant impact is identified for this issue and it is not discussed further in the EIR.

Water Treatment

- Require or result in the construction of new water or water treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?
- Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?

The proposed project is anticipated to result in a minimal increase in water demand/use during construction and operation. This water will be obtained under an agreement with IID. During construction, water will be used to facilitate soil compaction and to control fugitive dust on exposed soils. During operation, the project will use water for reapplication of the soil binding agent if necessary. In addition, the project may use water for periodic washing of the solar panels (Note: The Applicant does not expect to wash the panels and anticipates that rainfall would be sufficient to keep the panels clean. However, for the purposes of providing a worst-case analysis of water demand and water truck trips, occasional panel washing was assumed). An agricultural farm currently uses substantially more water than the proposed solar facility would need during construction and operation. Thus, a less than significant impact is identified for this issue and it is not discussed further in the EIR.

Water Supply

Under Senate Bill (SB) 610, a water supply assessment (WSA) must be furnished to local governments for inclusion in any environmental documentation for certain projects (as defined in the California Water Code Section 10912) subject to CEQA. Due to increased water demands, SB 610 seeks to improve the link between information on water availability and certain land use decisions made by cities and counties. SB 610 requires any project subject to CEQA to provide a WSA if it meets one of the seven definitions of “a project” as identified Water Code Section 10912. Until recently, solar projects similar to Campo Verde were subject to SB 610 and required the preparation of a WSA. In October of 2011, Governor Brown signed SB 267 into law to facilitate timely approvals for proposed photovoltaic and wind energy generation facilities. Under SB 267, such facilities that have an annual water demand of 75 acre-feet or less are expressly exempted from the requirement to prepare a water supply assessment. The proposed project is expected to use approximately 1,500 acre-feet of water during the 12 to 24 month construction period. The source of construction water for the project will be from the Imperial Irrigation District (IID). Water will be taken from the IID canals located adjacent to and throughout the site and trucked throughout the site as needed. During operation, the project would use 20-acre feet or less per year. Based on the useful life of the project (expected to be up to 40 years), the average annual water demand anticipated for the project, taking into account construction and operations, is well below the 75 acre-feet threshold and a WSA is not required to be prepared for the project.

IID serves as the regional water supplier to the Imperial Unit which encompasses agricultural areas as well as the seven incorporated cities of Brawley, Calexico, Calipatria, El Centro, Holtville, Imperial and Westmorland. IID imports raw Colorado River water and delivers it untreated to agricultural, municipal, and industrial water users within its Service Area which includes the project site. IID has an annual apportionment of 3.1 million acre-feet of Colorado River water per year. Due to the dependability of IID’s water rights, Colorado River flows, and storage facilities for Colorado River water, it is unlikely that the water supply of IID would ever

1.0 INTRODUCTION

be affected, even in dry years or under drought conditions. Industrial water would be supplied to the project under an industrial service water agreement with the IID.

Approximately 1,822 acres of the 1,990 acre site are important farmlands. Approximately 80 percent of the site (1,822 acres x .80 = 11,660 acres) has been in alfalfa with the remaining 20 percent (1,822 acres x .20 = 364 acres) in Bermuda and Sudan grass. Water consumption for alfalfa averages 7 to 8 acre feet per year and 6 to 7 acre feet per year for grasses. Based on these rates, water consumption associated with the current agriculture on the site would range from approximately 12,390 (11,660 acres x 7 acre feet per year + 364 acres x 6 acre feet) to 14,210 (11,660 acres x 8 acre feet per year + 364 acres x 7 acre feet) acre feet per year. These numbers estimates and are not based on actual water demand records for the site.

Another method of calculating historic water demand uses an average annual acre-foot per acre quantity for agricultural water consumption within the Imperial Irrigation District (IID). The *Imperial Irrigation District 2009 Annual Water Report* identified an average annual acre-foot per acre quantity of 4.63 acre-feet per acre (2009 Water Delivered for Agriculture ÷ 2009 Acres of Crops = 2,295,779 acre-feet ÷ 495,350 acres = 4.63 acre-feet per acre) (IID, 2009, p. 26 and 29). This would equate to an annual water demand for on-site agriculture of approximately 8,435 acre feet (1,822 acres x 4.63 acre feet per acre). A change in the project site's land use from agriculture to a solar generation facility would result in an annual consumption of approximately 20-acre feet per year based on a conservative scenario. This is a decrease of approximately 99.8 percent compared to the historical annual water usage for the project area. Stated another way, the site would require 0.01 acre-feet per acre of water compared to the historical 4.63 acre-feet per acre for agriculture. This is substantially less than is currently needed to support existing agricultural operations on the site.

As water supply is available from IID, and project demand is projected far below existing quantities used for agricultural irrigation on this site, no impact would occur regarding water supply during both construction and operation and maintenance of the project. The Applicant is in the process of securing agreements with IID to access canal water and acquire easements for canal crossings.

Stormwater Facilities

- Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?

The project site is relatively flat and will be drained by sheet flow to on- and off-site drainages as it is currently configured. No new drainage facilities are proposed. This impact is considered less than significant, but will be acknowledged in the EIR.

Solid Waste

- Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?
- Comply with federal, state, and local statutes and regulations related to solid waste?

During operations of the proposed project, waste generation will be minor. The Applicant has indicated that solid wastes will be disposed of using a locally-licensed waste hauling service. Thus, a less than significant impact is identified for this issue.

CHAPTER 2.0

PROJECT DESCRIPTION

2.1 PROJECT DESCRIPTION

Information about the proposed project identified in this chapter is based on technical studies, mapping, figures, and the Conditional Use Permit (CUP) application provided by the Applicant, Campo Verde Solar, LLC. Information referring to land disturbance, equipment, schedule, mileage, and workforce is based on the most up-to-date engineering available from the Applicant and generally represent conservative estimates. The project configuration may change based on final engineering and permit requirements for the project components. The Applicant's information for the gen-tie on Bureau of Land Management (BLM) managed land appeared primarily in the *Right-of-Way Plan of Development (POD) for the Campo Verde Gen-Tie Project* submitted to the BLM in September, 2011 (CVS, 2011). The gen-tie portion on BLM land is undergoing separate environmental review to fulfill the requirements of the National Environmental Policy Act (NEPA). An Environmental Assessment is being prepared for the gen-tie by the BLM.

2.1.1 INTRODUCTION

This chapter of the Environmental Impact Report (EIR) describes the Campo Verde Solar Project (proposed project) proposed by Campo Verde Solar, LLC (the "Applicant" which includes First Solar and US Solar). The project is a proposal to build a 140-plus megawatt alternating current (MWAC) solar generation facility using photovoltaic (PV) technology.¹ The project consists of the solar generation facility on private land and associated 230-kilovolt (kV) transmission line (gen-tie). The proposed gen-tie crosses both private and public land, the latter under the jurisdiction of the BLM. The gen-tie will connect the solar generation facility to the Imperial Valley Substation. The public lands crossed by the proposed gen-tie are managed by the BLM and located wholly within an area designated by the BLM for utilities and infrastructure corridors. A Right-of-Way (ROW) approval from the BLM is required to construct the proposed gen-tie.

2.1.2 PROJECT BACKGROUND

The Applicant is proposing to build, operate, and maintain the solar generation facility on approximately 1,990 acres of private land in southern Imperial County. The proposed project consists of two primary components: 1) solar generation equipment and associated facilities on privately owned land (the "solar generation facility"); and, 2) 230-kilovolt (kV) aboveground, electric transmission line(s) and associated facilities (the "gen-tie") that will connect the generation facilities with the Imperial Valley Substation. The solar generation facility and gen-tie are collectively referred to as the "proposed project" or "project." The area encompassing the solar generation facility and the gen-tie is referred to as the "project area."

On March 24, 2011, the Applicant submitted an application for a CUP to the Imperial County Department of Planning and Development Services (ICPDS). The CUP application was submitted to allow construction and operation of a solar PV electric generation facility and associated transmission line in southern Imperial County near the Imperial Valley Substation.

On September 12, 2011, the Applicant submitted an Application for Transportation and Utility Systems and Facilities on Federal Lands (Standard Form 299, or "SF-299") to the BLM. The SF-299 application requested a linear ROW to construct and operate the gen-tie and associated facilities on land managed by the BLM.

¹ To deliver 140 MWAC of electricity at the point of interconnection, the solar generation facility needs to be overbuilt to address the electrical demands of the facility, AC system losses, step-up transformer losses and transmission line losses.

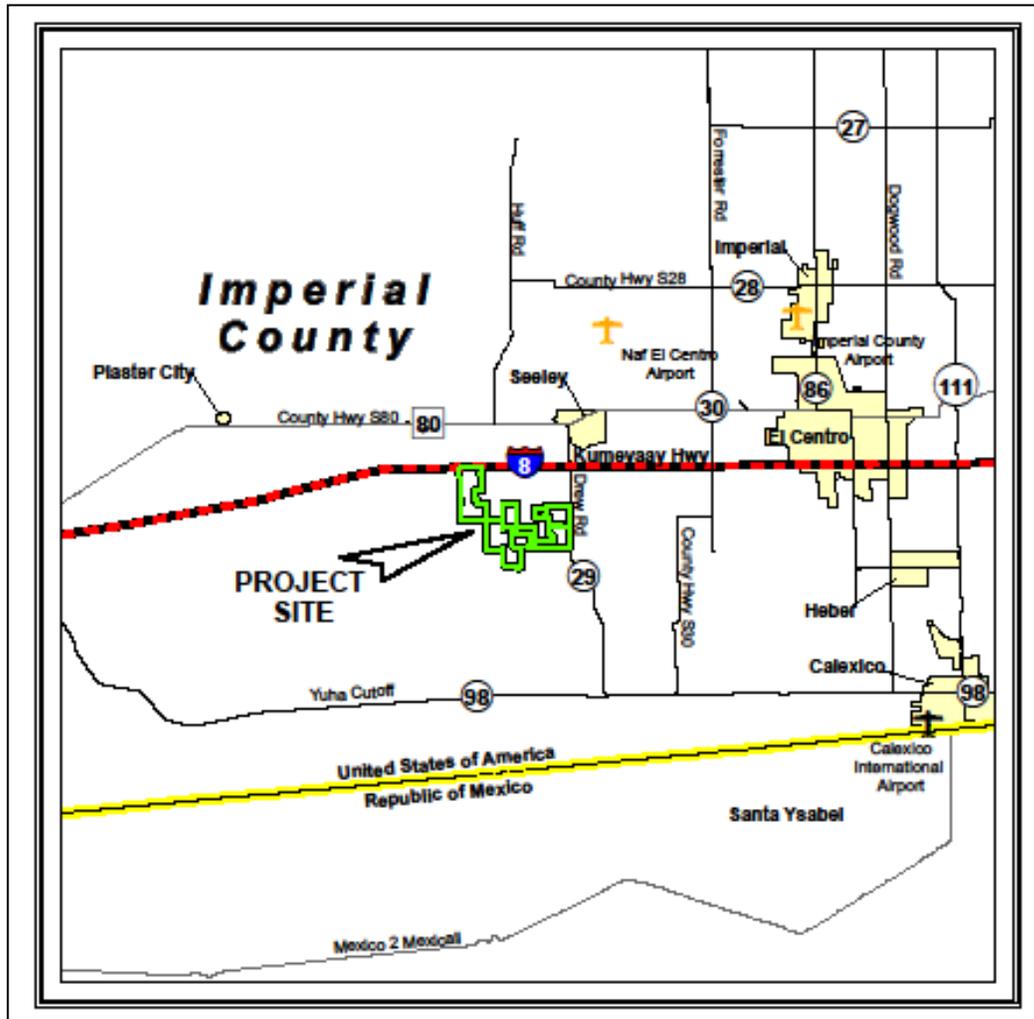
2.0 PROJECT DESCRIPTION

On February 7, 2012, the Applicant submitted a Variance Application to the ICPDS. The Variance Application was submitted to address gen-tie structures that may exceed the A-2 and A-3 zoning height limitation of 120 feet. The maximum height of the gen-tie line structures could be up to 145 feet. The proposed project was presented and discussed at the County's Airport Land Use Commission (ALUC) Meeting held on February 15, 2012. The ALUC reviewed the proposed application, including the variance for transmission tower height described in subsection 1.2, above. The Commission found the proposed project consistent with the 1996 Airport Land Use Compatibility Plan (ALUCP) with no conditions.

This EIR is being prepared to analyze the potential environmental impacts of the proposed Campo Verde Solar Project and fulfill the requirements of CEQA.

2.1.3 SITE LOCATION

The proposed project site is approximately 7 miles southwest of the community of El Centro, California. The project site is located generally south of Interstate I-8 (I-8), west of Drew Road, and north and east of the Westside Main Canal. **Figure 2.0-1** depicts the regional location of the property.



Source: kp environmental, 2012.

FIGURE 2.0-1
PROJECT LOCATION MAP

2.1.4 CAMPO VERDE SOLAR GENERATION FACILITY CHARACTERISTICS

A. Existing Uses and Features

The solar generation facility site is generally bounded by I-8 on the north, Drew Road on the east, and the Westside Main Canal on the west and south. The site boundaries follow parcel lines rather than roads or other physical features. **Figure 2.0-2** provides an aerial photograph of the project site and the immediate surrounding area including federal land managed by the BLM. **Figure 2.0-3** depicts the project parcels and adjacent parcels as well as the proposed gen-tie route. **Figure 2.0-4** shows the extension of the gen-tie through lands managed by the BLM to the Imperial Valley Substation.

The Applicant controls the solar generation facility site through options to purchase. **Table 2.0-1** identifies the assessor parcel numbers, acreages, and zoning of the parcels that comprise the solar generation facility site (there are no privately owned parcels crossed by the permanent gen-tie easement beyond those identified for the solar generation facility site) and correspond to the parcels depicted in **Figure 2.0-3**. A construction, an access easement and aerial easement could be required on one or more nearby private parcels.

All of the parcels that comprise the solar generation facility site are agricultural lands. Of the project site's 1,990 acres, approximately 1,852 acres of agricultural land would be converted to accommodate the proposed project. Of the 1,852 acres, approximately 1,822 acres (predominantly alfalfa hay) are important farmlands. The 1,852 acres represents agricultural fields within the solar generation facility site minus other land (i.e., the acreage of public roads, IID canals, ditches and maintenance roads currently on the site). The solar generation facility site includes a series of soil and concrete lined irrigation canals and ditches operated by the Imperial Irrigation District (IID). The topography of the property is relatively flat and ranges from 24 feet below mean sea level (msl) at the southern edge of the site to 40 feet below msl at the northern edge of the site.

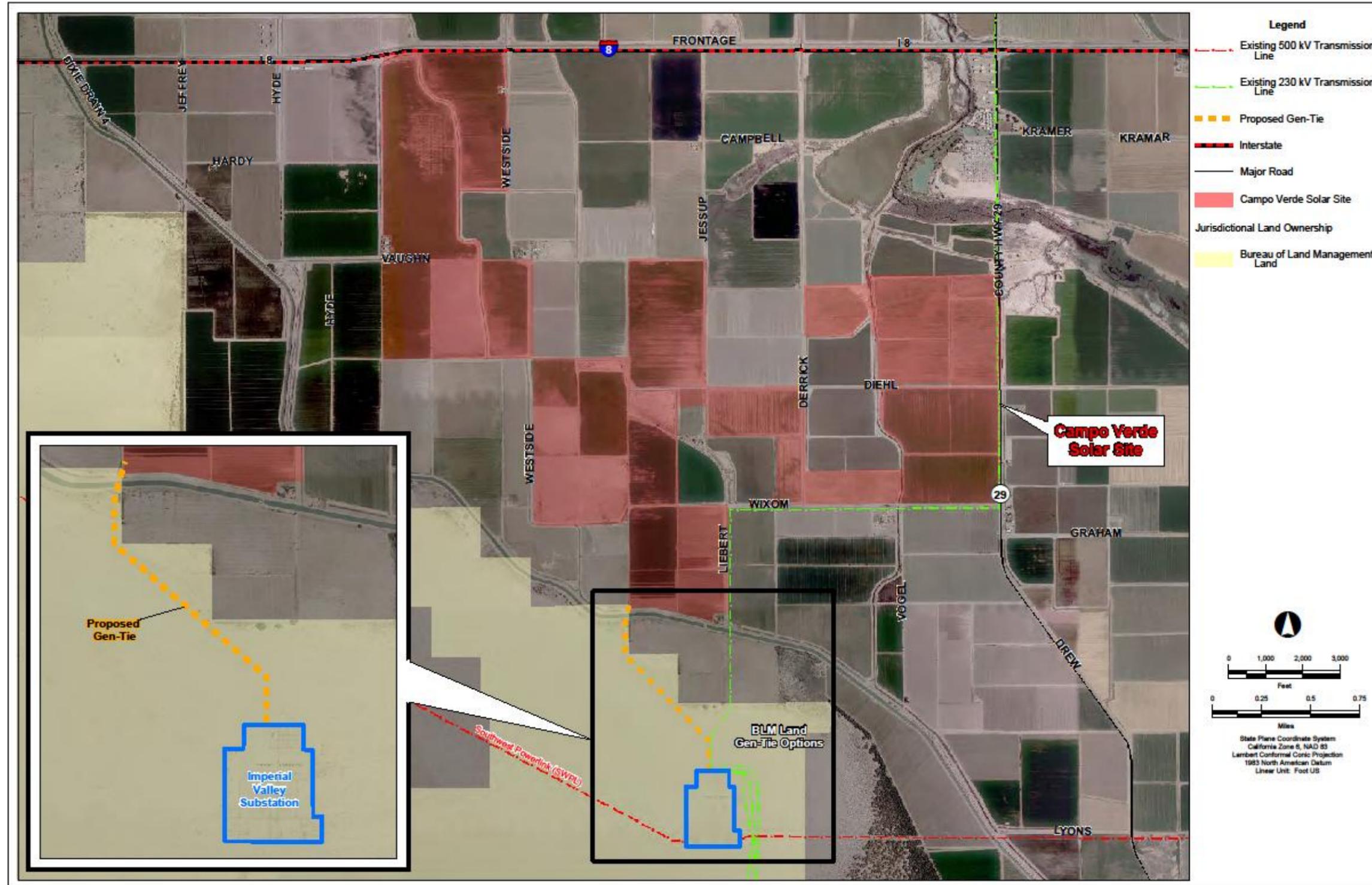
B. General Plan and Zoning Designations

The Imperial County Land Use Plan designates all of the private lands in the solar generation facility site as "Agriculture." Development of a solar generation facility would preclude agricultural crop production for the life of the project on the lands upon which it is located. However, the solar generation facility would be removed and the site returned to agricultural production at the end of the useful life of the project, expected to be up to 40 years.

Lands on which the solar generation facility is proposed are zoned A-2 - General Agriculture, A-2-R - General Agriculture, Rural Zone, and A-3 - Heavy Agriculture (refer to Figure 4.2-1 in Section 4.2, Land Use). Solar energy electrical generators, electrical power generating plants, substations, and facilities for the transmission of electrical energy are allowed as conditional uses in Agricultural zones (Land Use Ordinance, Title 9, Division 5, Sections 90508.02 and 90509.02 of the Land Use Ordinance). In keeping with the provisions of the zoning designations, the Applicant is seeking a CUP from the ICPDS.

2.0 PROJECT DESCRIPTION

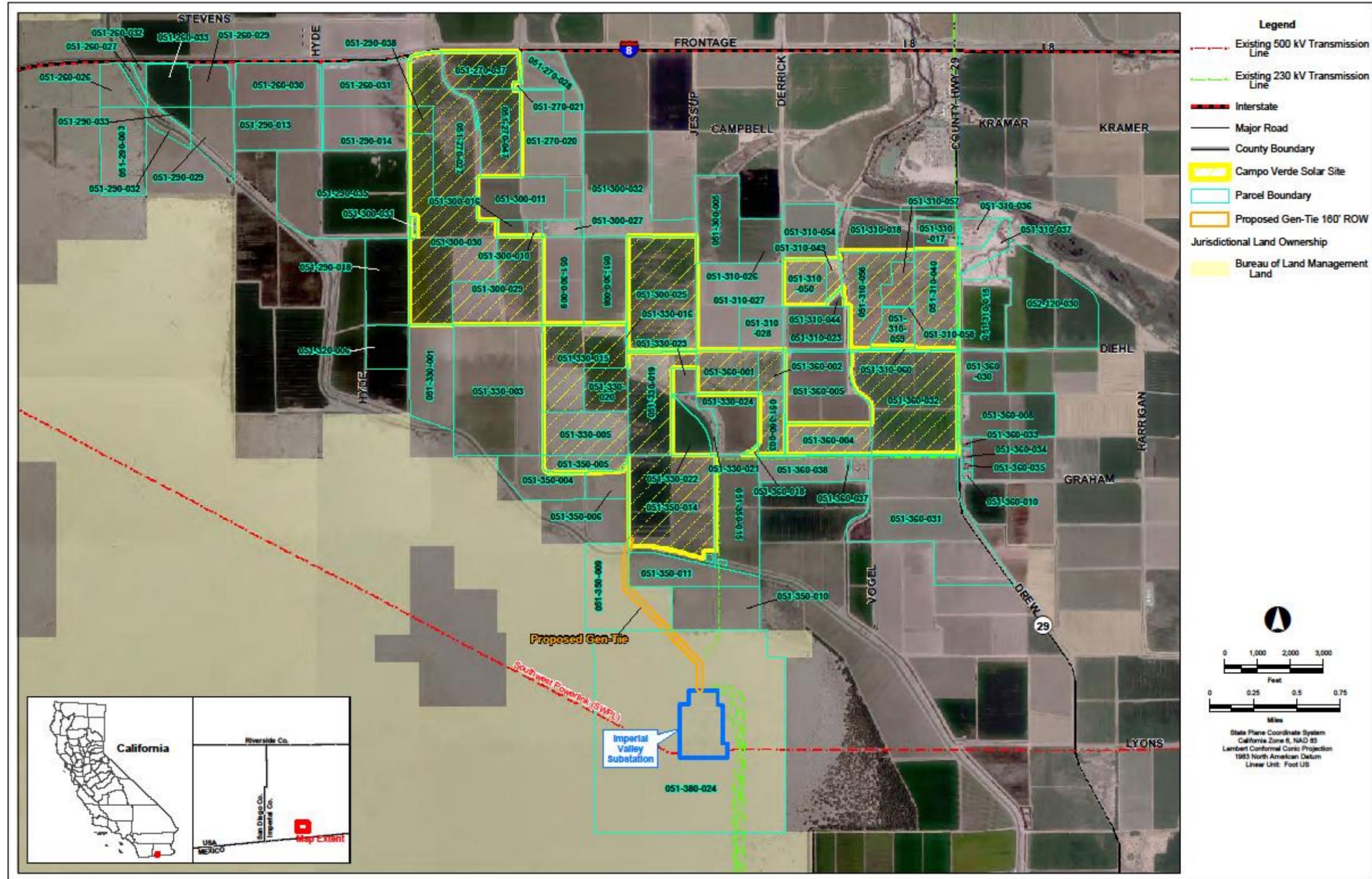
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Source: kp environmental, 2011.

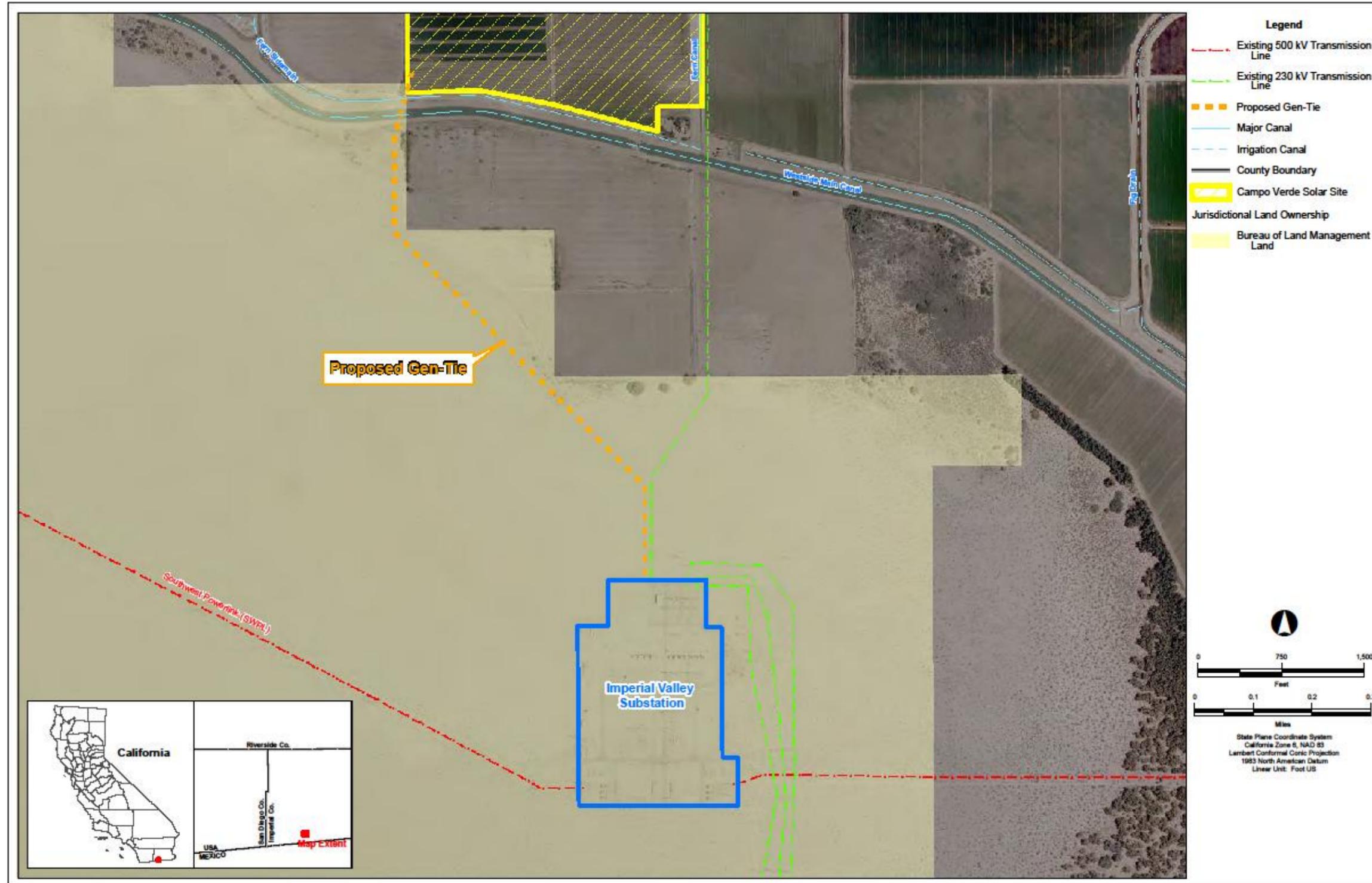
FIGURE 2.0-2
AERIAL PROJECT LOCATION MAP

2.0 PROJECT DESCRIPTION



Source: kp environmental, 2011.

**FIGURE 2.0-3
PROJECT OVERVIEW MAP**



Source: kp environmental, 2011.

FIGURE 2.0-4
 PROPOSED GEN-TIE ALIGNMENT

2.0 PROJECT DESCRIPTION

**TABLE 2.0-1
PRIVATELY OWNED PARCELS – SOLAR GENERATION FACILITY SITE**

Assessor's Parcel Number	Acreage	Zoning
051-270-037-000	57.19	A-2-R
051-270-047-000	81.16	A-2-R
051-290-038-000	13.88	A-2-R
051-270-027-000	120.86	A-2-R
051-300-030-000	221.88	A-2-R
051-300-029-000	119.91	A-2-R, A-2
051-300-025-000	164.86	A-2-R
051-330-015-000	119.18	A-2-R, A-3
051-330-020-000	40.0	A-2-R
051-330-005-000	80.0	A-3
051-350-005-000	28.8	A-3
051-330-019-000	101.90	A-2-R, A-3
051-350-014-000	184.00	A-3
051-360-018-000	1.80	A-3
051-360-001-000	57.06	A-2-R
051-360-002-000	23.16	A-2-R
051-360-003-000	32.03	A-2-R
051-360-004-000	55.0	A-2-R
051-360-032-000	203.72	A-2-R, A-2
051-310-060-000	0.82	A-2-R
051-310-040-000	92.23	A-2
051-310-059-000	31.96	A-2-R
051-310-057-000	25.27	A-2-R
051-310-056-000	80.65	A-2-R
051-310-049-000	9.97	A-2-R
051-310-050-000	42.42	A-2-R
051-310-058-000	0.90	A-2-R
	1,990.61	

Source: Campo Verde Solar, LLC, 2011. Acreage values from CUP application.

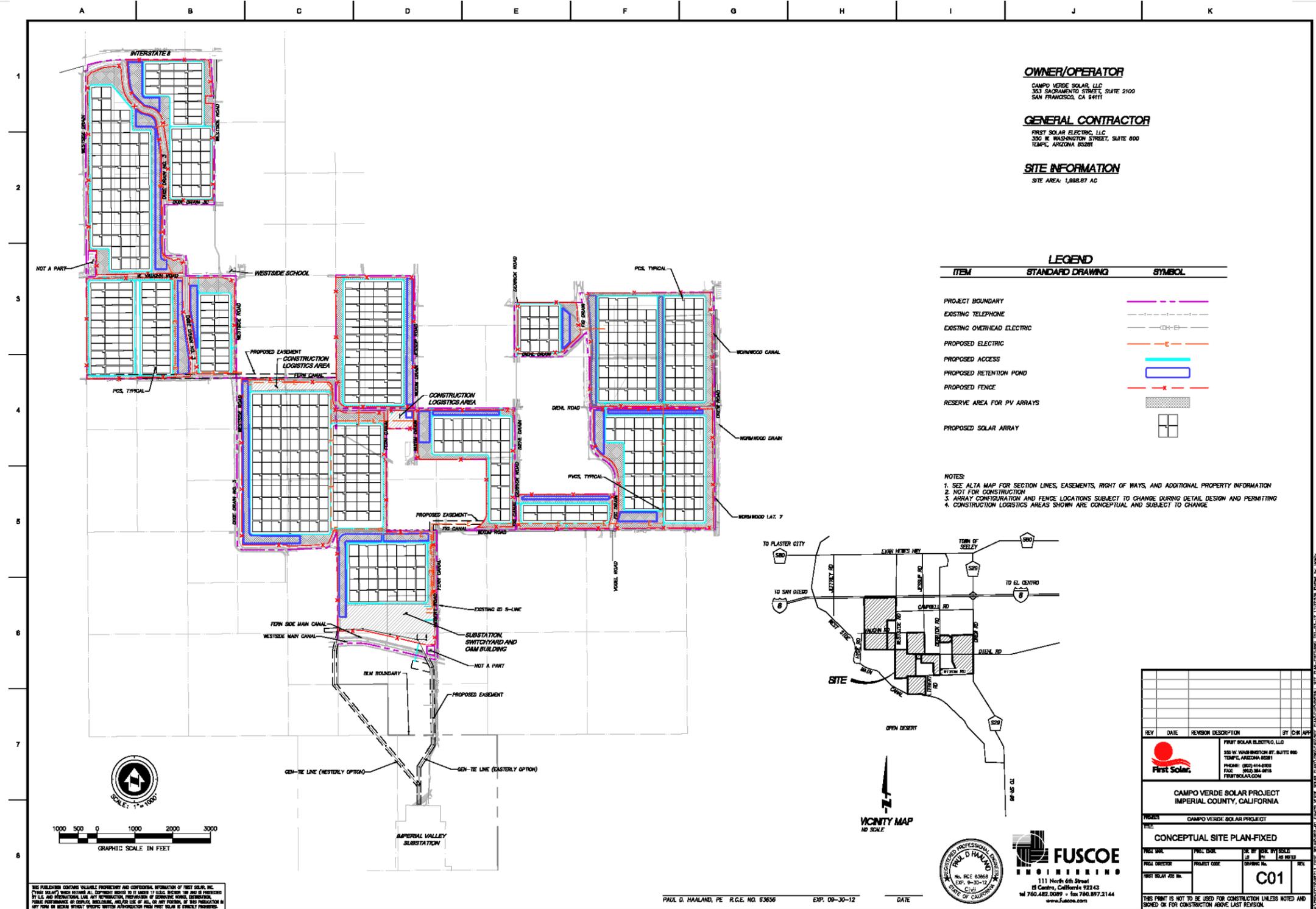
C. Solar Generation Facility Design

Site Layout

Figure 2.0-5 and Figure 2.0-6 show the current layouts of the two panel mounting configurations being considered for this project (fixed-tilt and horizontal trackers, each described in more detail below). As can be seen in these figures, solar arrays will be built within each of the parcels that make up the site to avoid impacts to the existing road, canal, and drainage network that serve this land and the surrounding area. The majority of each parcel will be covered with solar arrays that include the panels, inverters, transformers and other associated wiring and equipment. Also included within each area is an internal road network that provides access to the facilities for operations and maintenance.

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2.0 PROJECT DESCRIPTION



Source: Fuscoe Engineering, 2012

FIGURE 2.0-5
 OVERALL SITE LAYOUT – FIXED TILT

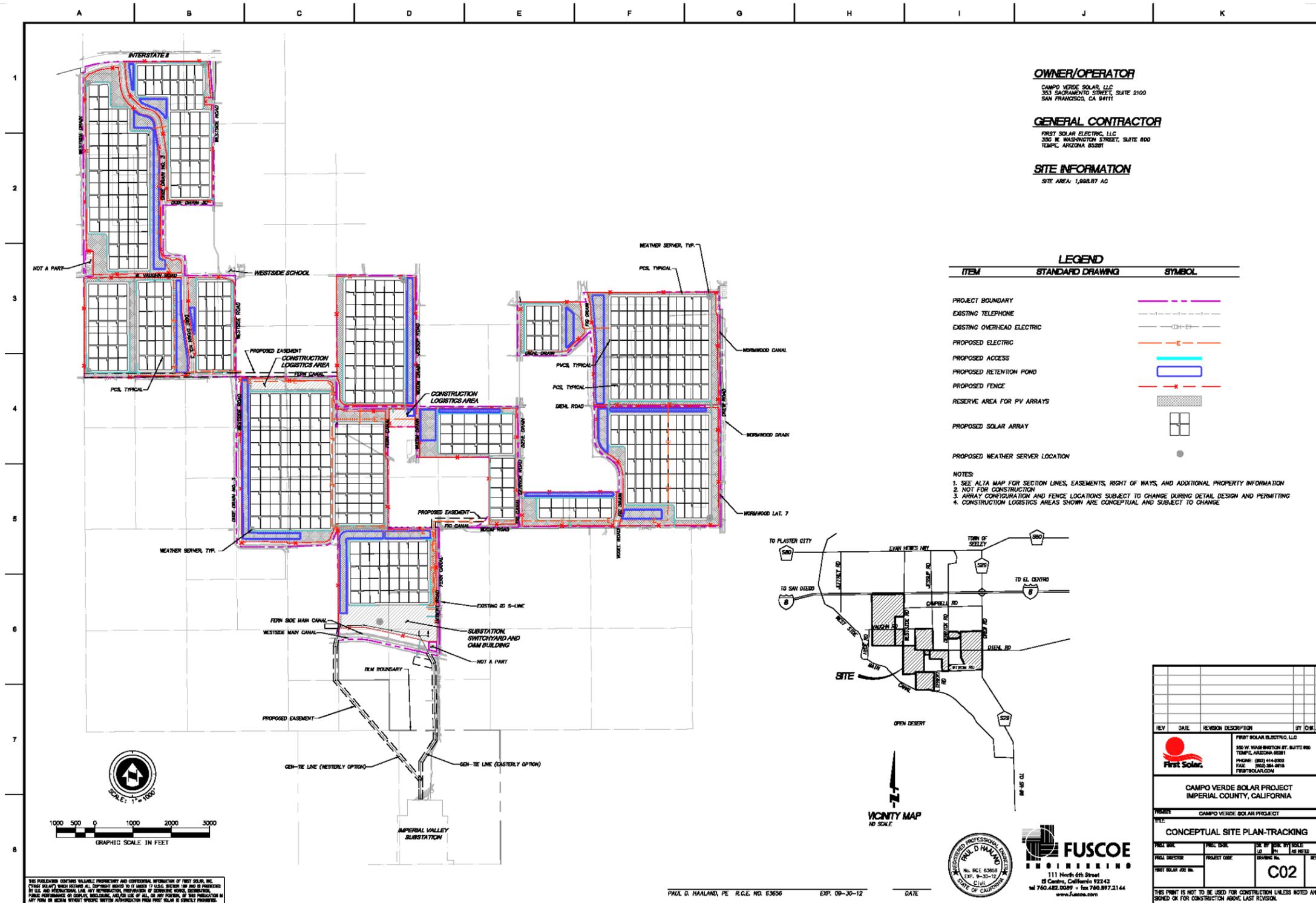


FIGURE 2.0-6
OVERALL SITE LAYOUT – HORIZONTAL TRACKER

2.0 PROJECT DESCRIPTION

At build-out, most of the solar generation facility site will be disturbed by construction activities, including areas to support the gen-tie pole structures. Temporary and permanent soil disturbance will be the same (approximately 1,990 acres) for the solar generation facility site. The design and construction of the buildings, solar arrays (PV solar panels, inverters, etc.) will be consistent with County building standards. The discussion below provides more detail on the various components of the project.

Solar Field and Generation System

The PV modules will generate power by converting sunlight directly into electricity. The major equipment in the solar field is summarized as follows:

- First Solar PV modules
- Arrays
- Fixed-tilt or horizontal (or single-axis) trackers supports
- Power Conversion Stations (PCS)
- 1,000 Volt (V) Direct Current (DC) collection system comprised of underground cabling and combiner boxes
- Medium voltage (12-kV and/or 34.5-kV) collection system
- Photovoltaic Combining Switchgear (PVCS)
- A project substation with medium voltage (12-kV and/or 34.5-kV) to high voltage (230-kV/220-kV) step-up transformer(s) and switchyard
- Meteorological stations (one at each solar array)
- O&M building with parking and other associated facilities
- Telecommunications equipment

Each of these components is described in more detail below.

PV Solar Modules

PV modules will produce all of the electricity generated by the project. PV panels are non-reflective and convert sunlight directly into DC electricity. The project will use First Solar's proprietary thin-film PV technology mounted on single-axis / horizontal tracker units or fixed-tilt supports.

First Solar began commercially producing its thin film PV technology in 2002, and since that time, the company has manufactured and sold over 5 gigawatts of modules that are in use throughout the world, including several locations in the southwestern United States. First Solar's manufacturing facilities are ISO 14001 and 9001 certified. First Solar PV modules conform to Underwriters Laboratories Inc. (UL) and International Electrotechnical Commission (IEC) test standards. First Solar does additional accelerated life-cycle testing of its PV modules to evaluate reliability and long-term performance characteristics. Based on the results of these tests and performance in the field, First Solar provides a 10-year workmanship warranty and a 25-year power output warranty. The company conducts routine monitoring of existing deployed panels to assess durability and longevity to meet its warranty obligations.

In 2005, First Solar established a pre-funded PV module collection and recycling program, through which any module may be returned to First Solar for recycling. The collection and recycling is at no cost to the end user. The anticipated recycling costs are pre-funded into a trust account that is managed by a third-party trustee. The program funds are independently managed as a trust to ensure that they will be available when they are needed, regardless of the financial status of First Solar. The PV module collection and recycling program enables all components of the modules, including the glass and the encapsulated semiconductor material to be processed into new modules or other products.

The principal materials incorporated into the PV modules include glass, steel, and various semiconductor metals. The PV modules absorb over 90 percent of the light received.

Typical Array

Arrays consist of rows of PV modules on fixed-tilt structures or single-axis / horizontal tracker structures and one Power Conversion System (PCS). The typical arrays for fixed-tilt are shown in **Figure 2.0-7**; tracker configurations are shown in **Figure 2.0-8**, respectively. As shown on these figures, the typical array would be sectioned into quadrants by two 20-foot-wide access corridors. One corridor would align north to south and the other east to west. Each array may produce 1.0 to 2.5 MWAC. Arrays are repeated to reach the full plant capacity.

The PV modules would be electrically connected by wiring harnesses extending along the bottom of each table to combiner boxes that collect power from several rows of modules. The combiner boxes would feed DC power from the modules to the PCS via underground cables.

The First Solar PV panels can be mounted on horizontal tracker supports or fixed-tilt system. The project may use one or both systems. Each of these technologies is described below.

Fixed-Tilt System

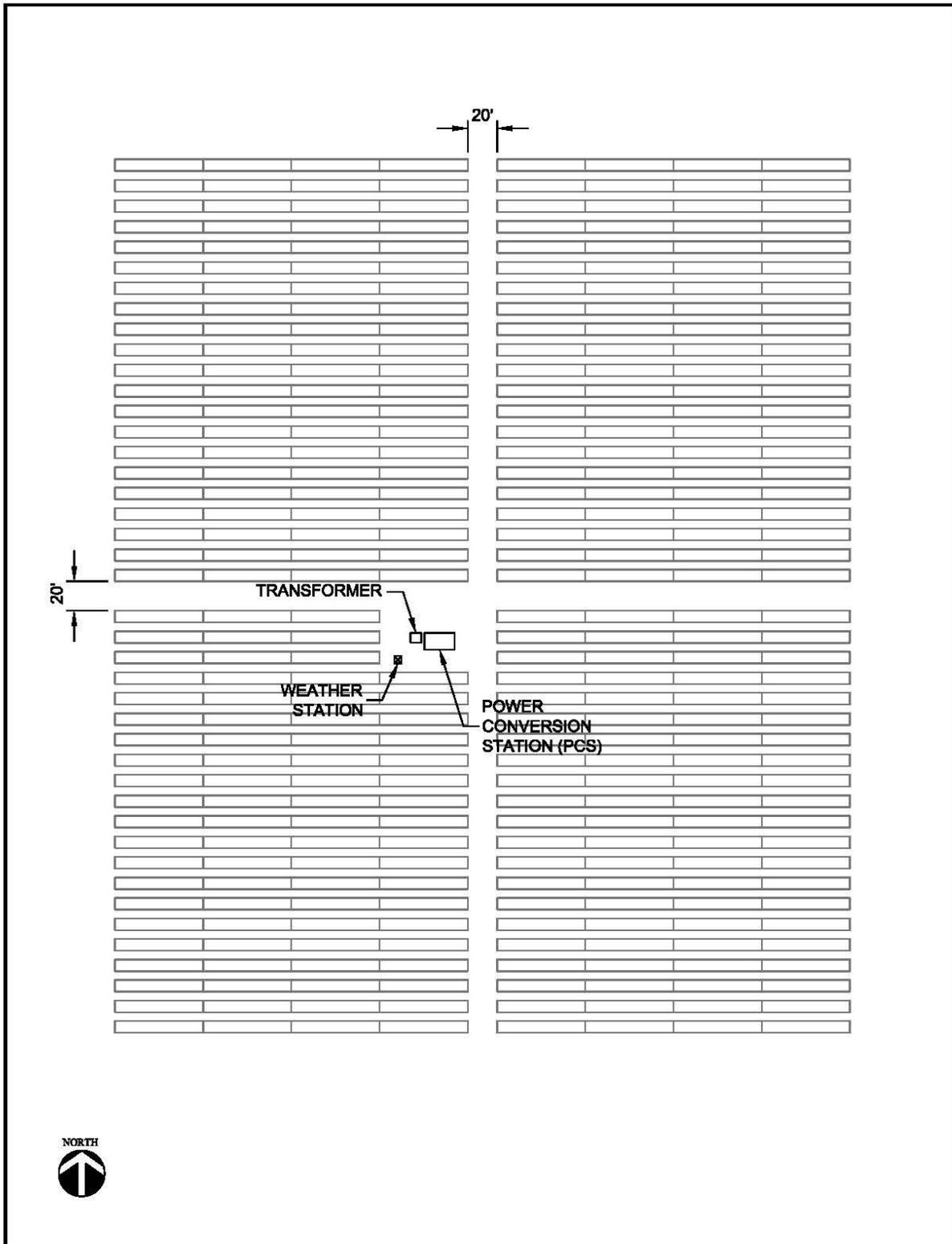
Fixed-tilt arrays would be constructed in east-west oriented rows. The modules would be positioned at a fixed angle to receive optimal solar energy. The approximate angle would be 25 degrees, which could change slightly during final design. The fixed tilt frame is supported by driven steel posts. A typical fixed tilt array layout is shown in **Figure 2.0-7**; the fixed tilt elevation is shown in **Figure 2.0-9**. The highest point of fixed tilt modules could be approximately 7 feet above the ground surface.

Horizontal (Single-Axis) Tracker Systems

Using horizontal or single-axis tracker systems, the PV modules are mounted horizontally and are not tilted to the south. The tracker units would be arranged in north-south oriented rows and drive motors would rotate the solar panels from east to west to follow the sun (on a single-axis) throughout the day. A typical horizontal tracker array layout is shown in **Figure 2.0-8**. An example horizontal tracker elevation is shown in **Figure 2.0-10**.

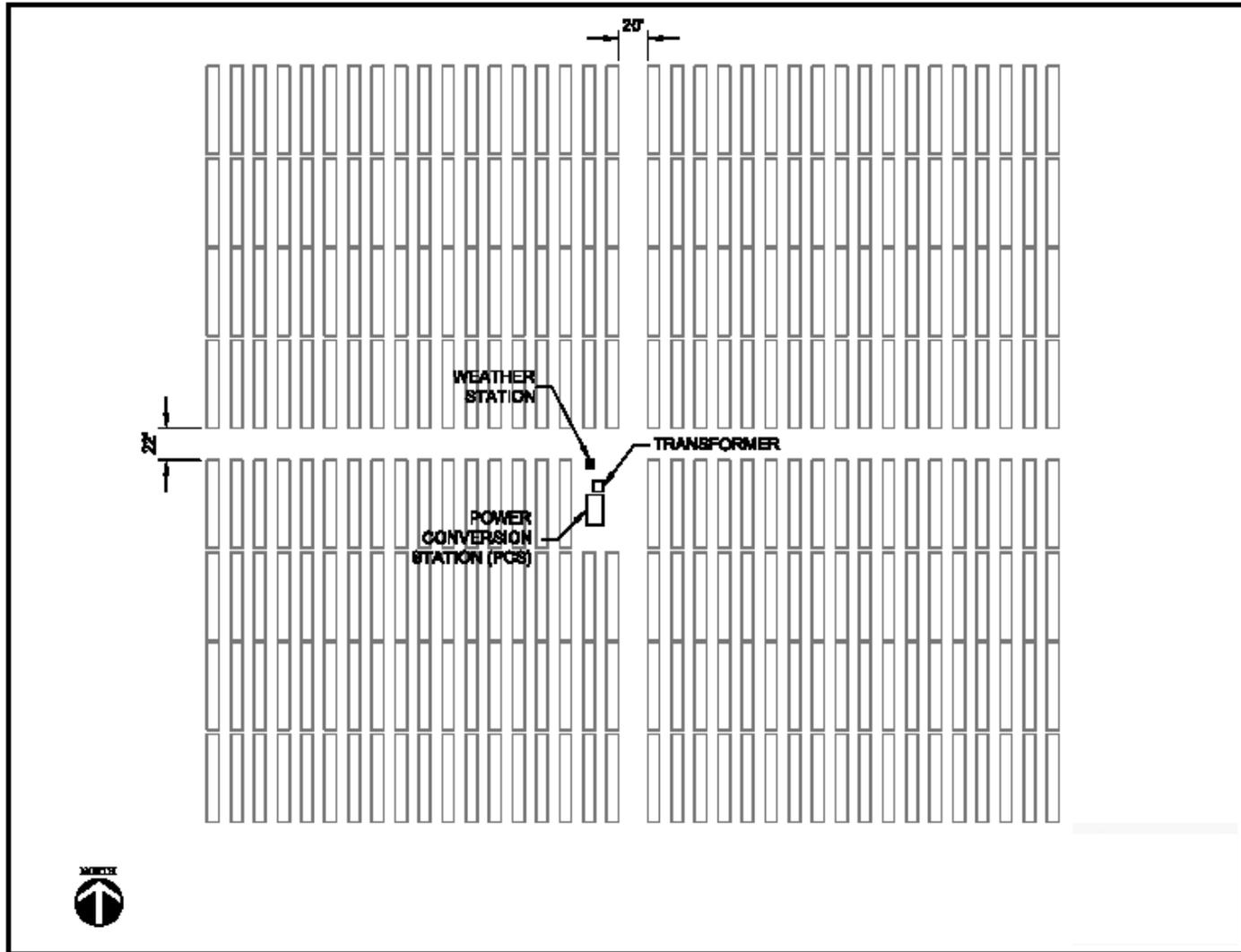
The tracker frame will be supported by driven steel posts. The highest point for a tracker is achieved during the morning and evening hours when the trackers are tilted at their maximum angle. When solar modules are roughly parallel to the ground, the overall height of the tracker is a maximum of 11 feet above the ground surface. Each tracker unit is approximately 60 feet long and powered by a low voltage, approximately 0.5 horsepower electric drive motor. The motors and actuator are mounted to one of the driven posts and do not require separate foundations for mounting. Hydraulic drive systems will not be used. The motors operate during daylight conditions to move the panels. The sound from the tracker motors is less than 65 dBA at 3 feet.

2.0 PROJECT DESCRIPTION



Source: First Solar, 2012.

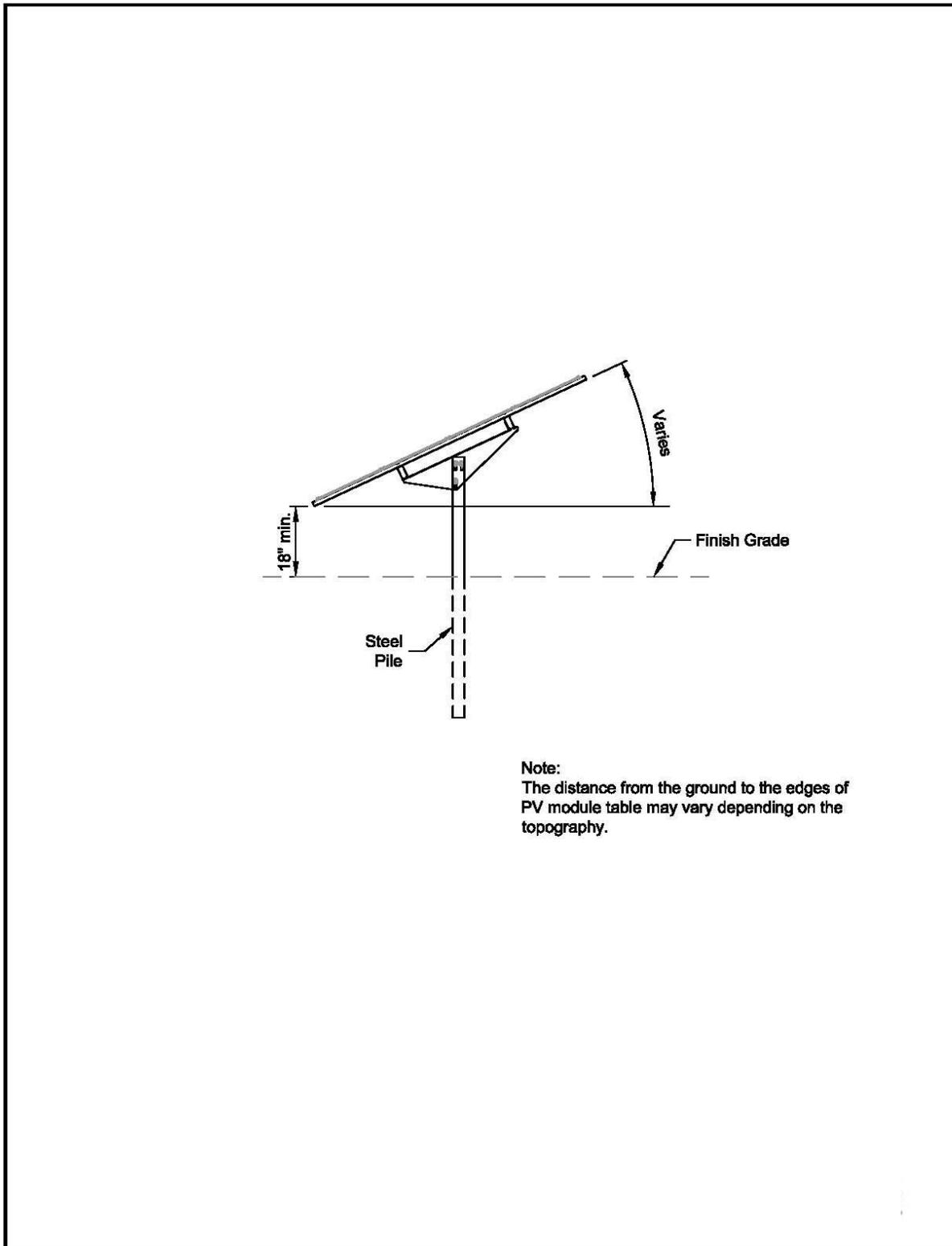
FIGURE 2.0-7
TYPICAL FIXED-TILT ARRAY



Source: kp environmental, 2012.

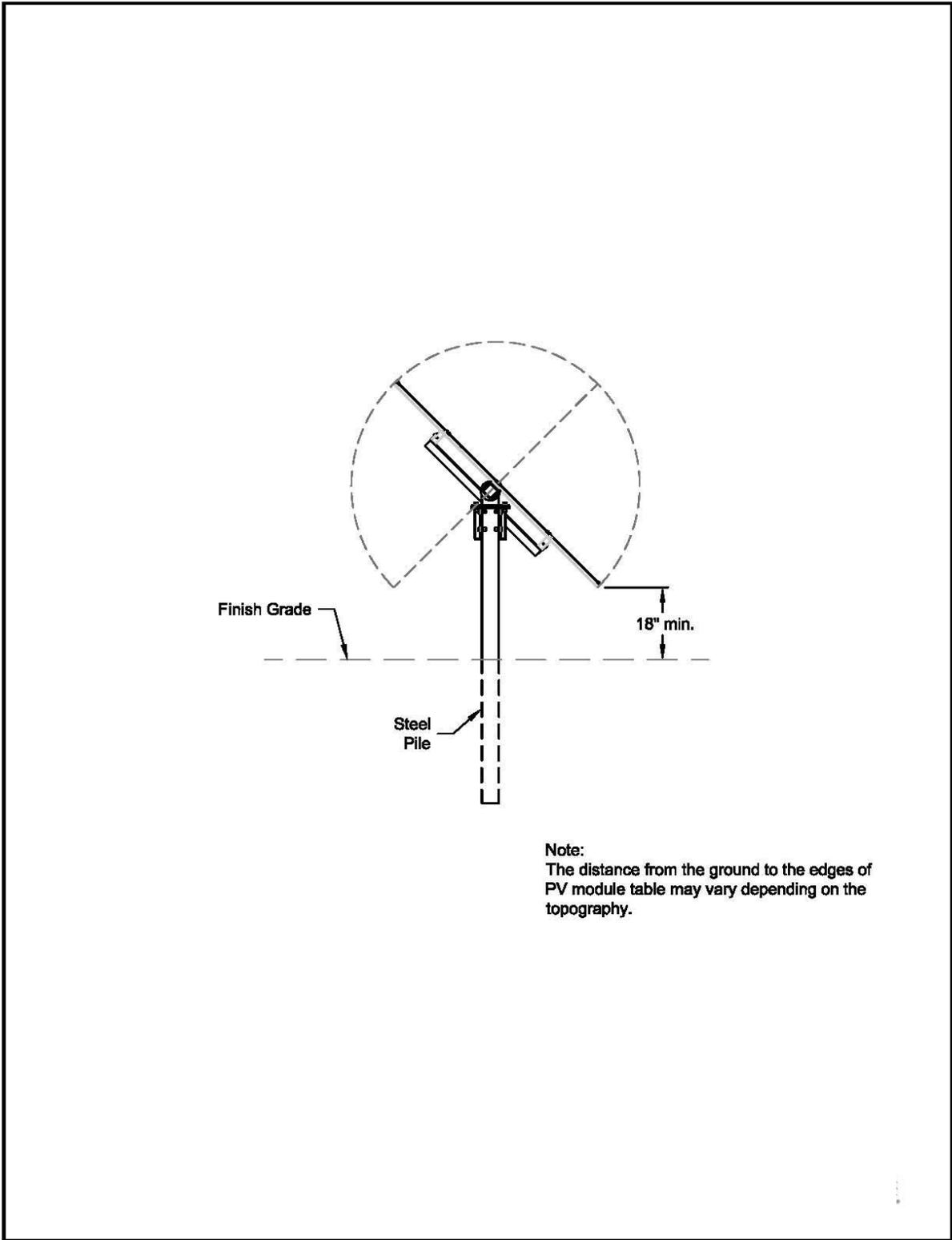
FIGURE 2.0-8
TYPICAL HORIZONTAL TRACKER ARRAY

2.0 PROJECT DESCRIPTION



Source: Campo Verde Solar, LLC, 2012.

FIGURE 2.0-9
TYPICAL DETAIL FIXED-TILT STRUCTURE



Source: Campo Verde Solar, LLC, 2012.

FIGURE 2.0-10
TYPICAL DETAIL HORIZONTAL TRACKER STRUCTURE

2.0 PROJECT DESCRIPTION

A tracker weather server may be centrally mounted in each tracker array or along perimeter of arrays to monitor wind speed and communicate with the tracker units. The weather server tower would have steel lattice construction. Each tower requires a small concrete foundation approximately 3 feet by 3 feet.

Power Conversion Stations (PCS)

The PV modules are electrically connected by wire harnesses and combiner boxes that collect power from several rows of modules via underground DC cables. These DC cables then fed to a Power Conversion Station (PCS), comprised of DC to alternating current (AC) inverters and a medium voltage transformer. In each array, one to four inverters and other electrical and communication equipment will be located in a pre-fabricated protective electrical equipment enclosure or shelter with adjacent transformer to step up to medium voltage (12.5-kV or 34.5-kV). Each array will have one PCS.

Each enclosure or shelter will be approximately 12 feet wide and 10 to 12 feet in height and will be a neutral color to blend into the surrounding environment. Each PCS will be connected to one or two transformers to support each array. The enclosure/shelter may be air-conditioned. The enclosure/shelter and transformer will be shipped to the site on skids that will be installed on precast concrete foundations. The inverter and transformer sizes will be selected based on the cost and market availability of these units. The enclosure or shelter may have an exterior light with motion sensor and a fire alarm. It may also include data acquisition and communication equipment, step-down transformers to 120 V/480 V for tracker motor, laptop or other equipment, and uninterruptible power supply (UPS) batteries. Equipment may be outside, within exterior rated cabinets, or within a structure. A representative drawing of a PCS enclosure/shelter is shown in **Figure 2.0-11**. Final design will vary based on products and manufacturer selected.

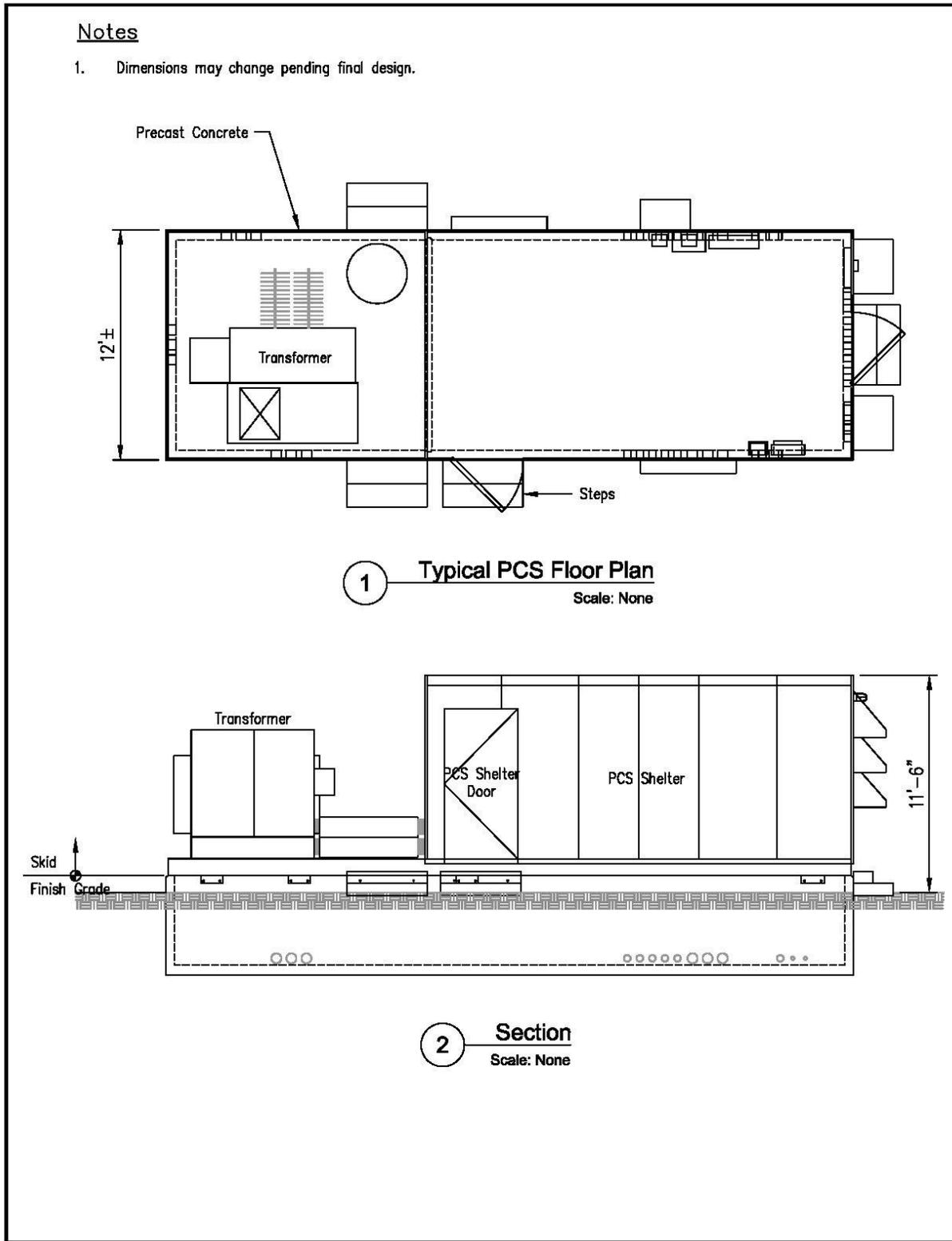
Each PCS enclosure or shelter is equipped with communication equipment to wirelessly communicate with the tracker units to control operation and detect anomalous conditions. The PCS enclosure/shelter is also equipped with emergency backup power required to rotate the tracker units if there is a loss of the primary electrical connection from the transmission system. The emergency backup power system may include batteries or a backup generator.

Electrical Collection System

The DC output of multiple rows of PV modules is collected through one or more combiner boxes, and associated electrical wiring which would deliver 1,000 volts of DC power along an underground trench (approximately 3-feet deep and 3-feet wide) to a PCS.

Each PCS will be connected by overhead and/or underground lines to Photovoltaic Combining Switchgear (PVCS). Each PVCS will collect and combine the medium voltage power and communication from multiple PCSs for transmission to the project substation. The medium-voltage collection system (12.5-kV or 34.5-kV) transmitting power and communication from each PCS to the PCVS may be buried underground and/or connected on overhead lines. The PVCS enclosures will be supported by pre-cast concrete vaults and would be located in pre-fabricated protective electrical equipment enclosures, each approximately 12 feet in height, dispersed among the arrays.

Preliminary locations of the electrical collection system are shown on the site plan. This system from PCS to PVCS and PVCS to substation would include multiple overhead and underground crossings of County right-of-way and IID facilities which will require encroachment permits.



Source: Campo Verde Solar, LLC, 2012.

FIGURE 2.0-11
TYPICAL POWER CONVERSION STRUCTURE

2.0 PROJECT DESCRIPTION

Underground crossings may include directional drilling or other construction method as approved by County or IID. The collection system may be constructed on adjacent private properties within private easements.

Substation and Switchyard

An onsite substation with medium voltage (12.5-kV or 34.5-kV) to high voltage (230-kV/220-kV) step-up transformer(s) with mineral oil, breakers, buswork, protective relaying, supervisory control and data acquisition (SCADA), and associated substation equipment is proposed on the south side of the site. **Figure 2.0-12** shows a conceptual layout of the substation / switchyard. The substation will be fenced for safety per codes. One or more structures may be outside the fence for meters and control equipment. The communication system may include above or below ground fiber optic cable or microwave tower. The project will be interconnected to the regional transmission system from this on-site substation/switchyard via the gen-tie interconnections described in subsection 2.1.5.

Operations and Maintenance Building

An Operations and Maintenance (O&M) building may contain administrative offices, parts storage, a maintenance shop, plant security systems, and plant monitoring equipment. The O&M building will likely consist of one or more single story buildings set on a concrete slab-on-grade. The maximum building height will be approximately 18 feet and up to 3,000 square feet in area. The plan will be submitted and approved by County Building Department. The building will have exterior lighting on motion sensors and will have fire and security alarms. The building would be located on a graded area with adjacent worker parking. A septic system and leach field adjacent to the building will serve the project's sanitary wastewater treatment needs. An above ground or below ground water storage tank may be installed along with a water treatment system.

Project Support Systems

The following systems control, protect, and support the project and its operation. These include a distributed control system, communications, and lighting as described below.

Control System

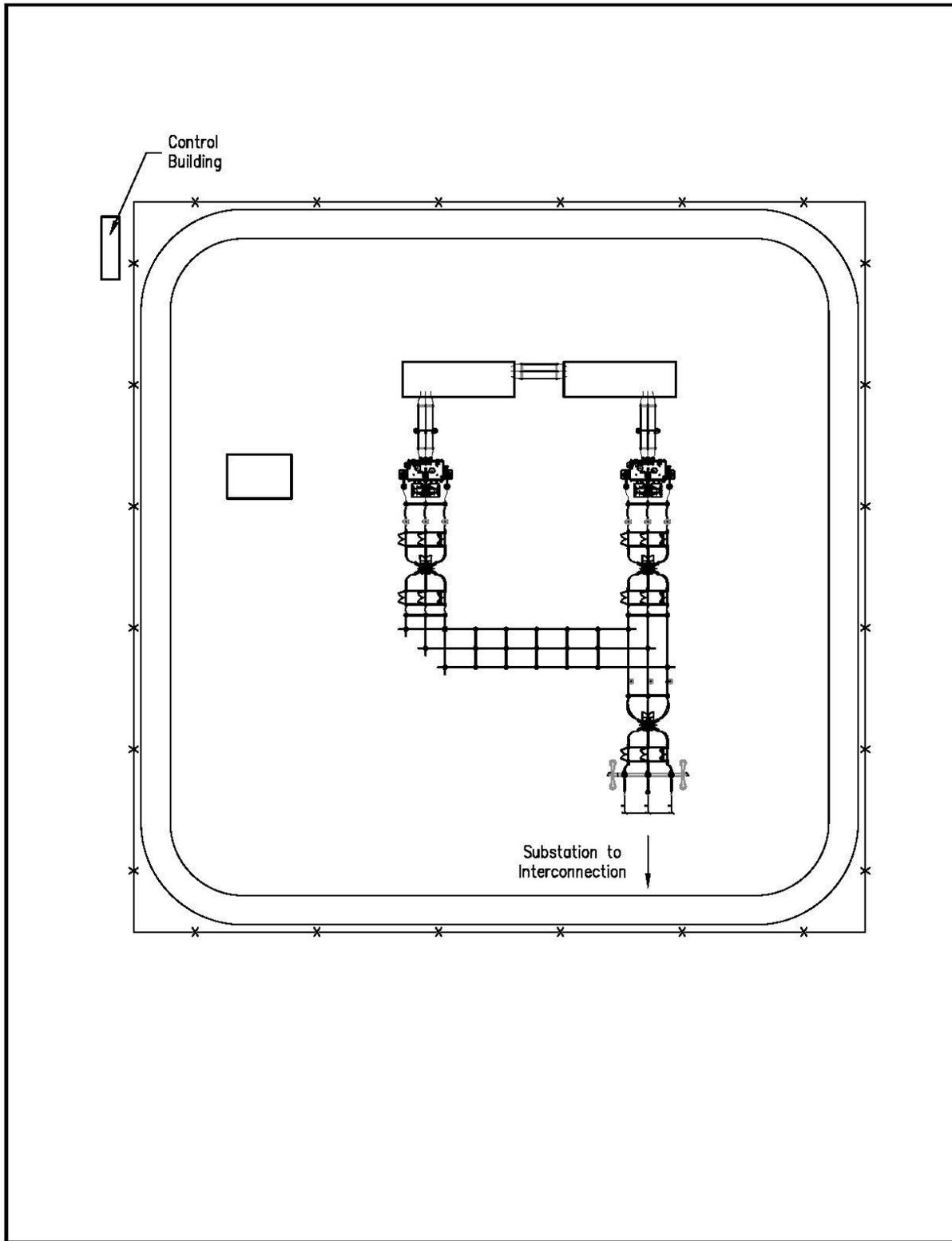
A microprocessor-based site communication center (SCC) will provide control, monitoring, alarm, and data storage functions for plant systems as well as communication with the solar field SCADA system. Redundant capability will be provided for critical components so that no single component failure will cause a facility outage. All field instruments and controls will be hard-wired to local electrical panels. Local panels will be hard-wired to the system. Wireless technology will be reviewed as a potential alternative during final project design.

Communication System

The project will use telephone and internet services that will be provided via overhead or underground lines, or via cellular system or microwave service by a local service provider. The local service provider may need to improve their system to provide necessary services. During construction, a temporary microwave dish may be installed on a 50-foot pole to provide construction logistical communications. This pole and system would be temporary and removed after construction.

Lighting System

The project's lighting system will provide operation and maintenance personnel with illumination for both normal and emergency conditions near the main entrance, parking lots, and the project substation. Lighting will be designed to provide the minimum illumination needed to achieve safety and security



Source: Campo Verde Solar, LLC, 2012.

FIGURE 2.0-12
CONCEPTUAL SUBSTATION AND SWITCHYARD

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objectives. Lighting will be pointed downward and shielded to focus illumination on the desired areas only. Permanent lighting will be provided at the O&M building, substation, and entrances. The PCS enclosures/shelters will have exterior lights on motion sensors. If lighting at individual solar panels or other equipment is needed for night construction or maintenance, portable lighting will be used.

Electric Service

Permanent electric service may be obtained for the O&M building. Service would be provided by IID. Temporary electric service will be obtained for the main construction logistics area. Existing agricultural electric services will be terminated if not needed. Applications for temporary and permanent electric service from IID will be submitted. IID may need to improve its distribution system to provide service to the site. Generator power may also be used for construction and for commissioning. If so, the generators would comply with applicable regulations.

Security

The solar generation facility site will be surrounded with a 7-foot high chain-link security fence (approximately 6 feet high with one-foot consisting of three strands of barbed-wire on the top). The substation/switchyard will be fenced separately per safety codes. Site security may be provided with small guard stations provided at the gated access points. These stations may be manned 24-hours per day 7-days per week. Security cameras may be deployed throughout the site and monitored at the guard station and remotely by a security service at night. Hooded lights, triggered by motion sensors, may be installed at each entry gate and at each PCS enclosure/shelter.

Signage will be installed at intervals along the perimeter fence and will include language required for the trespass laws in California. Warnings will also be posted in both English and Spanish stating: "Danger, Keep Out!" and "Hazardous Voltage Inside."

Fire System

As a PV solar energy project, the Campo Verde Solar Project will pose a very low fire risk as all vegetation will be maintained and no flammable materials are proposed as part of the solar generation facility. The PCS enclosures/shelters will be constructed of either metal or concrete and are designed for outdoor use.

A Fire Management Plan will be prepared and the final site plan would be designed in accordance with Fire Department requirements for access so as not to interfere with emergency service providers' ability to access to the site. Access to all nearby properties would remain in place.

D. Construction Process for the Solar Generation Facility

Construction

The 140 MWAC+ solar generation facility will be constructed in one continuous build cycle over a period of up to 24 months. Construction is estimated to begin in mid-2012. However, the actual start of construction will be determined based on the receipt of all pre-construction permits and approvals and securing financing for the project.

The PV solar arrays will be constructed in a similar sequence within the boundaries of each parcel identified on the site plan with several parcels undergoing construction in various stages simultaneously. Generally, the construction process will include the following steps:

- Conduct required pre-construction surveys and mitigation measures

- Development of construction staging and parking areas to facilitate the arrival of workers and equipment on site
- Fencing of parcels (Erected during construction and will remain permanent feature).
- Site preparation including installation of stormwater management features, grading, and compaction
- Installation of posts for the PV racks and PCS/PVCS pads
- Development of site substation/switchyard
- Installation of gen-tie and collection system structures and wiring
- Installation of PV racks, PCS, PVCS, trenching for wiring
- Installation of PV panels and wiring
- Completion of Connections
- Commissioning and Testing
- Site Clean-up and demobilization

Temporary Construction Facilities/Staging Areas

During construction, temporary facilities will be developed on-site to facilitate the construction process. These facilities may include construction trailers, a temporary septic system or holding tank, above-ground water storage tanks, water treatment system, portable toilets, parking areas, material receiving/storage areas, water storage ponds, construction power service, recycling/waste handling areas, above-ground diesel storage tanks, communications equipment, temporary lighting, and others. These facilities are proposed to be located on Diehl Road, Derrick Road and/or Wixom Road and are preliminary designated construction logistics areas on the site plans. Additional temporary construction lay down, mobile construction trailers and smaller parking areas will be located within the solar generation facility site parcels. Due to the size of the site, the solar field lay down areas will be relocated periodically as the solar field is built out.

Construction Access

Primary access to the project site will be via I-8 to Drew Road as well as other public roads in the area. Access to components of the solar energy field will be controlled through security gates at the main entrances to each field. The preliminary location of each access point is shown on the site plans. Access points would be used during construction and operation. Secondary access would be provided if needed.

Currently, there is minimal traffic on any of the local roads bordering or in the immediate vicinity of the project. The use on these roads is associated with accessing the surrounding agricultural areas and school, and providing access to the small number of residences in the area. There are no traffic signals in the area because of the low traffic volumes.

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Construction Workforce

The number of workers on the site is expected to vary over the construction period. The average number of construction workers on site would be expected to average up to approximately 250 each day with a peak of 500.

Typical daily construction work hours will vary seasonally. In the summer construction hours may be from 6:00 a.m. to 4:00 p.m. and in the winter months from 8:00 a.m. to 6:00 p.m. Two shifts could potentially be used when needed: from 6:00 a.m. to 6:00 p.m. and 6:00 p.m. to 6:00 a.m. Additional hours including weekends may be necessary to make up schedule deficiencies or to complete critical construction activities. Any night work would be conducted on focused areas of the site.

Construction Parking

All project related parking will be onsite during construction. Some parking may also occur on public roads between project parcels as needed.

Deliveries

Deliveries of equipment and supplies to the site would vary over the construction period but are expected to peak at approximately 50 trips daily.

Site Preparation

Site preparation will involve preparation of land areas for the installation of arrays, related infrastructure, project access driveways, temporary construction staging areas, and stormwater management improvements. The site will be prepared by using conventional grading techniques and where possible, disk and roll with micro-grading to minimize ground disturbance.

Prior to the initial construction mobilization, preconstruction surveys would be performed and then sediment and erosion controls will be installed in accordance with the approved Storm Water Pollution Prevention Plan (SWPPP). Stabilized construction entrance/exit(s) will be installed at the driveways to reduce tracking of sediment onto adjacent public roadways

All existing trees, existing dense vegetation and any existing debris will be removed from the site and disposed appropriately.

A network of private irrigation delivery ditches exists throughout the area. Some or all of these existing private concrete or earth ditches will be demolished and backfilled. Existing wooden shade structures will be removed and an existing memorial marker will be moved.

The project site and substation will be fenced with a chain-link security fence topped with three strands of barbed wire. The fencing will remain for the life of the project. Temporary fencing will be installed around the construction logistics area and will remain throughout the duration of project construction.

The construction staging areas will be set up to facilitate the site preparation and construction of the solar arrays and associated infrastructure. Preparation work will include grading for the trailers and parking areas at the main logistics area. Smaller staging areas may be set up on other blocks of land throughout the project site. Water connections will be established from IID canals for dust suppression. Elevated water tanks may be set up to facilitate filling of water trucks.

Conventional grading will be performed throughout the project site to smooth the grade changes to provide safe working conditions and meet structural tolerances. These areas include, but are not limited

to, the onsite detention basins that will be excavated, and areas where fill dirt will be placed to facilitate proper site drainage. Conventional grading will result in a balanced cut and fill and will typically include the use of larger equipment to excavate, transport, place, and re-compact soil. Earthwork scrapers, paddlewheels, haul vehicles and graders may all be used during this process. Water trucks will be used to wet the site during grading operations to keep dust levels within jurisdictional limits.

Where possible, the project will employ disk and roll grading. The intent of the disk and roll technique is not to change the macro-level topography and existing drainage patterns, but rather to contour the land consistent with the existing topography. The results of disk and roll activities yield a surface that maintains the same general slopes and general topography.

The disk and roll approach involves conventional farming equipment. With this approach, rubber-tired farming tractors towing disking equipment will disk the top inches of soil and existing vegetation. Similar to conventional grading, a water truck will remain in close proximity to the tractor to moisten the soil to minimize dust. The tractor may make several passes to fully disk the surface to meet engineering requirements for construction.

After disking, the resulting elevations will be surveyed and evaluated by an engineer. Areas where localized undulation does not meet engineering construction standards, micro-grading will be required. Micro-grading (limited conventional grading) will require GPS guided (or equivalent) grading equipment to displace the soil in high areas and then spread to fill in low areas. This may include a box scraper being pulled behind a tractor or conventional grading equipment. The micro-grading technique to be employed will not significantly change existing site drainage.

Finally, a smooth steel drum roller and/or other land-leveling equipment may be used to even the surface of the land and compact top inches of soil to a value as recommended by a geotechnical engineer for structural support. Private perimeter and PCS access roads may be additionally compacted to 90 percent or greater, as required to support emergency vehicles and construction vehicle traffic.

Additional grading and excavation requirements are described for each of the primary project components below:

- Trenching will be required for placement of underground electrical, communications, water lines and sewer/septic lines within the construction logistics area, solar fields, O&M building, and substation. Trenching activities may include the use of trenchers, backhoes, excavators, haul vehicles, compaction equipment and water trucks. Soils removed will be spread across the project site.
- Modification of existing water connections as required by IID or new connections may require trenching or excavation.
- After the site preparation, the pads for structures, equipment enclosures and equipment vaults will be prepared per geotechnical engineer recommendations. Organic matter will be removed and cut or fill will be performed to meet engineered pad elevations.
- The substation and switchyard require a relatively flat graded surface for proper operation. The substation interior will be covered with aggregate surfacing for safe operation.
- Collection and transmission structures will require drilling for foundation. Soils removed will be spread across the project or near the transmission structure.

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- The O&M area will be graded to positively drain away from the structure. The remaining area will be graded and appropriately surfaced for parking, roads, and material storage.
- Final engineering design will strive to minimize the amount of grading and earthwork necessary to construct and operate the project.

Drainage

The property currently drains to IID drains by surface flow and underground tile drain systems. A Conceptual Drainage Report has been prepared which demonstrates the project will meet County drainage requirements. Modifications to existing IID storm water connections and installation of new connections may be required as determined by final design and IID requirements.

Air Quality & Dust Suppression

The project will adhere to the applicable rules of the Imperial County Air Pollution Control District (ICAPCD) and will develop and implement a plan to minimize fugitive dust emissions. During construction, roads and work areas will be watered and/or dust palliatives will be applied as need to suppress dust. When earth moving activities are completed in an area, all exposed soil would be coated with a permeable dust suppressant. The roadways within and around the solar field will be compacted native soil and would also be treated with a dust suppressant.

Hazardous Materials

Limited quantities of hazardous materials would be stored or used on site. These include diesel, gasoline, motor oil, hydraulic fluids, lube oils for vehicles and equipment, paint, and mineral oil for transformers. Appropriate spill containment and clean-up kits will be kept on site during construction and maintained during the operation of the project.

First Solar PV modules are not hazardous materials subject to California or Federal hazardous material management regulations. Any modules damaged or broken during construction will be returned to First Solar's manufacturing facility in Ohio for recycling consistent with California and Federal requirements.

Water

The project will use water during construction primarily to assist with compaction and for dust suppression. Drinking water will be provided in the form of bottled water or trucked in bulk by an approved provider. An on-site water treatment system may be installed to provide potable, non-drinking water for sanitary needs. Approximately 1,500 acre-feet of water is expected to be used for the solar generation facility and the gen-tie during the construction period. The source of construction water for the project will be from the Imperial Irrigation District (IID). Water will be extracted at multiple points from the IID canals and/or delivery ditches located adjacent to and throughout the site and trucked throughout the site as needed. IID may require modification of facilities to serve this project. Private deliveries may be modified and new private delivery (open channel or piped) may be added as determined in final design.

The Applicant is in discussions with IID regarding a Water Supply Agreement. There will likely be several separate or related agreements depending upon the type of water use. Several permits may be required including water draw permits; construction water encroachment permit for dust control and grading; temporary service pipe connection encroachment permit for the construction trailer water; permanent service pipe connection for O&M building; and the Water Supply Agreement. Approval of the Water Supply Agreement is a discretionary decision requiring IID to make CEQA findings.

Stormwater

Construction of the project would be covered under General Permit for Discharges of Storm Water Associated with Construction Activity (NPDES No. CAS000002) (Construction General Permit Order 2010-2014-DWQ, effective February 14, 2011). A detailed Stormwater Pollution Prevention Plan (SWPPP) will be prepared for the entire site that will identify the locations and implementation procedures for the best management practices (BMPs) required by the General Permit. The SWPPP will be developed by a Qualified SWPPP Developer (QSD) and will be implemented by Qualified SWPPP Practitioner (QSP).

Waste Disposal

During construction, typical construction wastes such as wood, concrete, and miscellaneous packaging materials as well as some broken PV modules would be generated. Construction wastes will be disposed of in accordance with local, State and federal regulations, and recycling will be used to the greatest extent possible.

Any PV modules damaged or broken during construction will be returned to First Solar's manufacturing facility in Ohio where they will be recycled into new modules or for use in other new products. At end-of-life, First Solar PV modules would be classified as California-only hazardous waste but can still be collected and recycled under First Solar's Module Collection and Recycling Program, which implements applicable California and Federal hazardous waste requirements.

Sanitation

During construction, temporary septic systems or holding tanks will be provided for the construction trailers. Portable toilets will be used throughout the construction area to provide sanitary facilities for workers on site.

E. Operations and Maintenance of Solar Generation Facility

The Campo Verde Solar Project will operate 365 days a year and would generate power during daylight hours.

Workforce

Approximately 4 to 12 full-time workers would be employed during operation of the project. These personnel would perform maintenance and security functions.

Water Treatment and Storage

The source of fire protection and operational water for the project will be IID canals located adjacent to the site. Water may be trucked in as needed. The Imperial County Fire Department has indicated that a 10,000 gallon permanent non-potable water storage tank that is dedicated for Fire Department use should be constructed near the O&M building and the temporary construction offices. The tank will be installed prior to delivery of any combustible construction materials to the site as required by the ICFD. The final O&M building specifications will be determined based on detailed design and will meet all applicable Fire Department and Code requirements.

An on-site water treatment system (e.g., a package unit), or a water storage tank for potable water deliveries may be installed to meet the project operational potable water needs. Bottled drinking water may also be delivered to the site.

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Water truck delivery trips to the site (to clean the panels, if necessary) may occur up to once or twice a year. Deliveries of supplies or equipment to support operations and maintenance could also occur. Such trips are anticipated to result in a daily maximum of 40 or 50 trips (during washing events) and more commonly 20 trips or less during routine operation of the project.

Stormwater

Most of the solar generation facility site will be drained by sheet flow to on-site retention basins designed to retain peak runoff from storms per County-designated criteria. Each developed parcel will include a retention basin to hold stormwater flows from most storm events. In addition, the site may be designed to also have stormwater be retained under the solar panels. Local containment would be provided around the high-voltage transformers within the project substation to prevent any of the mineral oil contained within the transformers from leaving the site in the event of a leak.

Detention over the project site includes a combination of basins (typically less than 3.5 feet deep) located outside the solar arrays and in shallow ponded areas (less than 12-inches deep) under the arrays. Runoff from arrays would typically be directed to detention basins located downstream of arrays. Final limits of detention basins, 100-year ponding, and shallow ponding to satisfy County storage requirements would be determined at the time of final engineering.

Sanitation

During the operational phase of the project, the O&M building would include a septic system. The sanitary system would collect wastewater from sanitary facilities such as sinks and toilets. This waste stream would be sent to an onsite leach field. The site soils are capable of supporting septic systems. The waste water system will be designed to meet County requirements.

Water and Panel Washing

The project would use relatively small amounts of water during operation. The Applicant anticipates that rainfall would be sufficient to keep the panels clean. However, as a contingency, the Applicant is permitting for 20 acre-feet per year from the IID in the event additional panel washing is required. Water would be extracted from the IID canals located adjacent to the project and trucked in as needed. As noted above, water truck delivery trips to the site (to clean the panels, if necessary) may occur up to once or twice a year. Truck trips were accounted for in the traffic analysis to account for a worst-case scenario.

Other Maintenance Activities

Other maintenance activities that would be conducted on the site would include periodic testing of equipment, inspection and repair of project components, and maintenance of onsite roads and drainage systems.

Noise

During operation, the primary sources of noise would be the inverters and transformers distributed throughout the solar generation facility site. The inverters would be located within PCS enclosures/shelters with the transformers located adjacent to, but outside of, the enclosure/shelter. If trackers are used, sound emitted from the tracker motors is expected to be less than 65 dB(A) at 3 feet.

Vehicle traffic associated with operations and maintenance would also generate some noise onsite and on local roads.

Air Quality

Normal operations of the project would not result in any direct air emissions from the electricity production process as the PV solar panels convert sunlight directly into DC electricity. No fossil fuels are consumed in the process and no pollutants are emitted during operations. Daily air pollutant emission sources are anticipated to be limited to vehicular traffic associated with project maintenance and operation activities.

Weed and Vegetation Management

Invasive / weedy species would be controlled and any non-invasive vegetation that re-establishes on site would be maintained to a height of less than 18 inches within the solar field. Herbicides would be used to control weedy species when necessary.

Waste Management

All waste, including trash and litter, garbage, and other solid waste would be removed to a disposal facility authorized to accept such materials. Commercial garbage collection and hauling would be contracted to remove waste and recyclable materials.

Hazardous Material Handling and Storage

Limited amounts of hazardous materials would be stored or used on site. These include diesel fuel, gasoline and motor oil for vehicles and mineral oil for transformers. Appropriate spill containment and clean-up kits would be maintained during the operation of the project.

The project would generate minimal wastes during operation. Electrical generating activities would not produce hazardous or other industrial waste. Small amounts of universal waste (paper and other common wastes) and recycled batteries are expected to be stored on site during operations.

First Solar PV modules and other products used during operation of the project are not hazardous materials subject to regulation.

Abandonment of Roads

The Applicant is coordinating with the Imperial County Public Works Department regarding abandoning remnant County rights-of-ways or easements. The Applicant may seek approval for vacation of these rights-of-way from the Imperial County Board of Supervisors.

F. Decommissioning Plan

The project is expected to operate for up to 40 years. However, it is likely that project equipment and facilities site would continue to be upgraded and used to generate solar energy beyond the term of the initial PPA (20 years). Therefore, it is possible that the site would remain in solar energy production for a significant period of time assuming that all approvals needed to do so are acquired.

When the project is decommissioned, the modules would be collected and recycled under First Solar's pre-funded recycling program. The support structures, electrical equipment, and other materials/equipment would be removed and the site would be returned to agriculture.

Agricultural Reclamation Plan

At the end of the useful life of the project, the Applicant plans to remove and/or properly abandon facilities and equipment associated with the project and restore the solar generation facility site back to

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irrigated agricultural production. The reclamation plan would include de-compaction, slight grading to restore the site grade and drainage as needed to facilitate irrigation, the re-establishment of the subsurface tile drain system, and soil amendments as needed. Restoration would also involve de-compaction over the entire site with additional work required in locations of demolished buildings, parking lots, and roads. De-compaction in these areas would be conducted by chisel-plowing, disking or similar method.

During decommissioning-related restoration efforts, noxious weed control would be conducted as necessary, consistent with County approved methods. Additional measures would be implemented, as necessary, to affect agricultural re-establishment.

2.1.5 GEN-TIE CHARACTERISTICS

A. Existing Uses and Features

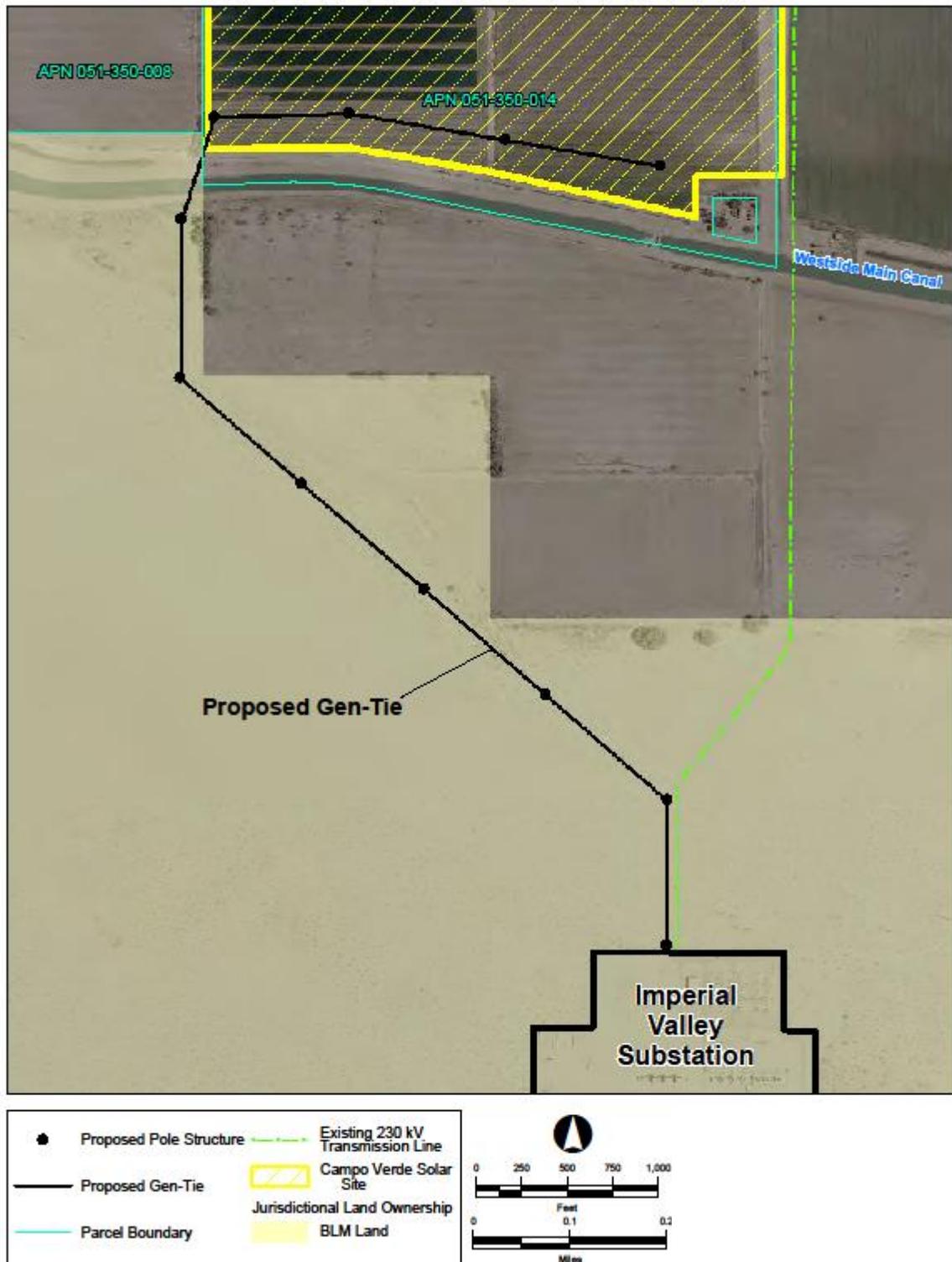
The proposed approximately 1.4 mile gen-tie would exit the southwest corner of the solar generation facility site (privately owned land), cross the Westside Main Canal, and enter BLM land (refer to **Figure 2.0-4**). The private parcel crossed by the gen-tie is agricultural land. The elevations on this parcel range from 24 to 25 feet below mean sea level. This segment of the gen-tie would extend south from the solar generation facility site and cross over the Westside Main Canal. The Applicant controls the portion of the solar generation facility site impacted by the gen-tie through a purchase agreement. The crossing of the Westside Main Canal would require approval from IID. Additional easements may be obtained from adjacent private landowners.

Table 2.0-2 identifies the one solar generation facility site parcel and the other private parcel that may be affected by the gen-tie (refer to **Figure 2.0-13**). The width of the permanent easement on private land may be 100 feet with an additional 60-foot wide temporary easement or as determined by private agreement available for construction. An easement will be needed for temporary pulling equipment

**TABLE 2.0-2
PRIVATELY OWNED PARCELS – GEN-TIE**

Assessor's Parcel Number	Acreage	Nearest Cross Street/Intersection
APN 051-350-014	Part of solar project site	Liebert and Mandrapa Roads
APN- 051-350-012	Temporary construction or aerial easement	Liebert and Mandrapa Roads
APN 051-350-008	Temporary construction easement and/or aerial easement	Liebert and Mandrapa Roads

Source: Imperial County Zoning Maps.



Source: kp environmental, 2012.

FIGURE 2.0-13
PROPOSED GEN-TIE –AFFECTED APNS

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In addition, the Applicant has submitted a ROW application to the BLM for the gen-tie segment extending approximately 0.9 mile south through BLM land to the Imperial Valley Substation.

The proposed permanent BLM ROW width is 160 feet. As shown in **Table 2.0-2**, the corner of one or more privately owned parcels that are not part of the solar generation facility site would require a temporary construction easement. Lands managed by the BLM through which the gen-tie would extend are generally flat, native Sonoran Desert vegetation within the Yuha Basin. There are no existing transmission facilities near this proposed alignment.

B. General Plan and Zoning Designations

The Imperial County Land Use Plan designates all of the private lands crossed by the gen-tie as "Agriculture." Agricultural crop production would not continue in areas under the gen-tie.

The one private parcel on the solar site proposed to be crossed by the gen-tie is zoned A-3. Facilities for the transmission of electrical energy are allowed as conditional uses in Agricultural zones. In keeping with the provisions of the zoning designations, the Applicant is seeking a CUP from ICPDS.

For the portion on BLM land, the gen-tie is entirely within California Desert Conservation Area (CDCA) Plan Corridor N (or Utility Corridor N) which extends north from the International Boundary (**Figure 2.0-14**). Additionally, a portion of the gen-tie on BLM land is within the West-wide Energy Corridor Segment 115-238, which is designated as a multi-modal transmission corridor (DOI/BLM, 2009). The proposed gen-tie would have approximately 8 structures on BLM land. Additional structures may be necessary in order to accommodate crossing of other planned transmission lines.

C. Gen-Tie Design

Transmission Interconnection

The project would be interconnected to the regional transmission system via a new line constructed to the Imperial Valley Substation. The proposed gen-tie would originate at the project substation/switchyard at the southern end of the project site and would cross BLM land south to the Imperial Valley Substation. The gen-tie would be designed as a double-circuit 230-kV line (to accommodate a future second line if necessary for a separate project) and parallel existing roads. The gen-tie would cross approximately 0.9 miles of BLM land.

In addition to the proposed gen-tie, an interim electrical interconnection may be implemented that would involve connecting to IID's S Line that crosses the solar project site (refer to **Figure 2.0-15**). This would only require an aerial connection looping one of the upgraded S Line circuits into the proposed on-site substation/substation. If the S Line is used, it would provide temporary interconnection to the electrical grid and would be replaced by a permanent interconnection into the Imperial Valley Substation when completed. No ground disturbance beyond what has already been evaluated in the approval of the S line upgrade on BLM- managed land and what is being evaluated as part of this project would be associated with this interconnection.

Structures

The proposed gen-tie would be designed for two 230-kV circuits with three conductors per circuit. **Figure 2.0-16** depicts a proposed tangent structure and **Figure 2.0-17** shows a dead-end structure. The gen-tie would have two shield wires: one wire could be composed of extra high strength (EHS) steel wire. Alternatively, one or both of the shield wires would include an OPGW (Optical Ground Wire) constructed of aluminum and steel core which may carry glass fibers within its core for communications.

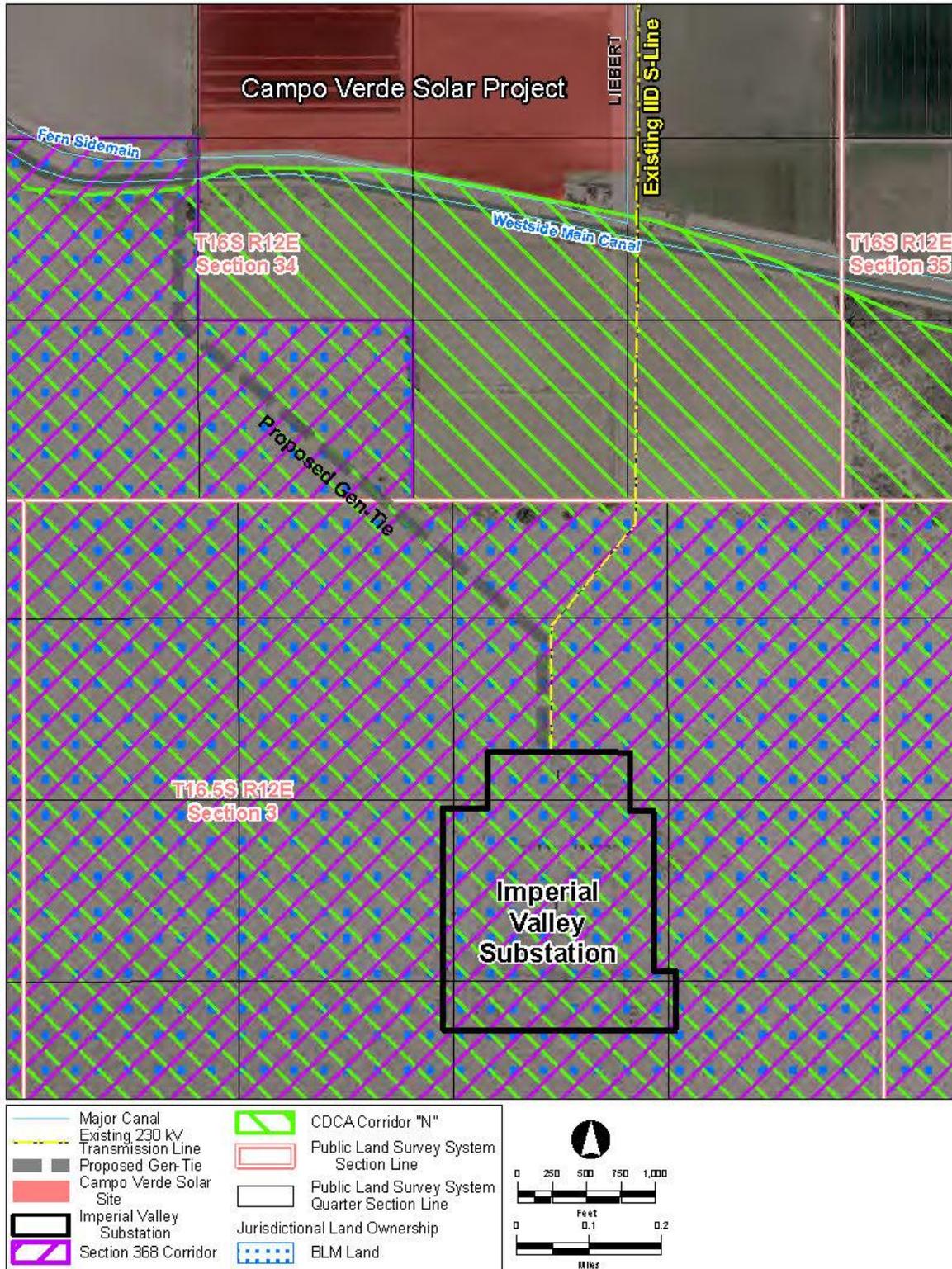
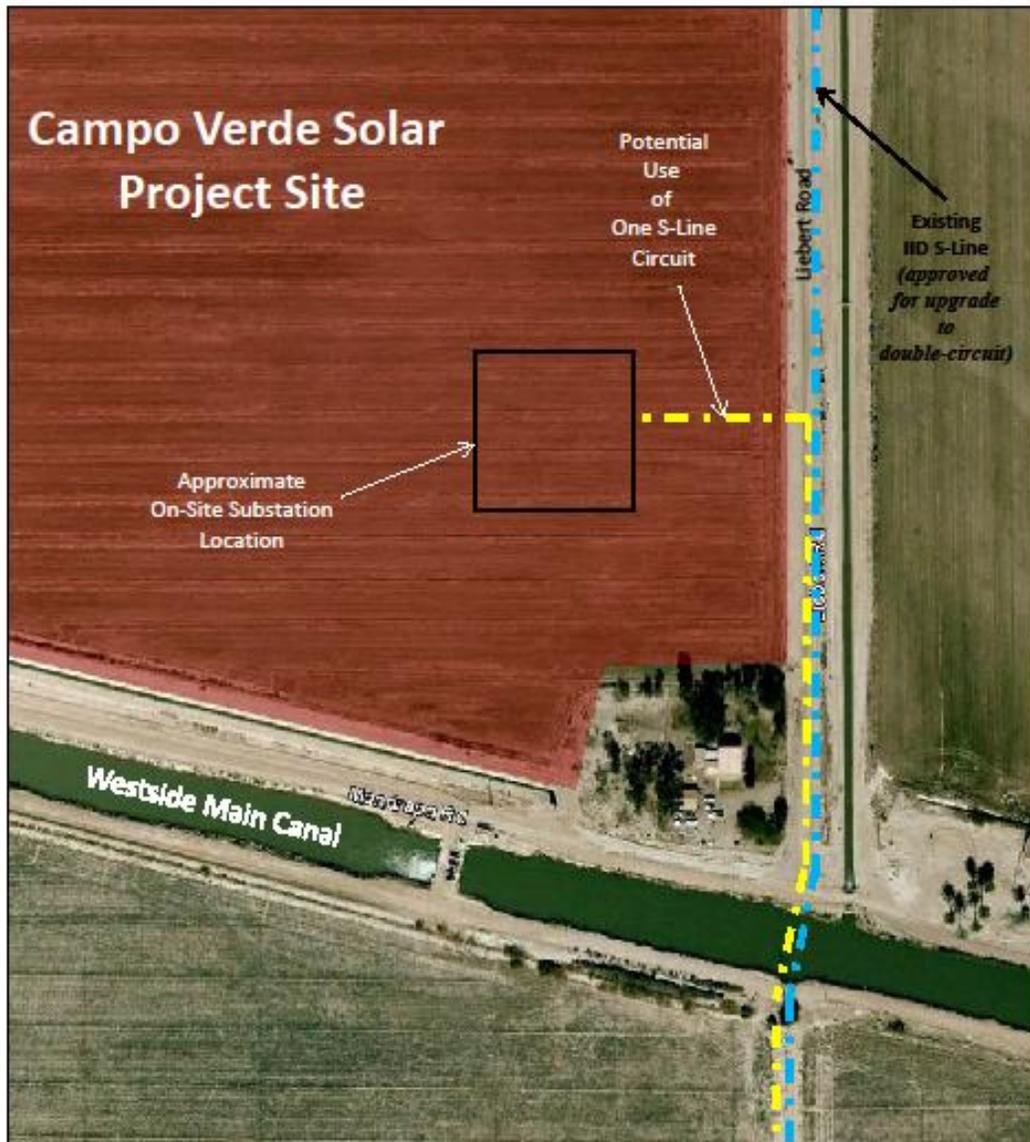


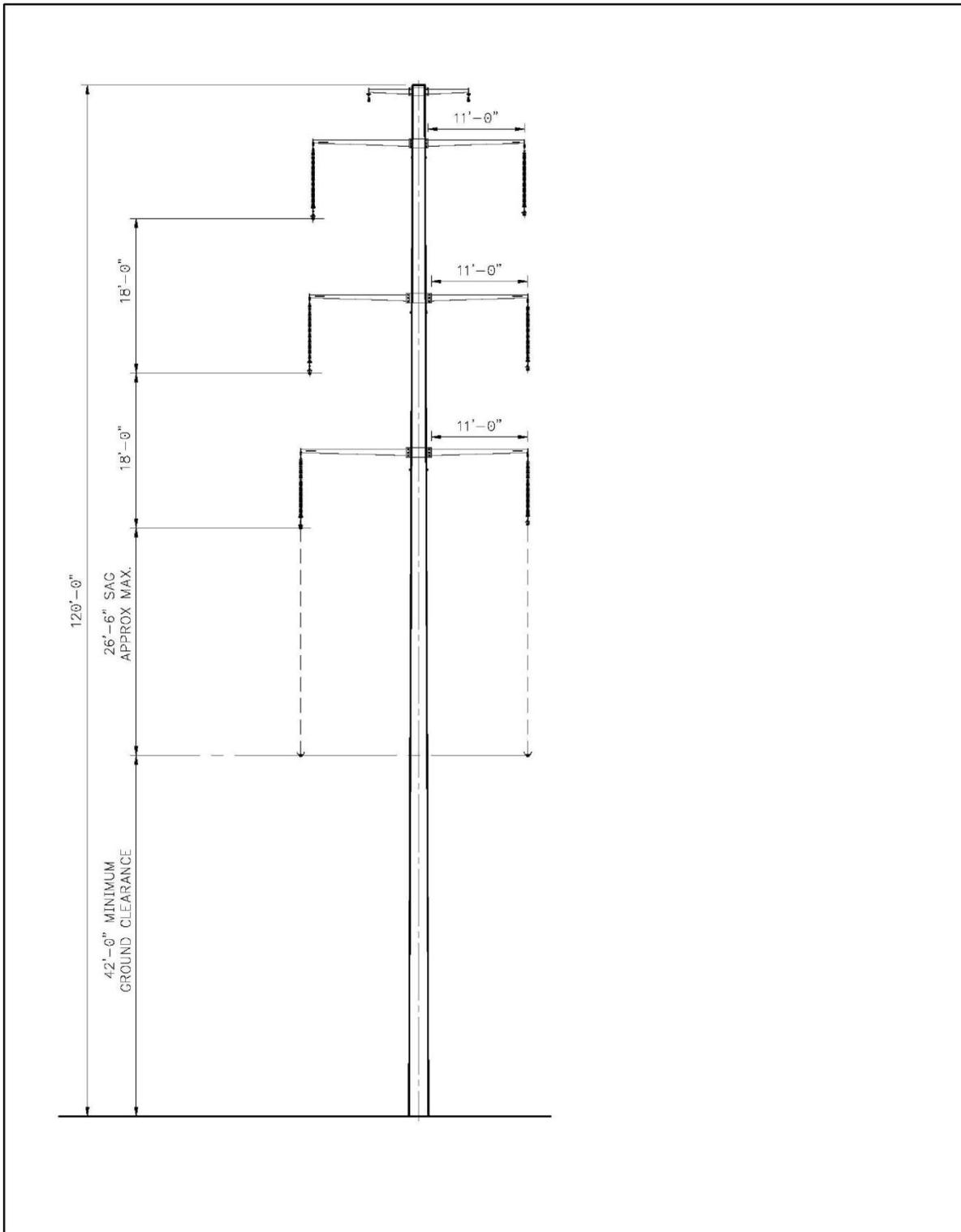
FIGURE 2.0-14
SECTION 368/CDCA CORRIDOR N

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Source: kp environmental, 2012.

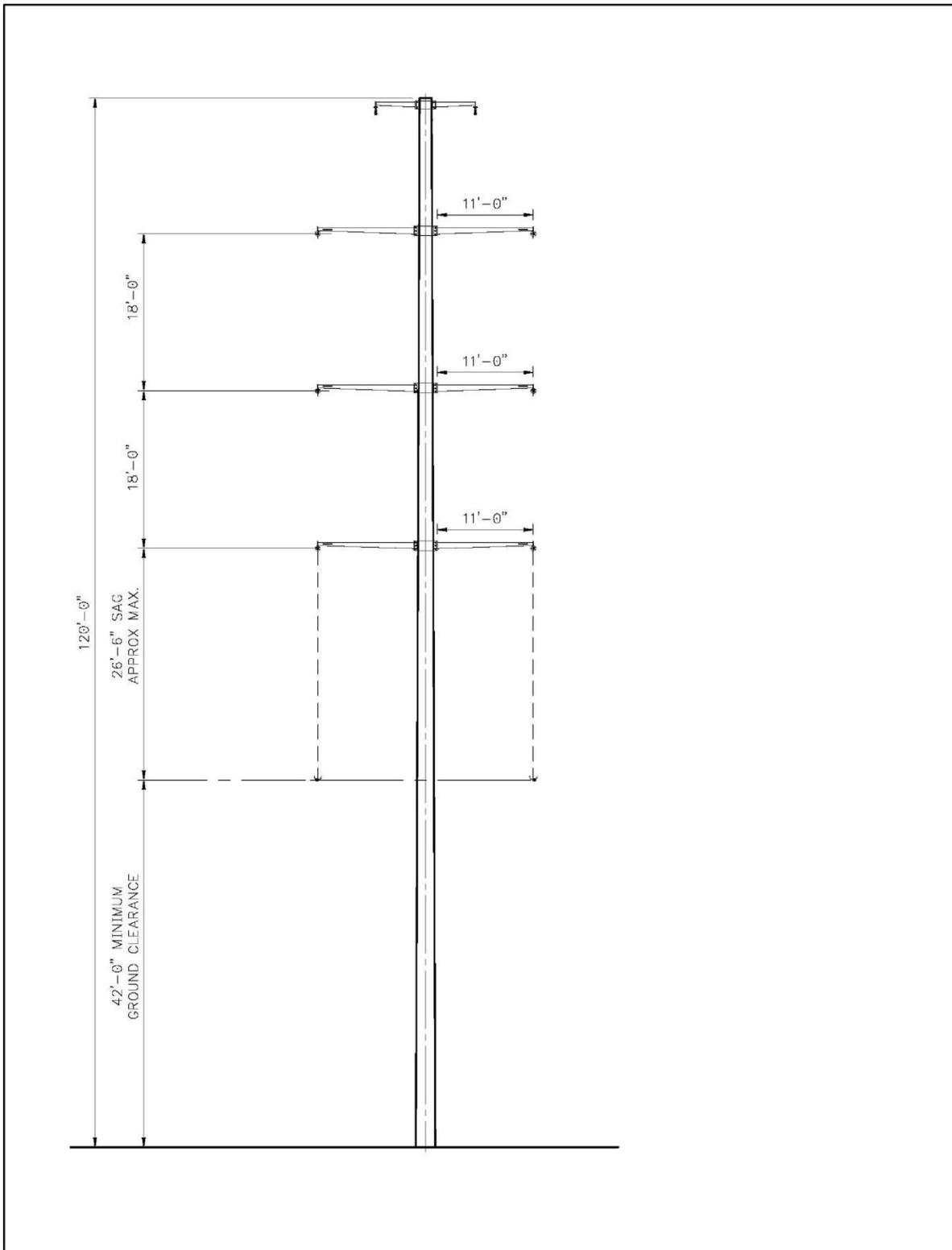
FIGURE 2.0-15
LOCATION OF POTENTIAL SHORT-TERM INTERCONNECTION TO IID S-LINE



Source: Campo Verde, LLC, 2012.

FIGURE 2.0-16
PRELIMINARY TANGENT STRUCTURE DESIGN

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Source: Campo Verde Solar, LLC, 2012.

FIGURE 2.0-17
PRELIMINARY DEAD-END STRUCTURE DESIGN

Per SDG&E requirement, the OPGW would be installed underground from the southern structure into Imperial Valley Substation. Single steel pole structures with the span length between structures ranging from 400 to 800 feet would be used. Assemblies of insulators would be used to position and support each of the conductor bundles while maintaining electrical design clearances between the conductors and the towers.

The project would use self-supporting single steel poles made of self-weathering or galvanized steel to better blend into the surrounding environment. Structure heights would vary from approximately 100 to 130 feet depending on terrain and would not exceed 145 feet. Span lengths would range from approximately 400 to 800 feet. Each pole would be installed on drilled pier with anchor bolts or direct embedded foundations, which would be typically 15 to 45 feet deep and 6 to 15 feet in diameter. Final foundation design would be based on a site-specific geotechnical study.

D. Imperial Valley Substation Modifications

The gen-tie would terminate at the Imperial Valley Substation. SDG&E would conduct limited work within the existing fenced boundary of the Imperial Valley Substation to facilitate the interconnection of the project. SDG&E may also do minor work as needed on other existing facilities elsewhere within the system if identified by SDG&E through the interconnection study process.

Access

Access to the gen-tie during construction and operation for BLM land and private land is as follows:

BLM Land

Access to the portions of the gen-tie on BLM land would be provided during both construction and operation primarily by using existing unpaved roads via Westside Main Canal vehicular crossing pending IID approval or other existing route to BLM land. From these existing roads, rubber-tired equipment would be driven overland from the nearest existing road both during construction and operation to access each structure location. No new roads are proposed to be constructed on BLM land. The construction contractor selected to build this project would be required to submit a specific Access Plan to BLM. The Plan would address use of the existing road network to transport workers, materials, and heavy equipment to the staging areas and to each structure location.

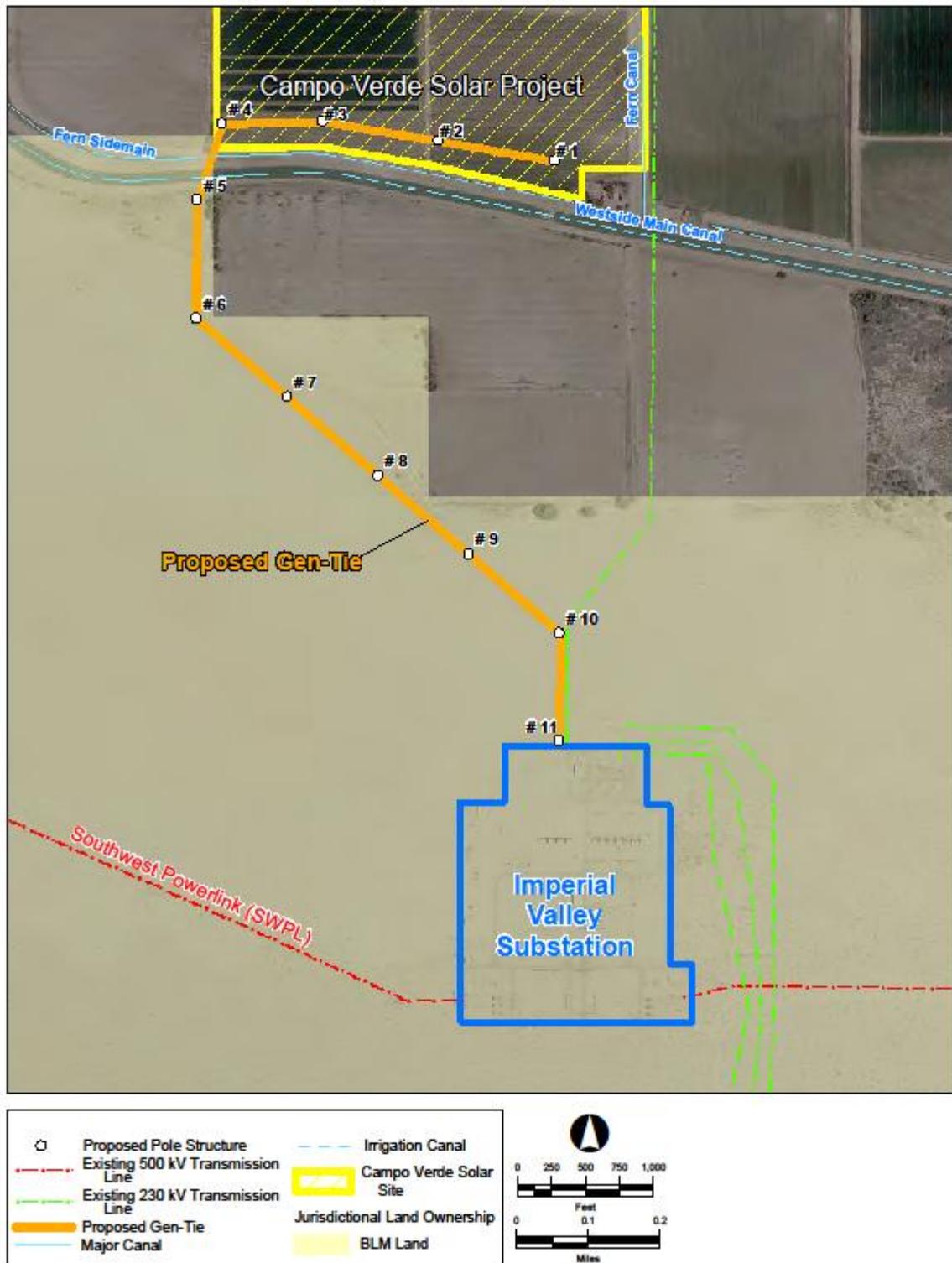
Private Land

The portions of the proposed gen-tie on private land are within project boundary and will be within the area of disturbance described below. Access to the portions of the gen-tie line on BLM-managed land and on private land would be provided during both construction and operation by using existing unpaved roads on the parcels being crossed, if possible. The existing Westside Main Canal vehicular crossing near Liebert Road may be modified to provide safe construction transport. This also may include extending piping of the Fern Side Main Canal. Temporary construction area may be on existing private agricultural land south of Westside Main Canal per private easement.

E. Disturbance Area

A 100-foot by 150-foot (15,000 square foot) area around each structure on BLM land would be cleared of obstructions to ensure safety for construction. These areas would be temporarily disturbed during construction. The permanent disturbance area associated with each structure is estimated to be approximately a 20-foot diameter (approximately 300 square foot) area. Additional area may be cleared on private land. The tentative locations of structure sites are shown in **Figure 2.0-18**. Final structure

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Source: kp environmental, 2012.

FIGURE 2.0-18
PROPOSED GEN-TIE STRUCTURE LOCATIONS

locations would be determined by topography, environmental constraints, and best engineering practice.

In addition, temporary disturbance would occur at pull sites where equipment would pull the conductor into place after the structures are constructed. Each pull site on BLM land would be approximately 100 feet by 400 feet (or approximately 40,000 square feet). Additional pull sites will be within the project site and on adjacent parcels in private easements.

F. Construction Process for Gen-Tie

As shown in **Table 2.0-3**, construction of the gen-tie on BLM land would result in approximately 7.40 acres of temporary ground disturbance and approximately 0.05 acres of permanent ground disturbance. Surface disturbances on BLM land during construction of the gen-tie would be limited to the areas shown in **Figures 2.0-19A, 2.0-19B and 2.0-19C**.

Construction Access

Access to the structure sites for construction of the transmission line would be provided via overland travel from the closest existing road to each location. No new access roads or access spur roads are planned to be constructed.

**TABLE 2.0-3
GEN-TIE DISTURBANCE ACREAGE DETAILS (BLM LAND)**

Structure/Feature	Proposed Project	
	Temp	Perm
Tower Structures (8)	2.75	0.05
Construction Areas (4)	4.65	0
Grand Total	7.40	0.05
Grand Total Plus 5% Contingency	7.77	0.05

Source: Campo Verde Solar, LLC, 2012.

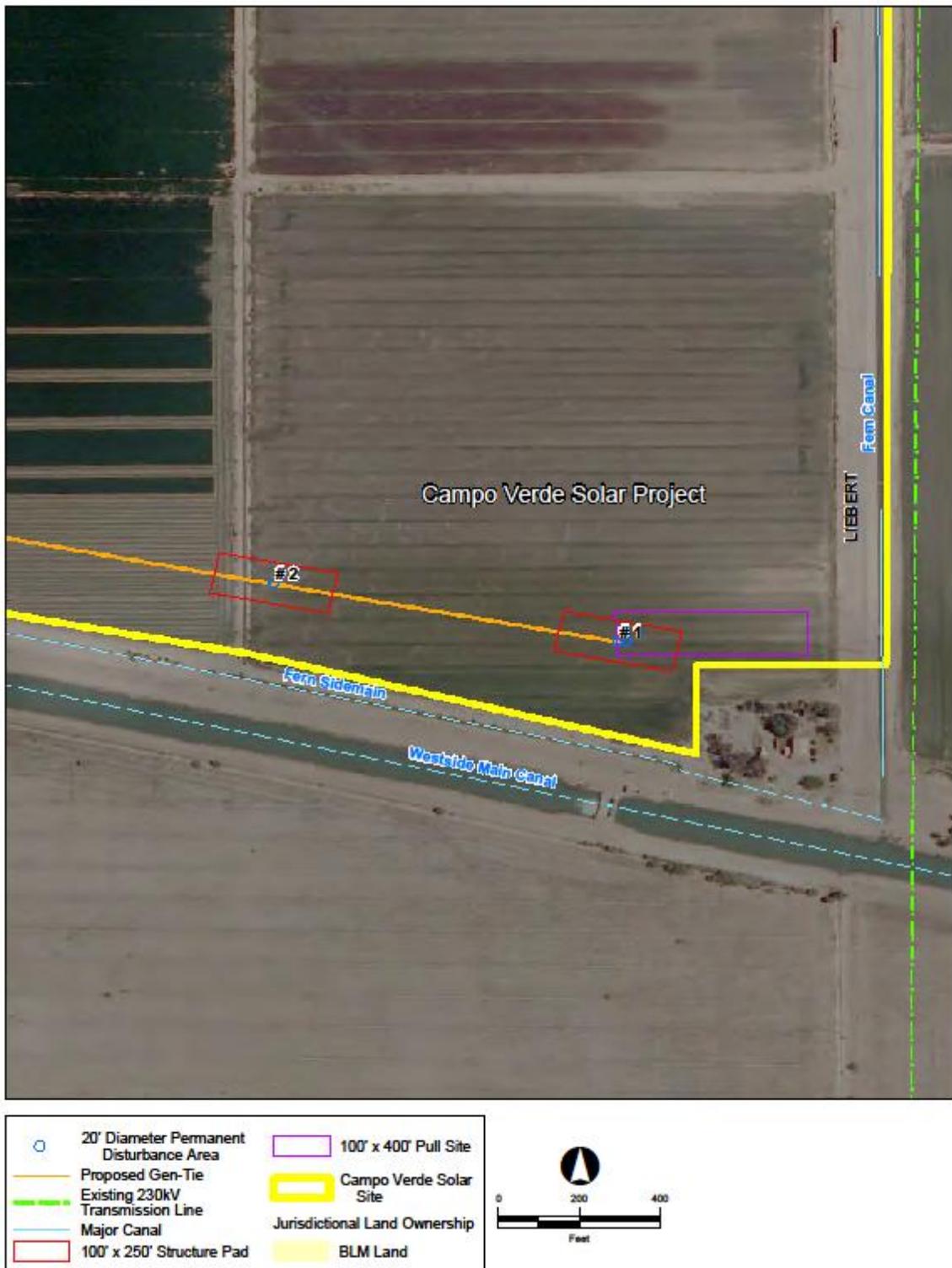
Staging Areas

Staging areas and equipment storage areas would be needed for storing materials, construction equipment, and vehicles during construction of the line. Any needed staging areas/construction material storage areas needed for the gen-tie would be located on the solar generation facility site and/or on adjacent private land with private temporary construction easement.

Vegetation Clearing

A temporary workspace approximately 100-foot by 150-foot on BLM lands would be cleared of any obstructions (such as large rocks and large vegetation) that could create safety risks for construction. Vegetation in this temporary work area would be disturbed, but the area would not be completely graded. Because of the flat topography of the site, grading for the construction pads is not expected to be needed at most structure locations and would only be done when needed to create safe work areas.

2.0 PROJECT DESCRIPTION



Source: kp environmental, 2012.

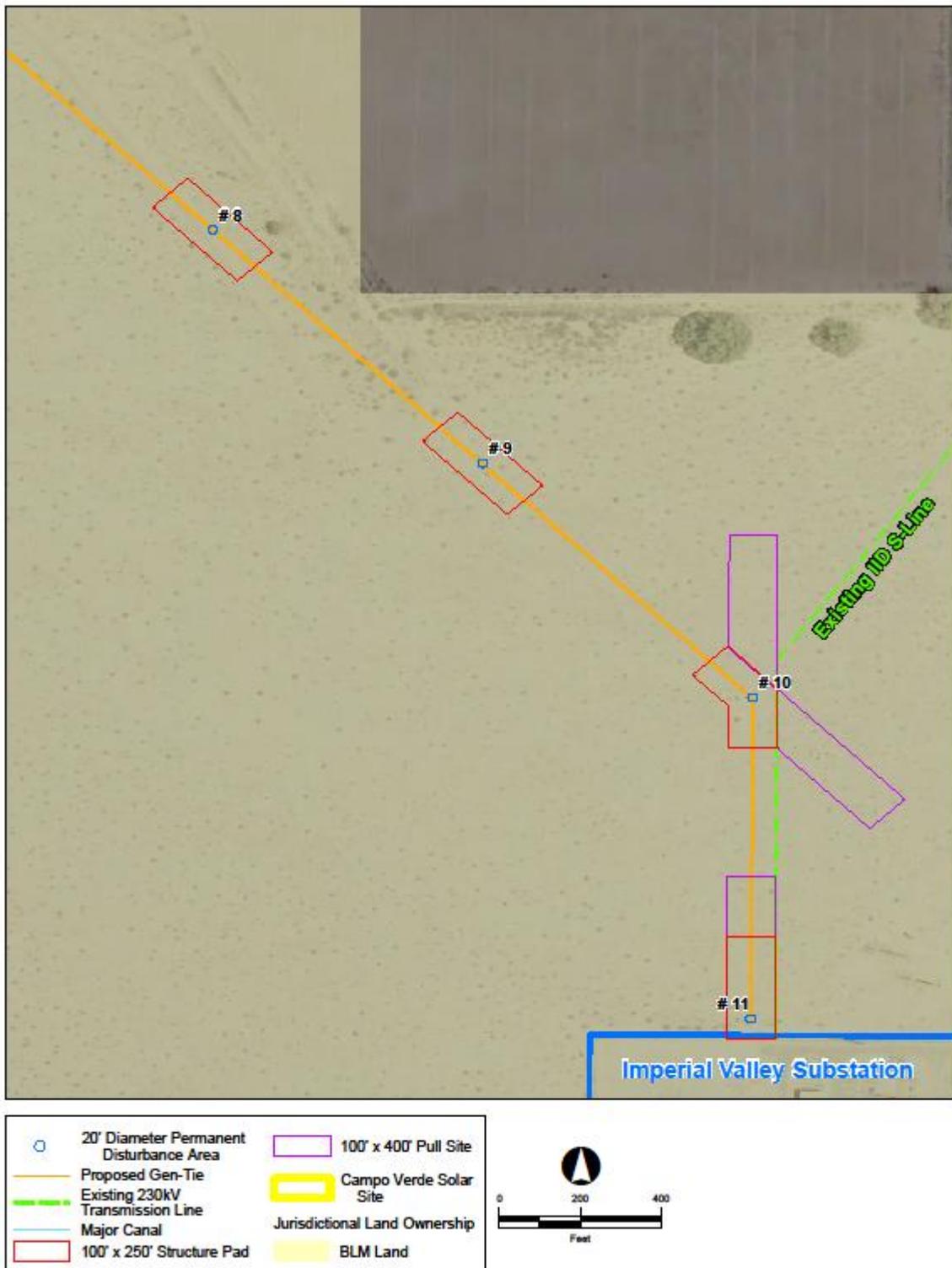
FIGURE 2.0-19A
PROPOSED GEN-TIE PERMANENT AND TEMPORARY DISTURBANCE AREAS
POLES 1 & 2



Source: kp environmental, 2012.

FIGURE 2.0-19B
PROPOSED GEN-TIE PERMANENT AND TEMPORARY DISTURBANCE AREAS
POLES 3 - 7

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Source: kp environmental, 2012.

FIGURE 2.0-19C
PROPOSED GEN-TIE PERMANENT AND TEMPORARY DISTURBANCE AREAS
POLES 8 - 11

Excavations

Foundation excavations would be made using mechanized equipment, with each structure site requiring one 6 to 15 foot diameter hole drilled and excavated from 15 to 45 feet deep. This would generate between 400 and 8,000 cubic feet of material that would be distributed on BLM land, or hauled offsite at the direction of the landowner or BLM. A site grading permit is required for the earthmoving activities associated with the project. The site earthmoving activity that is proposed does not require a stockpile permit. Material may be spread on project property. Excavations would be made with power drilling equipment using a vehicle-mounted power auger or backhoe. Dewatering could be needed at some locations.

Foundations would be installed by placing reinforced steel and transmission structure steel components into each foundation hole, positioning the steel components, and encasing them in concrete. The foundation excavation and installation activities would require access to the site by a power auger or drill, a crane, material trucks, and concrete trucks.

Foundation holes left open or unguarded temporarily would be covered to protect public and wildlife. If excess soil needed to be moved from one of the sites (instead of distributed locally), it would be transported by trucks present at the gen-tie pole structure sites and taken to the nearby construction staging area. From a staging area, the soil could be used on the solar generation facility site

Construction Workforce

Construction of the gen-tie is expected to require 20 to 30 people for the duration of the construction period which could last up to 24 months. These workers are included in the estimate for the overall project.

Water Use

Water would be used during construction for dust suppression and for mixing the concrete for the foundations. The amount of water needed for these purposes is accounted for in the estimate of construction water use for the entire project, which is 1,500 acre-feet.

Assembling and Erecting Structures with Temporary and Permanent Pad Sites

Structural steel components and associated hardware would be delivered to each structure site where they would be fastened together to form a complete structure and hoisted into place by a crane.

Stringing Conductors and Ground Wires

After the structures are erected, insulators, hardware, and stringing sheaves would be delivered to each structure site. The structures would be rigged with insulator strings and stringing sheaves at each ground wire and conductor position.

Pilot lines would be pulled (strung) from structure to structure and threaded through the stringing sheaves at each structure. Following pilot lines, a larger diameter, stronger line would be attached to conductors to pull them onto structures. This process would be repeated until the ground wire or conductor is pulled through all sheaves.

The shield wire (and/or optical ground wire [OPGW]) and conductors would be strung using powered pulling equipment at one end and powered braking or equipment tensioning at the other end of each conductor stringing segment. Sites for tensioning equipment and pulling equipment would be planned at each turning structure. Up to four pull sites are expected to be needed.

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Each tensioning site would be approximately 100 feet by 400 feet (approximately 40,000 square feet). Tensioners, line trucks, wire trailers, and tractors needed for stringing and anchoring the ground wire or conductor would be necessary at each tensioning site. The pulling site would require approximately half the area of the tension site. At each pulling site, a puller, line trucks, and tractors would be used to pull and anchor the lines in place. There will be no blading at pull sites because the terrain is sufficiently level. Final pull site locations would be determined during final design.

Cleanup and Restoration of Temporarily Disturbed Areas

Construction sites would be kept in an orderly condition throughout the construction period by using approved enclosed refuse containers. Refuse and trash would be removed from the sites and disposed of in an approved manner. No open burning of construction trash would occur.

Restoration activities would be conducted on temporarily disturbed construction areas including structure pad location, and stringing/tensioning sites. The following prescriptions would be implemented after final construction activities have been completed.

- To the maximum extent possible, all shrubs and cacti within non-graded impact areas on BLM land would be identified and flagged prior to initiation of construction for protection against trampling or removal. In all other areas, larger vegetation would be avoided by overland travel.
- No mulch would be applied in order to eliminate any barriers to seed deposition from wind dispersal and possible introduction of alien and noxious plant species.
- Suitable cacti and shrubs in areas that would be graded or significantly disturbed would be salvaged and replanted at the end of construction.
- Following construction, disturbed areas would be restored to the original pre-construction topographic contours.
- Hydrologic features and/or banks will not be disturbed.
- New seed would be broadcast or planted as directed by the BLM or landowner.
- If vegetation has been cleared from a construction area, it would be re-spread within the reclaimed area to increase soil moisture and provide a catchment for wind dispersed seeds.
- If vegetation is unsalvageable, it will be removed based on approved BLM methods.

The prevention of weedy and exotic species invasion would be addressed throughout the construction process. All heavy equipment used during construction will be washed prior to entering the work area. This will ensure that weed seed from a different region is not transported into the ROW. Monitoring will be conducted post-construction to control weeds and ensure the re-establishment of native species useful to the flat-tailed horned lizard (FTHL).

G. Construction Schedule for the Gen-Tie

The gen-tie would be constructed during the same timeframe as the solar generation facility to allow connection of the arrays when completed. The total timeframe expected for construction of the gen-tie component of the proposed project is 2 to 6 months.

H. Operations and Maintenance of Gen-Tie

The design of the Gen-Tie line would minimize operation and maintenance requirements. Typical operation and maintenance tasks will include periodic inspections of the equipment and access roads, with repairs made as necessary. Removing natural vegetation is not expected but could be required to maintain clearances for electrical safety, long-term maintenance, and reliability of the line. As necessary, vegetation would be selectively removed under or near the conductors within or adjacent to the right-of-way to provide adequate electrical clearance as required by regulations. Any trees that have the potential to encroach within safe distance to the conductor as a result of bending, growing, swinging, or falling toward the conductor, will be removed. Selective clearing of vegetation benefits public safety by minimizing the potential for contact between vegetation and high-voltage electrical current, which could start fires or otherwise endanger human health.

Noise

The only substantial source of noise during operation of the gen-tie would be from the vehicles occasionally used to access the line for operations and maintenance. In addition, some audible noise would be generated from the line due to the Corona Affect – a hissing or crackling sound caused by the ionization of the air resulting from the high electrical fields near the surface of the conductor. The relatively low level of noise associated with this phenomenon is discussed in more detail in Section 4.8, Noise.

Fire

All applicable fire laws and regulations will be observed during the gen-tie operation and maintenance period. All personnel would be advised of their responsibilities under the applicable fire laws and regulations, including taking practical measures to report and suppress fires.

BLM fire safety standards will be followed on BLM lands. Requirements for fire tool availability, spark arresters/mufflers on equipment, and communication during extreme fire conditions will be coordinated with BLM representatives. When extreme fire conditions occur, BLM representatives will be contacted for direction.

Air Quality

Operations of the gen-tie would result in no air emissions. Emissions from vehicles and power equipment would occur during infrequent inspection and maintenance activities that could occur up to once a year.

Weed and Vegetation Management

Vegetation management during operation is expected to be limited. Work areas will be maintained adjacent to transmission structures for vehicle and equipment access necessary for operations, maintenance and repair.

The project will prepare and implement a comprehensive, adaptive Weed Control Plan for pre-construction and long-term invasive weed abatement on BLM land. The Weed Control Plan would include specific weed abatement methods, practices and treatment timing developed in consultation with the Imperial County Farm Bureau and the California Invasive Plant Council (Cal-IPC). On the ROW easement lands administered by the BLM, the Weed Control Plan would incorporate and comply with all appropriate agency-stipulated regulations and policies. The Weed Control Plan would be submitted to the BLM for final authorization of weed control methods, practices, and timing prior to implementation.

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ROW easements located on private lands will include adaptive provisions for the implementation of the Weed Control Plan. Prior to implementation, the Applicant will work with the BLM and any other landowners to obtain authorization of the weed control treatment that is required.

Waste Management

All waste, including trash and litter, garbage, and other solid waste would be removed to a disposal facility authorized to accept such materials. Commercial garbage collection and hauling will be contracted to remove waste and recyclable materials.

Hazardous Material Handling and Storage

No hazardous materials would be used or stored on the gen-tie line during operations. If any such materials are needed during maintenance activities, they will be used in accordance with required practices.

I. Decommissioning and Restoration of Gen-Tie

This section outlines the measures that will be taken at such time in the future when the ROW has expired, is not renewed, and the project is decommissioned. At this time, these actions are anticipated to include:

- Removal of structures
- Re-contouring of tower pads(if needed)
- Stabilization and re-vegetation of disturbed areas

Structures would be removed and structure sites would be cleared and graded only to the extent necessary. Clearing activities to reestablish or improve access would be performed in a manner agreed to by the BLM. Restoration activities would be similar to those described for post-construction.

In construction areas (e.g., structure sites, pull sites, access roads) where ground disturbance is significant or where re-contouring is required, surface restoration will occur as required by the BLM. The method of restoration would typically consist of returning disturbed areas to their natural contour and re-vegetating with native species providing habitat for the FTHL.

In general, all construction and subsequent maintenance activities would be conducted in a manner that will minimize disturbance to soil and vegetation. In addition, all previously existing roads would be left in a condition equal to pre-construction of the transmission lines. Fences, gates, and cattle guards will be replaced if damaged or removed during termination and restoration.

Methods of restoration when the ROW has expired and the project is terminated would adhere to generally accepted standard procedures. Any damage to existing facilities and structures during decommissioning activities would be restored to a condition equal to or better than their pre-construction condition.

Prior to restoration, all necessary surveys would be conducted in accordance with accepted standards and procedures. During the course of any necessary restoration activities, education similar to that given to construction crews would be provided to workers regarding environmentally sensitive areas including: protection and avoidance of cultural, paleontological, and biological resources, minimizing impact on special status species and containment and disposal of any hazardous materials. In addition, environmental monitors will be used at any areas deemed necessary.

All restoration activities will be conducted in a manner that minimizes impacts. In addition, restoration will be implemented to reuse/recycle materials to the maximum extent applicable.

Standard safety procedures associated with restoration activities will be implemented. This will include properly marking towers and wires for visibility. If any special construction techniques are needed for decommissioning and restoration, safety procedures will be outlined and implemented prior to beginning activities.

J. Design Features and Best Management Practices

Campo Verde Solar, LLC, has incorporated several design features and measures into proposed project. **Table 2.0-4** identifies measures specific to the solar generation facility site.

**TABLE 2.0-4
APPLICANT PROPOSED MEASURES INCLUDED AS PART OF PROPOSED SOLAR GENERATION FACILITY**

BIOLOGICAL RESOURCES
<i>Vegetation</i>
The applicant will provide a noxious weed control plan for the project to the County of Imperial Agricultural Commissioner prior to construction. Prior to construction and during construction, a weed survey would be conducted to identify any areas of weed infestation requiring treatment. Weeds would be controlled through acceptable mechanical (e.g., topsoil excavation and removal) or herbicide applications.
<i>Wildlife</i>
Formal worker education training will be established for all employees and subcontractors to provide instruction on sensitive species identification; measures to avoid contact, disturbance, and injury to sensitive species; and procedures in the case of dead and/or injured wildlife species.
Construction activities and vehicle operation would be conducted to minimize potential disturbance of wildlife.
Construction and maintenance employees would be trained to exercise caution when commuting to and from the Project area to reduce road wildlife mortality.
Firearms shall be prohibited in all project areas except for those used by security personnel.
Preconstruction clearance surveys for burrowing owl would be conducted within 30 days prior to construction. If active burrows are present within the project area, approved methods including passive relocation will be implemented.
Compensation for burrowing owl habitat modifications will be made per coordination with responsible resource agencies.
Project personnel will not be allowed to bring pets to any project area in order to minimize harassment or killing of wildlife and to prevent the introduction of diseases to native wildlife populations.
A biological monitor will be present in each area of initial active surface disturbance. All steep-walled trenches or excavations used during construction shall be inspected twice daily (early morning and evening) to protect against wildlife entrapment. If wildlife is located in the trench or excavation, the on-site biological resource monitor shall be called immediately to remove them if they cannot escape unimpeded.

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**TABLE 2.0-4
APPLICANT PROPOSED MEASURES INCLUDED AS PART OF PROPOSED SOLAR GENERATION FACILITY**

<p>A <i>Raven Control Plan</i> will be prepared and implemented that details specific measures for storage and disposal of all litter and trash produced by the solar facility and its employees. This plan is designed to discourage scavengers that may also prey on wildlife in the vicinity.</p>
<p>CULTURAL RESOURCES</p>
<p>A Treatment Plan for avoiding and mitigating unavoidable direct adverse effects on cultural resources eligible for National Register listing will be prepared and implemented.</p> <p>Treatment of cultural resources will follow the procedures established by the ACHP for compliance with CEQA.</p> <p>An Unanticipated Discovery Plan would be developed to outline procedures to be undertaken if unexpected resources are encountered during the course of construction.</p> <p>A cultural resources monitor will be on-site during ground-disturbing activities and would be available at all times to respond to cultural resource issues that arise during construction.</p>
<p>AIR QUALITY</p>
<p>Construction equipment will be equipped with EPA Tier 2 or better engine designation to reduce NOx impacts during construction.</p> <p>Minimize construction equipment idling time either by shutting equipment off when not in use or reducing the time of idling to 5 minutes as a maximum to reduce NOx impacts.</p> <p>All vehicles on site will be well-maintained to prevent leaks and minimize emissions during construction.</p> <p>The project will comply with ICAPCD Rule 800 (Fugitive Dust Requirement for Control of Fine Particulate Matter [PM₁₀]). A Dust Control Plan for construction activities will be filed with the ICAPCD</p> <p>Water or chemical dust suppressants will be applied to unstabilized disturbed areas and/or unpaved roadways in sufficient quantity and frequency to reduce fugitive dust emissions (including PM₁₀).</p> <p>Water or water-based chemical additives will be used in such quantities to control dust on areas with extensive traffic including unpaved access roads.</p> <p>Vehicle speeds on unpaved roadways will be restricted to 15 mph.</p> <p>Vehicles hauling dirt will be covered with tarp or other means.</p>
<p>WATER RESOURCES</p>
<p>A stormwater pollution prevention plan (SWPPP) would be prepared as required by the State General Construction Activity Storm Water Permit. The SWPPP will include identification of all temporary or permanent erosion and sediment control measures and a proposed schedule for the implementation of erosion control measures.</p> <p>Construction activities will not be carried out within 100 feet of surface water resources without using appropriate BMPs.</p> <p>The use or storage of hazardous material near a canal or other surface water resource will be prohibited. Additionally, special precautions will be implemented to prevent spills of hazardous materials, discharges of foreign materials, and sedimentation discharges near these resources.</p>

**TABLE 2.0-4
APPLICANT PROPOSED MEASURES INCLUDED AS PART OF PROPOSED SOLAR GENERATION FACILITY**

GEOLOGY AND SOILS
<p>The project will be designed and constructed according to appropriate seismic standards.</p> <p>A geotechnical engineering investigation consistent with California geologic and engineering standards will be conducted for the proposed project by a licensed geotechnical engineer.</p> <p>Construction, operation, and maintenance activities will be restricted when the soil is too wet to adequately support construction or maintenance equipment.</p> <p>Any areas of expansive soils would be mitigated to minimize damage from shrink / swell actions on equipment foundations.</p> <p>Use drainage control structures, where necessary, to direct surface drainage away from disturbance areas and to minimize runoff and sediment deposition downslope from all disturbed areas. These structures include culverts, ditches, water bars (berms and cross ditches), and sediment traps.</p>
TRANSPORTATION AND CIRCULATION
<p>Traffic control crews would be used as needed to ensure that people are aware of the presence of crossing or slow-moving construction vehicles.</p> <p>Following construction, or during construction as necessary to maintain safe driving conditions, any damage to existing roadways caused by construction vehicles would be repaired.</p>
PUBLIC HEALTH AND SAFETY
<p>Detailed information about the use, storage and disposal of hazardous materials would be provided in the Health and Safety Plan that would be developed by the construction contractor.</p> <p>A Fire Prevention and Response Plan (FPRP) will be developed and implemented during construction, operation, and maintenance of the Project.</p>

Table 2.0-5 identifies draft Applicant proposed measures from the Environmental Assessment (EA) that would be incorporated into the proposed gen-tie on BLM land to avoid or reduce resource impacts. Final measures approved by BLM will be incorporated into the final EA and ROW Grant. Some of these measures would be applied to specific areas where needed (where a specific type of resource exists). In such cases, the locations where these geographically-specific measures would be applied will be shown on the detailed drawings prepared prior to construction.

**TABLE 2.0-5
APPLICANT PROPOSED MEASURES INCLUDED AS PART OF PROPOSED PROJECT ON BLM-MANAGED LAND**

BIOLOGICAL RESOURCES
<p><i>Vegetation</i></p> <p>Adverse effects on vegetation disturbance during construction would be minimized as follows:</p> <ul style="list-style-type: none"> • Prohibit vehicle operation off BLM designated routes by construction workers, including construction work and employee access, except where access is authorized by the BLM in the ROW grant. • Existing access roads would be used to the maximum extent allowable and development of overland travel routes would be minimized.

2.0 PROJECT DESCRIPTION

**TABLE 2.0-5
APPLICANT PROPOSED MEASURES INCLUDED AS PART OF PROPOSED PROJECT ON BLM-MANAGED LAND**

<ul style="list-style-type: none"> Vegetation disturbance including its removal would be minimized wherever possible. Access road construction activities shall implement drive and crush to minimize impacts to the roots of desert shrubs rather than grading, where possible. To the extent possible, grading and grubbing of vegetative cover will be avoided on all tower pad locations and all vehicular traffic will travel only on access routes authorized in the ROW grant.
<p>The following prescriptions would prevent the spread of invasive weeds into previously un-infested areas in the designated construction right-of-way:</p> <ul style="list-style-type: none"> In advance of construction activities, all construction equipment arriving on site would have the tires, axles, frame, running boards, under-carriages, and any equipment parts designed to hold soil or rock shall be washed and cleaned at a documented location to prevent transport of invasive weed species transport into project areas. A qualified weed specialist, vegetation ecologist, or desert botanist would survey the tower pad locations, stringing and tensioning sites, existing access roads that require improvements, and construction material staging areas prior to construction to identify any infestations of invasive plant. Before beginning construction activities, these infestations would be controlled through acceptable mechanical (e.g., topsoil excavation and removal/disposal), hand pulling, or herbicide applications. If direct control methods or removal of invasive weed infestations in construction disturbance areas is not feasible, the invasive plants may be cut and disposed of or otherwise destroyed in a manner that the BLM specifies. The lead environmental construction monitor would instruct construction personnel about invasive weed identification and the legal requirement for controlling and preventing the spread of invasive weed infestations.
<p>Wildlife</p>
<p>Compensation for habitat modifications per coordination with responsible resource agencies.</p>
<ul style="list-style-type: none"> Project habitat compensation for both streambed alteration agreements and special-status species may be satisfied by the Applicant independently, or by depositing compensation funds into the Renewable Energy Action Team (REAT) Account established with the National Fish and Wildlife Foundation (NFWF).
<p>Construction activities and vehicle operation would be conducted to minimize potential impacts or disturbance of wildlife.</p>
<ul style="list-style-type: none"> Speed limits along the right-of-way and access roads will be limited to 15 mph. In addition, construction and maintenance employees would exercise caution when traveling to and from the project site on designated routes on BLM lands to reduce the potential for wildlife mortality. Prohibit vehicle operation off BLM designated routes by all project personnel except where authorized by the BLM. Equipment stockpiles and vehicle parking will occur only on designated wire tensioning (pull) sites or on private lands. On BLM lands, the minimum number and types of vehicles and equipment would be limited to those necessary for project construction.

**TABLE 2.0-5
 APPLICANT PROPOSED MEASURES INCLUDED AS PART OF PROPOSED PROJECT ON BLM-MANAGED LAND**

<ul style="list-style-type: none"> • Implement the “List of Standard Mitigation Measures for Flat-tailed Horned Lizard”, as outlined in the Flat-tailed horned lizard Rangewide Management Strategy (2003) • Develop and implement a Bird and Bat Conservation Strategy (BBCS) - formerly known as an Avian and Bat Protection Plan (ABPP).
Design would minimize electrocution and collision potential for raptors.
<ul style="list-style-type: none"> • Design would space conductors and ground wires sufficiently apart so that raptors cannot contact two conductors or one conductor and a ground wire to cause electrocution as outlined in Suggested Practices for Raptor Protection on Power Lines: The State of the Art in 2006 (APLIC 2006).
Conduct pre-construction surveys prior to project initiation:
<ul style="list-style-type: none"> • Preconstruction clearance surveys will be conducted by qualified biologists for sensitive wildlife including, but not limited to, burrowing owl, kit fox, and American badger. FTHL surveys will be conducted pursuant to the methods outlined in the FTHL Rangewide Management Strategy, 2003. • For the protection of migratory birds during the breeding season (January 15 through August 15), prior to any project related activities, an approved biologist with a minimum of three years of experience conducting migratory bird surveys and implementing the requirements of the Migratory Bird Treaty Act (MBTA) shall conduct a preconstruction migratory bird nesting survey in the project area. If any active nest is located, the nest area shall be flagged or otherwise marked for avoidance, and a 200-foot buffer zone shall be flagged, a 300-foot buffer shall be established for nests of federally listed birds and a 500-foot buffer will be established for all nesting raptor species. No work activity shall occur within these avoidance buffer areas until an approved biologist determines that the fledglings are independent of the nest or has verified nest failure. If the biologist or a construction worker discovers an occupied burrowing owl burrow, the construction contractor will halt construction activities and notify the California Department of Fish and Game, in Ontario at (909) 484-0167, MCRodriguez@dfg.ca.gov and the BLM, El Centro, Resources Section, (760) 337-4400 immediately. Construction would be avoided during the passerine and raptor nesting season (e.g., April 1 to August 31), if possible.
<i>Special Status Species</i>
Survey and avoid and/or salvage special-status plant species in areas to be disturbed by project activities.
<ul style="list-style-type: none"> • Comprehensive focused surveys conducted during the appropriate season and designed with appropriate agency consultation would be conducted prior to any project-related ground disturbing activities to identify any special-status plant populations on proposed tower pads, pulling and splicing sites, staging areas, or any other construction sites that would be temporarily or permanently disturbed. • If special-status plant(s) are identified during the pre-construction surveys, plant locations would be delineated on aerial photography and incorporated into the construction plan as areas to be avoided. In addition, identified populations would be marked in the field with stakes and flagging. Realignment would be implemented to avoid those populations within the designated tower pad and access routes, unless the BLM approves making no realignment. • Where avoidance is infeasible, a Plant Salvage Plan would be developed by the Applicant and

2.0 PROJECT DESCRIPTION

**TABLE 2.0-5
APPLICANT PROPOSED MEASURES INCLUDED AS PART OF PROPOSED PROJECT ON BLM-MANAGED LAND**

submitted for approval from the appropriate responsible agencies.
Implement conservation measures to decrease the likelihood of take of special status wildlife species and impacts to critical habitat.
<ul style="list-style-type: none"> • Flag or otherwise mark the outer boundaries of the project construction areas where necessary to define the limit of work activities. • Minimize habitat degradation by limiting travel to existing roads and surface disturbance to previously disturbed areas. • Implement WEAP training for all project personnel. • Employ BLM-approved biologists to monitor construction activities within the right-of-way. These monitors will have the authority to halt construction activities when wildlife would be adversely affected. The biological monitors will alert take appropriate actions to ensure impacts to wildlife are avoided within the right-of-way. Pulling, staging, and equipment storage sites where construction activities would be intense and extended overtime, may be temporarily fenced to keep wildlife from entering these zones. • Conduct passive exclusion according to CDFG guidelines if kit fox and/or American badger burrows are located where ground disturbing activities are authorized.
<i>Waters of the U.S.</i>
<p>The following actions would be implemented to minimize impacts to waters of the U.S.:</p> <ul style="list-style-type: none"> • A survey of “waters of the U.S.” was completed and submitted to the ACOE. In addition, a delineation and drainage report was submitted to the CDFG and an investigation of the project site by the CDFG was conducted to determine if the project may impact fish or wildlife resources. On BLM lands, an overhead crossing of the Westside Main Canal by the gen-tie is expected, although no construction activities are expected to result in the placement of fill material or divert, obstruct, or change the natural flow of the bed or channel. • The Project would have a design consistent with ACOE and CDFG guidance to minimize impacts to floodplains and jurisdictional waters of the U.S., and construction of the transmission line would incorporate best management practices (BMPs), include erosion control measures, and comply with all ACOE, CDFG, and State water quality permit terms and conditions to protect water quality in the Project area. • Placement of towers in washes will be avoided to the extent possible through project engineering design. Washes will be flagged prior to ground-disturbing activities by a qualified resource specialist. All construction activities would take place outside the flagged areas to ensure minimum habitat disturbance. • Any direct or indirect impacts to Waters of the U.S. and streambeds would be mitigated by restoring the impact area to a state that encourages native vegetation to reestablish to its pre-construction condition and reduces the effects of erosion on the drainage system. • Additional compensatory, restoration, or avoidance mitigation measures identified by regulatory agencies (e.g., ACOE, CDFG) as part of the permitting process would be implemented.
CULTURAL RESOURCES
Preparation of a Treatment Plan for avoiding and mitigating unavoidable direct adverse effects on resources eligible for listing in the National Register of Historic Places would be prepared and

**TABLE 2.0-5
 APPLICANT PROPOSED MEASURES INCLUDED AS PART OF PROPOSED PROJECT ON BLM-MANAGED LAND**

<p>implemented.</p> <ul style="list-style-type: none"> • Treatment of cultural resources will follow the procedures established by the ACHP for compliance with Section 106 of the National Historic Preservation Act (NHPA) and also for compliance with CEQA. • A Class III intensive pedestrian inventory will be undertaken for all portions of the Project that have not been previously surveyed or have been identified by the BLM as requiring an inventory to identify properties that are eligible for listing in the National Register of Historic Places (NRHP). • A Treatment Plan will be prepared to identify methods of avoiding or mitigating effects. A cultural resources evaluation report will be submitted to the BLM for review, and for consultation purposes, as part of the development of the Treatment Plan. • Adverse effects to cultural resources will be avoided to the extent possible. Final design of the Project (e.g., tower placement and work areas) will include measures to avoid NRHP eligible sites. The final list of sites to be avoided during construction will be specified in the Treatment Plan. The Treatment Plan will also include detailed measures to ensure this avoidance is implemented during construction. • An Unanticipated Discovery Plan would be developed to outline procedures to be undertaken if unexpected resources are encountered during the course of construction. • A cultural resources monitor will be available to respond to the BLM within 48 hours to cultural resource issues that arise during construction. • Consultation will be conducted at the direction of BLM with concerned Native American groups to determine if the archaeological sites have additional sensitivities (i.e., Traditional Cultural Properties [TCPs]).
<p>AIR QUALITY</p> <p>The following mitigation measures would be implemented during the construction of the Proposed Project to reduce the exhaust emissions of CO, NO_x, VOC, SO_x, and PM₁₀:</p> <ul style="list-style-type: none"> • Heavy duty off road diesel engines over 50 horsepower will meet Tier I ARB/EPA standards for off-road equipment and will be properly tuned and maintained to manufacturers' specifications to ensure minimum emissions under normal operations; • Construction vehicles will have 1996 and newer model engines; • Visible emissions from all heavy duty off road diesel equipment will not exceed 20 percent opacity for more than three minutes in any hour of operation; • A comprehensive inventory (i.e., make, model, year, emission rating) of all heavy-duty off-road equipment (50 horsepower or greater) that will be used an aggregate of 40 hours per week or more during the duration of the construction project will be submitted to the Imperial County Air Pollution Control District, if needed. <p>The following mitigation measures would be implemented for the Proposed Project to reduce fugitive dust emissions (including PM₁₀):</p> <ul style="list-style-type: none"> • Water or chemical dust suppressants approved by the BLM will be applied to unstabilized surfaces of disturbed areas and/or unpaved roadways in sufficient quantity and frequency to maintain a stabilized surface. • Water or water-based chemical additives will be used in such quantities to control dust on areas with extensive traffic including unpaved access roads. Water, organic polymers, lignin

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**TABLE 2.0-5
APPLICANT PROPOSED MEASURES INCLUDED AS PART OF PROPOSED PROJECT ON BLM-MANAGED LAND**

<p>compounds, or conifer resin compounds will be used depending on availability, cost, and soil type.</p> <ul style="list-style-type: none">• Vehicle speeds on unpaved roadways will be restricted to 15 mph.• Vehicles hauling dirt will be covered with securely-fastened tarp or other means approved by the BLM.
WATER RESOURCES
<p>A stormwater pollution prevention plan (SWPPP) would be prepared as required by the State General Construction Activity Storm Water Permit. The SWPPP will include:</p> <ul style="list-style-type: none">• An outline of the areas of vegetative soil cover or native vegetation onsite that will remain undisturbed during the construction project.• An outline of all areas of soil disturbance including cut or fill areas which will be stabilized during the rainy season by temporary or permanent erosion control measures, such as seeding, mulch, or blankets, etc.• An outline of the areas of soil disturbance, cut, or fill which will be left exposed during any part of the rainy season, representing areas of potential soil erosion where sediment control BMPs are required to be used during construction.• A proposed schedule for the implementation of erosion control measures.• The SWPPP will include a description of the BMPs and control practices to be used for both temporary and permanent erosion control measures.
<p>Surface waters, wells and springs adjacent to construction areas would be protected.</p> <ul style="list-style-type: none">• Surface waters (canals), springs, and wells within 1,000 feet of construction activities will be identified. Construction activities will be limited in the following manner: (1) construction activities will not be carried out within 100 feet of these resources without using BMPs; (2) blasting will be prohibited within 500 feet of a well; and (3) only size limited blasting will be authorized within 1,000 feet of a well. If damage occurs to a well or spring, the affected area will be repaired by the contractor.• The use or storage of hazardous material near a canal, well, or spring will be prohibited. Additionally, special precautions will be implemented to prevent spills of hazardous materials, discharges of foreign materials, and sedimentation discharges near a canal, well or spring.• Dewatering activities for tower footings or other deep excavations will be planned to minimize the effect on wells and springs.

**TABLE 2.0-5
 APPLICANT PROPOSED MEASURES INCLUDED AS PART OF PROPOSED PROJECT ON BLM-MANAGED LAND**

GEOLOGY AND SOILS
<p>The project would be designed to prevent damage resulting from seismic activity in the project area.</p> <ul style="list-style-type: none"> • Measures will be taken to the extent possible to avoid sites for transmission towers that are located within known fault zones. • A geotechnical engineering investigation consistent with California geologic and engineering standards will be conducted for the Proposed Project by a licensed geotechnical engineer. • All practicable precautions will be taken to design and construction of transmission towers and new substations, substation facility improvements, and equipment to withstand the projected ground shaking in the area.
<p>Construction, operation, and maintenance activities will be restricted when the soil is too wet to adequately support construction or maintenance equipment (i.e., when heavy equipment creates ruts in excess of 4 inches deep over a distance of 100 feet or more in wet or saturated soils). Where the soil is deemed too wet, one or more of the following measures will apply:</p> <ul style="list-style-type: none"> • Construction and maintenance vehicles will be rerouted around wet areas onto existing roads that do not cross sensitive resource areas. • If wet areas cannot be avoided, implement BMPs for use in these areas during construction and access road improvement, and during subsequent reclamation of these areas. BMPs may include use of wide-track or balloon-tire vehicles and equipment use of geotextile cushions, pre-fabricated equipment pads, and other materials to minimize damage to the substrate where determined necessary by resource specialists and in consultation with appropriate resource agencies. If BMPs cannot be successfully applied to wet or saturated soil areas, construction or routine maintenance activities would not be allowed in these areas until the Project environmental monitor(s) determine it is acceptable to proceed.
<p>Areas of expansive soils would be mitigated to minimize damage from shrink/swell actions on equipment foundations.</p> <ul style="list-style-type: none"> • Prior to construction, soils will be evaluated by a geotechnical engineer to determine if they are expansive and if they may have potential effects on the proposed facilities. Where they represent a potential hazard, solutions recommended by the proposed project’s geotechnical engineer, such as excavation and replacement of the expansive soils with compacted backfill, will require BLM approval. If imported backfill material is used, it will be certified to be from a non-agricultural area and to be free of invasive weeds and propagules (i.e., seeds and root/stem/rhizome fragments), and the soil material will be a match with the native soil in the project area.
<p>Monitoring of the erosion control measures will continue until reclamation efforts are considered complete and successful. Measures to be implemented during the proposed project construction and reclamation are listed below.</p> <p>These measures will minimize the effects of grading, excavation, soil compaction, and other surface disturbances in all project areas. Schedules and specifications for these features would be part of the final construction plan.</p>
<ul style="list-style-type: none"> • Confine all vehicular traffic associated with construction to areas designated in the construction, operation, and maintenance (COM) Plan. • Limit disturbance and removal of soils and vegetation to the minimum area necessary for access

2.0 PROJECT DESCRIPTION

**TABLE 2.0-5
APPLICANT PROPOSED MEASURES INCLUDED AS PART OF PROPOSED PROJECT ON BLM-MANAGED LAND**

<p>and construction.</p> <ul style="list-style-type: none"> • Where vegetation removal is necessary, use cutting/mowing methods instead of blading, wherever possible. Fire will not be used to remove vegetation. • Adhere to a construction methodology that mitigates impacts in sensitive areas during severe weather events. • Inform all construction personnel before they are allowed to work on the Proposed Project of the environmental concerns, pertinent laws and regulations, and elements of the erosion control plan. A multi-hour environmental training would be provided for project management, foremen, and construction personnel. • Minimize grading to the extent possible. When required, grading will be conducted away from washes and artificial waterways to reduce the potential of material entering watercourses. • Slope and berm graded material, where possible, to reduce surface water flows over unit area across the graded area. • Replace excavated materials in disturbed areas and minimize the time between excavation and backfilling. • Direct the dewatering of excavations onto stable surfaces to avoid soil erosion. • Use detention basins, certified weed-free straw bales/rolls, or silt fences, where appropriate. • Use drainage control structures, where necessary, to direct surface drainage away from disturbance areas and to minimize runoff and sediment deposition downslope from all disturbed areas. Control structures include culverts, ditches, water bars (berms and cross ditches), and sediment traps. • Implement other applicable BMPs to minimize erosion-related impacts during construction, to improve access roads, and to facilitate their subsequent reclamation.
<p>VISUAL RESOURCES</p>
<p>The following mitigation measures will be implemented to minimize visual impacts:</p> <ul style="list-style-type: none"> • Non-specular materials will be used for conductor and structure materials to minimize reflections and glare. • After Project construction is complete, ground surfaces within the transmission line right-of-way and areas outside the right-of-way that are disturbed during project construction would be restored to their original condition and grade, as outlined in the Reclamation Plan. • Staging areas would be revegetated as necessary, according to the Vegetation Restoration Plan. • Existing rock formations and vegetation would be retained whenever possible.
<p>TRAFFIC AND TRANSPORTATION</p>
<p>The following measures would be implemented to minimize impacts to traffic and roads.</p> <p>Traffic controls shall include ensuring that:</p> <ul style="list-style-type: none"> • The locations of intersections of existing access roads are highly visible by placing signage and traffic control crews to ensure that people are aware of the presence of crossing or slow-moving construction vehicles. • Following construction, or during construction as necessary to maintain safe driving conditions, any damage to existing roadways caused by construction vehicles would be repaired.

**TABLE 2.0-5
 APPLICANT PROPOSED MEASURES INCLUDED AS PART OF PROPOSED PROJECT ON BLM-MANAGED LAND**

PUBLIC HEALTH AND SAFETY
Detailed information about the use, storage and disposal of hazardous materials would be provided in the Health and Safety Plan that would be developed by the construction contractor and with the approval of the BLM.
A Fire Prevention and Response Plan (FPRP) will be developed and implemented after approval by the BLM during construction, operation, and maintenance of the proposed transmission line.
During Project construction, on -going training would be provided by the Applicant to the US Border Patrol agents who work in the area for the duration of the Project about any safety issues related to BP access to the gen-tie ROWs or the solar energy generation facilities. At least two training sessions for the Border Patrol will be conducted at their convenience at the beginning of construction and at the beginning of operations (generally one for a day shift and one for a night shift) to explain the development process, hazards to the agents and their vehicles during construction and operations, depth of holes (as potential hiding places for undocumented persons), dangers of collapse of earthen excavations, any risks from electrical/shock, and staffing during the construction phase. The Project Applicant will provide access for Border Patrol agents to no-electrified secured areas if they need to pursue individuals.

2.2 ALTERNATIVES

This EIR considered three alternatives in addition to the proposed project:

- **Alternative 1 - Alternative Gen-Tie Across BLM Land** - This alternative includes the same approximate 1,990 acre solar generation facility site as the proposed project and proposes a gen-tie that would follow the existing IID S-line and associated access road. A 0.9 mile Gen-tie is proposed including a 0.1 mile segment on the solar generation facility site. The gen-tie would also cross approximately 0.4 miles of BLM land and 0.4 miles of private land.
- **Alternative 2 - Private Land Gen-Tie Alternative** - This alternative includes the same approximate 1,990 acre solar generation facility site as the proposed project and proposes a 1.85 mile gen-tie that would originate from the western side of the solar generation facility site (0.1 mile segment) and cross approximately 1.75 miles of private lands to the west. The gen-tie would follow existing field roads and ditches to the Imperial Solar Energy Center West site. From this point, the proposed project would use available capacity on Imperial Solar Energy Center West’s gen-tie line that has an approved right-of-way to the Imperial Valley Substation.
- **Alternative 3 - No Action Alternative** – This alternative would result in continued use of the project site for agricultural production. The proposed Campo Verde Solar Project would not be developed.

These are discussed in greater detail in Chapter 6.0, Alternatives.

Regardless of whether the proposed gen-tie or Alternative 1 or 2 is selected, a short-term solution may be implemented that would involve an electrical interconnection to IID’s S-Line that crosses the solar generation facility site. If this option is selected, it would provide a temporary interconnection to the

2.0 PROJECT DESCRIPTION

grid and would be replaced by the permanent interconnection into the Imperial Valley Substation when completed.

2.3 INTENDED USES OF THE EIR/AUTHORIZING ACTIONS

Due to the project's encroachment into federal lands, two agencies have jurisdiction over the Campo Verde Solar Project. Imperial County is the lead agency with regard to the solar generation facility site as well as portions of the gen-tie not located on BLM land. The County will serve as the Lead Agency regarding the California Environmental Quality Act (CEQA) and the Applicant's request for a CUP and other required County and state approvals. The BLM will serve as the cooperating agency to fulfill the requirements of the National Environmental Policy Act (NEPA). The BLM is conducting a separate environmental review (an Environmental Assessment) for the segment of the gen-tie on BLM land.

2.3.1 DISCRETIONARY ACTIONS AND APPROVALS

A. County of Imperial

In conformance with Sections 15050 and 15367 of the CEQA Guidelines, the County of Imperial has been designated the "lead agency," defined as, "the public agency which has the principal responsibility for carrying out or approving a project." Discretionary actions and approvals by the Imperial County Planning Commission and/or Board of Supervisors for the proposed project or its alternatives may include, but are not limited to:

Certification of the Final EIR

After the required public review for the Draft EIR, Imperial County will respond to written comments, edit the document, and produce a Final EIR to be considered for certification by the Planning Commission and/or Board of Supervisors prior to making a decision on the project.

Mitigation Monitoring and Reporting Program

A Mitigation Monitoring and Reporting Program will be adopted as required by CEQA Guidelines Section 15097 to ensure that mitigation measures identified in the EIR are implemented as appropriate.

Conditional Use Permit (CUP11-0007)

The proposed project will require approval of a CUP by Imperial County to allow construction and operation of the proposed project.

Development Agreement/Public Benefits Agreement

Execution of a Development Agreement or Public Benefits Agreement requires approval by the Board of Supervisors.

Lot tie Covenant

The project will require approval of a deed covenant allowing adjacent parcels within the project to be treated as a single parcel for purposes of setback requirements during the duration of the CUP.

Abandonment of Rights-of-Way

The Applicant's request to vacate certain rights-of-ways for use by this project will require Board of Supervisors approval.

Subdivision Map Approvals

The project may require a lot line adjustment and/or public lot conveyance for purposes of project financing or facilitating arrangements with public agencies.

Public Water System Permit

If the project treats water onsite for drinking water purposes, will be required to obtain a permit from the Imperial County Public Health Department to operate a public water system.

Private Sewage Disposal Permit

The project shall obtain a permit from the Imperial County Public Health Department to construct and operate a septic system and leach field adjacent to the O&M building, if proposed for the project.

Site Plan

Site Plan and Architectural Review is required for all non-residential projects and will be conducted for the proposed project.

Variance (V12-0008)

A variance is required for project site in order to exceed the height limit for the gen-tie structures. The existing zoning allows for a maximum height limit of 120 feet. However, one or more transmission structures may exceed 120 feet with a maximum height of 145 feet.

B. Imperial Irrigation District (IID)

Various approvals may be required from IID in conjunction with implementation of the project. These include but are not limited to:

- Power Distribution
- Abandonment of Easements
- Land Sale Agreements
- Mineral Rights Agreements
- Water Supply Agreements for construction and permanent water (IID will be making CEQA findings specifically related to the water supply agreements so we need to make sure the discussion of water supply by IID is adequate within the EIR).
- Drainage Encroachment
- Electrical crossings over Westside Main Canal and other easements.

C. Bureau of Land Management

BLM Grant of Right-of-Way (BLM Right-of-Way Application Serial No. CACA 053151)

The segment of the gen-tie on federal land will require ROW approval by the BLM to allow construction operation and decommissioning of the proposed gen-tie, any required improvements to existing unpaved access roads, and, if necessary, construction of new unpaved access roads within lands managed by the BLM.

2.0 PROJECT DESCRIPTION

2.3.2 SUBSEQUENT/CONCURRENT ENTITLEMENTS TO IMPLEMENT THE PROPOSED PROJECT

A variety of entitlement actions and permits will be required from Imperial County to implement the components of the proposed project:

- Grading Plan for the project site
- Construction Traffic Control Plan
- Building Permits
- Encroachment Permits from the Imperial County Public Works Department for access to the lot(s) and for any proposed road crossings
- Occupancy Permit
- Septic System Permit
- In order to permit construction of the solar facility as one discrete development, the Applicant or parcel owner will execute a covenant to be recorded on all project parcels that waives Code-required setbacks from interior property lines and exterior boundaries. This covenant would be imposed through the Conditions of Approval adopted by the CUP.

2.3.3 DISCRETIONARY ACTIONS AND APPROVALS BY OTHER AGENCIES

Responsible Agencies are those agencies that have discretionary approval over one or more actions involved with development of the proposed project site. Trustee Agencies are state agencies that have discretionary approval or jurisdiction by law over natural resources affected by a project. These agencies may include, but are not limited to the following:

- U.S. Fish and Wildlife Service - Endangered Species Act informal consultation
- California Department of Fish and Game (CDFG) (Trustee Agency) consultation regarding State Endangered Species Act compliance, Streambed Alteration Agreement (Section 1603 of the California Fish and Game Code), California Native Plant Protection Act (mitigation for rare plants)
- California Regional Water Quality Control Board (RWQCB), Colorado River Basin, Region 7 – Section 401 Water Quality Certification (if required in conjunction with any federal permit requirements), General Construction Activity Storm Water Permit
- Bureau of Land Management Compliance with Section 106 of the National Historic Preservation Act for gen-tie route on BLM land
- California State Historic Preservation Office consultation
- Imperial County Air Pollution Control District - Rule 801 compliance; permit to operate if a generator with 50+ horsepower is utilized on-site for more than 12 months
- Imperial County Fire Department - approval of final design of the proposed fire system
- California Department of Toxic Substances Control - depending on the volume of hazardous materials stored on-site, the Applicant may need to submit a Hazardous Materials Business Plan

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CHAPTER 3.0

INTRODUCTION TO THE ENVIRONMENTAL ANALYSIS AND ASSUMPTIONS USED

3.0 INTRODUCTION TO THE ENVIRONMENTAL ANALYSIS AND ASSUMPTIONS USED

The following is an introduction to the environmental impacts analysis and general assumptions used in the project specific and cumulative analyses. Individual sections of the Draft Environmental Impact Report (Draft EIR) include assumptions, methodology and standards of significance relevant to each applicable environmental factor identified through preparation of the Initial Study (The Initial Study is included on the attached CD of Technical Appendices as **Appendix A** of this EIR).

3.1 ANALYSIS ASSUMPTIONS GENERALLY USED TO EVALUATE THE IMPACTS OF THE PROJECT

3.1.1 BASELINE ENVIRONMENTAL CONDITIONS ASSUMED IN THE DRAFT EIR

Section 15125(a) of the CEQA Guidelines requires that an EIR include a description of the physical environmental conditions in the vicinity of the project as they exist at the time the Notice of Preparation (NOP) is published. The CEQA Guidelines also specify that the description of the physical environmental conditions is to serve as the baseline physical conditions by which a lead agency determines whether impacts of a project are considered significant.

The environmental setting conditions of the project site and the surrounding area are described in detail in sections 4.1 through 4.12 of this Draft EIR. In general, these setting discussions describe the setting conditions of the project site and the surrounding area as they existed at the time the NOP for the project was released in November 2011 (SCH No. 2011111049) (see subsection 3.2, "Approach to the Cumulative Impact Analysis" subsection below).

3.1.2 GENERAL PLAN CONSISTENCY ANALYSIS

As required by CEQA Guidelines 15125(d), each relevant environmental factor analyzed in sections 4.1 through 4.12 has been evaluated for consistency with policies contained in the Imperial County General Plan (January 18, 1993, with updates and amendments through November 2008). The general plan consistency analysis is presented in tabular form. Applicable policies appear in the left column; the middle column identifies whether the project is consistent (yes or no) with the policy; and the right column includes an analysis of the consistency or inconsistency.

3.1.3 PROJECT CONSTRUCTION EFFECTS

The proposed project is a solar generation facility. In order for the project to be approved by the Imperial County Board of Supervisors, the project must be consistent with the General Plan and Land Use Ordinance Policies and Standards. During construction, impacts such as dust, equipment noise, and increased traffic volumes are anticipated to occur. Construction phase impacts would be reduced to a level which is less than significant through the implementation of mitigation measures for the following environmental factors: aesthetics, transportation and circulation, air quality; geology and soils; cultural resources; noise; agricultural resources; hazards and hazardous materials; hydrology and water quality; and biological resources. Project construction impacts specific to each environmental factor are evaluated in sections 4.1 through 4.12 (refer to subsections 4.1.3, 4.2.3, 4.3.3, etc., "Impacts and Mitigation Measures).

3.1.4 PROJECT BUILDOUT ASSUMPTIONS

For the environmental analysis, it is assumed that buildout of the solar generation facility would occur at one time with no phasing. Construction would occur over a 12 to 24 month period. Project operational impacts, such as traffic, air quality, noise, hydrology and water quality, are evaluated

3.0 INTRODUCTION TO THE ENVIRONMENTAL ANALYSIS AND ASSUMPTIONS USED

in sections 4.1 through 4.12 of the EIR (refer to subsections 4.1.3, 4.2.3, 4.3.3, etc., “Impacts and Mitigation Measures”). Buildout of the project is assumed to occur in the context of other cumulative projects which are currently approved, proposed or reasonably foreseeable.

3.2 APPROACH TO THE CUMULATIVE IMPACT ANALYSIS

3.2.1 DEFINITION OF CUMULATIVE SETTING

CEQA Guidelines Section 15130 requires that EIRs include an analysis of the cumulative impacts of a project to determine if the project’s effect is considered cumulatively considerable. As defined by CEQA Guidelines Section 15065(a)(3), “‘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.”

Section 15130(b)(1) goes on to identify two approaches for performing a cumulative analysis: Either 1) A list of past, present, and probable future projects producing related or cumulative impacts, including, if necessary, those projects outside the control of the agency; or 2) A summary of projections contained in an adopted local, regional or statewide plan, or related planning document, that describes or evaluates conditions contributing to the cumulative effect.

For the purposes of this cumulative analysis, a list approach is used. According to Section 15130(b)(2), when using a list it is important to consider the nature of each environmental resource being examined, the location of the project and its type. In keeping with these provisions, the cumulative project list was compiled in consultation with the County with input from the BLM. The projects identified were chosen because they are approved, proposed or reasonably foreseeable; located in the vicinity of the proposed project (southern Imperial County), or include solar energy facilities (project of similar size and scale).

Table 3.0-1 lists the cumulative projects. **Figure 3.0-1** provides a graphical representation of each project’s location.

**TABLE 3.0-1
APPROVED, PROPOSED AND REASONABLY FORESEEABLE LARGE-SCALE PROJECTS
IN THE VICINITY OF THE CAMPO VERDE SOLAR PROJECT**

Project Number	Name of Project	Use	Project Description	Status
1+	“S” Line Upgrade 230-kV Transmission Line Project	Power Line	A power line project of approximately 18 miles extending from approximately 10 miles southwest of the City of El Centro near Liebert Road and Wixom Road along I-8 and SR-86	Ongoing upgrade of transmission line. Estimated completion by December, 2015.
2+	Imperial Valley Solar Project (Formerly SES Solar Two)	Electric Generating Facility	An electric generating facility capable of producing approximately 750 megawatts of electricity on approximately 6,500 acres generally located west of Dunaway Road and	Final EIR public review period July 27, 2010 through August 23, 2010. Currently on hold pending technology

3.0 INTRODUCTION TO THE ENVIRONMENTAL ANALYSIS AND ASSUMPTIONS USED

**TABLE 3.0-1
APPROVED, PROPOSED AND REASONABLY FORESEEABLE LARGE-SCALE PROJECTS
IN THE VICINITY OF THE CAMPO VERDE SOLAR PROJECT**

Project Number	Name of Project	Use	Project Description	Status
			north of I-8	change.
3+	Sunrise 500-kV Line IV West Solar Farm Interconnection to Imperial Valley Substation	Power Line	A power line project extending from Imperial Valley to Penasquitos in the City of San Diego	Currently under construction. Estimated completion by December 31, 2012.
4	SDG&E Photovoltaic Solar Field	Photovoltaic Solar Facility	A photovoltaic solar facility capable of producing approximately 14 megawatts of electricity on approximately 100 acres located adjacent to the SDG&E Imperial Valley Substation	Construction to begin after a Notice to Proceed is issued, if authorized. Construction not expected to begin until 2013.
5*	SDG&E Geotechnical Investigation	Exploratory Analysis	An exploratory analysis to determine the quality and compaction of the soil around the SDG&E Imperial Valley substation	Borehole testing in September, 2011.
6+	North Gila to Imperial Valley #2	Power Line Project	A power line project of approximately 75 miles extending from the SDG&E Imperial Valley substation to Yuma County, Arizona.	Construction not anticipated to begin until 2014.
7+	Dixieland Connection to Imperial Irrigation District Transmission System	Power Line Project	A power line project connecting the Imperial Irrigation District's "S" line from the Imperial Irrigation District substation to the Imperial Valley substation.	Construction anticipated to begin in 2012 and be completed by mid-2013.
8+	Solar Reserve Imperial Valley	Solar Power Tower	A 100 megawatt solar power tower generally located approximately 35 miles east of the Imperial Valley substation.	Construction to begin after a Notice to Proceed is issued, if authorized. Construction not expected to begin until 2014.

3.0 INTRODUCTION TO THE ENVIRONMENTAL ANALYSIS AND ASSUMPTIONS USED

**TABLE 3.0-1
APPROVED, PROPOSED AND REASONABLY FORESEEABLE LARGE-SCALE PROJECTS
IN THE VICINITY OF THE CAMPO VERDE SOLAR PROJECT**

Project Number	Name of Project	Use	Project Description	Status
9	Linda Vista Tentative Subdivision Map	Mixed-Use Project	A mixed use project of 182 single family homes and a 6 acre commercial lot generally located on the west side of Clark Road between I-8 and McCabe Road.	Notice of Determination filed January 23, 2006.
10	County Center II Expansion	Mixed-Use Project	A mixed use project of a commercial center, expansion of the Imperial County Office of Education, a Joint-Use Teacher Training and Conference Center, Judicial Center, County Park, Jail expansion, County Administrative Complex, Public Works Administration, and a County Administrative Complex located on the southwest corner of McCabe Road and Clark Road	Draft EIR public review period July 21, 2010 through September 16, 2010.
11+	Imperial Solar Energy Center West	Photovoltaic Solar Facility	A photovoltaic solar facility capable of producing approximately 250 megawatts of electricity on approximately 1,130 acres generally located east of Dunaway Road and located both north and south of I-8.	Notice of Determination Files November 8, 2011.
12+	Imperial Solar Energy Center South	Photovoltaic Solar Facility	A photovoltaic solar facility capable of producing approximately 200 megawatts of electricity on approximately 950 acres generally located south of SR-98 and east of Drew Road.	Joint Draft EIR/EA Under construction.
13+	Mount Signal Solar Farm ++	Photovoltaic Solar Facility	A photovoltaic solar facility capable of producing approximately 200 megawatts of electricity on approximately	Draft EIR available for public review November 3, 2011 through December

3.0 INTRODUCTION TO THE ENVIRONMENTAL ANALYSIS AND ASSUMPTIONS USED

**TABLE 3.0-1
APPROVED, PROPOSED AND REASONABLY FORESEEABLE LARGE-SCALE PROJECTS
IN THE VICINITY OF THE CAMPO VERDE SOLAR PROJECT**

Project Number	Name of Project	Use	Project Description	Status
			1,375 acres generally located south of SR-98 between Pulliam Road and Ferrell Road.	19, 2011.
14+	Centinela Solar Energy	Photovoltaic Solar Facility	A photovoltaic solar facility capable of producing approximately 275 megawatts of electricity generally located in the vicinity of SR-98 and Drew Road.	Notice of Determination filed December 30, 2011.
15	Mayflower Solar Farm Project	Photovoltaic Solar Facility	A photovoltaic solar facility capable of producing approximately 50 megawatts of electricity on approximately 482 acres generally located 5.5 miles southeast of the town of Calipatria.	Notice of Preparation Filed December 5, 2011.
16	Arkansas Solar Farm	Photovoltaic Solar Facility	A photovoltaic solar facility capable of producing approximately 50 megawatts of electricity on approximately 481 acres generally located 2.5 miles east of the town of Calipatria.	Notice of Preparation Filed December 5, 2011.
17	Sonora Solar Farm	Photovoltaic Solar Facility	A photovoltaic solar facility capable of producing approximately 50 megawatts of electricity on approximately 488 acres generally located 4.5 miles northeast of the town of Calipatria.	Notice of Preparation Filed December 5, 2011.
18	Alhambra Solar Farm	Photovoltaic Solar Facility	A photovoltaic solar facility capable of producing approximately 50 megawatts of electricity on approximately 482 acres generally located 3.5 miles south of the town of Calipatria.	Notice of Preparation Filed December 5, 2011.
19	Acorn Greenworks	Photovoltaic Solar Facility	A photovoltaic solar facility capable of producing	CUP Application submitted June,

3.0 INTRODUCTION TO THE ENVIRONMENTAL ANALYSIS AND ASSUMPTIONS USED

**TABLE 3.0-1
APPROVED, PROPOSED AND REASONABLY FORESEEABLE LARGE-SCALE PROJECTS
IN THE VICINITY OF THE CAMPO VERDE SOLAR PROJECT**

Project Number	Name of Project	Use	Project Description	Status
			approximately 150 megawatts of electricity on approximately 693 acres generally located 10 miles southwest of the City of El Centro.	2011. No longer moving forward as of April, 2012.
20+	Calexico I-A++	Photovoltaic Solar Facility	A photovoltaic solar facility capable of producing approximately 100 megawatts of electricity on approximately 666 acres generally located 6 miles west of the City of Calexico.	Draft EIR available for public review November 3, 2011 through December 19, 2011.
21+	Calexico I-B++	Photovoltaic Solar Facility	A photovoltaic solar facility capable of producing approximately 100 megawatts of electricity on approximately 666 acres generally located 6 miles west of the City of Calexico.	Draft EIR available for public review November 3, 2011 through December 19, 2011.
22+	Calexico II-A++	Photovoltaic Solar Facility	A photovoltaic solar facility capable of producing approximately 100 megawatts of electricity on approximately 733 acres generally located 6 miles west of the City of Calexico.	Draft EIR available for public review November 3, 2011 through December 19, 2011.
23+	Calexico II-B++	Photovoltaic Solar Facility	A photovoltaic solar facility capable of producing approximately 100 megawatts of electricity on approximately 732 acres generally located 6 miles west of the City of Calexico.	Draft EIR available for public review November 3, 2011 through December 19, 2011.
24	Silverleaf Solar	Photovoltaic Solar Facility	A photovoltaic solar facility and 230-kilovolt gen-tie connecting to the Imperial Valley Substation. The project would be capable of producing approximately 160	CUP Application submitted September 6, 2011.

3.0 INTRODUCTION TO THE ENVIRONMENTAL ANALYSIS AND ASSUMPTIONS USED

**TABLE 3.0-1
APPROVED, PROPOSED AND REASONABLY FORESEEABLE LARGE-SCALE PROJECTS
IN THE VICINITY OF THE CAMPO VERDE SOLAR PROJECT**

Project Number	Name of Project	Use	Project Description	Status
			megawatts of electricity on approximately 1,096 acres generally located south of Interstate-8 near the intersection of Westside Road and West Diehl Road.	

Source: County of Imperial, 2012; BLM, 2011.

+ Denotes projects with published environmental documents that were used in preparing the cumulative analysis.

++ These projects were analyzed in a single EIR.

*This project was not added to the traffic aggregate because it has since been completed. It is included in the table to match list agreed upon by the County.

While Imperial County as a whole has many more solar projects (refer to **Figure 3.0-2**), only projects in the vicinity of the proposed project were included based on their proximity (approximately a 15 mile radius). Several projects outside the control of Imperial County (i.e. those with BLM as the Lead Agency) were also included based on their similarity (solar projects, electrical transmission projects).

3.2.2 CONSIDERATION OF CUMULATIVE IMPACTS

While the cumulative project’s list establishes approved, proposed or reasonably foreseeable projects to consider in combination with the proposed project, the cumulative setting varies for each environmental factor. The cumulative setting is established specific to each environmental factor based on the nature and extent of the resource or issue. Some environmental factors such as hazards and hazardous materials may be highly localized. In contrast, environmental factors such as air quality and seismicity may be regional in nature. Still, some environmental factors demonstrate both aspects as in the case of geology and soils (site specific soils but more regional geology). In most cases, a geographic scope (in miles from the project site, or as determined based on a natural our jurisdictional boundary) is identified.

When considering cumulative impacts, the analysis examines whether the overall long-term impacts of all such projects would be cumulatively significant and whether the projects would cause a “cumulatively considerable” (and thus significant) incremental contribution to any such cumulatively significant impacts (CEQA Guidelines Sections 15064(h),15065(c), 15130(a), 15130(b), and 15355(b)). To fulfill these two levels of analysis, the project is assessed with regard to its incremental contribution to anticipated cumulative impacts within a geographic scope that extends beyond the project site. The geographic scope is determined for each individual issue area. The next level of analysis determines if the project’s incremental contribution to any significant cumulative impacts from all projects is itself significant (i.e., “cumulatively considerable”).

CEQA Guidelines Section 15355 defines a cumulative impact as “two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts.” A cumulative impact occurs from “the change in the environment which results from the incremental impact of the projects when added to other closely related past, present, and reasonably

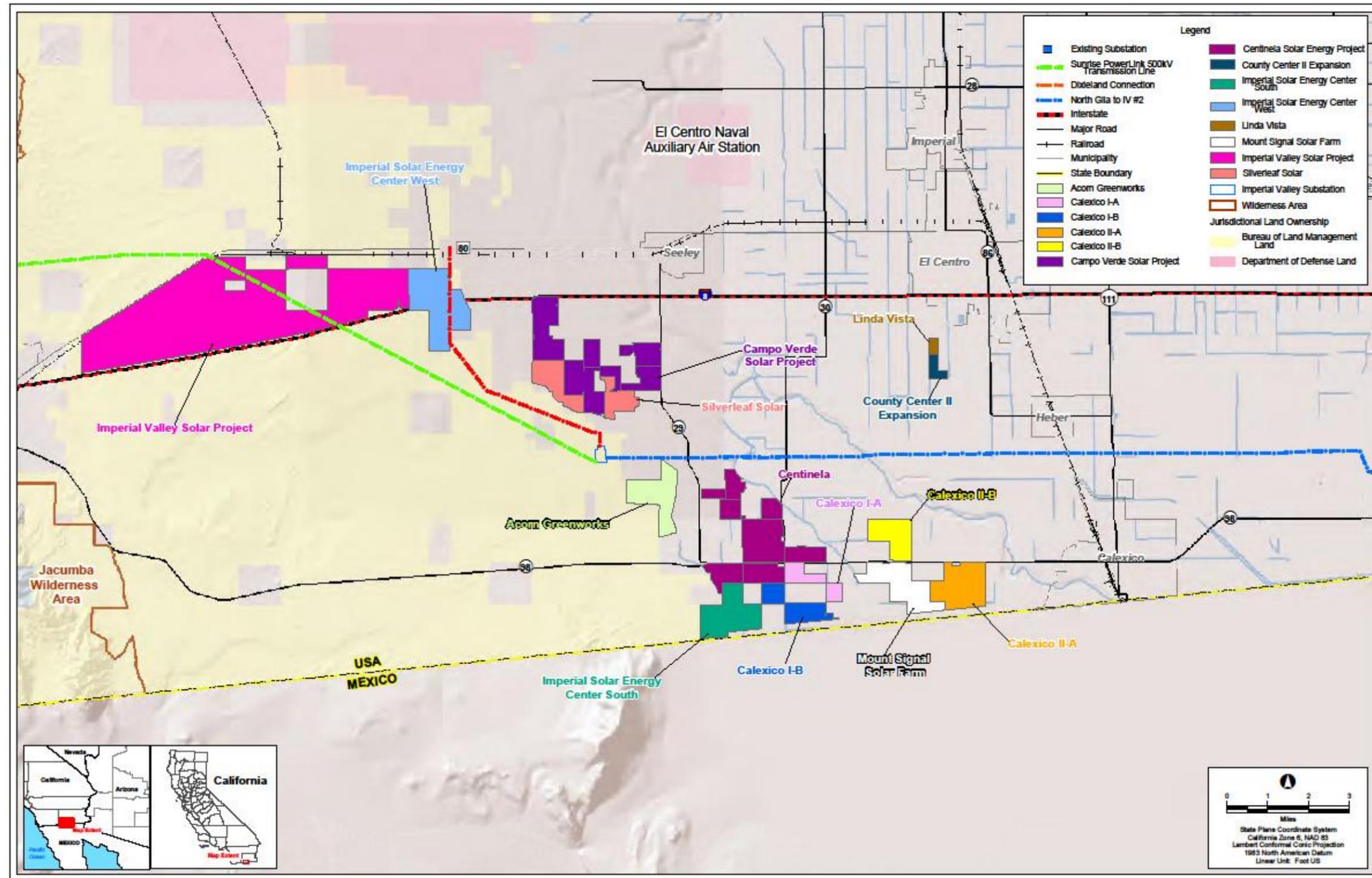
3.0 INTRODUCTION TO THE ENVIRONMENTAL ANALYSIS AND ASSUMPTIONS USED

foreseeable probable future projects. Cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time” (CEQA Guidelines Section 15355[b]).

This EIR evaluates the cumulative impacts of the project for each environmental factor with respect to geographic scope, in combination with past and present (existing) and reasonably foreseeable future projects in the area, and incremental contribution to the cumulative effects.

Chapter 5.0, Cumulative Impacts Summary, provides a summary of the cumulative impacts identified in sections 4.1 through 4.12 (refer to subsections 4.1.4, 4.2.4, 4.3.4, etc., “Cumulative Setting, Impacts and Mitigation Measures”).

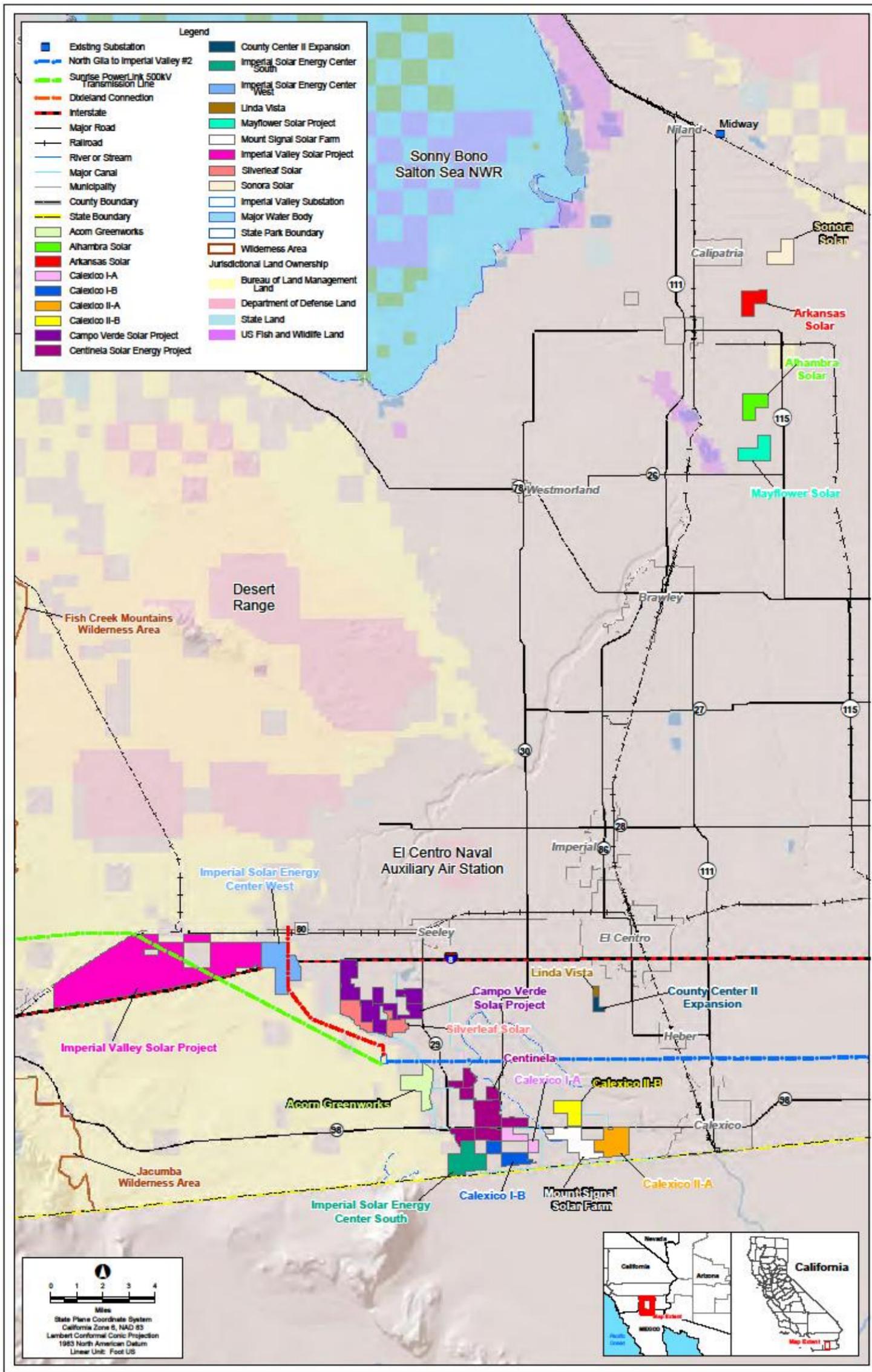
3.0 INTRODUCTION TO THE ENVIRONMENTAL ANALYSIS AND ASSUMPTIONS USED



Source: kp environmental, 2012.

FIGURE 3.0-1
CUMULATIVE PROJECTS MAP – PROJECT VICINITY

3.0 INTRODUCTION TO THE ENVIRONMENTAL ANALYSIS AND ASSUMPTIONS USED



Source: kp environmental, 2012.

**FIGURE 3.0-2
CUMULATIVE PROJECTS – IMPERIAL VALLEY**

CHAPTER 4.0

ENVIRONMENTAL ANALYSIS

This chapter provides a brief overview of the twelve environmental factors covered in the environmental analysis. This chapter also orients the reader to the order of each environmental factor and the format of each individual section.

ORDER OF ENVIRONMENTAL FACTOR SECTIONS

Following preparation of the Initial Study, twelve environmental factors from the CEQA Appendix G Environmental Checklist emerged as requiring further analysis in the EIR. The sections representative of each environmental factor are presented in the same order that they are listed in CEQA Appendix G.

Section 4.1 - Aesthetics

Section 4.2 - Land Use

Section 4.3 - Transportation and Circulation

Section 4.4 - Air Quality

Section 4.5 - Climate Change and Greenhouse Gases

Section 4.6 - Geology and Soils

Section 4.7 - Cultural Resources

Section 4.8 – Noise

Section 4.9 - Agricultural Resources

Section 4.10 - Hazardous and Hazardous Materials

Section 4.11 - Hydrology and Water Quality

Section 4.12 - Biological Resources

SECTION FORMAT

As a general rule, each section has been formatted in the following order. In the case of Climate Change and Greenhouse Gases, GHG emissions generated by an individual project are evaluated on a cumulative basis due to the global nature of climate change and GHGs and their potential effects.

REGULATORY FRAMEWORK

This subsection orients the reader to the three levels of regulation that may be applicable to the proposed project for each environmental factor.

Federal – Identifies relevant federal laws and regulations applicable to the proposed project.

State – Identifies relevant state laws (Assembly Bills, Senate Bills) and regulations applicable to the proposed project.

Local – Identifies local plans, policies and standards applicable to the proposed project.

ENVIRONMENTAL SETTING

This subsection describes the existing conditions on the project site and surrounding area as applicable. The setting is divided between the solar generation facility site and the segment of the gen-tie located on BLM land.

4.0 ENVIRONMENTAL ANALYSIS

solar generation facility – The description of the environmental setting pertains to the 1,990 acre solar generation facility and surrounding area, as applicable.

gen-tie – The description of the environmental setting pertaining to the 0.8 mile long segment of the gen-tie located on BLM land.

The majority of details are provided for the solar generation facility site as the segment of the gen-tie located on BLM land is undergoing a separate environmental review under NEPA.

IMPACTS AND MITIGATION MEASURES

This subsection identifies the project-specific impacts and mitigation measures, as applicable for each environmental factor.

STANDARDS OF SIGNIFICANCE

The standards of significance identify criteria from CEQA Appendix G Environmental Checklist applicable to each environmental factor.

ISSUES SCOPED OUT AS PART OF THE INITIAL STUDY

This subsection notes any issues which were scoped out as a result of the Initial Study and briefly explains why they are not included in the discussion.

METHODOLOGY

This subsection describes how the impact analysis was performed. Specific studies, techniques and research performed relevant to the environmental factor are identified.

PROJECT IMPACTS AND MITIGATION MEASURES

This subsection includes a concise impact statement that pertains to a specific standard of significance. The impact statement includes a title, a number, and a conclusion summarizing the level of significance.

Following the impact statement, a discussion is provided explaining the analysis conducted and further substantiates the conclusion of the impact statement.

Mitigation Measures

If necessary, mitigation measures are provided to reduce, minimize or alleviate the impact identified. The mitigation measures are numbered to correspond with the impact number.

Significance After Mitigation

A brief concluding assessment is provided explaining the effectiveness of the mitigation and any remaining significance.

CUMULATIVE SETTING, IMPACTS AND MITIGATION MEASURES

Cumulative Setting – Provides a brief explanation of the cumulative setting specific to each environmental factor.

Cumulative Impacts and Mitigation Measures - This subsection includes a concise impact statement that pertains to a specific standard of significance. The impact statement includes a title, a number and a conclusion summarizing the level of significance.

SECTION 4.1

AESTHETICS

This section defines terms used to assess visual quality and describes the existing visual resources in the vicinity of the project site that could potentially be affected by the construction and operation of the solar generation facility and gen-tie. This section also examines the potential for the proposed project to degrade the existing visual character or quality of the site and its surroundings through changes in the existing landscape. Key Observation Points are identified from which the project is analyzed. Potential effects are evaluated using photo simulations.

DEFINITIONS AND TERMINOLOGY

The following definitions of key terms are provided to describe and assess potential visual impacts.

- **Key Observation Point.** A point along a travel route or an area where the view of the proposed project would be visible.
- **Scenic Vista.** An area that is designated, signed, and accessible to the public for the express purposes of viewing and sightseeing as designated by a federal, state, or local agency.
- **Scenic Highway.** A section of public roadway that is designated as a scenic corridor by a federal, state, or local agency.
- **Sensitive Viewpoints.** Views from a public park, recreational trails, and/or culturally important sites are considered to have a high visual sensitivity and are considered examples of sensitive viewpoints.
- **Sensitive Receptors.** Areas subject to high visibility by a large number of people are considered to be sensitive receptors. Residential viewers typically have extended viewing periods and are generally considered to have high visual sensitivity.
- **Viewshed.** The landscape that can be viewed free of obstruction under favorable atmospheric conditions from a viewpoint or along a transportation corridor.

4.1.1 REGULATORY FRAMEWORK

A. FEDERAL

Bureau of Land Management

In 1976, Congress designated 25 million acres of land in Southern California as the California Desert Conservation Area (CDCA) through the Federal Land Policy and Management Act. The Bureau of Land Management (BLM) oversees approximately 10 million acres of the CDCA (BLM, 1980). All of the public lands in the CDCA managed by the BLM (with the exception of a few small and scattered parcels), are designated into four multiple-use classes.

The portion of the gen-tie line on BLM land is located entirely within the Yuha Basin Area of Critical Environmental Concern (ACEC) of the CDCA Plan. More specifically, the gen-tie is located within a Multiple-Use Class L (Limited Use) designated area within the CDCA. The Multiple-Use Class L (Limited Use) designation protects sensitive, natural, scenic, ecological, and cultural resource values. Multiple-Use Class L are managed to provide for generally lower-intensity, controlled multiple use of resources to protect sensitive values (BLM, 1980). Approximately 0.9 miles of the proposed gen-tie extends through BLM land designated ACEC.

4.1 AESTHETICS

B. STATE

Southern California Association of Governments

The Southern California Association of Governments (SCAG) Intergovernmental Review (IGR) section, part of the Environmental Planning Division of Planning and Policy, is responsible for performing consistency review of regionally significant local plans, projects, and programs. Regionally significant projects are required to be consistent with SCAG's adopted regional plans and policies. The IGR section does not include any policies that address aesthetics, light or glare. Therefore, there are no policies that relate to the analysis of visual resources and the project cannot be analyzed for consistency with SCAG's IGR section.

C. LOCAL

Imperial County General Plan

Two elements of the Imperial County General Plan discuss issues relevant to the analysis of visual resources. These include the Circulation and Scenic Highways Element and the Conservation and Open Space Element.

Circulation and Scenic Highways Element

The Circulation and Scenic Highways Element of the Imperial County General Plan (Imperial County, revised 2008) identifies the transportation needs of the County and the various modes available to meet these needs. In addition, the Element provides a means of protecting and enhancing scenic resources within both rural and urban scenic highway corridors. There are no designated scenic highways in the area surrounding the project nor is the project site visible from any designated scenic highway.

Conservation and Open Space Element

The Conservation and Open Space Element of the Imperial County General Plan identifies plans and measures for the preservation and management of biological and cultural resources, soils, minerals, energy, regional aesthetics, air quality, and open space.

Table 4.1-1 analyzes the consistency of the proposed project with the applicable policies relating to visual resources from the Imperial County General Plan. While this EIR analyzes the project's consistency with the General Plan pursuant to CEQA Guidelines Section 151250, the Imperial County Board of Supervisors ultimately determines consistency with the General Plan.

**TABLE 4.1-1
IMPERIAL COUNTY GENERAL PLAN CONSISTENCY ANALYSIS**

General Plan Policies	Consistent with General Plan?	Analysis
Conservation And Open Space Policies		
Preservation of Visual Resources		
<p>Goal 7: The aesthetic character of the region shall be protected and enhanced to provide a pleasing environment for residential, commercial, recreational, and tourist activity.</p>	<p>No</p>	<p>The project would change the visual character of the project site from an active agricultural setting with cultivated crops to a solar generation facility with panels and associated structures and electrical lines. The proposed project and gen-tie would not protect or enhance the aesthetic character of the region, and would not be consistent with Goal 7. Potential visual and aesthetic impacts associated with the project and gen-tie are evaluated in detail in this Visual Resources analysis. Mitigation (MM 4.2.1) is provided to address potential visual impacts to surrounding uses.</p>
<p>Objective 7.1 Encourage the preservation and enhancement of the natural beauty of the desert and mountain landscape.</p>	<p>No</p>	<p>Approximately 0.9 miles of the proposed gen-tie would be on lands managed by the BLM comprised of desert landscape. The gen-tie is proposed in BLM-designated Utility Corridor N. This corridor currently includes several transmission lines as well as the Imperial Valley Substation. While the proposed gen-tie line and supporting structures would be visible, the existing lines and associated supporting structures are already visible in the same views of the desert and mountains. While the proposed gen-tie portion of the project would not be consistent with Objective 7.1, it also would not significantly alter the existing views of the desert and mountains. Instead, it would add to existing infrastructure allowed within Utility Corridor N. Mitigation (MM 4.2.1) is provided to address potential visual impacts of the solar generation facility to surrounding uses.</p>

4.1 AESTHETICS

**TABLE 4.1-1
IMPERIAL COUNTY GENERAL PLAN CONSISTENCY ANALYSIS**

General Plan Policies	Consistent with General Plan?	Analysis
Land Use Element		
Regional Vision		
<p>Objective 3.4 Protect/improve the aesthetics of Imperial County and its communities.</p>	No	<p>The proposed project is located in a rural portion of Imperial County. The site is currently used for agricultural purposes and does not contain any designated scenic features. Based on the rural nature of the area, the proposed project and gen-tie would not obstruct views or degrade scenic vistas. Neither would the project protect or improve the aesthetics of the County. Therefore, the proposed project and gen-tie would not be consistent with Objective 3.4.</p>
<p>Objective 3.6 Recognize and coordinate planning activities as applicable with the BLM, and the California Desert Conservation Plan.</p>	Yes	<p>The Applicant has coordinated with the County and BLM regarding the proposed project and gen-tie. The proposed project would not negatively impact the BLM area that surrounds the site and be consistent with the CDCA Plan because the segment of the proposed Gen-Tie on BLM land is entirely within Utility Corridor N. Therefore, the proposed project and gen-tie would be consistent with Objective 3.6.</p>

4.1.2 ENVIRONMENTAL SETTING

The visual setting includes private lands under the jurisdiction of Imperial County (solar generation facility site) as well as lands managed by the BLM to the south and west of the solar generation facility site (segment of proposed gen-tie connecting to the Imperial Valley Substation).

A. REGIONAL

Imperial County encompasses 4,597 square miles in the southeastern portion of California. The County is bordered by Riverside County on the north, the international border of Mexico on the south, San Diego County on the west and Arizona on the east. The length and breadth of the County provide for a variety of visual resources ranging from desert, sand hills, mountain ranges, and the Salton Sea.

The desert includes several distinct areas that add beauty and contrast to the natural landscape. The barren desert landscape of the Yuha Desert, lower Borrego Valley, East Mesa, and Pilot Knob Mesa provide a dramatic contrast against the backdrop of the surrounding mountain ranges. The West Mesa area is a scenic desert bordered on the east by the Imperial Sand Dunes, the lower Borrego Valley, the East Mesa and Pilot Knob Mesa.

The eastern foothills of the Peninsular Range are located on the west side of the County. The Chocolate Mountains, named to reflect their dark color, are located in the northeastern portion of the County, extending from the southeast to the northwest between Riverside County and the Colorado River. These mountains reach an elevation of 2,700 feet making them highly visible throughout the County.

B. SURROUNDING AREA

The site is generally bound on the north by Interstate 8 (I-8), on the east by Drew Road (County Highway 29), and on the south and west by the Westside Main Canal. Desert lands managed by the BLM are to the south and west of the Westside Main Canal. I-8 is a four-lane divided freeway with two-lanes in each direction that aligns through the area in an east-west direction. Two-lane paved roads and dirt roads are located adjacent to and throughout the project area providing access to and through the existing agricultural fields.

The area is predominantly flat as most of the land has been leveled to facilitate irrigation. Elevations across the solar generation facility site range from approximately 24 to 40 feet below mean sea level (URS, 2011, p. 3-1). Numerous canals, ditches and drains owned by the Imperial Irrigation District (IID) are located throughout the project site and surrounding area providing irrigation water and drainage to the individual fields.

Earthen berms, overhead power and telephone lines, and agricultural fields dominate the scenery in the project area. One residence (1651 Westside Road), Westside Elementary School, a residential complex and undeveloped/agricultural land, are located on the north side of Vaughn Road. Undeveloped/agricultural land, the Westside Main Canal, and three residential complexes are to the south of the solar generation facility site. Undeveloped/agricultural land and Drew Road is adjacent to the site on the east side and separates the site from additional agricultural land and residences. Agricultural land is the dominant land type adjacent on the west side of the property. In addition, a residential complex (two buildings, a barn, and an apparent agricultural maintenance and storage area) is located on the west side of APN 051-300-30 (URS, 2011, p. 2-8 and 2-9).

BLM land to the south and west of the solar generation facility site is mostly managed as open desert. Views of desert from roadways are obstructed by intervening agricultural fields, trees and existing electrical transmission or distribution as well as phone lines. However, mountains are visible in the background from most vantage points along area roadways and from the agricultural fields.

The Imperial Valley Substation is located on BLM land south of the solar generation facility site. The substation and the numerous transmission lines are readily visible throughout this area and are located in Utility Corridor N. Utility corridors are identified in the Energy Production and Utilities Corridor Element of the CDCA to consolidate location of utilities.

Based on the undeveloped nature of the surrounding landscape, very little light is generated in this area of the County. The primary source of light and glare in the area is from motor vehicles traveling on surrounding roadways. Glare is generated during daytime hours from the sun's reflection off of cars and paved roadway surfaces. Likewise at night, vehicle headlights on surrounding roadways generate light and glare. Warning lighting is also located on the existing transmission lines to alert aircraft of potential flight path hazards.

4.1 AESTHETICS

C. PROJECT SITE

Solar Generation Facility Site

The solar generation facility site is on private land in the unincorporated area of Imperial County approximately 7 miles southwest of the City of El Centro. The solar generation facility site consists of approximately 1,990 acres of privately-owned land, currently used for agricultural production.

Like the surrounding area, the solar generation facility site is dominated by the agricultural fields, earthen berms associated with the irrigation and drainage systems, and overhead power and telephone lines. Drew Road is the major north-south arterial road in the area and borders the western limits of the solar generation facility site. Local roads (Derrick Road, Diehl Road, Hyde Road, Jessup Road, Vogel Road, Westside Road, and Wixom Road) provide access to the existing agricultural fields that comprise the solar generation facility site. No residences are located on the solar generation facility site. However, a few residences are located on parcels surrounding the project site.

Gen-Tie

The proposed gen-tie line would exit the project site at the southwestern corner of the solar generation facility site, cross the Westside Main Canal and extend approximately 0.9 miles through BLM land to interconnect to the Imperial Valley Substation. The proposed gen-tie route would parallel existing roads and berms. The gen-tie would align through BLM designated Utility Corridor N. The Imperial Valley Substation and existing transmission lines within the utility corridor are visible from parcels and roadways in this portion of the county.

Note: The segment of the gen-tie located on BLM land is undergoing separate environmental analysis under NEPA using the BLM's Visual Resource Management (VRM) System. However, visual impacts of the overall gen-tie (on private and BLM land) are acknowledged in this section.

D. VIEWSHED

Existing views of the solar generation facility site are available from the surrounding areas, specifically from I-8 and Drew Road (County Highway 29) as well as the other roads (Wixom Road, Vaughn Road) that cross the project area. Due to the flat topography of the project site and the surrounding area, the existing transmission lines and a large, regional electrical substation located within the Utility Corridor N are the only readily visible feature from many viewpoints. No other unique topographical features are associated with any portion of the project site (solar generation facility site on private lands or gen-tie on federal). The viewshed is depicted from Key Observation Points (KOPs) determined based on consultation with Imperial County staff and comments received as part of the NOP process and scoping meeting.

Key Observation Points

Figure 4.1-1 provides an aerial of the project site prior to project implementation and a visual simulation of the project site after implementation. This aerial view shows the overall extent of the visual change of the project site relative to surrounding properties.

To assess the visual impacts at ground-level, nine KOPs were identified that are representative of views of the proposed project site. **Figure 4.1-2** is a map showing the location of the KOPs. Existing views with visual simulations below are provided in **Figure 4.1-3** through **4.1-11A** and **4.1-11B**. The highest point of fixed tilt modules could be as high as approximately 7 feet above the ground surface while the overall height of a horizontal tracker is a maximum of 11 feet above the ground surface. Because horizontal

trackers would be the taller of the two options, they potentially represent a worst-case visual scenario. Therefore, to be conservative in assessing impacts, all visual simulations were modeled for horizontal trackers to represent the worst-case visual impacts. Viewpoints from KOP#2 and KOP#9 are especially close to the solar fields. Thus, fixed-tilt units were also modeled for these KOPS to show the difference between the two mounting options.

Descriptions of the KOPs are as follows:

KOP #1: View along I-8 (looking eastbound) adjacent to the northern extend of the solar generation facility site. KOP #1 represents the view of the proposed solar generation facility site that would be visible to travelers along I-8 (**Figure 4.1-3**).

KOP #2: View south from the grounds of the Westside Elementary toward the solar generation facility site. KOP#2 provides a view of the PV solar field south of the school with horizontal trackers (**Figure 4.1-4A**) as well as fixed-tilt trackers (**Figure 4.1-4A**).

KOP #3: View south-southwest slightly west of the intersection of Derrick Road and I-8. KOP#3 provides a distant view of the PV solar field from I-8 (**Figure 4.1-5**).

KOP#4: Located west of Drew Road at the southernmost point of the Rio Bend RV Development. KOP#4 provides a view of the proposed project site to the south-southwest from the area south of Rio Bend RV Development across New River (**Figure 4.1-6**).

KOP#5: View along southbound Drew Road at the northeast corner of the project site. KOP#5 provides a view to the southwest of the PV solar field visible from Drew Road, the major north-south arterial roadway in the project area (**Figure 4.1-7**).

KOP#6: View north along Drew Road south of the solar generation facility site. KOP#6 provides a view to the north-northwest of the PV solar field looking north from Drew Road, the major north-south arterial roadway in the project area (**Figure 4.1-8**).

KOP#7: View south from the southern edge of a residential property north of the intersection West Wixom Road and Liebert Road. KOP#7 provides a view to the south-southwest of the PV solar field, gen-tie tower structures and substation, switchyard and O&M building from the location of this residence. (**Figure 4.1-9**). These facilities are located on the southern-most parcel of the solar generation facility site.

KOP#8: Located at a residence along West Vaughn Road along the western boundary of the solar generation facility site. KOP#8 provides a view from this residence towards to PV solar field to the south (**Figure 4.1-10**).

KOP#9: Looking west from residence at 1280 Drew Road toward solar generation facility site. KOP#9 provides a view from this residence toward the PV solar field. **Figure 4.1-11A** shows the view with horizontal trackers and **Figure 4.1-11B** shows the view with fixed-tilt trackers.

4.1.3 IMPACTS AND MITIGATION MEASURES

A. STANDARDS OF SIGNIFICANCE

The impact analysis provided below is based on the following State CEQA Guidelines, as listed in Appendix G. The project would result in a significant impact to visual resources if it would result in any of the following:

- a) Have a substantial adverse effect on a scenic vista?

4.1 AESTHETICS

- b) Substantially damage scenic resources, including, but limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?
- c) Substantially degrade the existing visual character or quality of the site and its surroundings?
- d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?

B. ISSUES SCOPED OUT AS PART OF THE INITIAL STUDY

Criterion “b” was scoped out as part of the Initial Study because the proposed solar generation facility site and gen-tie are not located near any scenic vista or state scenic highway. No aspect of the project would damage or degrade any existing scenic resources. Thus, no impact is identified for this issue area and it is not discussed further in this report.

C. METHODOLOGY

In general, the potential aesthetic, light, and glare impacts associated with the solar generation facility site and Gen-tie segment on private land are evaluated on a qualitative basis. The evaluation of impacts are based on professional judgment, analysis of the Imperial County General Plan goals and policies related to visual resources and the significance criteria established by CEQA.

This assessment is based on the approved visual assessment practices employed by the BLM (1986), the U.S. Forest Service (1995), and other federal regulatory agencies. This method includes:

- Defining the project and its visual setting;
- Identifying sensitive viewpoints for assessment;
- Analyzing the baseline visual quality and character of the identified views;
- Depicting the visual appearance of the project from identified views;
- Assessing the project’s impacts to those views in comparison to their baseline visual quality and character; and
- Proposing methods to mitigate any potentially significant visual impacts identified.

Visual Simulations

Visual simulations were prepared by Visual Environments for each KOP to model how existing views would change following implementation of the proposed project. The simulations were prepared by Visual Environmental. Existing views are shown in the top image of **Figures 4.1-3** through **4.1-11A** and **4.1-11B**. The visual simulation of the same view is depicted in the lower image.

“Visual quality” is a measure of a landscape or view’s visual appeal and can be somewhat subjective based on the individual viewer’s preferences. The “Scenic Quality Rating Criteria” used by the BLM was selected to rate scenic quality (BLM, 1986). This standardized method allows the various components of a landscape to be easily quantified and rated thereby eliminating a large degree of ambiguity or subjectivity.

The Scenic Quality Rating Criteria uses seven components to rate visual quality of the landscape: landform, vegetation, water, color, adjacent scenery, scarcity and cultural modifications. Each is described briefly below:

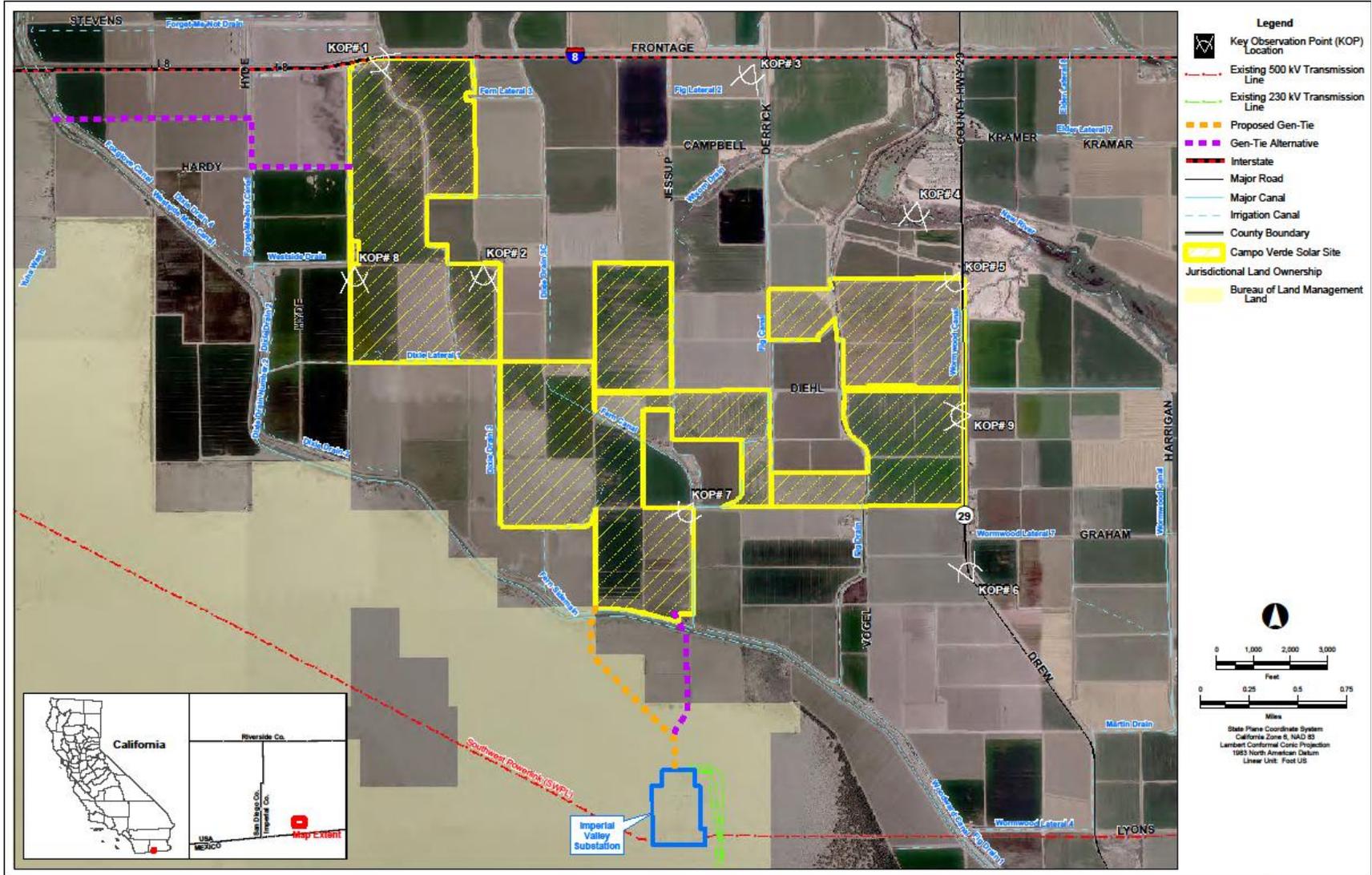
- **Landform** – This component of the visual quality rating criteria takes into account the degree of topography in a landscape and acknowledges that topography becomes more



Source: Visual Environments, 2012.

FIGURE 4.1-1
AERIAL OF PROJECT SITE BEFORE AND AFTER PROJECT IMPLEMENTATION

4.1 AESTHETICS



Source: kp environmental, 2012.

**FIGURE 4.1-2
KOP LOCATIONS**



Source: Visual Environments, 2012.

FIGURE 4.1-3
KOP #1 – I-8 EASTBOUND LOOKING EAST-SOUTHEAST

4.1 AESTHETICS



Source: Visual Environments, 2012.

FIGURE 4.1-4A
KOP #2 – WESTSIDE ELEMENTARY SCHOOL LOOKING SOUTHWEST (HORIZONTAL TRACKER)



Source: Visual Environments, 2012.

FIGURE 4.1-4B
KOP #2 – WESTSIDE ELEMENTARY SCHOOL LOOKING SOUTHWEST (FIXED-TILT UNIT)

4.1 AESTHETICS



Source: Visual Environments, 2012.

FIGURE 4.1-5
KOP #3 – I-8 WESTBOUND LOOKING SOUTH-SOUTHWEST



Source: Visual Environments, 2012.

FIGURE 4.1-6
KOP #4 – RIO BEND RV DEVELOPMENT LOOKING SOUTH

4.1 AESTHETICS



Source: Visual Environments, 2012.

FIGURE 4.1-7
KOP #5 – DREW ROAD LOOKING SOUTHWEST



Source: Visual Environments, 2012.

FIGURE 4.1-8
KOP #6 – DREW ROAD NORTHBOUND

4.1 AESTHETICS



Source: Visual Environments, 2012.

FIGURE 4.1-9
KOP #7 – WEST WIXOM ROAD & LIEBERT ROAD LOOKING SOUTHWEST



Source: Visual Environments, 2012.

FIGURE 4.1-10
KOP #8 – WEST VAUGHN ROAD LOOKING SOUTH

4.1 AESTHETICS



Source: Visual Environments, 2012.

FIGURE 4.1-11A
KOP #9 – DREW ROAD LOOKING WEST (HORIZONTAL TRACKER)



Source: Visual Environments, 2012.

FIGURE 4.1-11B
KOP #9 – DREW ROAD LOOKING WEST (FIXED-TILT UNIT)

4.1 AESTHETICS

- visually interesting as it gets steeper or more massive, or more severely or universally sculptured. Outstanding landforms may be monumental, (as found in Yosemite Valley), or they may be exceedingly artistic and subtle (such as certain badlands, pinnacles, arches, and other extraordinary formations).
- **Vegetation** - This component of the rating criteria gives primary consideration to the variety of patterns, forms, and textures created by plant life. Short-lived displays are given consideration when recurring or exceptionally beautiful. Consideration is also given to smaller scale vegetation that add detail to the landscape (e.g., gnarled or wind-beaten trees, Joshua trees, etc.).
- **Water** - This component of the rating criteria recognizes that visual quality is largely associated with the presence of water as it adds movement or serenity to a landscape. The degree to which water dominates the scene is the primary consideration in selecting the rating score for the water component.
- **Color** - This component of the visual quality rating criteria considers the overall color(s) of the basic components of the landscape (e.g., soil, rock, vegetation, etc.). Key factors that are used when rating the color of scenery are variety, contrast, and harmony.
- **Adjacent scenery** - This component of the rating criteria considers the degree to which scenery outside the view being rated enhances the overall impression of the scenery being evaluated. The distance of influence for adjacent scenery normally ranges from zero to five miles, depending upon the characteristics of the topography, the vegetation cover, and other such factors. This factor is generally applied to views that would normally rate very low in score, but the influence of the adjacent high visual quality serves to enhance the visual quality and raise the score.
- **Scarcity** - This component of the visual quality rating criteria provides an opportunity to give added importance to one or all of the scenic features that appear to be relatively unique or rare within a region. There may also be cases where a separate evaluation of each of the key factors does not give a true picture of the overall scenic quality of an area. Often, it is a number of not so spectacular elements in the proper combination that produces the most pleasing and memorable scenery. The scarcity factor can be used to recognize this type of area and provide the added emphasis that is lacking.
- **Cultural modifications** - This component of the visual quality rating criteria takes into account any manmade modifications to the landform, water, vegetation, and/or the addition of manmade structures. Depending on their character, these cultural modifications may detract from the scenery in the form of a negative intrusion or they may complement and improve the scenic quality of a view.

Based on the above criteria, views are rated numerically and a total score of visual quality can be tabulated. Based on the BLM's rating system, there are a total of 32 points possible (refer to Key Factors column in **Table 4.1-2**). Views that score a total of 19 points or more are typically considered to have "very high" visual quality. Views that score a total of 15 to 19 points are typically considered to have "high" visual quality. Views that score a total of 12 to 15 points are typically considered to have "above average" visual quality. And views that score a total of 11 points or less are typically considered to have "average" visual quality.

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Table 4.1-2 provides a breakdown of the various elements with regard to the proposed solar generation facility. The point values associated with the various criteria are show at the bottom of each cell.

**TABLE 4.1-2
VISUAL QUALITY RATING SYSTEM**

Key Factors Maximum Total of 32	Rating Criteria and Score		
Landform (Maximum Total 5)	High vertical relief as expressed in prominent cliffs, spires, or massive rock outcrops, or severe surface variation or highly eroded formations including major badlands or dune systems; or detail features dominant and exceptionally striking and intriguing such as glaciers. Score: 0	Steep canyons, mesas, buttes, cinder cones, and drumlins; or interesting erosional patterns or variety in size and shape of landforms; or detail features which are interesting though not dominant or exceptional. Score: 0	Low rolling hills, foothills, or flat valley bottoms; or few or no interesting landscape features. Score: 2
Vegetation (Maximum Total 5)	A variety of vegetative types as expressed in interesting forms, textures, and patterns. Score: 0	Some variety of vegetation, but only one or two major types. Score: 2	Little or no variety or contrast in vegetation. Score: 0
Water (Maximum Total 5)	Clear and clean appearing, still, or cascading white water, any of which are a dominant factor in the landscape. Score: 0	Flowing, or still, but not dominant in the landscape. Score: 0	Absent, or present but not noticeable. Score: 1
Color (Maximum Total 5)	Rich color combinations, variety or vivid color; or pleasing contrasts in the soil, rock, vegetation, water or snow fields. Score: 0	Some intensity or variety in colors and contrast of the soil, rock, and vegetation, but not a dominant scenic element. Score: 2	Subtle color variations, contrast, or interest; generally mute tones. Score: 0
Influence of Adjacent Scenery (Maximum Total 5)	Adjacent scenery greatly enhances visual quality. Score: 0	Adjacent scenery moderately enhances overall visual quality. Score: 1	Adjacent scenery has little or no influence on overall visual quality. Score: 0

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**TABLE 4.1-2
VISUAL QUALITY RATING SYSTEM**

Key Factors Maximum Total of 32	Rating Criteria and Score		
Scarcity (Maximum Total 5)	One of a kind; or unusually memorable, or very rare within region. Consistent chance for exceptional wildlife or wildflower viewing, etc. Score: 0	Distinctive, though somewhat similar to others within the region. Score: 0	Interesting within its setting but fairly common within the region. Score: 0
Cultural Modifications (Maximum Total 2)	Modifications add favorably to visual variety while promoting visual harmony. Score: 0	Modifications add little or no visual variety to the area, and introducing no discordant elements. Score: 0	Modifications add variety but are very discordant and promote strong disharmony. Score: 1

BLM, 1986.

*A rating of greater than 5 can be given but must be supported by written justification.

An important premise of the Scenic Quality Rating Criteria method is that views with the most variety and most harmonious composition have the greatest scenic value. Another important concept is that manmade features within a landscape do not necessarily detract from the scenic value. In fact, certain manmade features that complement the natural landscape may actually enhance the visual quality. In making this determination, it is important to assess project effects relative to the “visual character” of the project setting. Visual character is qualitatively defined by four primary components: form, line, color, and texture.

As a general rule, projects that create a high level of contrast to the existing visual character of a project setting are more likely to generate adverse visual impacts due to visual incompatibility. Conversely, projects that create a low level of contrast to the existing visual character are less likely to generate adverse visual impacts due to inherent visual compatibility. On this basis, project modifications are quantified and evaluated for impact assessment purposes.

By comparing the difference in visual quality ratings from the baseline (“before” condition) to post-project (“after” condition) visual conditions, the severity of project related visual impacts can be quantified. In some cases, visual changes caused by projects may actually have a beneficial visual effect and may enhance scenic quality.

D. PROJECT IMPACTS AND MITIGATION MEASURES

Adverse Effect on Scenic Vista

Impact 4.1.1 The proposed project would change existing views of the solar generation facility site from surrounding lands and roadways. The project site is not considered a scenic vista nor does it contain any outstanding aesthetic features. Therefore, this impact is considered **less than significant**.

The solar energy site is located in a rural portion of Imperial County with no topographic relief. The site is not located in a designated scenic vista, nor has the Imperial County General Plan designated the project site as an important visual resource (Imperial County, 2008). The northern extent of the solar generation facility site borders I-8. However, the interstate is not designated as a state scenic highway nor are any of the roadways abutting or surrounding the project site designated or proposed scenic roadways. In addition, none of the KOPs described above are located in a designated scenic vista. The project site could be considered to have scenic value from the perspective of open space. However, the project site does not possess features or characteristics which render a high score using the Visual Quality Rating System (**Table 4.1-2**). Therefore, project impacts to a scenic vista are considered less than significant.

Mitigation Measures

None required.

Significance After Mitigation

Not applicable.

Degrade Existing Visual Character or Quality of the Site

Impact 4.1.2 The proposed project would convert agricultural fields to a solar generation facility thereby replacing vegetation with man-made structures. The project would alter the overall character of the project site and substantially alter views from several residences. Therefore, this impact is considered **potentially significant**.

Short-Term Visual Changes – Travelers and Residents

Short-term visual impacts would occur in association with construction activities, including introducing heavy equipment (e.g., cranes), staging and materials storage areas and potential dust and exhaust to the project area. Residents living adjacent to parcels undergoing construction, as well as the Westside Elementary School located along Vaughn Road, would be subject to these visual changes throughout the 12 to 24-month duration of construction. Likewise, travelers along I-8, Drew Road and roadways adjacent to the solar generation facility site would also experience visual changes associated with the presence of construction activity. However, as various aspects of construction are completed (e.g., grading), the corresponding equipment would be eliminated from view. While construction equipment and activity may present a visual nuisance, it is temporary and does not represent a permanent change in views. Therefore, this impact is considered **less than significant**.

Long-Term Visual Changes – Travelers

The proposed project would change the existing use and character of the parcels comprising the solar generation facility site. Currently, the site is used for agricultural production (predominantly alfalfa hay) and there are no outstanding or unique visual resources located on the site. The proposed project would alter the existing visual character of the area and its surroundings as a result of converting agricultural land to a solar generation facility. The major generation equipment that will be installed on the project site includes solar modules; a panel racking and foundation design; inverter and transformer station; an electrical collection system. The project would also have Auxiliary Equipment, which would include safety and security equipment (firewater tanks, security system and security lighting, access gates, meteorological stations) and operations and maintenance facilities.

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The project includes low-lying solar modules (typically up to 7 feet in height for Fixed-tilt Units and up to 11 feet for Horizontal [Single-Axis] Tracker Structures); inverter enclosures (approximately 12 feet in height) and transformers (approximately 6 feet in height) and an O&M building (approximately 18 feet in height). The entire project site would be enclosed by a 7-foot high chain-link security fence (approximately 6 feet high with one-foot consisting of three strands of barbed-wire on the top) supported by line posts spaced a maximum of 10 feet apart. Based on the see-through nature of chain link fencing, most of the proposed equipment at the site would be visible from surrounding roadways. Taller structures, such as inverter structures and water tanks would also be visible from a distance.

PV solar panels would be the predominant feature of the project with power conversion stations located within the solar arrays. Depending on the type of panel chosen, heights could range from approximately 7 feet above the ground surface for Fixed-tilt Unit to a maximum of 11 feet above the ground surface for (Horizontal [Single-Axis] Tracker Structures). Power Conversion Stations (PCS) approximately 12 feet in height would be dispersed among the arrays. The tallest structures would be the gen-tie poles which would be between 120 to 135 feet in height with a maximum height of up to 145 feet. The poles would be localized in the southern portion of the site north of the Westside Main canal and extend south to the Imperial Valley Substation through lands managed by the BLM. Based on the height of the poles, they would be visible from several miles away.

For travelers along I-8, Drew Road and roadways adjacent to the solar generation facility site, the solar generation facility and gen-tie would be noticeable changes which dominate views. However, the duration of time the site would be visible would be very short as motorists would travel quickly through areas where the project would be visible. Most of the roadways immediately adjacent to the projects site are limited to ½-mile which would be passed very quickly. The overall aesthetic quality of the area is not distinctive being devoted to agriculture with no unique or outstanding features. The change in use would appear more industrial, but would not displace or damage any outstanding aesthetic feature unique to the area or the County as a whole. Thus, the overall, long-term visual changes from the perspective of travelers would be **less than significant**.

Long-Term Visual Changes – Residents

Solar Generation Facility Site

Generally, CEQA considers visual impacts from public viewpoints. However, residents are considered to be a highly sensitive viewer group because of the long periods of time spent in personal residences, and the strong feelings attached to their homes. The solar generation facility site is readily visible from KOP #1, #2, #5, #6, #7, #8 and #9. Only KOPs #3 and #4 have intervening lands that obstruct clear views of the site. KOPs #2, #8 and #9 would all be visible from residences.

While agricultural land is not considered a significant or unique visual resource, it does represent a use of land free of development with minimal man-made features. The uniform arrangement of cultivated fields and associated color (green or yellowish brown depending on growing season or harvest) create a combined man-made and natural aesthetic. The introduction of the solar generation facility would replace the existing appearance of the area with rows of PV solar panels approximately 18-inches off the ground across approximately 1,852 acres of the 1,990 acre site. While the PV structures would be no more than a maximum of 11 feet in height and the inverter enclosures would be no more than 10 to 12 feet in height, these structures would be visible from surrounding roadways as well as residences adjacent to, or across from the project parcels.

As proposed, the project includes a chain-link security fence approximately 7-feet high with three strands of smooth wire or barbed-wire (where required by code) on the top. As shown in the visual

simulations of KOPs #1, #2, #5, #7, #8 and #9, the chain link fence would be highly visible. Moreover, while it serves as a physical barrier to keep intruders off the site, it provides no purposeful visual screening of facility itself. Hence, the change in view from rows of green cultivated fields or mowed alfalfa to rows of tilted black and metal structures is quite pronounced. This especially is the case for the horizontal tracker configuration in the area of the Westside Elementary School (KOP #2) (**Figure 4.1-4A**) (as well as the residence to the east of the school), the residence at West Wixom Road and Liebert Road (KOP #7) (**Figure 4.1-9**), the residence at West Vaughn Road (KOP #8) (**Figure 4.1-10**), and the residence at Drew Road (KOP #9) (**Figure 4.1-11A** and **Figure 4.1-11B**).

KOP #1 is highly visible along eastbound I-8. However, based on travel speeds (estimated at 55-65 miles per hour) and limited frontage (slightly over one-half mile), views would be for a very limited duration. Moreover, this portion of I-8 is surrounded by flat agricultural fields with no significant visual features in foreground views (**Figure 4.1-3**). Therefore, changes to views or the quality of the site from KOP#1 would be considered **less than significant**.

In the case of KOP #2, the Westside Elementary school would experience a considerable change in views to the south across Vaughn Road. The visual simulations were prepared using a setback of approximately 120 feet from Vaughn Road for the horizontal tracker configuration (**Figure 4.1-4A**) and a setback of approximately 300 feet from Vaughn Road for the fixed-tilt configuration (**Figure 4.1-4B**). While views of the mountains would not be entirely obstructed, the PV solar panels would place structures in an area previously consisting of low profile agricultural crops. Therefore, changes to views or the quality of the site from KOP#2 would be considered **potentially significant impact**.

The proposed solar generation facility is barely visible along the horizon as shown in KOP #3 (**Figure 4.1-5**). Setbacks from I-8 as well as intervening agricultural land make the facility virtually unnoticeable. Therefore, changes to views or the quality of the site from KOP#3 would be considered **less than significant**.

Residents at the Rio Bend RV Development would not experience a noticeable change in views when looking south toward the project. As shown in **Figure 4.1-6**, distance and intervening vegetation would serve as a natural screen for the solar generation facility from KOP #4. Therefore, changes to views or the quality of the site from KOP#4 would be considered **less than significant**.

Slightly over one mile of the project is adjacent to the west side of Drew Road. Travelers along Drew Road would have prominent views of the solar generation facility site as there is minimal setback and vegetation is sparse and intermittent (**Figure 4.1-7**). Based on traveling speeds (approximately 55 miles per hour) and length of the project frontage, travelers would have brief views of the solar generation facility from KOP #5. Background views of the mountains would be slightly, but not completely obstructed along this segment of Drew Road. Therefore, changes to views or the quality of the site from KOP#5 would be considered **less than significant**.

KOP #6 provides another view along Drew Road approaching the project site from the south (northbound). From this vantage point, the solar generation facility site appears as a low lying black band on the horizon (**Figure 4.1-8**). Agricultural fields in the foreground as well as trees and existing overhead utilities appear to dominate the traveler's view. In contrast, the solar generation facility is unobtrusive. Therefore, changes to views or the quality of the site from KOP#6 would be considered **less than significant**.

KOP #7 illustrates the changes that would be visible from the residence at the southeast corner of West Wixom Road and Liebert Road (**Figure 4.1-9**). This portion of the solar generation facility site includes PV solar panels and the substation, switchyard and O&M Building as well as several gen-tie pole structures.

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West Wixom Road, the Fern Canal, as well as a band of reserve area for PV arrays provide a setback from the residential property. Mountains in the background are still visible and minimally interrupted by the vertical gen-tie pole structures. Nevertheless, the character of the view is changed from agricultural to an industrial-looking use. This is considered a **potentially significant impact**.

The view from the residence represented by KOP #8 would undergo a substantial visual change. The chain link fence and PV solar panels dominate views from this residence looking south (**Figure 4.1-10**). Views of the mountain range in the distance are partially obscured and the character of the area dramatically changed with the introduction of rows of PV solar panels in a previously cultivated agricultural field. As there PV solar panels about the south side of West Vaughn Road, there is no intervening setback or buffer to provide distance between the residence and the solar generation facility site. This is considered a **potentially significant impact**.

KOP #9 illustrates the change in view that would occur for the residence along Drew Road east of the solar generation facility site. As shown, views of agricultural fields would be changed to rows of PV solar panels with a chain link fence in the foreground regardless of whether horizontal tracker or fixed-tilt PV panels are used. The visual simulations were prepared using a setback of approximately 120 feet from Drew Road for the horizontal tracker configuration (**Figure 4.1-11A**) and a setback of approximately 300 feet from Drew Road for the fixed-tilt configuration (**Figure 4.1-11B**). The final dimensions (including setbacks) may vary from what is shown on the conceptual plans (refer to Figure 2.0-5 and 2.0-6 in Chapter 2.0). Both the horizontal trackers (**Figure 4.1-11A**) and the fixed-tilt units (**Figure 4.1-11B**) would not exceed the height of the fence as viewed from this KOP. However, the horizontal tracker configuration has a higher profile and would be more noticeable compared to the fixed-tilt configuration. The Fern Canal and Wormwood Lateral 7 provide minimal separation between the residence and the solar generation facility site. Overall, the character of the view is changed from agricultural to an industrial-looking use. This is considered a **potentially significant impact**.

Gen-Tie

The portion of the Gen-tie Alternatives on federal land managed by the BLM is designated VRM Class III based on its Scenic Quality Classification of C, and High Visual Sensitivity Level, and Viewing Distance Zone of F/M (BLM, 2010 p. B-13 and A-39). The proposed gen-tie is located wholly within Utility Corridor N, a portion of BLM land where placement of transmission lines and other linear utilities are encouraged.

Construction of the proposed gen-tie will change the look and character of the BLM lands that will be crossed. Structure heights would vary from approximately 100 to 130 feet depending on terrain and would not exceed 145 feet. Single steel pole structures will be spaced approximately 400 to 800 feet apart. The VRM Class III area within which the line would be located has as its objective to partially retain the existing character of the landscape. But the level of change to the characteristic landscape from the gen-tie would be weak because while the double-circuit structures would be visible from some distance, they would look similar to the other existing electrical facilities in and around the nearby Imperial Valley Substation. Therefore, while the introduction of the Gen-tie Line would alter the existing visual character or quality of the immediate area, it would not substantially degrade existing visual quality based on its location in an area unlikely to be seen by many people. Furthermore, this portion of the Yuha Basin it is not in an area with outstanding visual features, and there are multiple existing electric infrastructure features present (consistent with the designation as a utility corridor) connecting to the Imperial Valley Substation. Therefore, **less than significant impacts** under would occur with regard to substantially degrading the existing visual character or quality of the site as a result of construction of the Gen-Tie.

Mitigation Measures

MM 4.1.2 Prior to issuance of construction permits, the Applicant shall work with affected landowners and ICPDS to develop a visual screening program that will screen views of the project from KOP #2, #8 and #9, if determined to be needed by each landowner.

The extent of screening shall be determined for each KOP in consultation with the school and/or residents, ICPDS and the Applicant. If vegetative screening is used, xeriscape plants shall be selected from the "Imperial County Xeriscape Guide and Map." Initial xeriscape planting, if desired by the landowner, shall be the responsibility of the Applicant. Landscape maintenance to check the health of the plants shall be performed by the landowner or Applicant, as needed and as determined by the agreement between the two parties.

Timing/Implementation: Prior to issuance of construction permits.

Enforcement/Monitoring: Imperial County Planning and Development Services.

Significance After Mitigation

Implementation of MM 4.1.2 would visually screen the proposed solar generation facility from the elementary school play yard and residence along Vaughn Road and the residence located along Drew Road. The screen would obstruct views of the solar generation facility site with xeriscape plantings and fencing. Following implementation of MM 4.1.2, impacts to visual quality and character would be reduced to **less than significant**.

New Source of Substantial Light or Glare

Impact 4.1.3 The proposed project includes non-reflective PV panels are non-reflective which are not anticipated to create glare. Likewise, the lighting system will be designed to provide the minimum illumination. Therefore, impacts associated with creation of substantial light and glare are considered **less than significant**.

Short-Term Light and Glare

Short-term sources of lighting would be introduced to the project site during construction as part of site security, storage and staging areas. The Applicant has identified a Best Management Practices to reduce construction night lighting impacts by designing and installing all lighting at construction and storage yards and staging areas such that light bulbs and reflectors are not visible from public viewing areas. Furthermore, construction lighting must not cause reflected glare. Overall, the BMPs would minimize illumination of the project facilities, vicinity, and nighttime sky. Construction is not anticipated to result in major sources of glare other than vehicle windshields or reflection that may occur off of metallic surfaces (e.g. PV panel support structures) while being installed. Thus, new sources of light and glare associated with construction of the project would result in a **less than significant impact**.

Long-Term Visual Changes

Light

The project site is used for agricultural production and as such is not currently a source of light or glare. A lighting system is proposed as part of the project. Outdoor lighting for the common services area of the project facilities will consist of fixtures secured to structures, equipment, walls and poles to provide illumination for maintenance vehicles and security. The lighting system would be designed to provide nighttime lighting levels consistent with applicable Imperial County lighting standards. Switched lighting

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will be provided at the substation and inverters. In the PV solar field, lighting will be provided at the gates and other locations where necessary for security or safety.

The Applicant has identified a BMP regarding nighttime lighting during operation and maintenance of the project. The BMP requires using the minimum amount of nighttime lighting necessary for security purposes. The lighting must be designed to eliminate glare or spillover to areas outside of the project site. While the project would introduce some nighttime light, it would be designed to avoid a substantial change in illumination in the existing night sky environment. Thus, new sources of light associated with long-term operations and maintenance of the project would result in a **less than significant impact**.

Glare

PV modules are designed to absorb as much light as possible to maximize efficiency. In addition, PV modules use anti-reflective coatings to decrease reflection and increase conversion efficiency. The time and duration of any potential reflections from the panels are determined by the orientation of the panels and the position of the observer in relation to those panels. All PV solar projects, regardless of the type of mounting structure, orient the panels perpendicular to the sun or as close to perpendicular as much time as possible to maximize solar absorption and energy output. This results in the panels being oriented towards the sun as much as possible throughout the day and the course of the year as the position of the sun changes in the sky. This orientation towards the sun results in the portion of incoming light that is reflected to be directed back into the sky because light is reflected from a flat surface at an angle equal to that of the incoming light.

The amount of light reflected upwards would not be expected to potentially affect the Naval Air Facility at El Centro's training flights or other air traffic in the area, including crop dusters. Only 2 to 10 percent of ambient light is reflected by PV solar panels. The reflectance of panels to be used on the solar generation facility site has been calculated at various angles. The results of the calculations indicate that the index of refraction for the glass is generally the same as the windshield of a car. Therefore, the intensity of the reflected light would be low. Also, light intensity decreases with distance from the source (according to the inverse square law of light intensity where intensity is equal to the inverse square of the distance or $I = 1/d^2$). For example, each time distance is doubled from the source, the light intensity is decreased to one-quarter of its original value ($1/2^2$). Therefore, the intensity of light reflected from the PV solar panels at locations any distance from the source would be a small fraction of the original intensity at the point of reflection. Thus, any reflected light from the PV panels would be very low. Any viewers who could see the low intensity reflected light would also be exposed to significantly brighter ambient light.

As such, the PV solar modules would not create a significant source of glare during sunlight hours. Also, the project would not use other reflective materials such as fiberglass, aluminum or vinyl/plastic siding, galvanized products, and brightly painted steel roofs that have the potential to create on- and off-site glare. Therefore, operations and maintenance of the project is not anticipated to create a new source of glare that would adversely affect day or nighttime views in the area. Thus, glare impacts are considered **less than significant**.

Mitigation Measures

None required.

Significance After Mitigation

Not applicable.

4.1.4 CUMULATIVE SETTING, IMPACTS AND MITIGATION MEASURES

A. CUMULATIVE SETTING

The geographic scope for the cumulative setting for aesthetics, light, and glare encompasses lands within a 5-mile radius of the proposed project site. In a larger context, the cumulative setting also includes existing, approved, proposed and reasonably foreseeable projects identified in Table 3.0-1 in Chapter 3.0, Introduction to the Environmental Analysis and Assumptions Used.

B. CUMULATIVE IMPACTS AND MITIGATION MEASURES

Cumulative Visual Impacts

Impact 4.1.4 Implementation of the proposed project, in conjunction with existing, approved, proposed, and reasonably foreseeable projects in the vicinity of the project site, would alter the visual character of the area, resulting in a change to public views as well as increased daytime glare and nighttime lighting levels. Such impacts are typically addressed on a project-by-project basis. Therefore, cumulative impacts to visual resources are considered **less than cumulatively considerable**.

Under cumulative conditions, existing views in the vicinity of the project site would be directly impacted by loss of open space, decreased views of mountainsides, and increased light and glare. The proposed solar generation facility site is surrounded by mostly agricultural land with desert land to the south and west. Construction of the proposed project would result in short-term changes to the visual character of the site associated with the presence of equipment, site clearance and solar facility installation. These visual changes would be less than cumulatively considerable due to their limited duration.

Implementation of the proposed project would visually alter the site changing its character from agricultural fields to a solar generation facility (as discussed under Impact 4.1.1). However, the site and surrounding agricultural area within the geographic scope does not contain any unique or outstanding features with high aesthetic value. Likewise, other solar projects proposed within the geographic scope are not anticipated to damage or compromise any outstanding aesthetic features as these projects would occur on flat agricultural or desert lands.

Within the geographic scope, the proposed Silverleaf Solar project would be located to south of the proposed project site. Several project parcels would have western, eastern and southern boundaries adjacent to the Silverleaf Solar project. Thus, views to the south from the proposed project would be changed from agricultural land to solar facilities. Further to the west, the Imperial Solar Energy Center West project would be developed. The project site would be separated from this project by intervening agricultural lands. Likewise the proposed Acorn Greenworks Solar Project and Centinela Solar Energy Project to the south and southeast respectively, would also have intervening agricultural lands separating these projects from the proposed project. Alteration of views within the geographic scope would visually alter the existing agricultural character of the area, but would not result in a loss of scenic views or compromise the aesthetic of an otherwise outstanding landscape.

The proposed project, in combination with past and present (existing) and reasonably foreseeable future projects (identified in Table 3.0-1 in Chapter 3.0, Introduction to the Environmental Analysis and Assumptions Used), would contribute to cumulative changes to the character of the cumulative visual setting. However, because the County of Imperial allows for development of the site with issuance of a Conditional Use Permit, and there are only distant views of mountains from the project site and

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surrounding area, the contribution of the proposed project to this impact would be less than cumulatively considerable.

Visual impacts are typically addressed on a project-by-project basis via mitigation such as screening, setbacks, use of earth tone colors and non-reflective building materials, and downward or shielded lighting. Visual impacts to KOP #2, #8 and #9 will be screened as described in MM 4.1.2.

The gen-tie portion of the project located on BLM managed lands would not substantially degrade the character of the site or surrounding area because it is proposed within Utility Corridor N. This corridor is designated for siting utilities and has been developed with a number of overhead utility lines.

The PV panels would cover the majority of the solar generation facility site. The PV panels are non-reflective and none of the materials proposed are anticipated to cause light and glare. Similar conditions are anticipated for the proposed Silverleaf Solar Project to the south and other solar projects within the geographic scope and as identified in Table 3.0-1. All projects are required to comply with the County's lighting ordinance to avoid excessive illumination and light spillage on adjacent properties. This portion of the County is largely undeveloped and unlit. The proposed project would not incrementally add to existing conditions such that a significant cumulative impact would occur. Lighting proposed for the project will be pointed downward and shielded to focus illumination on the desired areas only. Therefore, the project's incremental contribution to cumulative visual impacts, including light and glare, is considered less than cumulatively considerable.

Mitigation Measures

Implement MM 4.1.2.

Significance After Mitigation

Following implementation of MM 4.1.2, impacts to visual quality and character would be reduced to less than significant levels. Therefore, the project's contribution to cumulative visual impacts would be less than cumulatively considerable.

SECTION 4.2

LAND USE

This section describes the land use plans, policies, regulations and federal special designations that apply to the proposed project. The solar generation facility site is located in Imperial County on privately held lands. Applicable local land use regulations include the County's General Plan and Land Use Ordinance, and the Airport Land Use Compatibility Plan (ALUCP). Approximately 0.09 miles of the gen-tie cross through lands managed by the BLM encroaching within an Area of Critical Environmental Concern and a designated utility corridor. Applicable federal land use plans include *Title V of the Federal Land Policy and Management Act*, *California Desert Conservation Area Plan* (BLM, 1980), the *Yuha Desert Management Plan* (BLM, 1985), and *Flat-tailed Horned Lizard Rangeland Management Strategy* (ICC, 2003).

This section focuses on the proposed project consistency with existing land use plans, ordinances, regulations, policies, and the project's compatibility with existing or reasonably foreseeable land uses. The project's compatibility with existing land use resources is also evaluated. The Project's impacts with respect to air quality, biological resources, cultural resources, noise, dust, public health, traffic and transportation, and visual resources are discussed in detail in separate sections of this EIR. Note: The segment of the gen-tie located on BLM land is undergoing separate environmental analysis under NEPA by the BLM. However, regulations applicable to the gen-tie segment on BLM land are acknowledged in this section.

4.2.1 REGULATORY FRAMEWORK

A. FEDERAL

Bureau of Land Management (BLM)

The following discussion describes the plans applicable to the gen-tie portion of the proposed project which crosses public lands managed by the BLM. However, this portion of the project would be subject to separate analysis under NEPA. An Environmental Assessment is being prepared by the BLM for this portion of the proposed project.

Federal Land Policy and Management Act, 1976 as Amended

The United States Congress passed the Federal Land Policy and Management Act (FLPMA) in 1976. Title V, "Rights-of-Way" of the FLPMA establishes public land policy, guidelines for administration, provides for management, protection, development, and enhancement of public lands, and provides the BLM authorization to grant right-of-way. Authorization of systems for generation, transmission, and distribution of electric energy is addressed in Section 501(4) of Title V. In addition, Section 503 specifically addresses "Right of Way Corridors" and requires common right-of-ways "to the extent practical". FLPMA, Title V, Section 501(a)(6) states, "The Secretary, with respect to the public lands (including public lands, as defined in section 103(e) of this Act, which are reserved from entry pursuant to section 24 of the Federal Power Act (16 U.S.C. 818)) [P.L. 102-486, 1992] and, the Secretary of Agriculture, with respect to lands within the National Forest System (except in each case land designated as wilderness), are authorized to grant, issue, or renew rights-of-way over, upon, under, or through such lands for roads, trails, highways, railroads, canals, tunnels, tramways, airways, livestock driveways, or other means of transportation except where such facilities are constructed and maintained in connection with commercial recreation facilities on lands in the National Forest System;" (BLM, 2001, p. 35).

The Applicant is requesting a grant of right-of-way approval from the BLM for the portion of the gen-tie on land under the jurisdiction of the BLM.

4.2 LAND USE

California Desert Conservation Area (CDCA) Plan, 1980 as Amended

Section 601 of the FLMPA required preparation of a long-range plan for the California Desert Conservation Area. The California Desert Conservation Area (CDCA) Plan was adopted in 1980 to provide for the use of public lands and resources of the California Desert Conservation Area in a manner which enhances wherever possible and, which does not diminish, on balance, the environmental, cultural, and aesthetic values of the Desert and its productivity. The CDCA Plan is a comprehensive, long-range plan covering 25 million-acres. Approximately 12 million acres of this total are public lands administered by the BLM on behalf of the CDCA. These public lands are dispersed throughout the California Desert which includes the Mojave Desert, the Sonoran Desert and a small portion of the Great Basin Desert. The 12 million acres of public lands administered by the BLM make-up approximately half of the CDCA.

The CDCA Plan includes 12 elements: Cultural Resources; Native American; Wildlife; Vegetation; Wilderness; Wild Horse and Burro; Livestock Grazing; Recreation; Motorized Vehicle Access; Geology, Energy and Mineral Resources; Energy Production and Utility Corridors; and Land-Tenure Adjustment. Each of the elements contains goals and specific actions for the management, use, development, and protection of the resources and public lands within the CDCA, and is based on the concepts of multiple use, sustained yield, and maintenance of environmental quality. In addition, each element provides both a desert-wide perspective of the planning decisions for one major resource or issue of public concern as well as more specific interpretation of multiple-use class guidelines for a given resource and its associated activities.

Chapter 2 of the CDCA Plan identifies four multiple-use classes which are used to describe a different type and level or degree of use which is permitted within that particular geographic area. The four multiple-use classes are defined below (BLM, 1980, p. 13):

Multiple-Use Class C

Multiple-Use Class C has two purposes. First, it shows those areas which are being “preliminarily recommended” as suitable for wilderness designation by Congress. This process is fully explained in the Wilderness Element in this Plan. Second, it will be used in the future to show those areas formally designated as wilderness by Congress. The Class C guidelines (Table 1) are different from the guidelines for other classes. They summarize the kinds of management likely to be used in these areas in the CDCA when and if they are formally designated wilderness by Congress.

Multiple-Use Class L

Multiple-Use Class L (Limited Use) protects sensitive, natural, scenic, ecological, and cultural resource values. Public lands designated as Class L are managed to provide for generally lower-intensity, carefully controlled multiple use of resources, while ensuring that sensitive values are not significantly diminished.

Multiple-Use Class M

Multiple-Use Class M (Moderate Use) is based upon a controlled balance between higher intensity use and protection of public lands. This class provides for a wide variety of present and future uses such as mining, livestock grazing, recreation, energy, and utility development. Class M management is also designed to conserve desert resources and to mitigate damage to those resources which permitted uses may cause.

Multiple-Use Class I

Multiple-Use Class I is an “intensive use” class. Its purpose is to provide for concentrated use of lands and resources to meet human needs. Reasonable protection will be provided for sensitive natural and cultural values. Mitigation of impacts on resources and rehabilitation of impacted areas will occur insofar as possible.

The proposed project is included in the “Land Use Activities” category of Transmission Lines as identified in Table 1, Multiple-Use Class Guidelines, of the CDCA Plan. As noted in Table 1, under Multiple-Use Class L, M and I, “New...electric transmission facilities...may be allowed only within designated corridors (BLM, 1980, p. 15).

The proposed project is also located in the Yuha Basin Area of Critical Environmental Concern (ACEC) as mapped in the CDCA Plan (BLM, 1980). ACECs are defined in the CDCA Plan as follows:

“An area within the public lands where special management attention is required (when such areas are developed or used or where no development is required) to protect and prevent irreparable damage to important historic, cultural, or scenic values, fish and wildlife resources or other natural systems or processes, or to protect life and safety from natural hazards.” (BLM, 1980, p. 101)

The CDCA Plan provides the following management goals for ACECs:

- (1) Identify and protect the significant natural and cultural resources requiring special management attention found on the BLM-administered lands in the CDCA.
- (2) Provide for other uses in the designated areas, compatible with the protection and enhancement of the significant natural and cultural resources.
- (3) Systematically monitor the preservation of the significant natural and cultural resources on BLM administered lands, and the compatibility of other allowed uses with these resources.

Utility Corridor N

Planning corridors are identified in the Energy Production and Utilities Corridor Element. Sixteen planning corridors are identified on Map 16 of the CDCA Plan. Planning corridors are a tool for guiding planning and environmental assessment work required when a right-of-way grant is requested. Utilities that do not conform to the adopted corridor system require a Plan Amendment. The following types of utilities are allowed in planning corridors: new electrical transmission towers and cables of 161-kV (kilovolt) or above; all pipelines with diameters greater than twelve inches; coaxial cables for interstate communications; and major aqueducts or canals for interbasin transfer of water.

Joint use planning corridors vary in width from two to five miles. The five-mile standard is used in cases where there are no existing facilities and no engineering or environmental data to define a narrower corridor. Likewise, a five-mile width is used where many facilities merge to ensure adequate space for system integrity and flexibility. The corridors are primarily oriented east-west, with a number of entry points to the Desert along the Nevada-Arizona border and a number of exit points into the Los Angeles basin or the San Joaquin Valley (BLM, 1980, p. 116).

The Southwest Powerlink 500-kV transmission line, an Imperial Irrigation District 230-kV line and the La Rosita 230-kV transmission line all align through Corridor N (BLM, 1985, p. 20). The proposed gen-tie

4.2 LAND USE

would extend through Corridor N. A Plan Amendment is not needed but the Applicant has submitted an application for a grant of right-of-way from the BLM.

Yuha Desert Management Plan

The Yuha Desert Management Plan (YDMP) reexamined previous management efforts occurring in the Yuha Desert (BLM, 1985). The Yuha Desert Study Area includes the Yuha Basin ACEC. The YDMP identifies goals, planned action as and implementation methods to address resources in the area including wildlife and vegetation, cultural resources, geology, lands and recreation taking into consideration previous planning efforts and outcomes. The primary goal of the YDMP is to protect sensitive resource values while permitting compatible mineral, energy and recreation related activities. The proposed gen-tie would extend into the YDMP.

Flat-tailed Horned Lizard Rangewide Management Strategy

The Flat-tailed Horned Lizard Rangewide Management Strategy (ICC, 2003) (hereafter referred to as the Strategy) was originally developed in 1997 and revised in 2003 by the Interagency Coordinating Committee (ICC). The ICC signatory members who participated in the writing and discussion of the 2003 revision included various state and federal agencies (Anza-Borrego State Park, Arizona Game and Fish [Yuma], Ocotillo Wells State Vehicular Recreation Area, U.S. Bureau of Land Management [El Centro, Palm Springs, and Yuma], U.S. Bureau of Reclamation [Yuma], U.S. Fish and Wildlife Service [City of Carlsbad and Phoenix], U.S. Marine Corps Air Station [Yuma], U.S. Naval Air Facility (El Centro), and U.S. Navy SW Division [San Diego]).

The purpose of the Strategy is to provide guidance for the conservation and management of sufficient habitat to maintain extant populations of flat-tailed horned lizards (FTHLs) in each of the five Management Areas (MAs) within the CDCA Plan in perpetuity. The FTHL is a BLM sensitive species and is found only in southwestern Arizona, southeastern California, and adjacent portions of Sonora and Baja California Norte, Mexico.

The United States Fish and Wildlife Service (USFWS) proposed the species for listing as threatened by the U.S. Fish and Wildlife Service (USFWS) on November 29, 1993. The proposed listing was based on initial evidence suggesting that habitat loss within the perimeter of the range of the species was causing a decline in specific FTHL habitat. Subsequently, the USFWS withdrew its proposed listing on January 23, 2003, based in part on protections identified in the Strategy. The proposed listing has been reinstated and withdrawn several times since January 23, 2003. On March 14, 2011, after completing an analysis of the conservation status of FTHL, the USFWS announced that the species does not need protection under the Endangered Species Act (ESA). This determination was made because threats to the species as identified in the 1993 proposed rule are not as significant as earlier believed and available data do not indicate the species is likely to become endangered in the foreseeable future throughout all or a significant portion of its range (USFWS, 2011).

The Strategy encourages surface-disturbing projects to be located outside of FTHL MAs whenever possible. However, it does not disallow surface-disturbing projects from occurring in a MA. If no alternative to location for a project exists outside an MA, the project should attempt to locate in a previously disturbed area or in an area with poor habitat quality inside the MA. In addition, construction should be timed to minimize mortality.

New right-of-ways may be permitted only along the boundaries of an MA, and then, only if impacts can be mitigated to avoid long-term effects on FTHLs. Rights-of-way may be permitted within the

boundaries of an MA with mitigation incorporated. The cumulative disturbance per MA may not exceed 1%. Mitigation ratios can be as high as 6:1.

Based on review of “Figure 7 – Yuha Desert Management Area” of this Strategy, the portion of the gte extending into lands managed by the BLM is located within the Yuha Desert Management Area for the FTHL. Several planning actions have been developed as recommendations so that signatory agencies can ensure they achieve the goal of maintaining a “long-term stable” population within each MA is achieved. Projects that impact FTHL or their habitat are required to implement mitigation measures or pay compensation to minimize impacts. The BLM will obtain a conference opinion from the USFWS for FTHL. The Applicant has also proposed mitigation measures to address FTHL (refer to Table 2.0-4 in Chapter 2.0).

Federal Aviation Regulations Part 77

The FAA regulates aviation at regional, public, private, and military airports. The Federal Aviation Administration (FAA) requires notification of structures to be constructed in excess of 200 feet in all areas (and, potentially, of structures less than 200 feet, depending on proximity of the proposed structure to public use airports). The U.S. Department of Transportation and California Department of Transportation also require the applicant to submit FAA Form 7460-1, Notice of Proposed Construction or Alteration. Notification allows the FAA to identify potential aeronautical hazards in advance, thus preventing or minimizing any adverse impacts on the safe and efficient use of navigable airspace (49 CFR Part 77.17). Any structure that would constitute a hazard to air navigation, as defined in FAA Part 77, requires issuance of a permit from the California Department of Transportation’s Aeronautics Program. If the FAA aeronautical study determines that the structure has no impact on air navigation, a permit is not required.

Part 77, Subpart C, of the Federal Aviation Regulations limits the heights of structures, trees, and other objects in the vicinity of an airport within Compatibility Zones C and D to less than 35 feet above the level of the ground. Proponents of a project which may exceed a Part 77 limit must notify the Federal Aviation Administration as required. Currently, there are no such locations near the existing airports in Imperial County. As discussed below, the project site is located approximately nine miles south of the Naval Air Facility (NAF), El Centro. According to Figure 3G (Compatibility Map-Naval Air Facility, El Centro) of the Airport Land Use Compatibility Plan (ALUCP), the project site is not located within any of the compatibility zones as identified in the ALUCP. Therefore, Part 77 would not apply to the proposed project.

B. LOCAL

Imperial County General Plan

The purpose of the Imperial County General Plan is to guide growth throughout the County. Urban development is directed to areas where public infrastructure can be readily extended and areas with limited health and safety hazards. Likewise development should avoid natural, cultural, and economic resources.

The Imperial County General Plan includes ten elements: Land Use; Housing; Circulation and Scenic Highways; Noise; Seismic and Public Safety; Conservation and Open Space; Agricultural; Geothermal/Alternative Energy and Transmission; Water; and Parks and Recreation. These elements satisfy the California Government Code requirements for general plan elements. Each element includes goals, objectives, and implementing policies and action programs.

4.2 LAND USE

The General Plan land use designation Agriculture applies to the solar generation facility and approximately 0.1 mile of the gen-tie on the solar generation facility site. The Land Use Element of the Imperial County General Plan defines the “Agriculture” designation as follows:

This category is intended to preserve lands for agricultural production and related industries including aquaculture (fish farms), ranging from light to heavy agriculture. Packing and processing of agricultural products may also be allowed in certain areas, and other uses necessary or supportive of agriculture. The Agriculture category includes most of the central irrigated area known as the Imperial Valley, the Bard/Winterhaven Valley and the south end of the Palo Verde Valley.

Where this designation is applied, agriculture shall be promoted as the principal and dominant use to which all other uses shall be subordinate. Where questions of land use compatibility arise, the burden of proof shall be on the non-agricultural use to clearly demonstrate that an existing or proposed use does not conflict with agricultural operations and will not result in the premature elimination of such agricultural operations. No use should be permitted that would have a significant adverse effect on agricultural production, including food and fiber production, horticulture, floriculture, or animal husbandry. All non-agricultural uses in any land use category shall be analyzed during the subdivision, zoning, and environmental impact review process for their potential impact on the movement of agricultural equipment and products on roads located in the Agriculture category.

No land shall be removed from the Agriculture category except for annexation to a city, where needed for use by a public agency, for geothermal purposes, where a mapping error may have occurred, or where a clear long term economic benefit to the County can be demonstrated through the planning and environmental review process (Imperial County, 2008, p. 48).

Table 4.2-1 analyzes the consistency of the proposed project with the applicable policies relating to land use from the Imperial County General Plan. While this EIR analyzes the project’s consistency with the General Plan pursuant to CEQA Guidelines Section 151250, the Imperial County Board of Supervisors ultimately determines on balance whether the project is overall consistent with the County’s General Plan.

**TABLE 4.2-1
IMPERIAL COUNTY GENERAL PLAN CONSISTENCY ANALYSIS**

General Plan Policies	Consistent with General Plan?	Analysis
Conservation and Open Space Element		
Conservation of Environmental Resources for Future Generations		
Objective 1.2 Encourage only those uses and activities that are compatible with the fragile desert, aquatic, and marshland environment.	Yes	The proposed Gen-tie is compatible with the desert environment. The Applicant has submitted a right-of-way application to the BLM for the approximately 0.9 mile gen-tie segment located on BLM land. The gen-tie

**TABLE 4.2-1
IMPERIAL COUNTY GENERAL PLAN CONSISTENCY ANALYSIS**

General Plan Policies	Consistent with General Plan?	Analysis
		alignment for the proposed project would be located in Utility Corridor N. This designated corridor allows development of utilities within a defined area and confines utilities to a specific area in order to protect the overall desert environment. Therefore, the proposed project is consistent with this objective.
Objective 1.5 Provide for the most beneficial use of land based upon recognition of natural constraints.	Yes	The Campo Verde Solar Project is a beneficial use of the project site. The proposed project would provide a beneficial use of land by creating local jobs during construction and assisting with more stable energy costs consistent with this objective.
Objective 1.6 Ensure the conservation, development and utilization of the County's natural resources.	Yes	The proposed project would result in conversion of agricultural lands in order to construct a solar facility. The proposed project would forfeit one resource (Prime Farmland, Farmland of Statewide Importance and Unique Farmland) for another (use of the County's solar resource for generation of electricity energy). However, the conversion would be temporary as the Applicant intends to submit an Agricultural Reclamation Plan to the Imperial County Department of Planning and Development Services detailing procedures for returning the solar generation facility site to a condition to support agricultural production at the end of the useful life of the project or the expiration of the Conditional Use Permit. Therefore, the proposed project is consistent with this objective.
Conservation of Energy Sources		
Goal 6: The County shall seek to achieve maximum conservation practices and maximum development of renewable alternative sources of energy.	Yes	The proposed project would include a solar generation facility on private lands that are currently highly disturbed by human activity (agriculture) and would support the county's goal of developing alternative energy resources, as well as the State's Renewable Portfolio Standard (RPS) goals. Therefore, the

4.2 LAND USE

**TABLE 4.2-1
IMPERIAL COUNTY GENERAL PLAN CONSISTENCY ANALYSIS**

General Plan Policies	Consistent with General Plan?	Analysis
		proposed project would be consistent with this goal.
Objective 6.6 Encourage compatibility with national and State energy goals and city and community general plans.	Yes	As a large-scale solar generation facility, the proposed project would coincide with the county’s goal of developing alternative energy and would comply with federal and state mandates for renewable energy development. Therefore, the proposed project would be consistent with this objective.
Land Use Element		
Regional Vision		
Objective 3.6 Recognize and coordinate planning activities as applicable with the Bureau of Land Management (BLM), and the California Desert Conservation Plan.	Yes	The gen-tie portion of the proposed project is consistent with the California Desert Conservation Plan because the proposed gen-tie corridor is located entirely within the designated Utility Corridor N. The proposed gen-tie is considered an allowed use as it is located within a designated utility corridor, thereby minimizing to the extent possible any additional disturbance to desert lands. The gen-tie would require approval by the BLM of a grant of right-of-way in order to allow the construction and operation of the proposed gen-tie on BLM land. The proposed project is consistent with this objective as the Applicant is coordinating with the BLM.
Public Facilities		
Objective 8.8 Ensure that the siting of future facilities for the transmission of electricity, gas, and telecommunications is compatible with the environment and County regulation.	Yes	The proposed project would be consistent with the County’s Land Use Ordinance which allows “major facilities relating to the generation and transmission of electrical energy” with a Conditional Use Permit (Imperial County, 2009). The Applicant has requested a Conditional Use Permit from the County (CUP11-0007). Therefore, the proposed project is consistent with this objective. The Applicant is also required to obtain a grant of right-of-way from the BLM to construct and operate transmission lines

**TABLE 4.2-1
IMPERIAL COUNTY GENERAL PLAN CONSISTENCY ANALYSIS**

General Plan Policies	Consistent with General Plan?	Analysis
		on BLM land.
Objective 8.9 Require necessary public utility rights-of-way when appropriate.	Yes	The proposed project is consistent with this objective, as the project has requested a grant of right-of-way from the BLM (Serial No. CACA 053151) for the gen-tie segment extending from the solar generation facility through BLM land.
Protection of Environmental Resources		
Objective 9.6 Incorporate the strategies of the Imperial County Air Quality Attainment Plan (AQAP) in land use planning.	Yes	The Applicant will minimize dust emissions during construction by implementing all measures necessary for compliance with the applicable provisions of Imperial County Air Pollution Control District (ICAPCD) Rules 800, 801, 802, 803, 804, and 805. The Applicant will also prepare a dust control plan and obtain permit from the Imperial County Air Pollution Control District prior to start of construction plan. During operations and maintenance, dust would be controlled by limiting vehicle speeds on unpaved roads. Therefore, the proposed project would be consistent with this objective.
Circulation and Scenic Highways Element		
Safe, Convenient, and Efficient Transportation System		
Objective 1.2 Require a traffic analysis for any new development which may have a significant impact on County roads.	Yes	A traffic analysis has been prepared for the proposed project. As discussed in Section 4.3 Transportation and Circulation, cumulative impacts would occur at one intersection with implementation of the proposed project but such impacts would be mitigated to less than significant levels through payment of the project's fair share proportion of any improvements (refer to MM 4.3.3). The proposed project is consistent with this objective.
Noise Element		
Noise Environment		
Objective 1.3 Control noise levels at the source where feasible.	Yes	A noise assessment was prepared for the proposed project that examined construction and operational noise. As discussed in Section

4.2 LAND USE

**TABLE 4.2-1
IMPERIAL COUNTY GENERAL PLAN CONSISTENCY ANALYSIS**

General Plan Policies	Consistent with General Plan?	Analysis
		4.8, Noise, the proposed project will meet the County's noise standards. Therefore, the proposed project would have no impact on noise levels.
Project/Land Use Planning		
Goal 2: Review Proposed projects for noise impacts and require design which will provide acceptable indoor and outdoor noise environments.	Yes	As discussed in Section 4.8, Noise, the proposed project will meet the County's noise standard. Therefore, the proposed project is consistent with this goal.
Long Range Planning		
Goal 3: Provide for environmental noise analysis inclusion in long range planning activities which affect the County.	Yes	A noise assessment has been prepared for the Proposed project which considered the operational, or long-range, noise generated by the project. As discussed in Section 4.8, noise from the proposed project would meet the County's noise standard. Therefore, the proposed project is consistent with this goal.
Seismic and Public Safety Element		
Land Use Planning and Public Safety		
Objective 1.1 Ensure that data on geological hazards is incorporated into the land use review process, and future development process.	Yes	A preliminary geotechnical investigation was prepared for the proposed project. Geotechnical issues are identified and discussed in Section 4.6, Geology and Soils. Recommendations provided in the geotechnical report are incorporated into this EIR as mitigation measures. Therefore, the proposed project is consistent with this objective.
Objective 1.7 Require developers to provide information related to geologic and seismic hazards when siting a Proposed project.	Yes	The preliminary geotechnical report prepared for the proposed project identifies potential geologic and seismic hazards. The proposed project would be required to comply with applicable state building codes as well as mitigation measures incorporated into Section 4.6 of this EIR. Therefore the proposed project is consistent with this objective.

**TABLE 4.2-1
IMPERIAL COUNTY GENERAL PLAN CONSISTENCY ANALYSIS**

General Plan Policies	Consistent with General Plan?	Analysis
Conservation and Open Space Element		
Preservation of Biological Resources		
<p>Goal 2: The County will preserve the integrity, function productivity, and long-term viability of environmentally sensitive habitats, and plant and animal species.</p>	<p>Yes</p>	<p>The site of the proposed project would be located on previously disturbed agricultural land located in Imperial County. As discussed in Section 4.12, Biological Resources, habitats, and plant and animal species on the project site could be impacted by the project. However, mitigation measures 4.12.1 through 4.12.12 are identified to address these impacts. Therefore, the proposed project is consistent with this objective.</p>
Conservation of Environmental Resources for Future Generations		
<p>Objective 1.5 Provide for the most beneficial use of land based upon recognition of natural constraints.</p>	<p>Yes</p>	<p>The proposed project represents a beneficial use that recognizes the site’s potential for renewable energy in the form of electricity generated from solar power. The proposed project would also significantly reduce the water demand that would otherwise be used for irrigation of the project site. Therefore, the proposed project is consistent with this objective.</p>
<p>Objective 1.6 Ensure the conservation, development and utilization of the County’s natural resources.</p>	<p>Yes</p>	<p>The proposed project would result in conversion of agricultural lands in order to construct a solar facility. While the project would forfeit one resource (Prime Farmland, Farmland of Statewide Importance and Unique Farmland) for another (generation of solar energy), the conversion would be temporary. The Applicant intends to submit an Agricultural Reclamation Plan to the Imperial County Department of Planning and Development Services detailing procedures for returning the solar generation facility site to a condition to support agricultural production at the end of the useful life of the project or the expiration of the Conditional Use Permit. The Applicant will pay fees to the County to offset the impacts from the temporary loss of agricultural land. An</p>

4.2 LAND USE

**TABLE 4.2-1
IMPERIAL COUNTY GENERAL PLAN CONSISTENCY ANALYSIS**

General Plan Policies	Consistent with General Plan?	Analysis
		Agricultural Reclamation Plan will also be required demonstrating how the project site will be returned to agricultural productivity at the end of the project's useful life. Therefore, the proposed project is consistent with this objective.
Preservation of Cultural Resources		
Objective 3.1 Protect and preserve sites of archaeological, ecological, historical, and scientific value, and/or cultural significance.	Yes	A cultural resources survey was conducted for the proposed project. As discussed in EIR Section 4.7, Cultural Resources unrecorded and unevaluated resources may exist in the project area. Mitigation Measures 4.7.2 through 4.7.5 would reduce potential impacts to these resources, if present, to less than significant.
Preservation of Agricultural Lands		
Goal 4: The County will actively conserve and maintain contiguous farmlands and prime soil areas to maintain economic vitality and the unique lifestyle of the Imperial Valley.	Yes	The proposed project would result in temporary conversion of contiguous parcels of farmland. Please refer to Section 4.9, Agricultural Resources, which provides a detailed analysis of the project's consistency with applicable agricultural goals and objectives. A Reclamation Plan will also be required demonstrating how the project site will be returned to agricultural productivity at the end of the project's useful life.
Conservation of Energy Sources		
Goal 6: The County shall seek to achieve maximum conservation practices and maximum development of renewable alternative sources of energy.	Yes	As a solar facility, the proposed project is consistent with this goal.
Objective 6.2 Encourage the utilization of alternative passive and renewable energy resources.	Yes	As a solar facility, the proposed project is consistent with this goal. Once implemented, the proposed project would create solar energy that would be conveyed to the Imperial Valley Substation.
Objective 6.6 Encourage compatibility with National and State energy goals and city and community general plans.	Yes	The proposed project is consistent with California Public Utilities Code § 399.11 et seq., "Increasing the Diversity, Reliability,

**TABLE 4.2-1
IMPERIAL COUNTY GENERAL PLAN CONSISTENCY ANALYSIS**

General Plan Policies	Consistent with General Plan?	Analysis
		Public Health and Environmental Benefits of the Energy Mix” by generating 140+ MW of power for SDG&E. This would help fulfill in part California’s electric utility companies’ requirement to use renewable energy to produce 20 percent of their power by 2010 and 33 percent by 2020. Therefore, the proposed project would be consistent with this objective.
Geothermal/Alternative Energy and Transmission Element		
Agricultural Lands and Biological Resources		
Objective 2.3 Utilize existing easements or right-of-way and follow field boundaries for electric and liquid transmission lines.	Yes	The gen-tie of the proposed project would extend approximately 0.9 miles south from the solar generation facility site through BLM land to connect with the Imperial Valley Substation. The portion of the gen-tie for the proposed project is on BLM land within Utility Corridor N. Therefore, the majority of the proposed gen-tie would use an existing utility right-of-way and the proposed project would be consistent with this objective.
Objective 2.4 Carefully analyze the potential impacts on agricultural and biological resources from each project.	Yes	The proposed project has been analyzed for impacts to agricultural and biological resources as evidenced through the preparation of a LESA Model and biological studies. Please refer to Section 4.9, Agricultural Resources, which discusses the potential impacts to agricultural lands and Section 4.12, Biological Resources, which discusses the potential impacts to sensitive species. Therefore, the proposed project would be consistent with this objective.
Objective 2.6 Encourage/require alternative resource production to be in energy zoned areas to minimize off-site impacts and lessen need for more transmission corridors.	Yes	The proposed project includes an easement through private lands that aligns with Utility Corridor N on BLM land. The majority of the length of the gen-tie would be located within this existing right-of-way. Therefore, the proposed project is consistent with this objective.

4.2 LAND USE

**TABLE 4.2-1
IMPERIAL COUNTY GENERAL PLAN CONSISTENCY ANALYSIS**

General Plan Policies	Consistent with General Plan?	Analysis
Locating Transmission Line Corridors		
<p>Goal 5: When planning and designing transmission lines, the County will consider impacts to agricultural lands, wildlife, and the natural desert landscape.</p>	Yes	<p>The portion of the gen-tie on private lands within Imperial County would be located within an easement through agricultural lands. A very minor amount of permanent disturbance would be required to locate the gen-tie in this area. Please refer to Section 4.9, Agricultural Resources and 4.12, Biological Resources, which discuss the potential impacts.</p>
<p>Objective 5.1 Require all major transmission lines to be located in designated federal and IID corridors or other energy facility corridors such as those owned by investor owned utilities and merchant power companies.</p>	Yes	<p>For most of its length, the gen-tie is proposed as a right-of-way adjacent to existing 230-kV electric lines within Utility Corridor N. The Applicant has applied for a grant of right-of-way (Serial No. CACA 52092) approval from the BLM. Therefore, the proposed project is consistent with this objective.</p>
<p>Objective 5.3 Construct transmission lines in accordance with this Element.</p>	Yes	<p>The proposed gen-tie is consistent with the Geothermal/Alternative Energy and Transmission Element's goals and objectives related to transmission line construction.</p>
<p>Objective 5.4 Design transmission lines to be joint use with transportation and other infrastructure corridors within or external to the County</p>	Yes	<p>As described in the analysis for Objective 2.6 and Objective 5.1, above, the majority of the length of the gen-tie would occur within Utility Corridor N. Therefore, the proposed project would be consistent with this objective.</p>

County of Imperial Land Use Ordinance, Title (9)

The County of Imperial Land Use Ordinance (Title 9) provides the physical land use planning criteria, development standards, and zoning regulations for development in the unincorporated areas of the County.

The purpose of the Land Use Ordinance is to protect the public health, safety and welfare, to provide for orderly development, classify, regulate and where applicable segregate land uses and building uses; to regulate the height and size of buildings; to regulate the area of yards and other open spaces and buildings; to regulate the density of population; and, to provide the economic and social advantages resulting from orderly planned land uses and resources.

As depicted in **Figure 4.2-1**, the solar generation facility site is zoned General Agriculture (A-2), General Agriculture Rural (A-2-R) and Heavy Agriculture (A-3). The permanent easement on private lands is zoned A-2-R. The portion of the gen-tie on BLM land is identified as Government/Special (G-S). **Table 4.2-2** summarizes the zones on the project site.

**TABLE 4.2-2
SUMMARY OF PROJECT SITE ZONING**

Zoning	Purpose	Uses Allowed with a CUP
General Agriculture (A-2) [40 Acre minimum]	To designate areas that are suitable and intended primarily for agricultural uses (limited) and agricultural related compatible uses.	<ul style="list-style-type: none"> • Electrical generation plants (less than 50-MW) • Electrical Power Generating Plant excluding nuclear or coal fired, • Electrical substations in an electrical transmission system (500-kV/230-kV/161-kV). • Major facilities relating to the generation and transmission of electrical energy, provided such facilities are not, under State or Federal law, to be approved exclusively by an agency or agencies of the State and/or Federal governments and provided that such facilities shall be approved subsequent to coordination and review with the Imperial Irrigation District for electrical matters.
General Agriculture Rural (A-2-R)	To designate areas that are suitable and intended primarily for agricultural uses (limited) and agricultural related compatible uses.	Same as identified for A-2
Heavy Agriculture (A-3)	To designate areas that are suitable for agricultural land uses; to prevent the encroachment of incompatible uses onto and within agricultural lands; and to prohibit the premature conversion of such lands to non-agricultural uses	Major facilities relating to the generation and transmission of electrical energy, provided such facilities are not, under state or federal law, to be approved exclusively by an agency or agencies of the state and/or federal governments and provided that such facilities shall be approved subsequent to coordination and review with the Imperial Irrigation District for electrical matters.

4.2 LAND USE

**TABLE 4.2-2
SUMMARY OF PROJECT SITE ZONING**

Zoning	Purpose	Uses Allowed with a CUP
Government/Special (G-S)	To designate areas that allow for the construction, development and operation of governmental facilities and special public facilities, primarily this zone allows for all types of government owned and/or government operated facilities, be they office or other uses. It also allows for special public uses such as security facilities, jails, solid and/or hazardous wastes facilities and other similar special public benefit uses.	Not Applicable

Source: County of Imperial, 1998.

Uses in the A-2, A-2-R and A-3 zoning designations are limited primarily to agricultural related uses and agricultural activities that are compatible with agricultural uses. Sections 90508.02 and 90509.02 of the Land Use Ordinance lists many uses that are permitted in the A-2, A-2-R and A-3 zones, but that require a conditional use permit (CUP) which are identified in **Table 4.2-2**. Section 90508.07 and 90509.07 of the Land Use Ordinance limit non-residential structure height to 120-feet within the A-2, A-2-R and A-3 zones. Specifically, Sections 90508.07(C) and 90509.07(C) state, “Non-Residential structures and commercial communication towers shall not exceed one hundred twenty (120) feet in height, and shall meet ALUC Plan requirements.” The exact height of each gen-tie structure would be governed by topography and safety requirements for conductor clearances. Structure heights would vary from approximately 100 to 130 feet depending on terrain and would not exceed 145 feet. A variance is required in order to exceed the 120-foot height limit for electric line towers on private lands zoned A-2 and A-3 subject to Imperial County zoning regulation (Land Use Ordinance, Title 9).

Adjacent Areas Land Use Designations

Lands surrounding the solar generation facility site are predominantly used for agricultural production and are zoned A-2, A-2-R, and A-3. The Gen-Tie would cross both privately owned agricultural property and desert scrub habitat on BLM-managed lands that generally comprise the eastern boundary of the Yuha Basin. The Yuha Basin is a BLM Area of Critical Environmental Concern (ACEC) that is managed to protect sensitive cultural and wildlife resources and to allow for certain compatible public uses such as camping in designated areas. The Gen-Tie alignment is proposed entirely within Utility Corridor N as identified on Map 16 of the CDCA Plan. Significant electrical infrastructure is located on the BLM land within Corridor N, including the Imperial Valley Substation, six 230-kV electric lines and two 500-kV electric lines.

Regional Comprehensive Plan and Regional Transportation Plan

The Southern California Association of Governments’ (SCAG) reviews projects in the Southern California region of Imperial, Los Angeles, Orange, Riverside, San Bernardino, and Ventura Counties. CEQA requires that regional agencies like SCAG review projects and plans throughout its jurisdiction in order to monitor development. Projects and plans that are of sufficient size or magnitude as defined in CEQA Guidelines Section 15206 are considered “regionally significant” and must demonstrate to SCAG their

consistency with a range of adopted regional plans and policies such as the Regional Comprehensive Plan and Guide, the Regional Transportation Plan, and the 2004 Compass Blueprint Growth Vision Report.

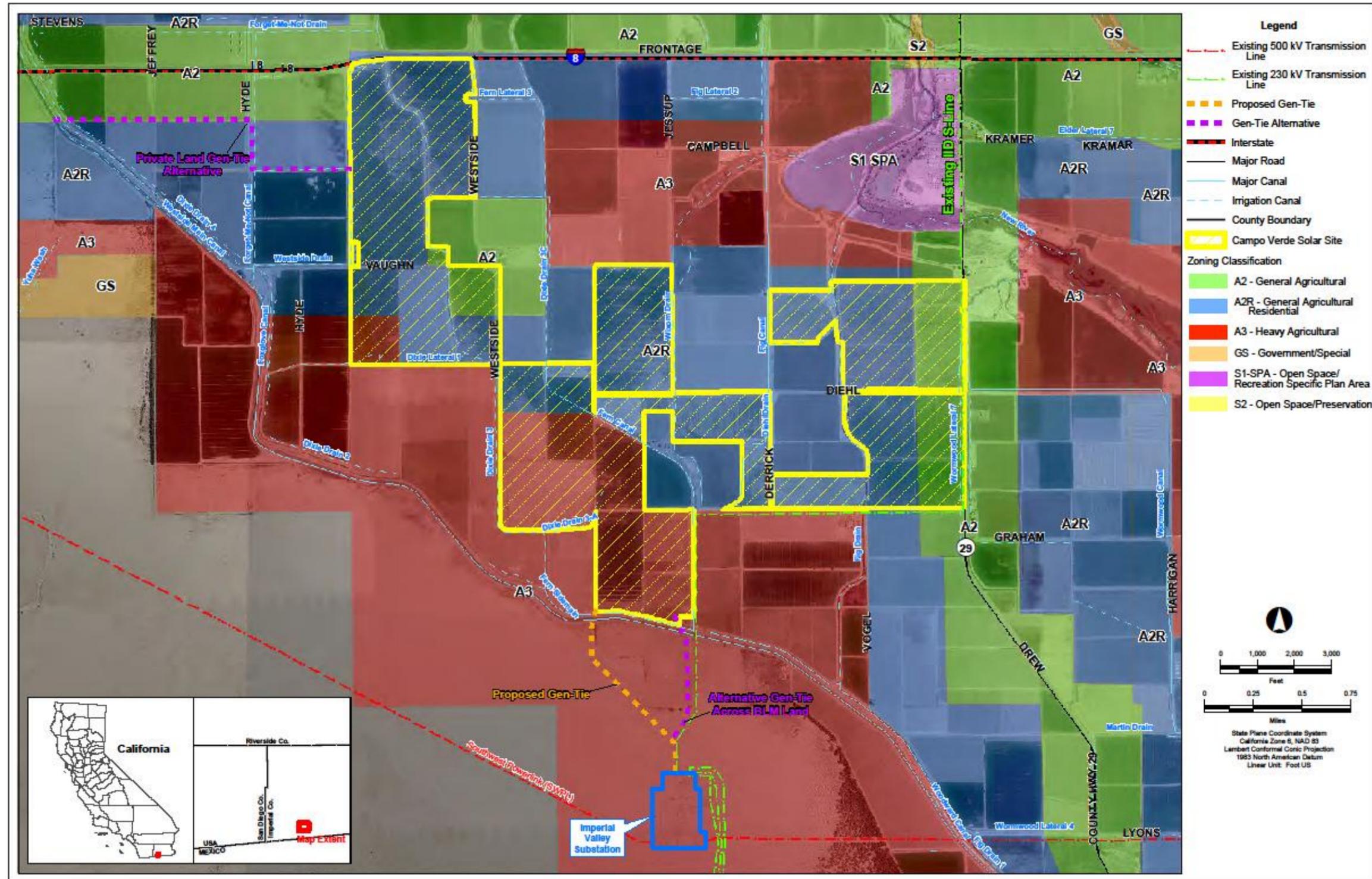
SCAG has identified 22 Minimum Criteria for Classification of Projects as Regionally Significant. Criteria 1-12 are recommended for use by CEQA Guidelines, Section 15206. Criteria 13-22 reflect SCAG’s mandates and regionally significant projects that directly relate to policies and strategies contained in the Regional Comprehensive Plan and Guide. Criterion 14 identifies “New or expanded electrical generating facilities and transmission lines” as regionally significant projects. **Table 4.2-3** provides a summary of the proposed project’s consistency with the SCAG intergovernmental review policies.

**TABLE 4.2-3
PROJECT CONSISTENCY WITH SOUTHERN CALIFORNIA ASSOCIATION OF
GOVERNMENTS INTERGOVERNMENTAL REVIEW POLICIES**

SCAG IGR Policies	Consistent with IGR Policies?	Analysis
Regional Transportation Plan Policies		
RTP G5 Protect the environment, improve air quality and promote energy efficiency.	Yes	The proposed project would improve air quality by providing 140+ MW of renewable energy through solar power rather than fossil-fuel. The project would also contribute to greater energy efficiency by helping meet the State’s RPS goals. Therefore, the proposed project is consistent with RTP Goal 5.
RTP G6 Encourage land use and growth patterns that complement our transportation investments and improves the cost-effectiveness of expenditures.	Yes	The proposed project proposes solar facilities that would create renewable energy. The location of the proposed project is in a rural area of Imperial County not proposed for urban growth. Sufficient roadway infrastructure is available to accommodate construction and operation, and additional transportation investments would not be required to serve the proposed project. Therefore, the proposed project is consistent with RTP Goal 6.

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Source: kp environmental, 2011.

FIGURE 4.2-1
ZONING MAP

**TABLE 4.2-3
PROJECT CONSISTENCY WITH SOUTHERN CALIFORNIA ASSOCIATION OF
GOVERNMENTS INTERGOVERNMENTAL REVIEW POLICIES**

SCAG IGR Policies	Consistent with IGR Policies?	Analysis
2004 Compass Blueprint Growth Vision Report Principals		
Principle 4: Promote Sustainability For Future Generations		
<p>GV P4.1 Preserve rural, agricultural, recreational and environmentally sensitive areas.</p>	<p>Yes</p>	<p>The proposed project would be located on private lands currently in agricultural production and lands managed by the BLM in the Yuha Basin ACEC. The project includes design features and Best Management Practices to avoid and preserve sensitive areas whenever possible (refer to Table 2.0-4 and Table 2.0-5 in Chapter 2.0). A Reclamation Plan will also be required demonstrating how the project site will be returned to agricultural productivity at the end of the project’s useful life. In addition, the Applicant would be required to comply with standards enforced by the BLM and other state (such as CDFG) and federal agencies (such as USFWS). The proposed project would be consistent with this principle.</p>
<p>GV P4.3: Develop strategies to accommodate growth that uses resources efficiently, eliminate pollution and significantly reduce waste.</p>	<p>Yes</p>	<p>The proposed project would involve production of renewable energy using solar PV technology. Harnessing the sun’s power to create carbon-free renewable energy, thereby eliminating fossil fuel emissions associated with production of 140+ MW of electricity demonstrate the consistency with this principal. Therefore, the proposed project would be consistent with this principle.</p>
<p>GV P4.4: Utilize “green” development techniques.</p>	<p>Yes</p>	<p>The proposed project is an example of clean development as it involves solar PV technology to generate electricity rather than fossil-fuel. Therefore, the proposed project is consistent with this principle.</p>

Source: SCAG, 2008.

Imperial County Airport Land Use Compatibility Plan (ALUCP)

The Imperial County Airport Land Use Compatibility Plan (ALUCP) provides the criteria and policies used by the Imperial County Airport Land Use Commission to assess compatibility between the principal

airports in Imperial County and proposed land use development in the areas surrounding the airports. The ALUCP emphasizes review of local general and specific plans, zoning ordinances, and other land use documents covering broad geographic areas.

The California Public Utilities Code (Section 21676.5) empowers the Commission to review additional types of land use “actions, regulations, and permits” involving a question of airport/land use compatibility if either: (1) the Commission and the local agency agree that these types of individual projects shall be reviewed by the Commission (Section 21676.5 (b)); or, (2) the Commission finds that a local agency has not revised its general plan or specific plan or overruled the Commission and the Commission requires that the individual projects be submitted for review (Section 21676.5 (a)). The Commission is also required to review “any request for variance from a local agency’s height limitation ordinance” (Imperial County, 1996, p. 2-3).

The solar generation facility of the project site is located south of the Naval Air Facility (NAF), El Centro. According to Figure 3G (Compatibility Map-Naval Air Facility, El Centro) of the ALUCP (Imperial County, 1996), the solar generation facility site is not located within any of the compatibility zones as identified in the ALUCP. The ALUCP does not apply to BLM lands. Thus, the gen-tie Line portion of the project is not subject to the requirements of the ALUCP.

On February 7, 2012, the Applicant submitted a Variance Application to the ICPDS. The Variance Application was submitted to address gen-tie structures that may exceed the A-2 and A-3 zoning height limitation of 120 feet. The maximum height of the gen-tie Line structures could be up to 145 feet.

The proposed project was presented and discussed at the County’s Airport Land Use Commission (ALUC) Meeting held on February 15, 2012. The ALUC reviewed the proposed application, including the variance for transmission tower height described in subsection 1.2, above. The Commission found the proposed project consistent with the 1996 Airport Land Use Compatibility Plan (ALUCP) with no conditions.

4.2 ENVIRONMENTAL SETTING

As discussed in subsection 2.1.2 of Chapter 2.0, the proposed solar generation facility includes approximately 1,990 acres of privately held agricultural land located 7 miles southwest of the community of El Centro. The project site and surrounding areas to the north, south, east and west are primarily in agricultural production. A number of Imperial Irrigation District canals and drains align through, and surround, the project site. One of the southern boundaries of the project site (i.e. the easement through private lands) abuts BLM land. This area west of the project site is in the Yuha Basin, an area characterized as native desert scrub habitat. Regional access to the site is available via US Interstate 8 (I-8) and SR 98 (refer to **Figure 2.0-1** in Chapter 2.0).

A. SOLAR GENERATION FACILITY SITE

On-Site Land Uses

The 1,990 acre solar generation facility site is generally flat and designated as Agriculture on the Imperial County Land Use Map (Imperial County, 1993). Of the 1,990 acres, approximately 1,811 acres (predominantly alfalfa hay) would be converted to accommodate the proposed project. This includes agricultural fields within the solar generation facility site minus the acreage of roads and ditches currently on the site. The proposed gen-tie is located within primarily undeveloped BLM desert lands. This 0.9 mile long segment of the gen-tie would be located adjacent to existing transmission facilities that traverse BLM lands within the Corridor N of the Yuha Basin ACEC.

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As discussed in Section 4.12, Biological Resources, the proposed gen-tie alignment through BLM land is entirely within the Yuha Basin ACEC of the CDCA, and is within Utility Corridor N. The solar generation facility site is on lands under the jurisdiction of Imperial County outside of the ACEC.

Surrounding Land Uses

The solar generation facility site is located on the western and southern fringe of developed agricultural lands in Imperial County. Land uses surrounding the project site include agricultural lands, the BLM CDCA Plan Utility Corridor N within the Yuha Basin, and IID infrastructure (Westside Main Canal and concrete lined ditches).

Likewise existing uses surrounding the site are primarily agricultural fields with federal (government lands) lands managed by the BLM located further to the west of the western boundary of the project site and adjacent to a portion of the southern boundary (**Figure 4.2-2**).

B. GEN-TIE

The longest portion of the gen-tie is proposed on lands under the jurisdiction of the BLM. This segment is not subject to the Imperial County General Plan and is undergoing separate environmental analysis under NEPA. The impact to recreation use caused by the transmission line on BLM lands would be assessed by BLM as part of the environmental review carried out under NEPA. The proposed project would be evaluated for its impacts on special designations as part of the NEPA review based on the Federal Land Policy and Management Act (FLPMA) and California Desert Conservation Area Plan (CDCA). The Yuha Basin Area of Critical Environmental Concern (ACEC) would be considered a special designation.

4.2.3 IMPACTS AND MITIGATION MEASURES

A. STANDARDS OF SIGNIFICANCE

The impact analysis provided below is based on the following State CEQA Guidelines, as listed in Appendix G. The project would result in a significant impact to land use if it would result in any of the following:

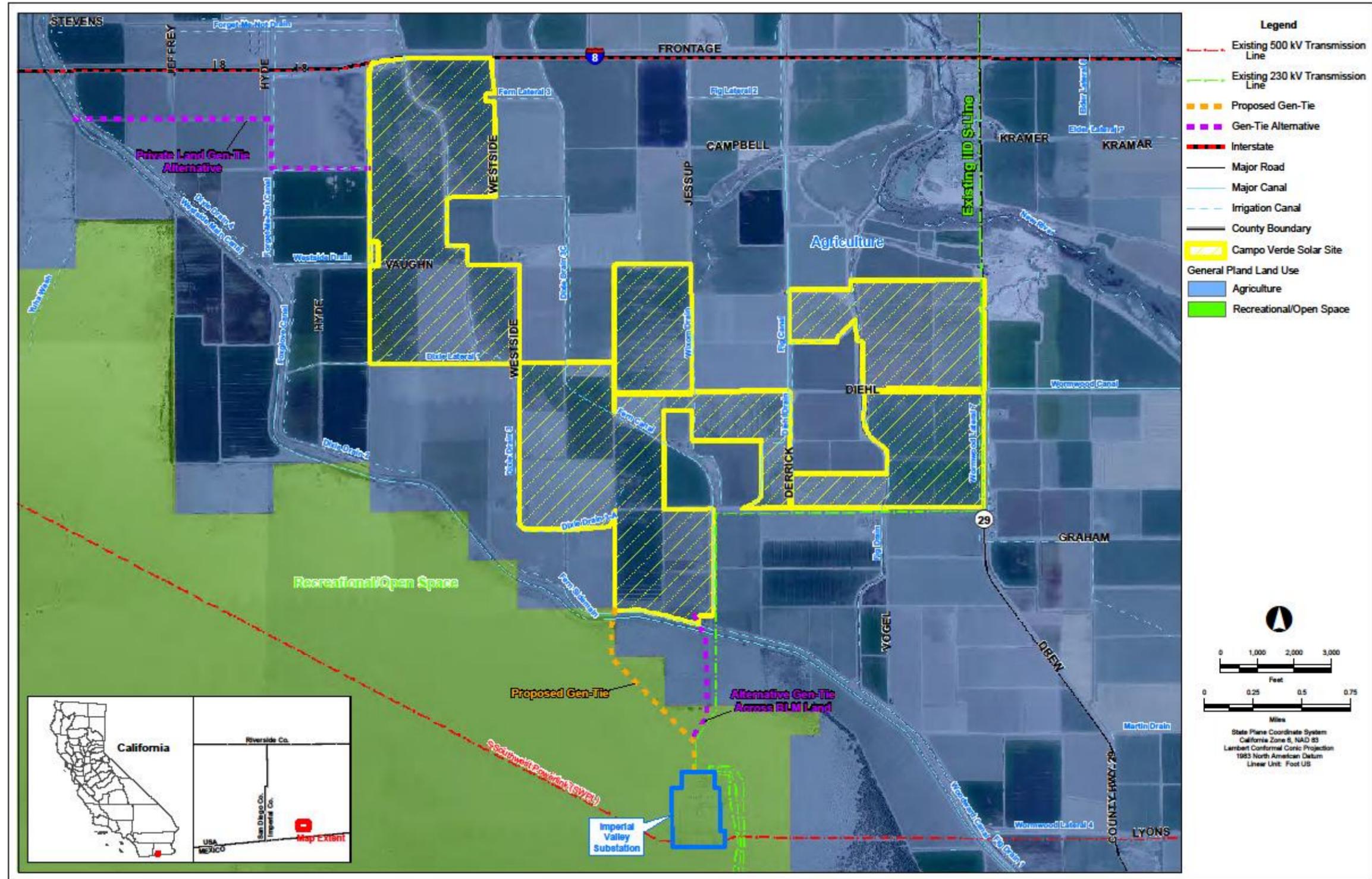
- a. Physically divide an established community?
- b. Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (include, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?
- c. Conflict with any applicable habitat conservation plan or natural community conservation plan?

B. ISSUES SCOPED OUT AS PART OF THE INITIAL STUDY

Two checklist criteria were eliminated from further evaluation as part of the Initial Study. Criterion “a” was eliminated from further evaluation as part of the Initial Study because the proposed project is located in a rural portion of Imperial County and would not physically divide any established community. Thus, no impact is identified for this issue area and it is not discussed further in the analysis.

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4.2 LAND USE



Source: kp environmental, 2011.

FIGURE 4.0-2
GENERAL PLAN LAND USE

Criterion "c" was eliminated because Imperial County is not within the jurisdiction of any adopted habitat conservation plan (HCP) or natural community conservation plan (NCCP), or other approved local, regional or state habitat conservation plan. Therefore, no impact to an HCP or NCCP would occur and this issue will not be discussed further.

C. METHODOLOGY

Evaluation of potential land use impacts of the proposed project were based on review of relevant planning documents, including the Imperial County General Plan and the Imperial County Land Use Ordinance. The focus of the land use analysis is on land use impacts that would result from implementation of the solar generation facility site portion of the proposed project. Land use conflicts are identified and evaluated based on existing land uses, land uses proposed as part of the project, land use designations, and standards and policies related to land use. Land use compatibility is based on the intensity and patterns of land use to determine whether the project would result in incompatible uses or nuisance impacts. Potential land use conflicts or incompatibility (specifically during construction activities) are usually the result of other environmental effects, such as generation of noise or air quality issues resulting from grading activities. Operational land use impacts of the project are evaluated in this section, and the reader is referred to Sections 4.1 through 4.12 for detailed analysis of other environmental impacts, including noise, traffic, air quality, and biological resources, that would result from the project's construction and operation.

D. PROJECT IMPACTS AND MITIGATION MEASURES

Conflict With Any Applicable Land Use Plan, Policy, or Regulation

Impact 4.2.1 The proposed project is consistent with the existing General Plan land use designation of Agriculture with a Conditional Use Permit and would not conflict with any County policies or regulations. Therefore, conflicts applicable land use plans, polices and regulations are considered a **less than significant impact**.

The project site is currently designated by the General Plan as "Agriculture." Per section 90508.1 of the Imperial County Land Use Code, an electrical power generating plant, excluding nuclear or coal fired and electrical substations in an electrical transmission system (500-kV/ 230-kV/ 161-kV) are allowed uses within the existing zones agricultural zones (A-2) with a Conditional Use Permit (CUP).

No land use amendment would be required for the portion of the project located within the County's jurisdiction because a solar facility is an allowed use subject to a CUP.

The project is consistent with existing land use and zoning. Thus, potential for conflicts with surrounding agricultural uses is considered less than significant. Issues such as dust and spraying of chemicals could affect how often the PV panels need to be washed, but would not result in incompatibility. Likewise, the solar generation facility would not adversely impact surrounding agricultural operations as existing access to those operations would remain unchanged. In addition, a Weed and Pest Management Plan would be prepared by the Applicant to address control of invasive weeds and manage pests from proliferating and damaging crops on neighboring lands. Thus, potential for conflicts with surrounding land uses is considered a **less than significant impact**.

Mitigation Measures

None required.

Significance After Mitigation

Not applicable.

4.2 LAND USE

4.2.4 CUMULATIVE SETTING, IMPACTS AND MITIGATION MEASURES

A. CUMULATIVE SETTING

The geographic scope for the analysis of cumulative impacts related to land use is the area within a 10-mile radius of the project site. This distance was determined based on capturing projects within a reasonable distance of the project site. The cumulative setting for land use includes buildout of the approved, proposed and reasonably foreseeable projects as identified in **Table 3.0-1** in Chapter 3.0, Introduction to the Environmental Analysis and Assumptions Used. Table 3.0-1 describes the approved, proposed and reasonably foreseeable projects and Figure 3.0-1 shows the locations of the cumulative projects surrounding the project site.

B. CUMULATIVE IMPACTS AND MITIGATION MEASURES

Cumulative Conflicts with Applicable Land Use Plans, Policies, or Regulations

Impact 4.2.2 Development of the proposed project in combination with approved, proposed and reasonably foreseeable projects in the region would not incrementally add to conflicts with applicable land use plans, policies and regulations. Each project would be required to be consistent with the applicable plans that apply to the area in which it is located. Thus, this impact is considered **less than cumulatively considerable**.

Imperial County General Plan

The solar generation facility portion of the proposed project is in Imperial County and is subject to the goals and policies of the Imperial County General Plan. The proposed project is a conditionally permitted use under the A-2, A-2-R and A-3 zones. Because it is permitted with a use permit by the Zoning Ordinance, it is considered consistent with the "Agriculture" land use designation of the General Plan. Therefore, no conflict with the Imperial County General Plan would occur. Moreover, the proposed project, in combination with approved, proposed and reasonably foreseeable projects as identified in Table 3.0-1 in Chapter 3.0, would not cumulatively contribute to cumulative impacts with the Imperial County General Plan. Conflicts with the Imperial County General Plan are considered **less than cumulatively considerable**.

County of Imperial Land Use Ordinance, Title 9

As part of the proposed project, a CUP application (CUP11-0007) has been filed which would allow development of a solar facility including proposed access, to occur within the A-2, A-2-R and A-3 zones. Thus, the proposed project would be consistent with the land use ordinance and the underlying zoning of the proposed solar generation facility site. Therefore, no conflict with the County of Imperial Land Use Ordinance would occur. Moreover, the proposed project, in combination with approved, proposed and reasonably foreseeable projects as identified in Table 3.0-1 in Chapter 3.0, would not cumulatively contribute to cumulative impacts with the County of Imperial Land Use Ordinance because such projects would be permitted either as of right or with conditional use authorization. Conflicts with the County of Imperial Land Use Ordinance are considered **less than cumulatively considerable**.

Tower structures proposed on private lands as part of the proposed project could be up to 145 feet in height. Heights for non-residential structures and commercial communication towers within zones A-2, A-2-R and A-3 are limited to 120 feet in height and must meet ALUC Plan requirements (Title 9 Division 5: Zoning Areas Established, Section 90508.07 and 90509.07). The Applicant has requested a variance (V12-0008) from the County to allow the towers on land under the jurisdiction of Imperial County to exceed the 120-foot height limit. The variance would eliminate for potential for conflicts with the height

limit in A-2, A-2-R and A-3 zoning for the proposed project. Therefore, no conflict with the County of Imperial Land Use Ordinance, Title 9 would occur. Moreover, like the proposed project, approved, proposed and reasonably foreseeable projects as identified in Table 3.0-1 in Chapter 3.0, that would exceed the Zoning Ordinance's height limits would have to obtain variances on a case by case basis. Because such height limits would not occur automatically, there would be no cumulative contribution to height limits with development of the cumulative projects 9. Conflicts with the County of Imperial Land Use Ordinance relative to height limits are thus considered **less than cumulatively considerable**.

Airport Land Use Compatibility Plan (ALUCP)

The parcels that comprise the solar generation facility site are not within any Airport Land Use Compatibility Zones. The Airport Land Use Commission determined that the proposed project would be consistent with the Airport Land Use Compatibility Plan (ALUCP). Therefore, the land use for the proposed project is compatible with the ALUCP. Moreover, the proposed project, in combination with approved, proposed and reasonably foreseeable projects as identified in Table 3.0-1 in Chapter 3.0, would not cumulatively contribute to cumulative impacts regarding the ALUCP. Conflicts with the ALUCP are considered **less than cumulatively considerable**.

Mitigation Measures

None required.

Significance After Mitigation

Not applicable.

Cumulative Land Use Compatibility/Conflict Impacts

Impact 4.2.3 Development of the proposed project in combination with approved, proposed and reasonably foreseeable projects in the region would change the land use patterns, present potential land use conflicts, and result in conversion of agricultural lands to a solar facility. This impact is considered **less than cumulatively considerable**.

The project site, in combination with other projects within a 10-mile radius, would be one of multiple solar facilities developed in the southwestern portion of Imperial County. Ten solar projects are within a 10-mile radius of the project site. They include Imperial Valley Solar, Imperial Solar Energy Center West, Imperial Solar Center South, Silverleaf Solar, Centinela Solar Energy Project, Calexico I-A, I-B, II-A and II-B, and Mount Signal Solar Farm (refer to Figure 3.0-2 in Chapter 3.0. All of the projects would occur primarily in undeveloped desert lands or rural agricultural (refer to Section 4.9 regarding cumulative impacts associated with agricultural resources). The temporary conversion of rural agricultural and desert lands to solar facilities would preclude existing land uses including agriculture, rangeland, and open space from continuing on these sites.

Development of the approved, proposed and reasonably foreseeable projects identified in Table 3.0-1 have the potential to create direct but temporary land use conflicts with existing uses such as the Imperial County Airport and natural areas. Generally, indirect land use conflicts would be related to noise, traffic, air quality, and hazards/human health and safety issues, which are discussed in the relevant sections of this Draft EIR. Land use compatibility/conflict impacts are site specific and would not cumulatively contribute to compatibility or conflicts throughout the geographic scope of the cumulative setting. Therefore, this impact would be less than cumulatively considerable.

Development of the proposed project would result in the temporary conversion of agricultural land to a 1,990 acre solar generation facility. The project would change the character and land use patterns

4.2 LAND USE

currently on the site to rows of PV solar panels and associated equipment. However, lands surrounding the project site are currently in agricultural use and are zoned for agriculture. Solar projects developed adjacent to agricultural areas are subject to dust and particles from periodic spraying being carried by the wind and depositing on PV panels. These represent nuisance issues rather than insurmountable cumulative land use incompatibilities or conflicts. The proposed project is consistent with the Imperial County General Plan with a CUP. While the implementation of the project would temporarily convert the site from agricultural fields to a solar facility, it would be developed consistently with the land uses allowed on the site and there would be no conflicts with the Imperial County General Plan or zoning. The proposed project, in combination with other cumulative projects, would result in a less than cumulatively considerable contribution to land use compatibility. Therefore, this impact is considered **less than cumulatively considerable**.

Mitigation Measures

None required.

Significance After Mitigation

Not applicable.

SECTION 4.3

TRANSPORTATION AND CIRCULATION

4.3 TRANSPORTATION AND CIRCULATION

This section discusses the transportation and access impacts that would occur with implementation of the proposed project. Impacts may occur from introduction of construction-related traffic on local roads, physical changes to roads, and access points created to allow entry and exit from the project site. Information contained in this section is summarized from the *Draft Traffic Impact Analysis* prepared by LOS Engineering, Inc. (LOS, 2012). This document is provided on the attached CD of Technical Appendices as **Appendix B** of this EIR.

4.3.1 REGULATORY FRAMEWORK

A. STATE

California Department of Transportation

The State of California Department of Transportation (Caltrans) is responsible for the design, construction, maintenance, and operation of the California State Highway System. Caltrans is also responsible for portions of the Interstate Highway System within the state's boundaries. Caltrans has jurisdiction over state highway right-of-way and has the authority to issue permits for work and encroachments (temporary or permanent) in these areas. Likewise, Caltrans is involved in review of traffic control plans, stoppage of traffic for placement of aerial lines, and installation or removal of overhead conductors crossing a highway. The project does not include any components that would span or encroach into Caltrans facilities.

B. LOCAL

Imperial County General Plan Circulation and Scenic Highways Element

The Circulation and Scenic Highways Element is included as part of the Imperial County General Plan pursuant to requirements of law and policies of federal, state, and regional agencies. The purpose of the Element is to provide a comprehensive document which contains the latest information about the transportation needs of the County and the various modes available to meet these needs and to facilitate regional transportation coordination. This Element is also intended to provide a plan to accommodate a pattern of concentrated and coordinated growth providing both regional and local linkage systems between unique communities and the County's neighboring metropolitan regions. Additionally, the purpose of this Element is to provide a means of protecting and enhancing scenic resources within both rural and urban scenic highway corridors.

Table 4.3-1 analyzes the consistency of the proposed project with the applicable policies relating to land use in the County of Imperial General Plan. While this EIR analyzes the project's consistency with the General Plan pursuant to CEQA Guidelines Section 151250, the Imperial County Board of Supervisors ultimately determines consistency with the General Plan.

4.3 TRANSPORTATION AND CIRCULATION

**TABLE 4.3-1
IMPERIAL COUNTY GENERAL PLAN CONSISTENCY ANALYSIS**

General Plan Policies	Consistent with General Plan?	Analysis
Circulation and Scenic Highways Element		
Safe, Convenient, and Efficient Transportation System		
<p>Objective 1.2 Require a traffic analysis for any new development which may have a significant impact on County roads. A traffic analysis may not be necessary in every situation, such as when the size or location of the project will not have a significant impact upon and generate only a small amount of traffic. Also, certain types of projects, due to the trip generation characteristics, may add virtually no traffic during peak periods. These types of projects may be exempt from the traffic analysis requirements. Whether a particular project qualifies for any exemption will be determined by the Department of Public Works Road Commissioner.</p>	Yes	<p>A <i>Draft Traffic Impact Analysis</i> was prepared for the proposed project by LOS Engineering, Inc. The analysis examined a worst-case scenario during month seven construction to provide a conservative estimate of impacts. Therefore, the proposed action is consistent with this objective.</p>
<p>Objective 1.12 Review new development proposals to ensure that the proposed development provides adequate parking and would not increase traffic on existing roadways and intersection to a level of service (LOS) worse than "C" without providing appropriate mitigations to existing infrastructure. This can include fair share contributions on the part of developers to mitigate traffic impacts caused by such proposed developments.</p>	Yes	<p>The <i>Draft Traffic Impact Analysis</i> was prepared for the proposed project by LOS Engineering, Inc., examined impacts to LOS and construction parking. Fair share contributions are identified to mitigate cumulative impacts that would occur at one intersection in association with the proposed project (refer to subsection 4.3.4). The proposed project is consistent with this objective.</p>
Financing Alternatives		
<p>Policy 4.1 Distribute the costs of transportation improvements equitably among those who will benefit, including current roadway users.</p>	Yes	<p>The proposed project would generate similar amounts of traffic during construction and operation. Costs associated with mitigating impacts resulting from the project are identified in the discussion of cumulative impacts in subsection 4.3.3.</p>

4.3.2 ENVIRONMENTAL SETTING

Information contained in this section is summarized from the *Draft Traffic Impact Analysis* prepared by LOS Engineering, Inc. (LOS, 2012). This document is provided on the attached CD of Technical Appendices as **Appendix B** of this EIR.

A. SOLAR GENERATION FACILITY

Existing Circulation Network

The existing roadway system and classifications are described below based on the Imperial County General Plan Circulation and Scenic Highways Element (January 29, 2008). (Excerpts from the Element are included in Appendix G of the *Draft Traffic Impact Analysis*. This document is provided on the attached CD of Technical Appendices as **Appendix B** of this EIR). **Figure 4.3-1** depicts the Existing (Year 2011) Roadway Conditions.

Interstate 8 (I-8) is constructed as a four-lane divided roadway with two lanes in each direction between Dunaway Road and Imperial Avenue.

Diehl Road is currently constructed as a 2 lane un-divided roadway within approximately 20 feet of pavement between Westside Road and Drew Road. This segment has a year 2003 classification of Minor Collector in the Imperial County Circulation and Scenic Highways Element. A posted speed limit was not observed on this segment.

Drew Road (S 29) is currently a paved roadway constructed as a two lane un-divided roadway between I-8 and SR 98. This segment of Drew Road has a year 2003 classification of Prime Arterial in the Imperial County *Circulation and Scenic Highways Element*.

Evan Hewes Highway is currently constructed as a 2 lane un-divided roadway within approximately 24 feet of pavement between Westside Road and Forrester Road. This segment has a 2003 classification of Prime Arterial on the Imperial County Circulation and Scenic Highways Element. The posted speed limit is 40 MPH within the built-up areas of Seeley. A posted speed limit was not observed on Evan Hewes Highway outside of urbanized areas.

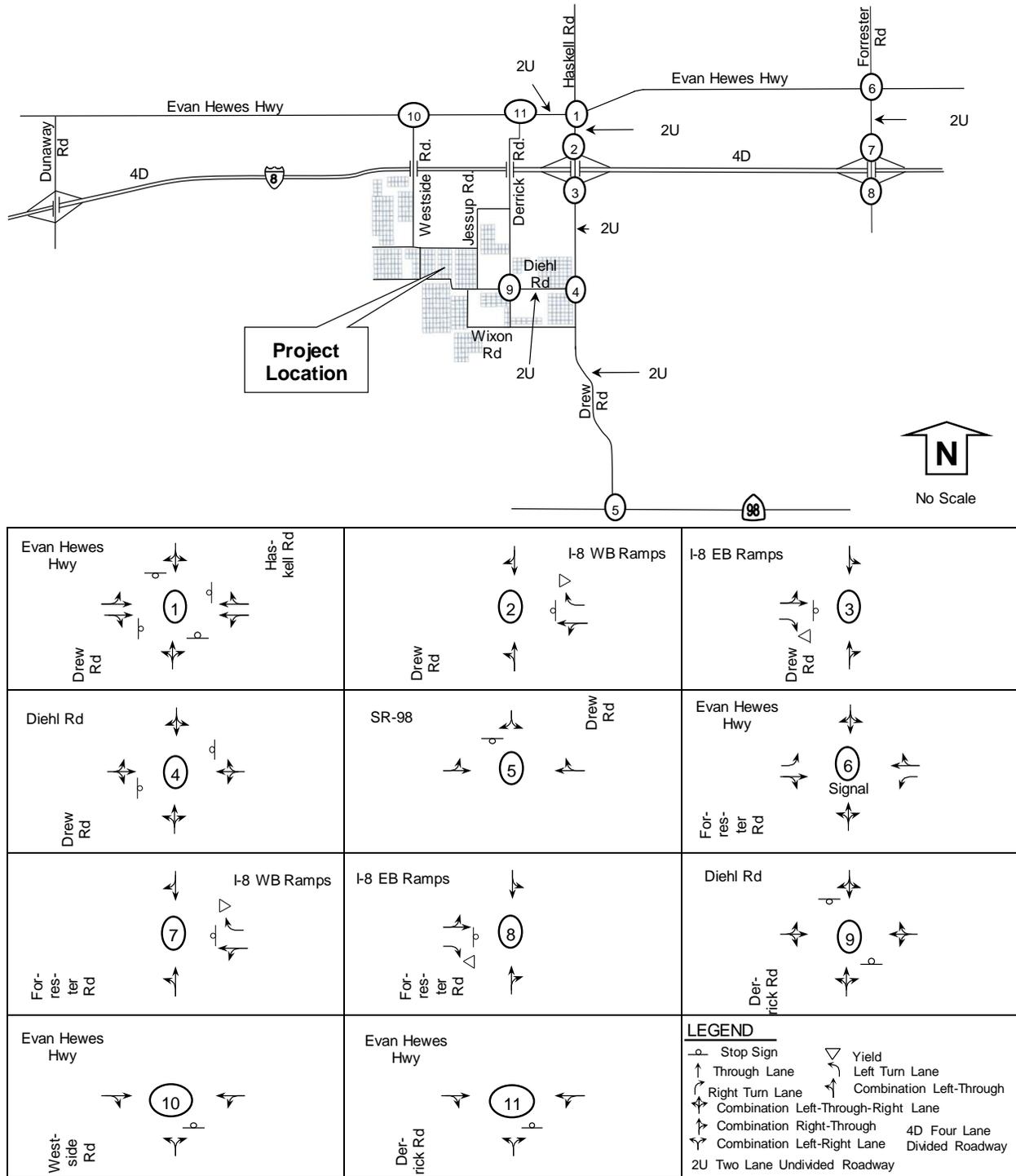
Forrester Road (S 30) is currently a paved roadway constructed as a two lane un-divided roadway between I-8 and McCabe Road. This segment of Forrester Road has a year 2003 classification of Prime Arterial in the Imperial County *Circulation and Scenic Highways Element*.

Level of Service

Intersection LOS

In order to understand existing conditions, level of service (LOS) must be explained. The operating conditions of the study intersections are measured using the Highway Capacity Manual (HCM) LOS designations ranging from A through F. LOS A represents the best operating condition and LOS F denotes the worst operating condition. LOS worsens from A to F based on delay in seconds at the intersection. **Table 4.3-2** shows the delays for each LOS associated with un-signalized and signalized intersections. The individual LOS criteria for each roadway component are described below.

4.3 TRANSPORTATION AND CIRCULATION



Source: LOS, 2012.

FIGURE 4.3-1
EXISTING (YEAR 2011) TRAFFIC VOLUMES

4.3 TRANSPORTATION AND CIRCULATION

**TABLE 4.3-2
UN-SIGNALIZED AND SIGNALIZED INTERSECTION LEVEL OF SERVICE (HCM 2000)**

Level of Service	Un-Signalized Average Control Delay (seconds/vehicle)	Signalized Average Control Delay (seconds/vehicle)
A	0-10	0-10
B	> 10-15	> 10-20
C	> 15-25	> 20-35
D	> 25-35	> 35-55
E	> 35-50	> 55-80
F	> 50	> 80

Source: LOS, 2012 from Highway Capacity Manual, 2000.

As noted on page 5 of Caltrans' *Guide for the Preparation of Traffic Impact Studies*, December 2002, the accepted methodology by Caltrans for un-signalized intersections is the most current edition of the HCM (excerpt included in Appendix B of the *Draft Traffic Impact Analysis*. This document is provided on the attached CD of Technical Appendices as **Appendix B** of this EIR). Therefore, all of the study interchanges with un-signalized intersections were analyzed using the most current edition of the HCM.

Roadway Segment LOS

The roadway segments were analyzed based on the functional classification of the roadway using the Imperial County Standard Street Classification capacity lookup table (copy included in Appendix C of the *Draft Traffic Impact Analysis*. This document is provided on the attached CD of Technical Appendices as **Appendix B** of this EIR). The roadway segment capacity and LOS standards used to analyze roadway segments are summarized in **Table 4.3-3**.

**TABLE 4.3-3
ROADWAY SEGMENT DAILY CAPACITY AND LOS (IMPERIAL COUNTY)**

Circulation Element Road Classification	Cross Section	LOS A	LOS B	LOS C	LOS D	LOS E
Expressway	154/210	<30,000	<42,000	<60,000	<70,000	<80,000
Prime Arterial	106/136	<22,200	<37,000	<44,600	<50,000	<57,000
Minor Arterial	82/102	<14,800	<24,700	<29,600	<33,400	<37,000
Major Collector (Collector)	64/84	<13,700	<22,800	<27,400	<30,800	<34,200
Minor Collector (Local Collector)	40/70	<1,900	<4,100	<7,100	<10,900	<16,200
Local County (Residential)	40/60	*	*	<1,500	*	*
Local County (Residential Cul-de-Sac or Loop Street)	40/60	*	*	<200	*	*
Major Industrial Collector – (Industrial)	76/96	<5,000	<10,000	<14,000	<17,000	<20,000
Industrial Local	44/64	<2,500	<5,000	<7,000	<8,500	<10,000

Source: LOS, 2012, from Imperial County Department of Planning and Development Services Circulation and Scenic Highways Element January 29, 2008.

Notes: *Levels of service are not applied to residential streets since their primary purpose is to serve abutting lots, not carry through traffic. Levels of service normally apply to roads carrying through traffic between major trip generators and attractors.

Freeway Segment LOS

The freeway segments were analyzed based on a multi-lane highway LOS criterion using a Volume to Capacity (V/C) ratio as outlined in the 2000 HCM. The V/C ratio is the ratio of traffic to roadway

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capacity. The V/C ratio provides a measure of how much roadway capacity is being used. Freeway LOS operations are based on Caltrans' *Guide for the Preparation of Traffic Impact Studies* V/C ratios as summarized below in **Table 4.3-4**. Excerpts from Caltrans' *Guide for the Preparation of Traffic Impact Studies* are included in Appendix D of the *Draft Traffic Impact Analysis*. This document is provided on the attached CD of Technical Appendices as **Appendix B** of this EIR.

**TABLE 4.3-4
FREEWAY LEVEL OF SERVICE**

Measure of Effectiveness	LOS A	LOS B	LOS C	LOS D	LOS E
Max Volume/Capacity Ratio (V/C)	0.30	0.50	0.71	0.89	1.00

Source: Source: LOS, 2012 from Caltrans' *Guide for the Preparation of Traffic Impact Studies*, December 2002.

B. EXISTING (YEAR 2011) TRAFFIC VOLUMES AND LOS ANALYSIS

Intersection Volumes

Existing AM and PM peak hour intersection volumes were collected for the intersections numbered 1 through 11. **Table 4.3-5** provides a summary of the intersection locations and the count date for each intersection. Count data is included in Appendix H D of the *Draft Traffic Impact Analysis*. This document is provided on the attached CD of Technical Appendices as **Appendix B** of this EIR. The existing roadway AM, PM, and daily volumes are shown in **Figure 4.3-2**.

**TABLE 4.3-5
INTERSECTION LOCATION AND DATE OF COUNT**

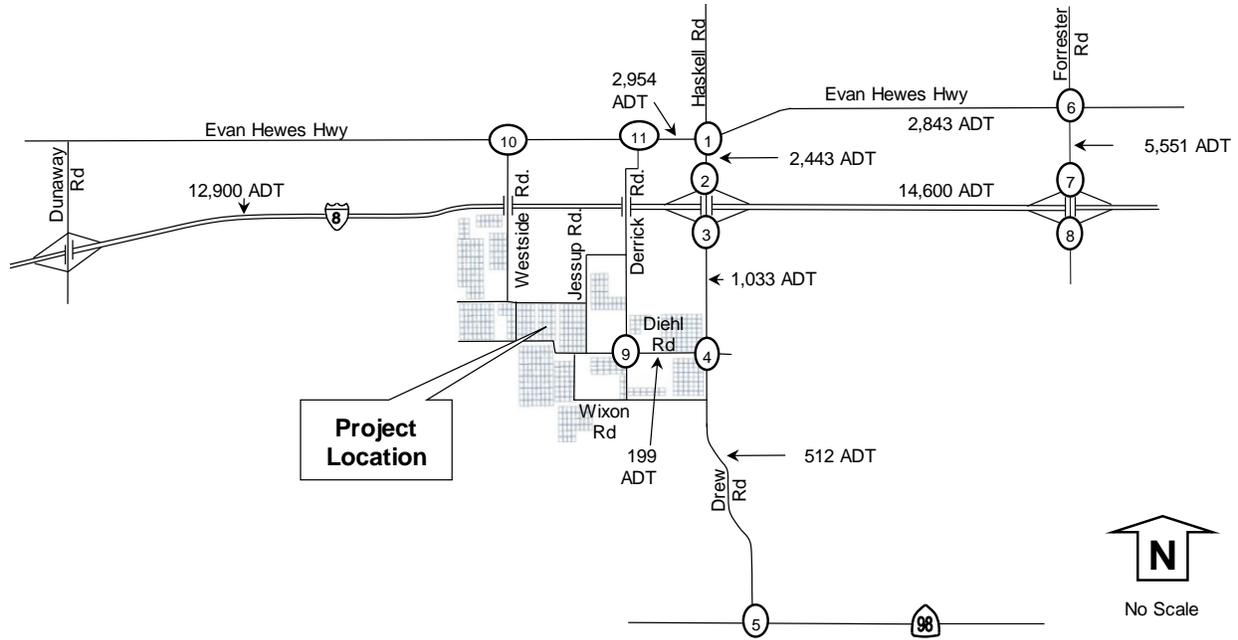
Number	Intersection	Date of Count
1	Drew Road/Evan Hewes Highway	Wednesday, June 22, 2011
2	Drew Road/I-8 Westbound Ramps	Wednesday, June 22, 2011
3	Drew Road/I-8 Eastbound Ramps	Wednesday, June 22, 2011
4	Drew Road/Diehl Road	Wednesday, June 22, 2011
5	Drew Road/SR-98	Thursday, March 24, 2011
6	Forrester Road/ Evan Hewes Highway	Wednesday, June 22, 2011
7	Forrester Road/I-8 westbound Ramps	Thursday, March 24, 2011
8	Forrester Road/I-8 eastbound Ramps	Thursday, March 24, 2011
9	Derrick Road/Diehl Road	Westside Road/Evan Hewes Highway (May 22, 2008 with a 2.8% annual growth factor applied to reach a year 2011 volume)
10	Westside Road/Evan Hewes Highway	Wednesday, June 22, 2011
11	Derrick Road/ Evan Hewes Highway	Wednesday, June 22, 2011

Source: LOS, 2012.

Roadway Segment Volumes

Daily traffic volumes with count dates were obtained or collected for 7 roadway segments. **Table 4.3-6** provides a summary of the roadway segment locations and count dates. Count data is included in Appendix H of **Appendix C**.

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<p>Evan Hewes Hwy</p> <p>10 (12) → (1) ← 6 (14)</p> <p>5 (8) → (1) ← 3 (19)</p> <p>59 (114) → (1) ← 96 (33)</p> <p>36 (92) → (1) ← 21 (13)</p> <p>Drew Rd</p> <p>69 (42) → (1) ← 11 (19)</p> <p>17 (10) → (1) ← 0</p>	<p>16 (6) ← (2) → 45 (84)</p> <p>I-8 WB Ramps</p> <p>56 (37) → (2) ← 0 (0)</p> <p>12 (14) → (2) ← 23 (12)</p> <p>Drew Rd</p> <p>7 (0) → (2) ← 2 (1)</p> <p>0 (4) → (2) ← 3 (3)</p> <p>51 (53) → (2) ← 0 (0)</p>	<p>I-8 EB Ramps</p> <p>20 (33) → (3) ← 37 (59)</p> <p>6 (7) → (3) ← 0 (0)</p> <p>0 (5) → (3) ← 27 (6)</p> <p>Drew Rd</p> <p>27 (18) → (3) ← 15 (20)</p> <p>8 (13) → (3) ← 106 (96)</p> <p>12 (24) → (3) ← 13 (95)</p> <p>15 (18) → (3) ← 0 (0)</p>
<p>Diehl Rd</p> <p>6 (1) → (4) ← 11 (24)</p> <p>0 (0) → (4) ← 1 (0)</p> <p>0 (0) → (4) ← 0 (0)</p> <p>Drew Rd</p> <p>3 (1) → (4) ← 3 (8)</p> <p>0 (0) → (4) ← 0 (0)</p>	<p>SR-98</p> <p>1 (2) → (5) ← 27 (91)</p> <p>Drew Rd</p> <p>2 (1) → (5) ← 33 (31)</p> <p>91 (232) → (5) ← 40 (76)</p> <p>0 (1) → (5) ← 3 (3)</p> <p>35 (26) → (5) ← 5 (9)</p>	<p>Evan Hewes Hwy</p> <p>25 (15) → (6) ← 104 (128)</p> <p>15 (20) → (6) ← 8 (13)</p> <p>106 (96) → (6) ← 12 (24)</p> <p>For- res- ter Rd</p> <p>13 (8) → (6) ← 95 (110)</p> <p>15 (18) → (6) ← 0 (0)</p> <p>1 (1) → (6) ← 3 (2)</p> <p>0 (0) → (6) ← 7 (3)</p> <p>0 (1) → (6) ← 0 (0)</p>
<p>I-8 WB Ramps</p> <p>200 (160) → (7) ← 15 (8)</p> <p>For- res- ter Rd</p> <p>4 (0) → (7) ← 74 (101)</p> <p>0 (0) → (7) ← 1 (0)</p>	<p>I-8 EB Ramps</p> <p>33 (31) → (8) ← 91 (232)</p> <p>40 (76) → (8) ← 0 (1)</p> <p>3 (3) → (8) ← 35 (26)</p> <p>5 (9) → (8) ← 1 (1)</p> <p>5 (4) → (8) ← 0 (0)</p>	<p>Diehl Rd</p> <p>0 (0) → (9) ← 1 (1)</p> <p>3 (2) → (9) ← 1 (0)</p> <p>8 (1) → (9) ← 0 (0)</p> <p>Der- rick Rd</p> <p>1 (1) → (9) ← 0 (0)</p> <p>0 (0) → (9) ← 0 (0)</p>
<p>Evan Hewes Hwy</p> <p>50 (164) → (10) ← 268 (17)</p> <p>3 (0) → (10) ← 1 (0)</p> <p>West- side Rd</p> <p>1 (0) → (10) ← 3 (4)</p>	<p>Evan Hewes Hwy</p> <p>52 (190) → (11) ← 142 (44)</p> <p>4 (4) → (11) ← 1 (0)</p> <p>Der- rick Rd</p> <p>1 (0) → (11) ← 5 (4)</p>	<p>LEGEND</p> <p>XX AM peak hour volumes at intersections</p> <p>(YY) PM peak hour volumes at intersections</p> <p>Z,ZZZ ADT volumes shown along segments</p> <p>(#) Intersection Reference Number to LOS Tables</p> <p>— Existing Roads</p> <p>() Represents 0 PM volume</p>

Source: LOS, 2012.

FIGURE 4.3-2
EXISTING (YEAR 2011) VOLUMES

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**TABLE 4.3-6
ROADWAY SEGMENT AND DATE OF COUNT**

Number	Roadway Segment	Date of Count
1	Diehl Road from Derrick Road to Drew Road	Wednesday, June 22, 2011
2	Drew Road from Evan Hewes Highway to I-8	Wednesday, June 22, 2011
3	Drew Road from I-8 to Diehl Road	Wednesday, June 22, 2011
4	Drew Road from Diehl Road to SR 98	Wednesday, June 22, 2011
5	Evan Hewes Highway from Derrick Road to Drew Road	Wednesday, June 22, 2011
6	Evan Hewes Highway from Drew Road to Forrester Road	Wednesday, June 22, 2011
7	Forrester Road from Evan Hewes Highway to I-8	Wednesday, June 22, 2011

Source: LOS, 2012.

Freeway Segment Volumes

Daily freeway volumes with count dates were obtained for two freeway segments. **Table 4.3-7** provides a summary of the freeway segment locations and count dates. Count data is included in Appendix H of **Appendix B**.

**TABLE 4.3-7
FREEWAY SEGMENT AND DATE OF COUNT**

Number	Freeway Segment	Date of Count
1	I-8 from Dunaway Road to Drew Road	Caltrans 2010 with a 2.8% annual growth factor applied to reach a year 2011 volume
2	I-8 from Drew Road to Forrester Road	Caltrans 2010 with a 2.8% annual growth factor applied to reach a year 2011 volume

Source: LOS, 2012.

Peak Hour Intersection Performance

Table 4.3-8 summarizes the existing (Year 2011) weekday intersections LOS (Intersections LOS calculations are included in Appendix I of the *Draft Traffic Impact Analysis*. This document is provided on the attached CD of Technical Appendices as **Appendix B** of this EIR). As shown, all intersections currently operate at LOS C or better during both the weekday AM and PM peak hours. Eight of the intersections would operate at LOS A during both the AM and PM peak hours. Three of the intersections operate at LOS B during the AM peak hour. Two intersections (Forrester Road/Evan Hewes Highway and Forrester Road/I-8 Eastbound Ramps) would operate at LOS C during the PM peak hour only. **Figure 4.3-2** depict the existing AM, PM, and daily intersection, roadway segment and freeway volumes for the project study area during weekday conditions (Count data is included in Appendix H of the *Draft Traffic Impact Analysis*. This document is provided on the attached CD of Technical Appendices as **Appendix B** of this EIR).

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**TABLE 4.3-8
EXISTING (YEAR 2011) INTERSECTION LOS**

Intersection & (Control) ¹	Movement	Peak Hour	Existing (Year 2011)	
			Delay ²	LOS ³
1) Drew Road/Evan Hewes Highway (U)	All	AM	7.5	A
	All	PM	7.5	A
2) Drew Road/I-8 Westbound Ramps (U)	WB LT	AM	8.7	A
	WB LT	PM	8.7	A
3) Drew Road/I-8 Eastbound Ramps (U)	EB LT	AM	10.0	B
	EB LT	PM	9.3	A
4) Drew Road/Diehl Road (U)	EB LTR	AM	8.6	A
	EB LTR	PM	8.6	A
5) Drew Road/SR-98 (U)	SB LR	AM	8.6	A
	SB LR	PM	9.2	A
6) Forrester Road/ Evan Hewes Highway (U)	All	AM	16.8	B
	All	PM	22.9	C
7) Forrester Road/I-8 westbound Ramps (U)	WB LT	AM	9.8	A
	WB LT	PM	9.8	A
8) Forrester Road/I-8 eastbound Ramps (U)	EB LT	AM	10.8	B
	EB LT	PM	16.9	C
9) Derrick Road/Diehl Road (U)	SB LTR	AM	8.7	A
	SB LTR	PM	8.7	A
10) Westside Road/Evan Hewes Highway (U)	NB LR	AM	9.1	A
	NB LR	PM	9.2	A
11) Derrick Road/ Evan Hewes Highway (U)	NB LR	AM	8.8	A
	NB LR	PM	9.3	A

Source: LOS, 2012.

Notes: ¹Intersection Control - (S) Signalized, (U) Unsignalized

²Delay - HCM Average Control Delay in Seconds.

³Los: Level Of Service.

DNE: Does Not Exist

Daily Segment Volumes

Table 4.3-9 summarizes the existing (Year 2011) daily roadway segment LOS during the weekday conditions. (Intersections LOS calculations are included in Appendix I of the *Draft Traffic Impact Analysis*. This document is provided on the attached CD of Technical Appendices as **Appendix B** of this EIR).

Under existing year 2011 conditions, all study roadway segments were calculated to operate at LOS C or better. Three segments would operate at LOS A; three segments would operate at LOS B; and one segment would operate at LOS C. **Figure 4.3-2** identifies the existing average daily trips (ADTs) along roadway segments in the project study area during weekday conditions.

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**TABLE 4.3-9
EXISTING (YEAR 2011) ROADWAY SEGMENT LOS**

Roadway Segment	Classification (as built)	Existing (Year 2011)				
		Daily Volume	# of Lanes	LOS C Capacity	V/C	LOS
Diehl Road Derrick Road to Drew Road	Minor Collector (2U)	199	2	7,100	0.03	A
Drew Road Evan Hewes Highway to I-8	Prime Arterial (2U)	2,443	2	7,100	0.34	B
I-8 to Diehl Road	Prime Arterial (2U)	1,033	2	7,100	0.15	A
Diehl Road to SR 98	Prime Arterial (2U)	512	2	7,100	0.07	A
Evan Hewes Highway Derrick Road to Drew Road	Prime Arterial (2U)	2,954	2	7,100	0.42	B
Drew Road to Forrester Road	Prime Arterial (2U)	2,843	2	7,100	0.40	B
Forrester Road Evan Hewes Highway to I-8	Prime Arterial (2U)	5,551	2	7,100	0.78	C

Source: LOS, 2012. Notes: Classification based on 1/29/08 Circulation and Scenic Highways Element.
V/C: Volume to Capacity ratio. 2U = 2 lane undivided roadway.
Daily volume is a 24 hour volume. LOS: Level of Service. LOS based on actual number of lanes currently constructed.

Existing Freeway Analysis

Table 4.3-10 summarizes the results of the existing daily freeway analysis during the weekday conditions for the two freeway segments identified in the study area. Both I-8 freeway segments operate at LOS B or better.

**TABLE 4.3-10
EXISTING (YEAR 2011) FREEWAY SEGMENT LOS**

Freeway Segment	I-8 Dunaway Road to Drew Road				I-8 Drew Road to Forrester Road			
	Year 2011 (Forecasted from 2010)							
ADT	12,900				14,600			
Peak Hour	AM		PM		AM		PM	
Directions	EB	WB	EB	WB	EB	WB	EB	WB
Number of Lanes	2	2	2	2	2	2	2	2
Capacity ¹	4,700	4,700	4,700	4,700	4,700	4,700	4,700	4,700
K Factor ²	0.1076	0.0963	0.0917	0.1517	0.1076	0.0963	0.0917	0.1517
D Factor ³	0.2616	0.7384	0.4419	0.5581	0.2616	0.7384	0.4419	0.5581
Truck Factor ⁴	0.8376	0.8376	0.8376	0.8376	0.8376	0.8376	0.8376	0.8376
Peak Hour Volume	434	1,095	624	1,304	491	1,239	706	1,476
V/C	0.092	0.233	0.133	0.277	0.104	0.264	0.150	0.314
LOS	A	A	A	A	A	A	A	B

Source: LOS, 2012.

Notes: ¹ Capacity of 2,350 passenger cars per hour per lane (pcphpl) from CALTRANS' Guide for the Preparation of Traffic Impact Studies, December 2002.

² Latest K factor (percentage of the ADT in both directions during the peak hour) from Caltrans (based on 2007 report).

³ Latest D factor (percentage of traffic in the peak direction during the peak hour) from Caltrans (based on 2007 report), which when multiplied by K and ADT will provide peak hour volume. V/C: Volume to Capacity ratio.

⁴ Latest truck factor from Caltrans (based on 2007 report). EB = eastbound; WB = westbound

LOS: Level of Service. LOS based on actual number of lanes currently constructed.

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The segment between Dunaway Road to Drew Road operates at LOS A in both the AM and PM hours in both directions (eastbound and westbound); the segment between Drew Road and Forrester Road operates at LOS A in the AM peak hour in both directions, at LOS A during the PM peak hour in the eastbound direction, and LOS B during the PM peak hour in the westbound direction.

B. GEN-TIE

The Draft Traffic Impact Analysis included traffic generated by the portion of the gen-tie to be located on lands under the jurisdiction of the BLM. This portion of the project is undergoing separate environmental analysis under NEPA. However, the roadway segments described for the solar generation facility, would also apply to the gen-tie.

C. METHODOLOGY

The following describes the methodology used for the various aspects of the traffic analysis.

Intersections

The operating conditions of the study intersections are measured using the Highway Capacity Manual (HCM) LOS designations ranging from A through F. LOS A represents the best operating condition and LOS F denotes the worst operating condition. LOS worsens from A to F based on delay in seconds at the intersection (refer to **Table 4.3-2**, above).

Roadway Segments

Roadway segments were analyzed based on the functional classification of the roadway using the Imperial County Standard Street Classification capacity lookup table. The roadway segment capacity and LOS standards used to analyze roadway segments are summarized in **Table 4.3-3**, above.

Freeway Segments

Freeway segments were analyzed based on a multi-lane highway LOS criterion using a Volume to Capacity (V/C) ratio as outlined in the 2000 Highway Capacity Manual. The accepted methodology by Caltrans for the analysis of freeway sections is to use the most current edition of the HCM as noted on page 5 of Caltrans' *Guide for the Preparation of Traffic Impact Studies*, December 2002. Freeway LOS operations are based on Caltrans' *Guide for the Preparation of Traffic Impact Studies* V/C ratios (identified in **Table 4.3-3**, above).

D. SCENARIOS

The number of scenarios analyzed for the proposed project/Proposed Action is based on the methodology outlined in the Imperial County Department of Public Works *Traffic Study and Report Policy* dated March 12, 2007, revised June 29, 2007 and approved by the Board of Supervisors of the County of Imperial on August 7, 2007. Excerpts from the *Traffic Study and Report Policy* showing the scenario criteria are included in Appendix A of the *Draft Traffic Impact Analysis*. This document is provided on the attached CD of Technical Appendices as **Appendix B** of this EIR.

Six scenarios were analyzed that accounted for existing, project construction, cumulative projects and horizon year conditions. Operational findings by scenario are summarized below for the proposed project:

- Existing (Year 2011) Conditions
- Existing (Year 2011) Plus Project Conditions

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- Year 2013 Conditions (Without Project)
- Year 2013 Plus Project Conditions
- Year 2013 Plus Project Plus Cumulative Conditions
- Horizon Year 2050 Plus Project Conditions

E. PROJECT TRIP GENERATION

The project trip generation consists of a construction phase and operations phase. The construction phase will have the highest traffic intensity followed by an operations phase with significantly fewer vehicle trips. Construction and operations trip generation are described below.

Construction Trip Generation

Construction of the project includes site preparation, foundation construction, erection of major equipment and structures, installation of electrical systems, control systems, and start-up/testing. These construction activities are expected to require approximately 12 to 24 months. According to the applicant, the construction workforce is expected to reach a peak during month number seven (7) anticipated to occur during the first quarter of 2013 with a peak of up to 325 daily vehicles for construction workers and 50 daily truck deliveries (details in Appendix J of the *Draft Traffic Impact Analysis*. This document is provided on the attached CD of Technical Appendices as **Appendix B** of this EIR). The number of workers before and after the peak month will be less. Work is anticipated to start at 6 AM and conclude at 6 PM Monday through Friday. The peak construction traffic (during month number 7) is calculated at 950 ADT with 349 AM peak hour trips (337 inbound and 12 outbound) and 349 PM peak hour trips (12 inbound and 337 outbound) as shown in **Table 4.3-11**.

**TABLE 4.3-11
PROJECT TRIP GENERATION SUMMARY**

Proposed Construction Related Traffic	Daily Vehicle Trips	ADT With PCE ²	AM (6 AM)		PM (6 PM)	
			IN	OUT	IN	OUT
Peak Construction Workers	325	650	325	0	0	325
Equipment Deliveries and Construction Trucks (with PCE)	50	300	12	12	12	12
Total Traffic During Peak Construction Period	375	950	337	12	12	337

Source: LOS, 2012.

ADT: Average Daily Trips. 1) Number of construction workers and construction trucks provided by applicant. 2) Passenger Car Equivalent (PCE) factor of 3 applied to each truck, thus 50 daily trucks equals 300 ADT in one (1) day while peak hour has about 4 trucks x 3 PCE to equal 12 PCE peak hour trips.

Construction Trip Distribution and Assignment

The applicant has indicated that the labor pool for the construction workforce is anticipated at approximately 60% from within Imperial County from a combination of existing residents and workers that will temporarily reside in the County, and approximately 40% from outside Imperial County. Local cities/residential communities within Imperial County are considered to include but are not limited to Calipatria, Westmorland, Brawley, Imperial, El Centro, Holtville, and Calexico. The distribution of the construction workforce by cities/communities was based on the concentration of populations per the Census 2010 from the U.S. Census Bureau. The percentage of local construction workforce by city/community and county is shown in **Table 4.3-12**.

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**TABLE 4.3-12
CONSTRUCTION WORKFORCE SOURCES BASED ON CENSUS 2010 POPULATIONS (60 PERCENT LOCAL)**

85 Percent Local Workforce	2010 Census Population	Percentage of Total	Percentage of Construction Employees (60% From Within Imperial County)
Calipatria	7,705	6%	3%
Westmorland	2,225	2%	1%
Brawley	24,953	18%	11%
Imperial	14,758	11%	6%
El Centro	42,598	31%	19%
Holtville	5,939	4%	3%
Calxico	38,572	28%	17%
Total	136,750	100%	60%

Source: LOS, 2012. Population data from U.S. Census Bureau.

The percentage of non-local construction workforce by city/community and county were based on the population concentrations per the Census 2010 from the U.S. Census Bureau and proximity to population centers such as San Diego. The non-local workforce numbers are shown in **Table 4.3-13**.

**TABLE 4.3-13
CONSTRUCTION WORKFORCE SOURCES BASED ON CENSUS 2010 POPULATIONS (60 PERCENT LOCAL)**

Non-Local (40%) County	2010 Census Population	Percentage of Census Total	Percentage of Non-Local Workforce (With emphasis on proximity to San Diego)
San Diego County	3,095,313	56%	30%
Riverside County	2,189,641	40%	9%
Yuma County (Arizona)	195,751	4%	1%
Non-Local Total	5,480,705	100%	40%

Source: LOS, 2012. Population data from U.S. Census Bureau.

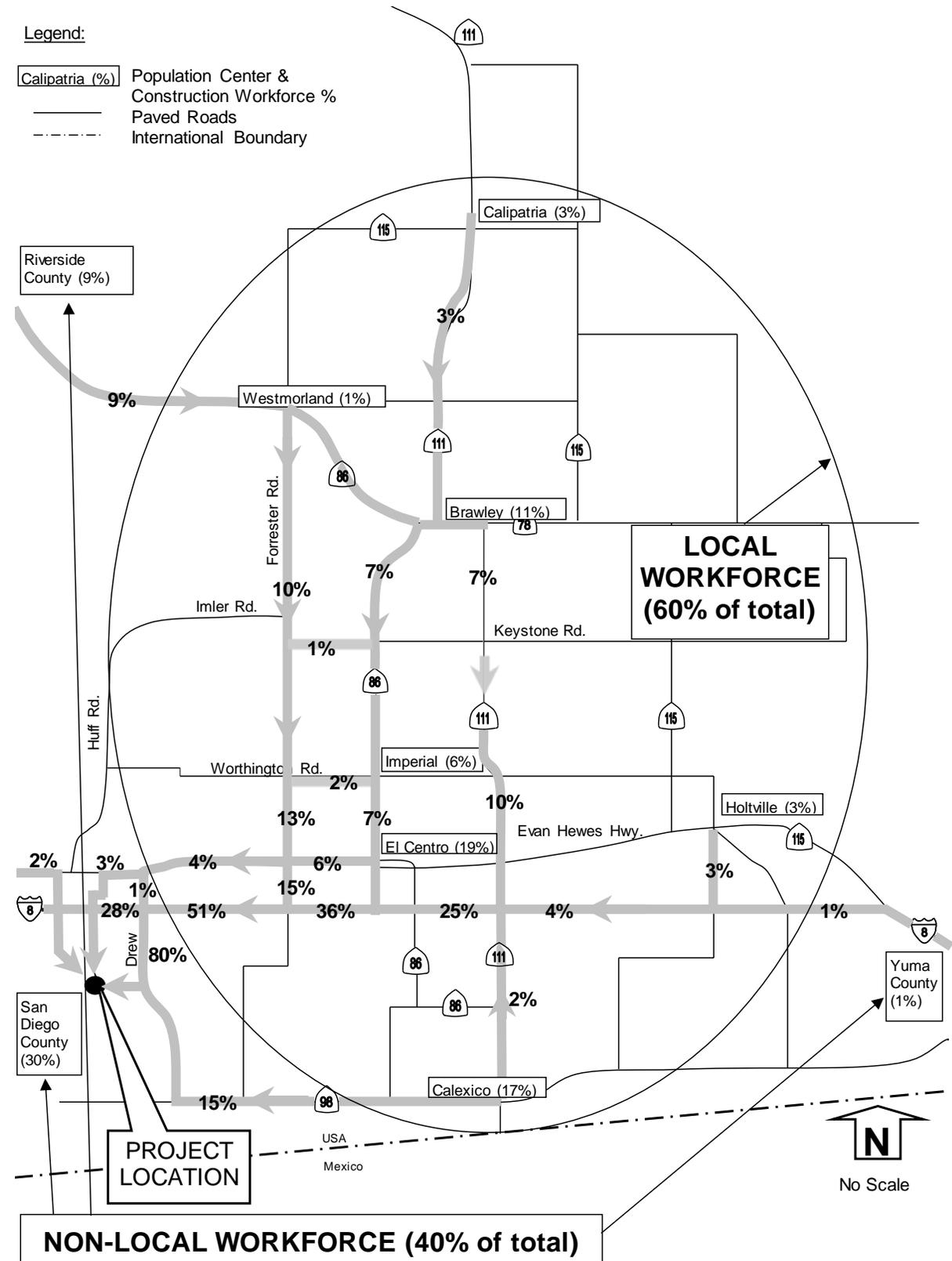
Based on the aforementioned Census information, the regional construction workforce distribution is shown in **Figure 4.3-3** with the study area distribution shown in **Figure 4.3-4**. The construction workforce trip assignment is shown in **Figure 4.3-5**.

The delivery of equipment is anticipated to arrive from outside of Imperial Valley with a majority arriving from Los Angeles and Riverside Counties, followed by San Diego County, and the possibility of some truck traffic from other locations. The project truck delivery distribution is shown in **Figure 4.3-6** with the truck delivery trip assignment shown in **Figure 4.3-7**. The total project traffic that consists of the construction workforce and delivery of equipment is shown in **Figure 4.3-8**.

Alternative Access Routes

On April 5, 2010 an earthquake struck Imperial County and caused the closure of Drew Road south of I-8. In the event an alternative route is required to reach the project site, several route options exist. These alternative access routes are shown in **Figure 4.3-9**; however, this analysis is based on primary access from Drew Road. The Drew Road bridge was rebuilt over the past year to current engineering and seismic standards and is expected to be available for use. However, alternative routes have been

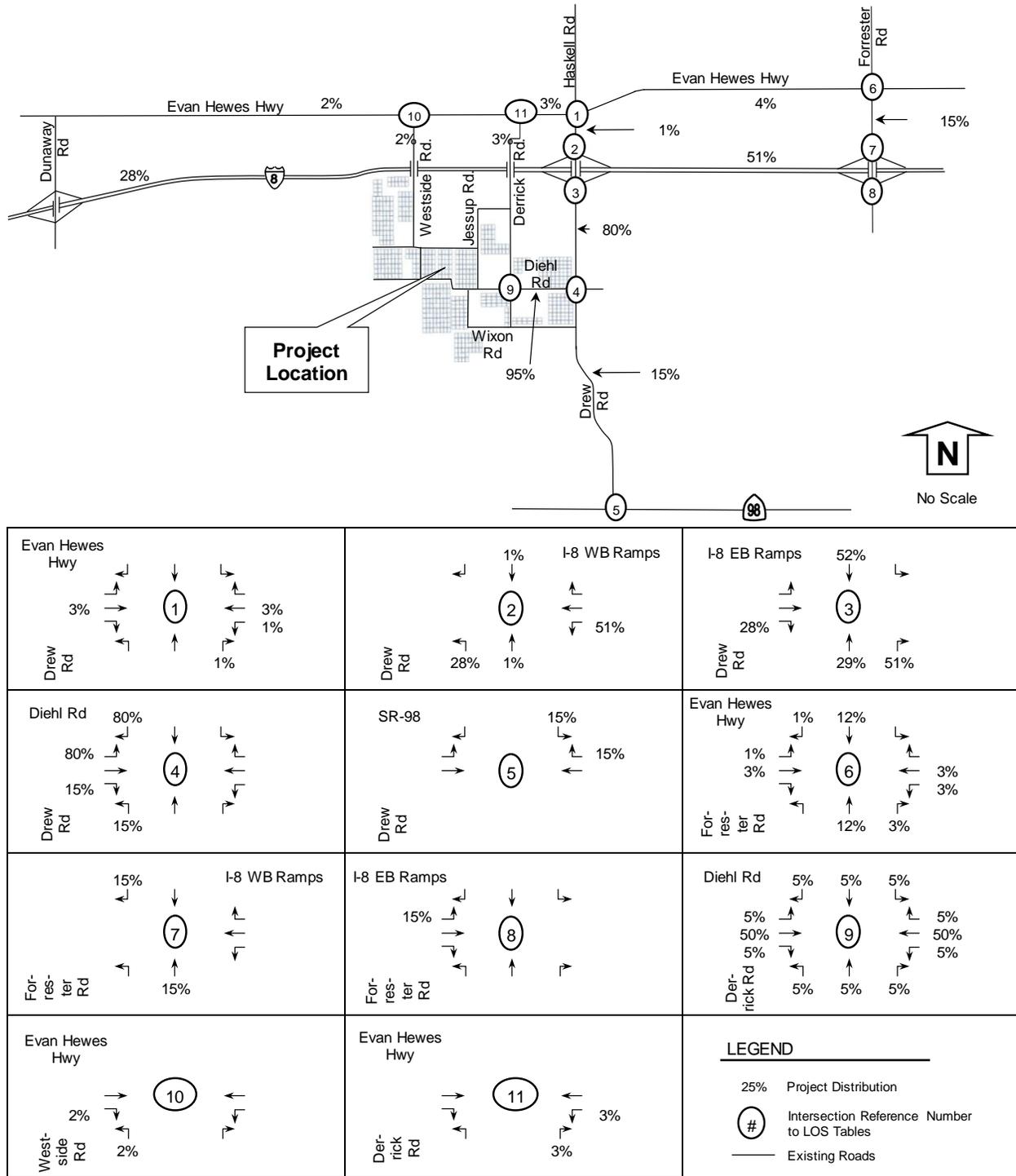
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Source: LOS, 2012.

FIGURE 4.3-3
LOCAL CONSTRUCTION WORKFORCE DISTRIBUTION

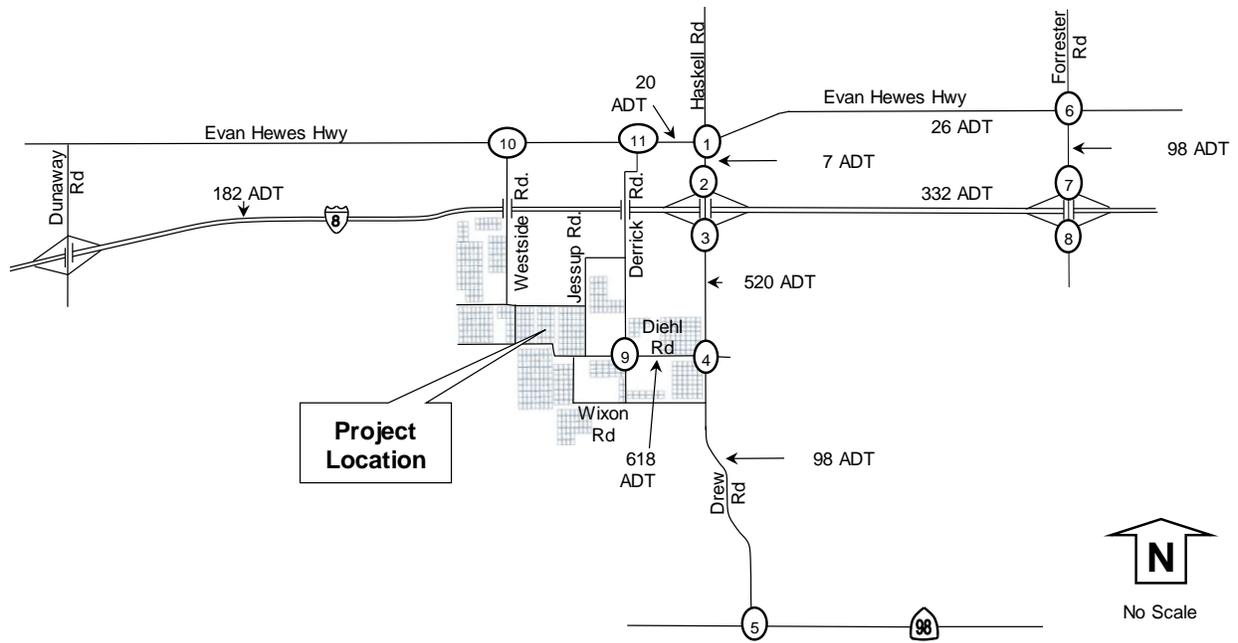
4.3 TRANSPORTATION AND CIRCULATION



Source: LOS, 2012.

FIGURE 4.3-4
STUDY AREA DISTRIBUTION

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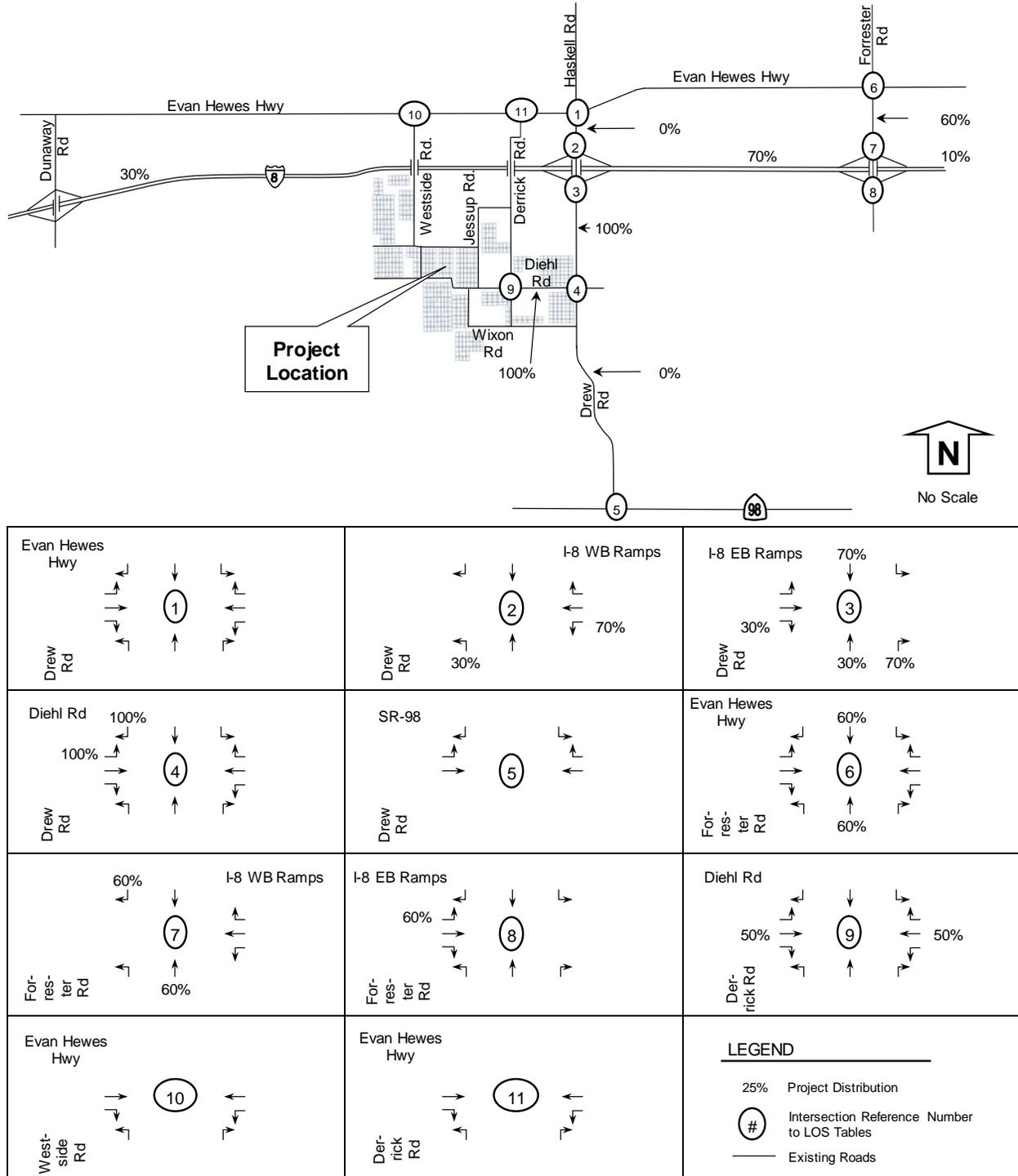


<p>Evan Hewes Hwy</p> <p>0 (10) → (1) ← 10 (3)</p> <p>Drew Rd → (3) ←</p>	<p>3 (0) I-8 WB Ramps</p> <p>Drew Rd → (91) (3) ↑ (2) ↓ 166 (0)</p>	<p>I-8 EB Ramps</p> <p>Drew Rd → (94) (166) ↑ (3) ↓ 169 (0)</p>
<p>Diehl Rd</p> <p>0 (260) → (4) ← 49 (0)</p> <p>Drew Rd → (49) (0) ↑</p>	<p>SR-98</p> <p>Drew Rd → (49) (0) ↑ (5) ↓ 49 (0)</p>	<p>Evan Hewes Hwy</p> <p>0 (3) → (6) ← 10 (0)</p> <p>Forrester Rd → (39) (10) ↑ (0) ↓ 39 (0)</p>
<p>Forrester Rd</p> <p>→ (7) ← 0 (49)</p> <p>I-8 WB Ramps</p>	<p>I-8 EB Ramps</p> <p>Forrester Rd → (49) (0) ↑ (8) ↓</p>	<p>Diehl Rd</p> <p>5 (20) → (9) ← 20 (5)</p> <p>5 (180) → 180 (5)</p> <p>5 (20) → 20 (5)</p> <p>Derrick Rd → (20) (20) ↑ (5) ↓ 5 (20)</p>
<p>Evan Hewes Hwy</p> <p>7 (0) → (10) ← 0 (7)</p> <p>Westside Rd → (7) ←</p>	<p>Evan Hewes Hwy</p> <p>Derrick Rd → (10) (0) ↑ (11) ↓ 10 (0)</p>	<p>LEGEND</p> <p>XX AM peak hour volumes at intersections</p> <p>(YY) PM peak hour volumes at intersections</p> <p>Z,ZZZ ADT volumes shown along segments</p> <p>(#) Intersection Reference Number to LOS Tables</p> <p>— Existing Roads</p> <p>() Represents 0 PM volume</p>

Source: LOS, 2012.

FIGURE 4.3-5
CONSTRUCTION WORKFORCE TRAFFIC

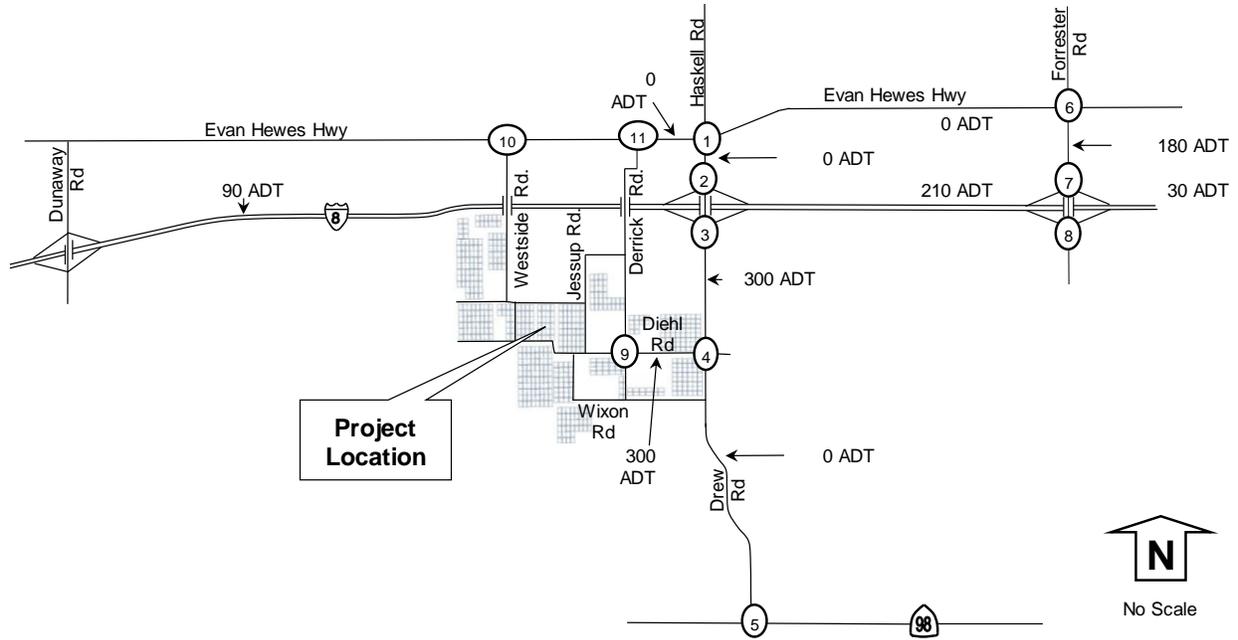
4.3 TRANSPORTATION AND CIRCULATION



Source: LOS, 2012.

FIGURE 4.3-6
TRUCK DELIVERY DISTRIBUTION

4.3 TRANSPORTATION AND CIRCULATION

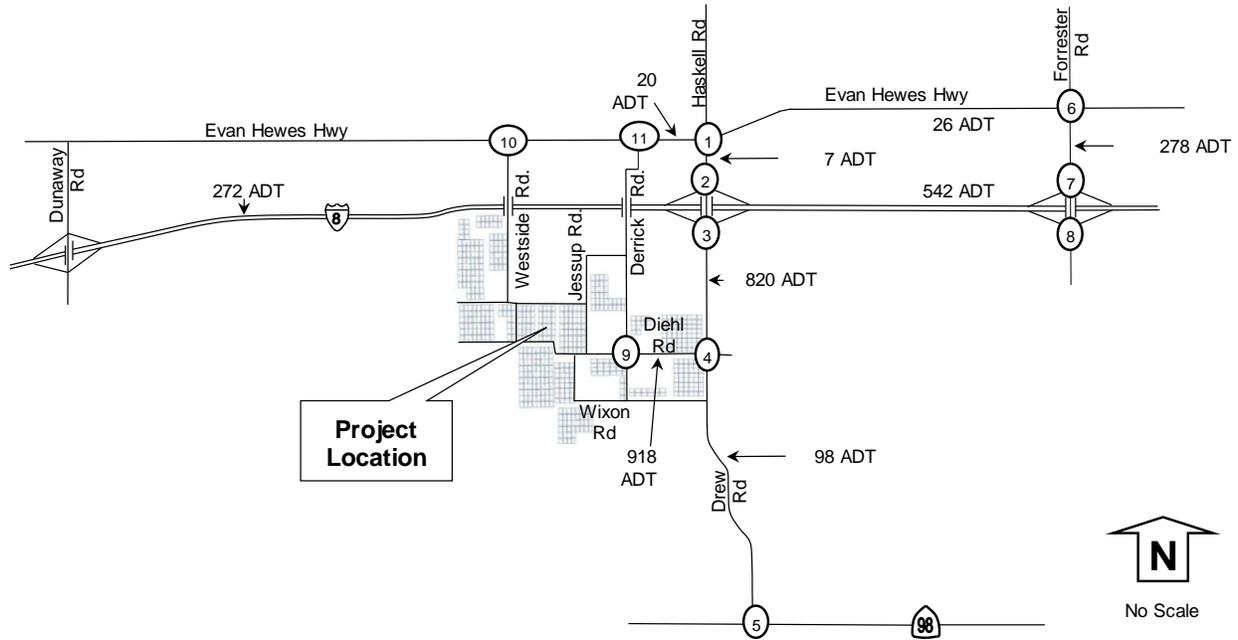


<p>Evan Hewes Hwy</p> <p>Drew Rd</p> <p>1</p>	<p>I-8 WB Ramps</p> <p>Drew Rd</p> <p>2</p> <p>8 (8)</p>	<p>I-8 EB Ramps</p> <p>Drew Rd</p> <p>3</p> <p>8 (8)</p> <p>4 (4)</p> <p>4 (4)</p> <p>8 (8)</p>
<p>Diehl Rd</p> <p>Drew Rd</p> <p>4</p> <p>12 (12)</p>	<p>SR-98</p> <p>Drew Rd</p> <p>5</p>	<p>Evan Hewes Hwy</p> <p>Forrester Rd</p> <p>6</p> <p>7 (7)</p> <p>7 (7)</p>
<p>I-8 WB Ramps</p> <p>Forrester Rd</p> <p>7</p> <p>7 (7)</p>	<p>I-8 EB Ramps</p> <p>Forrester Rd</p> <p>8</p> <p>7 (7)</p>	<p>Diehl Rd</p> <p>Derrick Rd</p> <p>9</p> <p>6 (6)</p> <p>6 (6)</p>
<p>Evan Hewes Hwy</p> <p>Westside Rd</p> <p>10</p>	<p>Evan Hewes Hwy</p> <p>Derrick Rd</p> <p>11</p>	<p>LEGEND</p> <p>XX AM peak hour volumes at intersections</p> <p>(YY) PM peak hour volumes at intersections</p> <p>Z,ZZZ ADT volumes shown along segments</p> <p># Intersection Reference Number to LOS Tables</p> <p>— Existing Roads</p> <p>() Represents 0 PM volume</p>

Source: LOS, 2012.

FIGURE 4.3-7
TRUCK DELIVERY TRAFFIC

4.3 TRANSPORTATION AND CIRCULATION

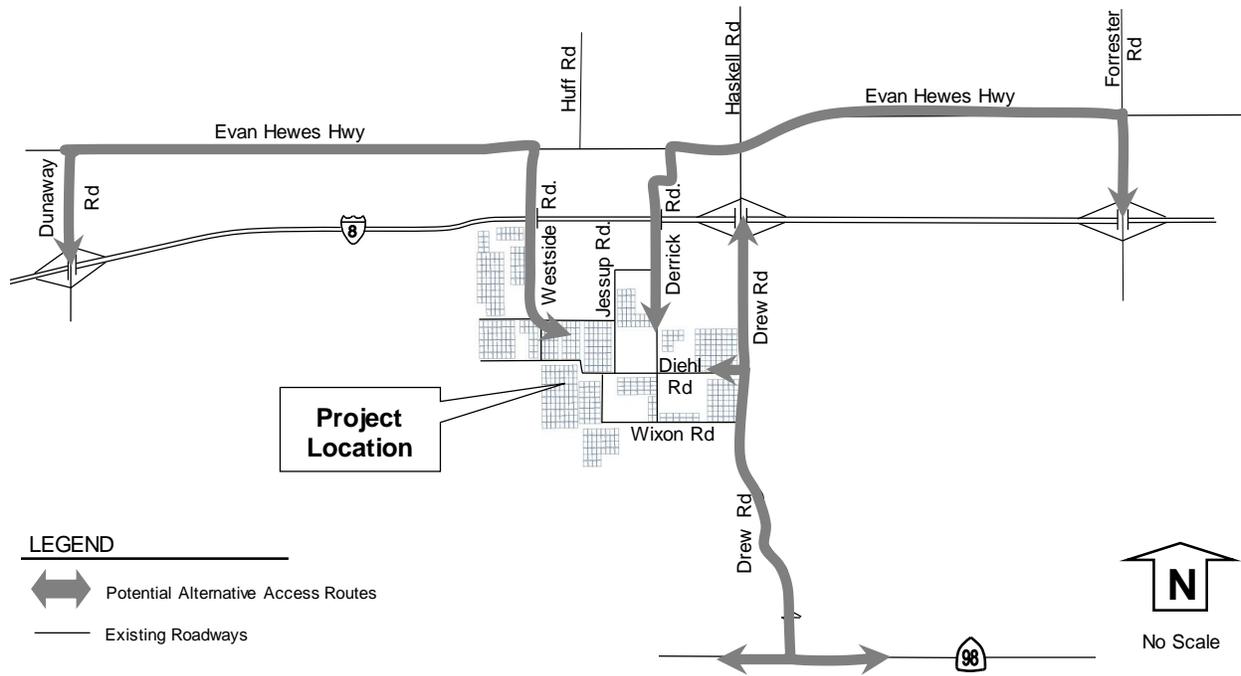


<p>Evan Hewes Hwy</p> <p>0 (10) ↓ (1) 10 (0)</p> <p>Drew Rd ↑ (3)</p>	<p>3 (0) I-8 WB Ramps</p> <p>Drew Rd ↓ (95) ↑ (3) 174 (8)</p>	<p>I-8 EB Ramps</p> <p>Drew Rd ↓ (98) ↑ (174)</p>
<p>Diehl Rd</p> <p>12 (272) ↓ (4) 49 (0)</p> <p>Drew Rd ↑ (49)</p>	<p>SR-98</p> <p>Drew Rd ↓ (49) ↑ (0) 49 (0)</p>	<p>Evan Hewes Hwy</p> <p>0 (3) ↓ (6) 10 (0)</p> <p>0 (10) ↑ (10)</p> <p>Forrester Rd ↓ (46) ↑ (10)</p>
<p>I-8 WB Ramps</p> <p>Forrester Rd ↓ (56) ↑ (56)</p>	<p>I-8 EB Ramps</p> <p>Forrester Rd ↓ (56) ↑ (20)</p>	<p>Diehl Rd</p> <p>5 (20) ↓ (9) 20 (5)</p> <p>11 (186) ↑ (11) 186 (11)</p> <p>5 (20) ↓ (20) 20 (5)</p> <p>Derrick Rd ↓ (20) ↑ (20)</p>
<p>Evan Hewes Hwy</p> <p>7 (0) ↓ (10) 10 (0)</p> <p>Westside Rd ↑ (7)</p>	<p>Evan Hewes Hwy</p> <p>Derrick Rd ↓ (10) ↑ (10)</p>	<p>LEGEND</p> <p>XX AM peak hour volumes at intersections</p> <p>(YY) PM peak hour volumes at intersections</p> <p>Z,ZZZ ADT volumes shown along segments</p> <p>(#) Intersection Reference Number to LOS Tables</p> <p>— Existing Roads</p> <p>() Represents 0 PM volume</p>

Source: LOS, 2012.

FIGURE 4.3-8
TOTAL PROJECT TRAFFIC

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Source: LOS, 2012.

**FIGURE 4.3-9
POSSIBLE ALTERNATIVE ACCESS ROUTES**

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identified for emergency purposes at the County's request (e.g. if an accident is blocking the road or intersection, localized flooding makes an area impassable, etc.).

Year 2011 Plus Project Conditions

Year 2011 Plus Project Conditions reflect the addition of construction traffic onto Year 2011 Conditions Without Project during the anticipated construction peak (month six).

Proposed Action Operations and Maintenance Trip Generation

During operations and maintenance, the project will primarily operate during daylight hours and will require (on average) less than 10 fulltime personnel for operations and maintenance. Operations personnel include employees running the facility, security, and any other work associated with the operations. Maintenance personnel include employees addressing maintenance on a daily basis. On average, the operations and maintenance trip generation is estimated at about 20 ADT with approximately 10 AM and 10 PM peak hour trips.

During a typical year, assuming a worst-case scenario where panel washing is necessary (rather than the panels being cleaned by rainfall), the project will require up to 10 daily water trucks for panel washing over approximately 15 business days; however, the washing frequency is estimated from one to four times a year. During the washing period, the total project daily traffic may increase to 40 or 50 ADT over a 15 business day period.

Since the operations and maintenance traffic generation is significantly less than the construction, the higher and more conservative construction trip generation is used to determine potential project impacts. In other words, the construction phase was used for the traffic analysis because it is calculated to generate significantly higher traffic than the project operations and maintenance phase when the project is operational.

4.3.3 IMPACTS AND MITIGATION MEASURES

A. STANDARDS OF SIGNIFICANCE

The CEQA significance criteria listed below were used to determine if the proposed project would result in impacts to transportation and circulation. These criteria are the same as the significance criteria for Transportation/Traffic listed in the CEQA Environmental Checklist, Appendix G of the 2011 CEQA Guidelines. Under CEQA, the Proposed Action would have a significant impact on transportation and circulation if it would:

- a) Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit.
- b) Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways.
- c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks.

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- d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).
- e) Result in inadequate emergency access.
- f) Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities.

The significance criteria for traffic impacts are based on the Imperial County Planning and Development Services Department level of service (LOS) standard of the Imperial County General Plan Circulation and Scenic Highways Element dated January 29, 2008. Imperial County’s goal is to have intersections and roadway segments operate at LOS C or better. In general, a location operating at LOS C or better under existing conditions that degrades to a LOS D or worse is considered a significant impact. Page 55 of the Circulation and Scenic Highways Element states: “The County’s goal for an acceptable traffic service standard on an ADT (average daily trips) basis and during AM and PM peak periods for all County-Maintained Roads shall be LOS C for all street segment links and intersections.” (An excerpt from the *Circulation and Scenic Highways Element* is included in Appendix E as part of the *Draft Traffic Impact Analysis*. This document is provided on the attached CD of Technical Appendices as **Appendix B** of this EIR).

The current practice of determining direct and cumulative impacts in Imperial County is defined by the significance criteria provided in **Table 4.3-14** which was obtained from several EIRs for projects in Imperial County. The significance criteria were confirmed with the Imperial County Department of Public Works in April 2011. (Copies of traffic significance criteria from other EIRs are included in Appendix F of the *Draft Traffic Impact Analysis*. This document is provided on the attached CD of Technical Appendices as **Appendix B** of this EIR).

**TABLE 4.3-14
SIGNIFICANCE CRITERIA**

Existing	Existing + Project	Existing + Project + Cumulative Projects	Impact Type
Intersections			
LOS C or better	LOS C or better	LOS C or better	None
LOS C or better	LOS D or worse	NA	Direct
LOS D	LOS D and adds 2.0 seconds or more of delay	LOS D or worse	Cumulative
LOS D	LOS E or F	NA	Direct
LOS E	LOS F	NA	Direct
LOS F	LOS F and delay increases by ≥ 10.0 seconds	LOS F	Direct
Any LOS	Project does not degrade LOS and adds < 2.0 seconds of delay	Any LOS	None
Any LOS	Project does not degrade LOS but adds 2.0 to 9.9 seconds of delay	LOS E or worse	Cumulative

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Existing (Year 2011) Plus Project Conditions

The proposed project consists of two primary components: 1) a solar generation equipment and associated facilities on privately owned land (the “solar generation facility”); and, 2) 230-kilovolt (kV) aboveground, electric transmission line(s) and associated facilities (the “gen-tie”) that will connect the generation facilities with the Imperial Valley Substation. The proposed project is on approximately 1,990 acres of private land in southern Imperial County with a segment of the gen-tie extending approximately 0.9 miles through land managed by the BLM to the Imperial Valley Substation.

Further details of the proposed project are described in Chapter 2.0.

Intersection LOS

Table 4.3-15 summarizes intersection LOS while Figure 4.3-10 depicts Existing (Year 2011) Plus Project Volumes.

**TABLE 4.3-15
EXISTING (YEAR 2011) PLUS PROJECT INTERSECTION LOS**

Intersection & (Control) ¹	Movement	Peak Hour	Existing (Year 2011)		Existing Plus Project			
			Delay ²	LOS ³	Delay ²	LOS ³	Change ⁴	Significant Impact? ⁵
1)Drew Road at Evan Hewes Highway (U)	All	AM	7.5	A	7.6	A	0.1	No
	All	PM	7.5	A	7.5	A	0.0	No
2)Drew Road at I-8 Westbound Ramps (U)	WB LT	AM	8.7	A	10.0	B	1.3	No
	WB LT	PM	8.7	A	9.5	A	0.8	No
3)Drew Road at I-8 Eastbound Ramps (U)	EB LT	AM	10.0	B	10.0	B	0.0	No
	EB LT	PM	9.3	A	9.9	A	0.6	No
4)Drew Road at Diehl Road (U)	EB LTR	AM	8.6	A	10.5	B	1.9	No
	EB LTR	PM	8.6	A	10.8	B	2.2	No
5)Drew Road at SR-98 (U)	SB LR	AM	8.6	A	8.7	A	0.1	No
	SB LR	PM	9.2	A	9.7	A	0.5	No
6)Forrester Road at Evan Hewes Highway (U)	All	AM	16.8	B	17.5	B	0.7	No
	All	PM	22.9	C	23.0	C	0.1	No
7)Forrester Road at I-8 westbound Ramps (U)	WB LT	AM	9.8	A	9.8	A	0.0	No
	WB LT	PM	9.8	A	10.2	B	0.4	No
8)Forrester Road at I-8 eastbound Ramps (U)	EB LT	AM	10.8	B	10.9	B	0.1	No
	EB LT	PM	16.9	C	20.0	C	3.1	No
9)Derrick Road at Diehl Road (U)	SB LTR	AM	8.7	A	11.0	B	2.3	No
	SB LTR	PM	8.7	A	10.9	B	2.2	No
10)Westside Road at Evan Hewes Highway (U)	NB LR	AM	9.1	A	9.1	A	0.0	No
	NB LR	PM	9.2	A	9.5	A	0.3	No
11)Derrick Road at Evan Hewes Highway (U)	NB LR	AM	8.8	A	8.8	A	0.0	No
	NB LR	PM	9.3	A	9.4	A	0.1	No

Source: LOS, 2012.

Notes: ¹ Intersection Control - (S) Signalized, (U) Unsignalized

² Delay - HCM Average Control Delay in seconds

³ LOS: Level of Service

⁴ Delta = increase in delay from project

⁵ Significant Impact? (Yes or No)

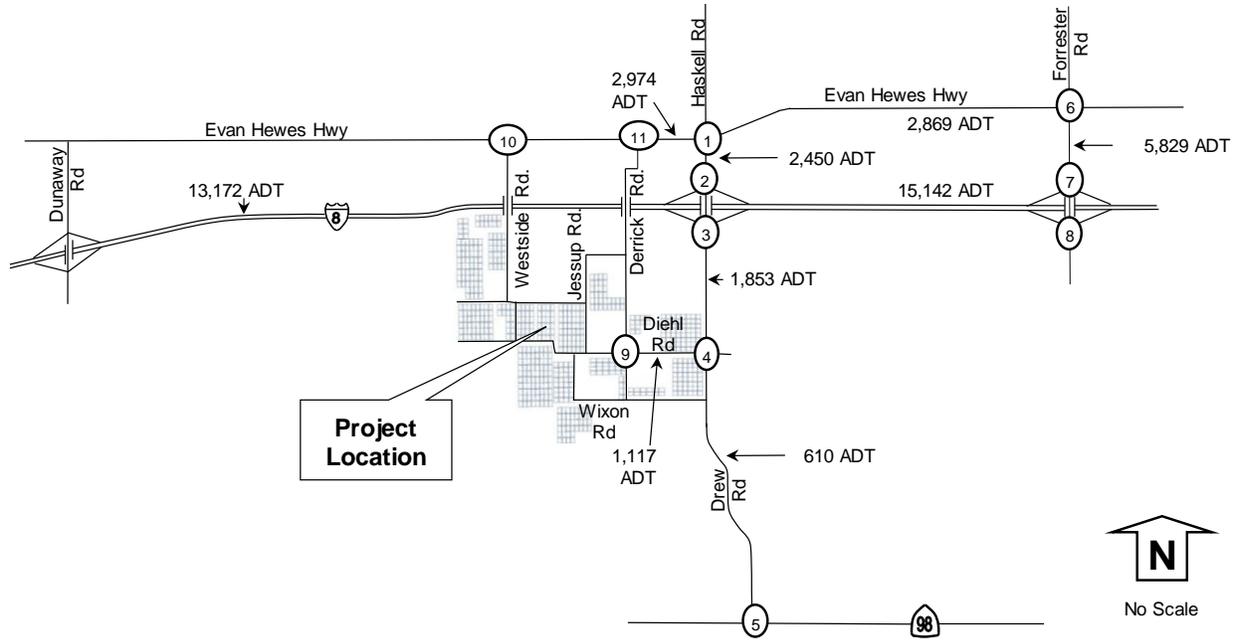
DNE: Does not exist

NA: Not Applicable

EB = eastbound

WB = westbound

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<p>Evan Hewes Hwy</p> <p>10 (12) → (1) ← 6 (14)</p> <p>5 (8) → (1) ← 3 (19)</p> <p>59 (124) → (1) ← 106 (33)</p> <p>36 (92) → (1) ← 24 (13)</p> <p>Drew Rd</p> <p>69 (42) → (1) ← 11 (19)</p> <p>17 (13) → (1) ← 0 (0)</p>	<p>16 (6) ← (2) → 48 (84)</p> <p>I-8 WB Ramps</p> <p>56 (37) → (2) ← 0 (0)</p> <p>186 (22) → (2) ← 23 (15)</p> <p>Drew Rd</p> <p>11 (95) → (2) ← 2 (1)</p> <p>0 (53) → (2) ← 52 (3)</p> <p>51 (53) → (2) ← 0 (0)</p>	<p>I-8 EB Ramps</p> <p>197 (41) → (3) ← 37 (59)</p> <p>6 (7) → (3) ← 0 (0)</p> <p>95 (9) → (3) ← 31 (104)</p> <p>35 (192) → (3) ← 15 (20)</p> <p>Drew Rd</p> <p>28 (15) → (3) ← 8 (13)</p> <p>150 (135) → (3) ← 116 (96)</p> <p>15 (20) → (3) ← 22 (24)</p>
<p>Diehl Rd</p> <p>278 (13) → (4) ← 11 (24)</p> <p>0 (0) → (4) ← 1 (0)</p> <p>6 (51) → (4) ← 0 (0)</p> <p>Drew Rd</p> <p>52 (1) → (4) ← 26 (8)</p> <p>0 (0) → (4) ← 0 (0)</p>	<p>SR-98</p> <p>2 (1) → (5) ← 0 (53)</p> <p>1 (2) → (5) ← 52 (3)</p> <p>27 (91) → (5) ← 51 (53)</p> <p>Drew Rd</p> <p>33 (31) → (8) ← 91 (232)</p> <p>47 (132) → (8) ← 0 (1)</p> <p>3 (3) → (8) ← 35 (26)</p>	<p>Evan Hewes Hwy</p> <p>28 (15) → (6) ← 15 (20)</p> <p>13 (41) → (6) ← 8 (13)</p> <p>52 (185) → (6) ← 116 (96)</p> <p>8 (15) → (6) ← 22 (24)</p> <p>For- res- ter Rd</p> <p>13 (8) → (6) ← 102 (156)</p> <p>15 (28) → (6) ← 21 (7)</p>
<p>I-8 WB Ramps</p> <p>200 (160) → (7) ← 15 (8)</p> <p>112 (61) → (7) ← 81 (157)</p> <p>4 (0) → (7) ← 6 (21)</p> <p>For- res- ter Rd</p> <p>20 (5) → (9) ← 23 (7)</p> <p>5 (20) → (9) ← 21 (5)</p> <p>18 (189) → (9) ← 194 (12)</p> <p>5 (21) → (9) ← 20 (5)</p>	<p>I-8 EB Ramps</p> <p>33 (31) → (8) ← 91 (232)</p> <p>47 (132) → (8) ← 0 (1)</p> <p>3 (3) → (8) ← 35 (26)</p> <p>5 (9) → (8) ← 5 (20)</p> <p>For- res- ter Rd</p> <p>20 (5) → (9) ← 23 (7)</p> <p>5 (20) → (9) ← 21 (5)</p> <p>18 (189) → (9) ← 194 (12)</p> <p>5 (21) → (9) ← 20 (5)</p>	<p>Diehl Rd</p> <p>20 (5) → (9) ← 23 (7)</p> <p>5 (20) → (9) ← 21 (5)</p> <p>18 (189) → (9) ← 194 (12)</p> <p>5 (21) → (9) ← 20 (5)</p> <p>Der- rick Rd</p> <p>6 (21) → (9) ← 5 (20)</p> <p>5 (20) → (9) ← 5 (20)</p>
<p>Evan Hewes Hwy</p> <p>50 (164) → (10) ← 268 (17)</p> <p>7 (0) → (10) ← 3 (4)</p> <p>1 (7) → (10) ← 3 (4)</p> <p>West- side Rd</p> <p>1 (7) → (10) ← 3 (4)</p>	<p>Evan Hewes Hwy</p> <p>52 (190) → (11) ← 142 (44)</p> <p>1 (0) → (11) ← 14 (4)</p> <p>1 (0) → (11) ← 5 (14)</p> <p>Der- rick Rd</p> <p>1 (0) → (11) ← 5 (14)</p>	<p>LEGEND</p> <p>XX AM peak hour volumes at intersections</p> <p>(YY) PM peak hour volumes at intersections</p> <p>Z,ZZZ ADT volumes shown along segments</p> <p>(#) Intersection Reference Number to LOS Tables</p> <p>— Existing Roads</p> <p>() Represents 0 PM volume</p>

Source: LOS, 2012.

FIGURE 4.3-10
EXISTING (YEAR 2011) PLUS PROJECT VOLUMES

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Under existing (Year 2011) Plus Project Conditions, the study intersections were calculated to operate at LOS C or better. Two intersections, Forrester Road/Evan Hewes Highway and Forrester Road/I-8 eastbound ramp, operate at LOS C in the PM peak hour (and LOS B in the AM peak hour). Two intersections operate at LOS B in both the AM and PM peak hours. Four operate at LOS B in the AM peak hour only and one operates at LOS B in the PM peak hour only. No significant project impacts to study area intersections were calculated due to the addition of construction traffic to existing traffic. Moreover, the increases in traffic resulting from construction of the proposed project would not exceed LOS standards. Therefore, **less than significant** impacts to study area intersections would result from construction traffic under Year 2011 plus project conditions.

Roadway Segment LOS

Table 4.3-16 summarizes roadway segment LOS for Existing (Year 2011) Plus Project conditions. As shown, no change in LOS would occur at any of the segments. All segments would all operate at LOS C or better. Only one segment (Forrester Road from Evan Hewes Highway to I-8) was projected to operate at LOS C. Therefore, **less than significant** impacts to study area roadway segments would result from construction traffic under Year 2011 plus project conditions.

Freeway Segment LOS

Table 4.3-17 summarizes freeway segment LOS. Under existing (Year 2011) Plus Project Conditions, the freeway segments were calculated to operate above LOS C (at LOS A and LOS B). I-8 from Dunaway Road to Drew Road would continue to operate at LOS A in the AM and PM peak hours in both directions (eastbound and westbound). I-8 from Drew Road to Forrester Road would operate at LOS A during the AM and PM peak hour in the eastbound direction, LOS A in the AM peak hour in the westbound direction, and LOS B during the PM peak hour in the westbound direction. Moreover, the increases in traffic resulting from project construction would not exceed V/C ratios or LOS standards. Therefore, **less than significant** impacts to study area freeway segments would result from construction traffic under Year 2011 plus project conditions.

Under Existing (Year 2011) Plus Project Conditions, the study intersections, roadway and freeway segments were calculated to operate at LOS C or better. Thus, **less than significant** project impacts were calculated with the addition of project traffic to existing traffic.

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**TABLE 4.3-16
EXISTING (YEAR 2011) PLUS PROJECT ROADWAY LOS**

Roadway Segment	Classification (as built)	Existing (Year 2011)				Project Daily Volume	Existing Plus Project					
		Daily Volume	LOS C Capacity	V/C	LOS		Daily Volume	LOS C Capacity	V/C	LOS	Change in V/C	Significant Impact?
Diehl Road Derrick Road to Drew Road	Minor Collector (2U)	199	7,100	0.28	A	918	1,117	7,100	0.157	A	0.129	No
Drew Road Evan Hewes Highway to I-8	Prime Arterial (2U)	2,443	7,100	0.344	B	7	2,450	7,100	0.345	B	0.001	No
I-8 to Diehl Road	Prime Arterial (2U)	1,033	7,100	0.145	A	820	1,853	7,100	0.261	A	0.115	No
Diehl Road to SR 98	Prime Arterial (2U)	512	7,100	0.072	A	98	610	7,100	0.086	A	0.014	No
Evan Hewes Highway Derrick Road to Drew Road	Prime Arterial (2U)	2,954	7,100	0.416	B	20	2,974	7,100	0.419	B	0.003	No
Drew Road to Forrester Road	Prime Arterial (2U)	2,843	7,100	0.400	B	26	2,869	7,100	0.404	B	0.004	No
Forrester Road Evan Hewes Highway to I-8	Prime Arterial (2U)	5,551	7,100	0.782	C	278	5,829	7,100	0.821	C	0.039	No

Source: LOS, 2012.

Notes: Classification based on 1/29/08 Circulation and Scenic Highways Element.
V/C: Volume to Capacity ratio. 2U = 2 lane undivided roadway.
Daily volume is a 24 hour volume. LOS: Level of Service. LOS based on actual number of lanes currently constructed.
Significant Impact? = identifies if a project impact is calculated (yes or no)

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**TABLE 4.3-17
EXISTING (YEAR 2011) PLUS PROJECT FREEWAY SEGMENT LOS**

Freeway Segment	I-8 Dunaway Road to Drew Road				I-8 Drew Road to Forrester Road			
	Year 2011 (Forecasted from 2010)							
ADT	12,900				14,600			
Peak Hour	AM		PM		AM		PM	
Directions	EB	WB	EB	WB	EB	WB	EB	WB
Number of Lanes	2	2	2	2	2	2	2	2
Capacity ¹	4,700	4,700	4,700	4,700	4,700	4,700	4,700	4,700
K Factor ²	0.1076	0.0963	0.0917	0.1517	0.1076	0.0963	0.0917	0.1517
D Factor ³	0.2616	0.7384	0.4419	0.5581	0.2616	0.7384	0.4419	0.5581
Truck Factor ⁴	0.8376	0.8376	0.8376	0.8376	0.8376	0.8376	0.8376	0.8376
Peak Hour Volume	434	1,095	624	1,304	491	1,239	706	1,476
V/C	0.092	0.233	0.133	0.277	0.104	0.264	0.150	0.314
LOS	A	A	A	A	A	A	A	B
Peak Project Hour Volume								
Existing (2011) Plus Project								
Peak Hour Volume	529	1,099	628	1,399	499	1,413	880	1,484
V/C	0.112	0.234	0.134	0.298	0.106	0.301	0.187	0.316
LOS	A	A	A	A	A	B	A	B
Increase in V/C	0.020	0.001	0.001	0.020	0.002	0.037	0.037	0.002
Impact	None	None	None	None	None	None	None	None

Source: LOS, 2012.

Notes: ¹ Capacity of 2,350 passenger cars per hour per lane (pcphpl) from CALTRANS' Guide for the Preparation of Traffic Impact Studies, December 2002.

² Latest K factor (percentage of the ADT in both directions during the peak hour) from Caltrans (based on 2007 report).

³ Latest D factor (percentage of traffic in the peak direction during the peak hour) from Caltrans (based on 2007 report), which when multiplied by K and ADT will provide peak hour volume.

⁴ Latest truck factor from Caltrans (based on 2007 report).

LOS: Level of Service. LOS based on actual number of lanes currently constructed.

V/C: Volume to Capacity ratio.

EB = eastbound; WB = westbound

Impacts to Intersection, Roadway and Freeway Segment LOS (Year 2013)

Impact 4.3.2 Implementation of the proposed project would add traffic to study area intersections, roadways and freeways during peak construction. This impact is considered **less than significant**.

Year 2013 Conditions

This section documents year 2013 conditions when the project is anticipated to be at the peak month of construction activities. The year 2013 background volumes are based on increasing the existing year 2011 volumes by an annual growth rate. Determination of the annual growth rate was based on guidelines defined in the County of Imperial Department of Public Works *Traffic Study and Report Policy* dated March 12, 2007, revised June 29, 2007 and approved by the Board of Supervisors of the County of Imperial on August 7, 2007. This document indicates that traffic projections should be based on demonstrated growth as detailed in the general plan. Four growth rate options were reviewed:

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- 1) The Land Use Element of the general plan indicates that the Population Research Unit of the California Department of Finance (DOF) estimates the annual change in population. Using the DOF revised July 1, 2006 population estimate of 168,979 and the projected population of Imperial County in 2030 of 283,693, an annual growth rate of 2.2 percent is calculated.
- 2) The Housing Element of the Imperial County General Plan has a 1980 population of 92,500; the Southern California Association of Governments [SCAG] has a population estimate of 148,980 for the year 2000. Based on this information, an annual growth rate of 2.4 percent is calculated.
- 3) The Southern California Association of Governments Community Development Division's 2004 *Regional Transportation Plan Socio-Economic Forecast Report*, dated June 2004, states that the population of Imperial County is projected to grow at an annual rate of 2.8 percent.
- 4) The U.S. Census Bureau population data from year 2000 to year 2010 for the local cities/residential communities within Imperial County as outlined previously in Table 9. The U.S. Census Bureau reported a population growth of 27,162 people over a 10 year period (population of 109,588 per the 2000 census and population of 136,750 per the 2010 census). Over this 10 year period, the annual growth rate was about 2.0%.

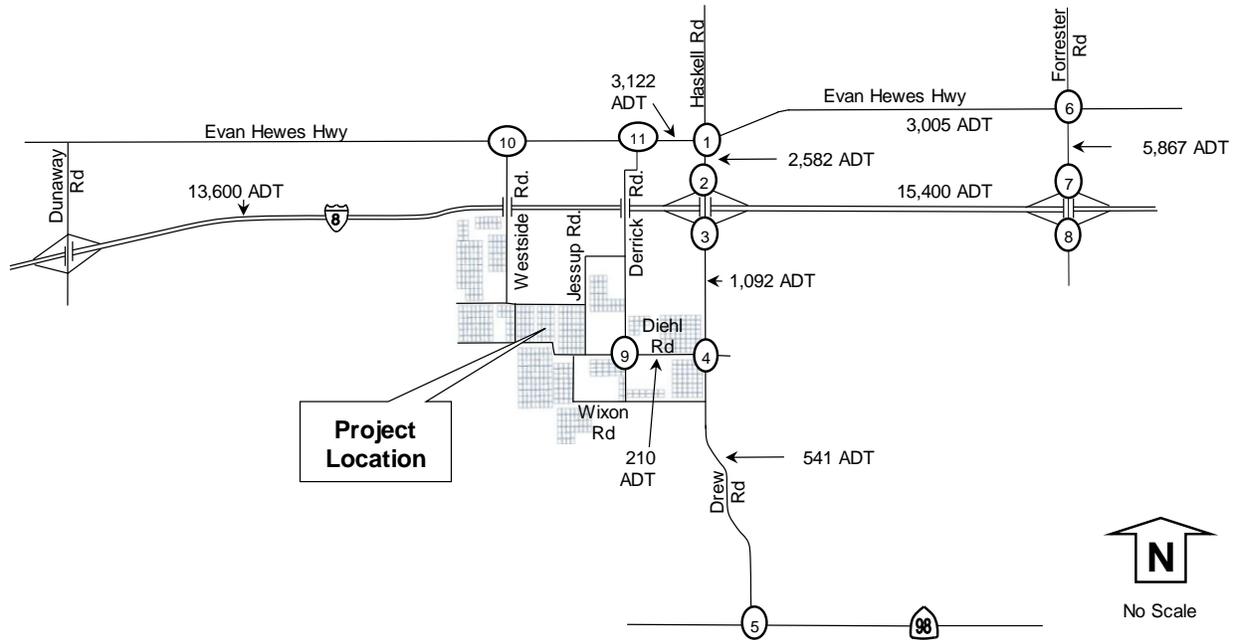
For the purpose of this traffic study, the more conservative growth rate of 2.8 percent was selected for the annual population growth rate. The growth factor support data are included in Appendix L of the *Draft Traffic Impact Analysis*. This document is provided on the attached CD of Technical Appendices as **Appendix B** of this EIR. Year 2013 volumes data was factored up from year 2011 data through the application of a 2.8% annual growth rate.

The construction peak background year 2013 volumes were calculated by increasing year 2011 volumes by 2.8% annually as shown in **Figure 4.3-11**. Intersection, segment, and freeway LOS are shown in **Tables 4.3-18, 4.3-19 and 4.3-20**. Intersection LOS calculations are included in Appendix M of the *Draft Traffic Impact Analysis*. This document is provided on the attached CD of Technical Appendices as **Appendix B** of this EIR.

Intersection LOS

As shown in **Table 4.3-18**, all intersections would operate at LOS 2013 or better under year 2013 conditions. Only two intersections (Forester Road at Evan Hewers Highway and Forrester road at I-8 eastbound ramp) would operate at LOS C in the PM Peak Hour. These same two intersections would operate at LOS B in the AM Peak Hour as would the intersection of Drew Road at I-8 eastbound ramp. All other intersections would operate at LOS A. Therefore, impacts to intersection LOS under Year 2013 would be **less than significant**.

4.3 TRANSPORTATION AND CIRCULATION



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Source: LOS, 2012.

FIGURE 4.3-11
YEAR 2013 PROJECT TRAFFIC VOLUMES

4.3 TRANSPORTATION AND CIRCULATION

**TABLE 4.3-18
YEAR 2013 INTERSECTION LOS**

Intersection & (Control) ¹	Movement	Peak Hour	Year 2013	
			Delay ²	LOS ³
1) Drew Road at Evan Hewes Highway (U)	All	AM	7.6	A
	All	PM	7.6	A
2) Drew Road at I-8 Westbound Ramps (U)	WB LT	AM	8.7	A
	WB LT	PM	8.7	A
3) Drew Road at I-8 Eastbound Ramps (U)	EB LT	AM	10.1	B
	EB LT	PM	9.3	A
4) Drew Road at Diehl Road (U)	EB LTR	AM	8.6	A
	EB LTR	PM	8.6	A
5) Drew Road at SR-98 (U)	SB LR	AM	8.6	A
	SB LR	PM	9.3	A
6) Forrester Road at Evan Hewes Highway (U)	All	AM	17.7	B
	All	PM	23.8	C
7) Forrester Road at I-8 westbound Ramps (U)	WB LT	AM	9.9	A
	WB LT	PM	9.9	A
8) Forrester Road at I-8 eastbound Ramps (U)	EB LT	AM	11.0	B
	EB LT	PM	18.0	C
9) Derrick Road at Diehl Road (U)	SB LTR	AM	8.7	A
	SB LTR	PM	8.7	A
10) Westside Road at Evan Hewes Highway (U)	NB LR	AM	9.1	A
	NB LR	PM	9.2	A
11) Derrick Road at Evan Hewes Highway (U)	NB LR	AM	8.8	A
	NB LR	PM	9.4	A

Source: LOS, 2012.

Notes: ¹ Intersection Control - (S) Signalized, (U) Unsignalized

² Delay - HCM Average Control Delay in seconds

³ LOS: Level of Service

⁴ Delta = increase in delay from project

⁵ Impact? (Yes or No)

DNE: Does not exist

NA: Not Applicable

EB = eastbound

WB = westbound

Roadway Segment LOS

Table 4.3-19 shows Year 2013 roadway segment LOS. All roadway segments would operate at LOS C or better. Only the segment of Forrester Road between Evan Hewes Highway to I-8 would operate at LOS C. Three segments would operate at LOS B (the segment of Drew Road from Evan Hewes Highway to I-8, and from Evan Hewes Highway from Derrick Road to Drew Road and from Drew Road to Forrester Road) and three would operate at LOS A (the segments of Diehl Road from Derrick Road to Drew Road and the segments of Drew Road from I-8 to Diehl road and from Diehl Road to SR 98). Therefore, impacts to roadway segment LOS under Year 2013 would be **less than significant**.

4.3 TRANSPORTATION AND CIRCULATION

**TABLE 4.3-19
YEAR 2013 ROADWAY SEGMENT LOS**

Segment	Classification (as built)	Existing (Year 2013)				
		Daily Volume	# of Lanes	LOS C Capacity	V/C	LOS
Diehl Road Derrick Road to Drew Road	Minor Collector (2U)	210	2	7,100	0.03	A
Drew Road Evan Hewes Highway to I-8	Prime Arterial (2U)	2,582	2	7,100	0.36	B
I-8 to Diehl Road	Prime Arterial (2U)	1,092	2	7,100	0.15	A
Diehl Road to SR 98	Prime Arterial (2U)	541	2	7,100	0.08	A
Evan Hewes Highway Derrick Road to Drew Road	Prime Arterial (2U)	3,122	2	7,100	0.44	B
Drew Road to Forrester Road	Prime Arterial (2U)	3,005	2	7,100	0.42	B
Forrester Road Evan Hewes Highway to I-8	Prime Arterial (2U)	5,867	2	7,100	0.83	C

Source: LOS, 2012.

Notes: Classification based on 1/29/08 Circulation and Scenic Highways Element.

V/C: Volume to Capacity ratio.

2U = 2 lane undivided roadway.

Daily volume is a 24 hour volume.

LOS: Level of Service. LOS based on actual number of lanes currently constructed.

Freeway Segment LOS

Table 4.3-20 summarizes freeway segment LOS. Under Year 2013 (forecasted from 2010), the freeway segments were calculated to operate above LOS C (at LOS A and LOS B). I-8 from Dunaway Road to Drew Road would continue to operate at LOS A in the AM and PM peak hours in both directions (eastbound and westbound). I-8 from Drew Road to Forrester Road would operate at LOS A during the AM and PM peak hour in the eastbound direction, LOS A in the AM peak hour in the westbound direction, and LOS B during the PM peak hour in the westbound direction. No project impacts were calculated due to the addition of construction traffic to existing traffic. Moreover, the increases in traffic resulting from project construction would not exceed V/C ratios or LOS standards. Therefore, impacts to freeway segment LOS under Year 2013 would be **less than significant**.

**TABLE 4.3-20
YEAR 2013 FREEWAY SEGMENT LOS**

Freeway Segment	I-8 Dunaway Road to Drew Road				I-8 Drew Road to Forrester Road			
	Year 2013 (Forecasted from 2010)							
ADT	13,600				15,400			
Peak Hour	AM		PM		AM		PM	
Directions	EB	WB	EB	WB	EB	WB	EB	WB
Number of Lanes	2	2	2	2	2	2	2	2
Capacity ¹	4,700	4,700	4,700	4,700	4,700	4,700	4,700	4,700
K Factor ²	0.1076	0.0963	0.0917	0.1517	0.1076	0.0963	0.0917	0.1517
D Factor ³	0.2616	0.7384	0.4419	0.558	0.2616	0.7384	0.4419	0.5581

4.3 TRANSPORTATION AND CIRCULATION

**TABLE 4.3-20
YEAR 2013 FREEWAY SEGMENT LOS**

Freeway Segment	I-8 Dunaway Road to Drew Road				I-8 Drew Road to Forrester Road			
	Truck Factor ⁴	0.8376	0.8376	0.8376	0.8376	0.8376	0.8376	0.8376
Peak Hour Volume	457	1,155	658	1,375	581	1,307	745	1,557
V/C	0.097	0.246	0.140	0.292	0.110	0.278	0.159	0.331
LOS	A	A	A	A	A	A	A	B

Source: LOS, 2012.

Notes: ¹ Capacity of 2,350 passenger cars per hour per lane (pcphpl) from CALTRANS' Guide for the Preparation of Traffic Impact Studies, December 2002.

² Latest K factor (percentage of the ADT in both directions during the peak hour) from Caltrans (based on 2007 report).

³ Latest D factor (percentage of traffic in the peak direction during the peak hour) from Caltrans (based on 2007 report), which when multiplied by K and ADT will provide peak hour volume.

⁴ Latest truck factor from Caltrans (based on 2007 report).

LOS: Level of Service. LOS based on actual number of lanes currently constructed.

V/C: Volume to Capacity ratio.

EB = eastbound; WB = westbound

Intersection LOS

Table 4.3-21 summarizes Year 2013 intersection LOS with and without the project. **Figure 4.3-12** depicts Year 2013 Plus (With) Project Volumes. Under Year 2013 Plus Project Conditions, the study intersections were calculated to operate at LOS C or better. Two intersections, Forrester Road at Evan Hewes Highway and Forrester Road at I-8 eastbound ramp, operate at LOS C in the PM peak hour (and LOS B in the AM peak hour) both without and with project traffic volumes.

**TABLE 4.3-21
YEAR 2013 WITHOUT AND WITH PROJECT INTERSECTION LOS**

Intersection & (Control) ¹	Movement	Peak Hour	Existing (Year 2013)		Year 2013 Plus Project			
			Delay ²	LOS ³	Delay ²	LOS ³	Change ⁴	Significant Impact? ⁵
1) Drew Road at Evan Hewes Highway (U)	All	AM	7.6	A	7.7	A	0.1	No
	All	PM	7.6	A	7.6	A	0.0	No
2) Drew Road at I-8 Westbound Ramps (U)	WB LT	AM	8.7	A	10.1	B	1.4	No
	WB LT	PM	8.7	A	9.6	A	0.9	No
3) Drew Road at I-8 Eastbound Ramps (U)	EB LT	AM	10.1	B	10.1	B	0.0	No
	EB LT	PM	9.3	A	10.0	A	0.7	No
4) Drew Road at Diehl Road (U)	EB LTR	AM	8.6	A	10.5	B	1.9	No
	EB LTR	PM	8.6	A	10.8	B	2.2	No
5) Drew Road at SR-98 (U)	SB LR	AM	8.6	A	8.7	A	0.1	No
	SB LR	PM	9.3	A	9.7	A	0.4	No
6) Forrester Road at Evan Hewes Highway (U)	All	AM	17.7	B	17.9	B	0.2	No
	All	PM	23.8	C	23.9	C	0.1	No
7) Forrester Road at I-8 westbound Ramps (U)	WB LT	AM	9.9	A	9.9	A	0.0	No
	WB LT	PM	9.9	A	10.4	B	0.5	No
8) Forrester Road at I-8	EB LT	AM	11.0	B	11.1	B	0.1	No

4.3 TRANSPORTATION AND CIRCULATION

**TABLE 4.3-21
YEAR 2013 WITHOUT AND WITH PROJECT INTERSECTION LOS**

Intersection & (Control) ¹	Movement	Peak Hour	Existing (Year 2013)		Year 2013 Plus Project			
			Delay ²	LOS ³	Delay ²	LOS ³	Change ⁴	Significant Impact? ⁵
eastbound Ramps (U)	EB LT	PM	18.0	C	21.8	C	3.8	No
9)Derrick Road at Diehl Road (U)	SB LTR	AM	8.7	A	11.0	B	2.3	No
	SB LTR	PM	8.7	A	10.9	B	2.2	No
10) Westside Road at Evan Hewes Highway (U)	NB LR	AM	9.1	A	9.2	A	0.1	No
	NB LR	PM	9.2	A	9.5	A	0.3	No
11) Derrick Road at Evan Hewes Highway (U)	NB LR	AM	8.8	A	8.8	A	0.0	No
	NB LR	PM	9.4	A	9.5	A	0.1	No

Source: LOS, 2012.

Notes: ¹ Intersection Control - (S) Signalized, (U) Unsignalized.

² Delay - HCM Average Control Delay in seconds.

³ LOS: Level of Service.

⁴ Delta = increase in delay from project.

⁵ Significant Impact? (Yes or No)

DNE: Does not exist.

NA: Not Applicable

EB = eastbound

WB = westbound

Two intersections operate at LOS B in both the AM and PM peak hours. Four operate at LOS B in the AM peak hour only. Four intersections operate at LOS A in both the AM and PM peak hours. No significant project impacts to study area intersections were calculated due to the addition of construction traffic to existing traffic under Year 2013. Moreover, the increases in traffic resulting from construction of the proposed project would not exceed LOS standards. Therefore, **less than significant** impacts to study area intersection LOS would result from construction traffic under year 2013.

Roadway Segment LOS

Table 4.3-22 summarizes roadway segment LOS for Year 2013 without and with project traffic. The roadway segments were calculated to operate at LOS C or better. Only one roadway segment Forrester Road from Evan Hewes Highway to I-8 would operate at LOS C. Four segments would operate at LOS B under Year 2013 with project traffic. Two segments would operate at LOS A under Year 2013 Plus Project conditions. No significant project impacts to study area roadway segments were calculated due to the addition of construction traffic to existing traffic. Moreover, the increases in traffic resulting from construction of the proposed project would not exceed LOS standards. Therefore, **less than significant** impacts to roadway segment LOS would result from the addition of project traffic under Year 2013.

4.3 TRANSPORTATION AND CIRCULATION

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4.3 TRANSPORTATION AND CIRCULATION

**TABLE 4.3-22
YEAR 2013 WITHOUT AND WITH PROJECT SEGMENT LOS**

Roadway Segment	Classification (as built)	Year 2013				Project Daily Volume	Year 2013 Plus Project					
		Daily Volume	LOS C Capacity	V/C	LOS		Daily Volume	LOS C Capacity	V/C	LOS	Change in V/C	Significant Impact?
Diehl Road Derrick Road to Drew Road	Minor Collector (2U)	210	7,100	0.030	A	918	1,128	7,100	0.159	A	0.129	No
Drew Road Evan Hewes Highway to I-8	Prime Arterial (2U)	2,582	7,100	0.364	B	7	2,589	7,100	0.365	B	0.001	No
I-8 to Diehl Road	Prime Arterial (2U)	1,092	7,100	0.154	A	820	1,912	7,100	0.269	B	0.115	No
Diehl Road to SR 98	Prime Arterial (2U)	541	7,100	0.076	A	98	639	7,100	0.090	A	0.014	No
Evan Hewes Highway Derrick Road to Drew Road	Prime Arterial (2U)	3,122	7,100	0.440	B	20	3,142	7,100	0.443	B	0.003	No
Drew Road to Forrester Road	Prime Arterial (2U)	3,005	7,100	0.423	B	26	3,031	7,100	0.427	B	0.004	No
Forrester Road Evan Hewes Highway to I-8	Prime Arterial (2U)	5,867	7,100	0.826	C	278	6,145	7,100	0.866	C	0.039	No

Source: LOS, 2012.

Notes: Classification based on 1/29/08 Circulation and Scenic Highways Element.
V/C: Volume to Capacity ratio. 2U = 2 lane undivided roadway.
Daily volume is a 24 hour volume. LOS: Level of Service. LOS based on actual number of lanes currently constructed.
Significant Impact? = identifies if a project impact is calculated (yes or no)

4.3 TRANSPORTATION AND CIRCULATION

Freeway Segment LOS

Table 4.3-23 summarizes freeway segment LOS. Under Year 2013 (forecasted from 2010), the freeway segments were calculated to operate above LOS C (at LOS A and LOS B). I-8 from Dunaway Road to Drew Road would continue to operate at LOS A in the AM and PM peak hours in eastbound direction; LOS A in

**TABLE 4.3-23
YEAR 2013 WITHOUT AND WITH PROJECT FREEWAY LOS**

Freeway Segment	I-8 Dunaway Road to Drew Road				I-8 Drew Road to Forrester Road			
	Year 2013 (Forecasted from 2010)							
ADT	13,600				15,400			
Peak Hour	AM		PM		AM		PM	
Directions	EB	WB	EB	WB	EB	WB	EB	WB
Number of Lanes	2	2	2	2	2	2	2	2
Capacity ¹	4,700	4,700	4,700	4,700	4,700	4,700	4,700	4,700
K Factor ²	0.1076	0.0963	0.0917	0.1517	0.1076	0.0963	0.0917	0.1517
D Factor ³	0.2616	0.7384	0.4419	0.5581	0.2616	0.7384	0.4419	0.5581
Truck Factor ⁴	0.8376	0.8376	0.8376	0.8376	0.8376	0.8376	0.8376	0.8376
Peak Hour Volume	457	1,155	658	1,375	518	1,307	745	1,557
V/C	0.097	0.246	0.140	0.292	0.110	0.278	0.159	0.331
LOS	A	A	A	A	A	A	A	B
Project Peak Hour Volume	95	4	4	95	8	174	174	8
Existing (2013) Plus Project								
Peak Hour Volume	552	1,159	662	1,470	526	1,481	919	1,565
Volume to Capacity	0.117	0.247	0.141	0.313	0.112	0.315	0.196	0.333
LOS	A	A	A	B	A	B	A	B
Increase in V/C	0.020	0.001	0.001	0.020	0.002	0.037	0.037	0.002
Impact?	None	None	None	None	None	None	None	None

Source: LOS, 2012.

Notes: ¹ Capacity of 2,350 passenger cars per hour per lane (pcphpl) from CALTRANS' Guide for the Preparation of Traffic Impact Studies, December 2002.

² Latest K factor (percentage of the ADT in both directions during the peak hour) from Caltrans (based on 2007 report).

³ Latest D factor (percentage of traffic in the peak direction during the peak hour) from Caltrans (based on 2007 report), which when multiplied by K and ADT will provide peak hour volume.

⁴ Latest truck factor from Caltrans (based on 2007 report).

LOS: Level of Service. LOS based on actual number of lanes currently constructed.

V/C: Volume to Capacity ratio.

EB = eastbound; WB = westbound

the AM peak hour in the westbound direction; and LOS B in the PM peak hour in the westbound direction. I-8 from Drew Road to Forrester Road would operate at LOS A during the AM and PM peak hour in the eastbound direction, and LOS B in the AM and PM peak hour in the westbound direction. No project impacts were calculated due to the addition of construction traffic to existing traffic. Moreover, the increases in traffic resulting from project construction would not exceed V/C ratios or LOS standards. Therefore, impacts to freeway segment LOS under Year 2013 With Project traffic would be **less than significant**.

4.3 TRANSPORTATION AND CIRCULATION

4.3.4 CUMULATIVE SETTING, IMPACTS AND MITIGATION MEASURES

A. CUMULATIVE SETTING

The geographic scope for the cumulative setting for transportation and circulation is based on the roadways in the vicinity of the project study area that may be affected by traffic generated by the project and cumulative projects. Because cumulative projects' traffic impacts will be greatest during construction, the cumulative impact analysis is based on the estimate of construction traffic impacts that would be caused by other projects during the proposed project's expected construction schedule (approximately 12 to 24 months). Information on cumulative projects (new development) was obtained from the County of Imperial and confirmed with County of Imperial planning staff to be current as of November 2011 (refer to Table 3.0-1 in Chapter 3.0, Introduction to the Analysis and Assumptions Used). The cumulative list also includes projects within the jurisdiction of the Bureau of Land Management (BLM). Most of the cumulative projects have completed technical studies including traffic generation information; however, several do not because they are in their initial stages. For the projects that do not have detailed traffic generation information, an estimate was calculated based on traffic generation information for similar projects and added to the project's potential cumulative considerable impacts. Traffic generation calculations and copies of the individual cumulative project descriptions, locations, traffic generation, and assignments are included in Appendix O of the *Draft Traffic Impact Analysis*. This document is provided on the attached CD of Technical Appendices as **Appendix B** of this EIR. **Table 4.3-24** identifies the traffic associated with combined Imperial County and BLM cumulative projects (new development) (refer to **Table 3.0-1** in Chapter 3.0, Introduction to the Environmental Analysis and Assumptions Used for a summary describing each project):

**TABLE 4.3-24
TRAFFIC GENERATED BY CUMULATIVE PROJECTS**

Project Number	Name of Project	ADT and Peak Hour Traffic Volumes**
1+	"S" Line Upgrade 230-kV Transmission Line Project	The construction and delivery traffic associated with a transmission line moves along the project corridor as work progresses; therefore, an estimate of 240 ADT with 45 AM peak hour trips and 45 PM peak hour trips is for the segment or work area under construction.
2+	Imperial Valley Solar Project (Formerly SES Solar Two)	The construction phase of the project is calculated to generate 1,736 ADT with 772 AM peak hour trips and 772 PM peak hour trips.
3+	Sunrise 500-kV Line IV West Solar Farm Interconnection to Imperial Valley Substation	The construction and delivery traffic associated with a transmission line moves along the project corridor as work progresses; therefore, an estimate of 240 ADT with 45 AM peak hour trips and 45 PM peak hour trips is for the segment or work area under construction.

4.3 TRANSPORTATION AND CIRCULATION

**TABLE 4.3-24
TRAFFIC GENERATED BY CUMULATIVE PROJECTS**

Project Number	Name of Project	ADT and Peak Hour Traffic Volumes**
4	SDG&E Photovoltaic Solar Field	The construction phase of the project is calculated to generate approximately 40 ADT with 15 AM peak hour trips and 15 PM peak hour trips.
5*	SDG&E Geotechnical Investigation	Limited construction traffic is anticipated to last no longer than one week in September 2011.
6+	North Gila to Imperial Valley #2	The construction and delivery traffic associated with a transmission line moves along the project corridor as work progresses; therefore, an estimate of 240 ADT with 45 AM peak hour trips and 45 PM peak hour trips is for the segment or work area under construction.
7+	Dixieland Connection to Imperial Irrigation District Transmission System	The construction and delivery traffic associated with a transmission line moves along the project corridor as work progresses; therefore, an estimate of 240 ADT with 45 AM peak hour trips and 45 PM peak hour trips is for the segment or work area under construction.
8+	Solar Reserve Imperial Valley	A 100 megawatt solar power tower generally located approximately 35 miles east of the Imperial Valley substation. The construction phase of the project is calculated to generate approximately 283 ADT with 110 AM peak hour trips and 112 PM peak hour trips.
9	Linda Vista Tentative Subdivision Map	The traffic generation for this cumulative project is calculated at 7,175 ADT with 252 AM and 676 PM peak hour trips.
10	County Center II Expansion	The total project is calculated to generate 24,069 ADT with 2,581 AM peak hour trips and 2,242 PM peak hour trips.
11+	Imperial Solar Energy Center West	The construction phase of the project is calculated to generate 750 ADT with 306 AM peak hour trips and 315 PM peak hour trips.
12+	Imperial Solar Energy Center South	The construction phase of the project is calculated to generate 680 ADT with 271 AM peak hour trips and 280 PM peak hour trips.

4.3 TRANSPORTATION AND CIRCULATION

**TABLE 4.3-24
TRAFFIC GENERATED BY CUMULATIVE PROJECTS**

Project Number	Name of Project	ADT and Peak Hour Traffic Volumes**
13+	Mount Signal Solar Farm	The construction phase of the project is calculated to generate 522 ADT with 162 AM peak hour trips and 162 PM peak hour trips.
14+	Centinela Solar Energy	The construction phase is calculated to generate 1,260 daily trips with 414 AM peak hour trips and 414 PM peak hour trips.
15	Mayflower Solar Farm Project	The construction phase is calculated to generate 142 daily trips with 56 AM peak hour trips and 57 PM peak hour trips.
16	Arkansas Solar Farm	The construction phase is calculated to generate 142 daily trips with 56 AM peak hour trips and 57 PM peak hour trips.
17	Sonora Solar Farm	The construction phase is calculated to generate 142 daily trips with 56 AM peak hour trips and 57 PM peak hour trips.
18	Alhambra Solar Farm	The construction phase is calculated to generate 142 daily trips with 56 AM peak hour trips and 57 PM peak hour trips.
19	Acorn Greenworks	The construction phase is calculated to generate 425 daily trips with 166 AM peak hour trips and 169 PM peak hour trips.
20+	Calexico I-A	The construction phase is calculated to generate 283 daily trips with 110 AM peak hour trips and 112 PM peak hour trips.
21+	Calexico I-B	The construction phase is calculated to generate 283 daily trips with 110 AM peak hour trips and 112 PM peak hour trips.
22+	Calexico II-A	The construction phase is calculated to generate 283 daily trips with 110 AM peak hour trips and 112 PM peak hour trips.
23+	Calexico II-B	The construction phase is calculated to generate 283 daily trips with 110 AM peak hour trips and 112 PM peak hour trips.
24	Silverleaf Solar	A photovoltaic solar facility capable of producing approximately 160 megawatts of electricity generally located west of Drew Road and south of I-8 (adjacent to the proposed Campo Verde project). According to the County of Imperial staff, the Silverleaf project is estimated to start

4.3 TRANSPORTATION AND CIRCULATION

**TABLE 4.3-24
TRAFFIC GENERATED BY CUMULATIVE PROJECTS**

Project Number	Name of Project	ADT and Peak Hour Traffic Volumes**
		construction approximately one year after the proposed Campo Verde project. This means the Silverleaf peak construction will occur in 2014, which is one year after the proposed Campo Verde construction peak of early 2013. Since the construction peaks do not coincide, the Silverleaf project is noted as a cumulative project, but the Silverleaf construction peak traffic is not added to the cumulative peak construction traffic volumes.

Source: County of Imperial, 2012; BLM, 2011.

+ Denotes projects with published environmental documents that were used in preparing the cumulative analysis.

++ These projects were analyzed in a single EIR.

+++No longer moving forward as of April, 2012.

* This project was not added to the traffic aggregate because it has since been completed. It is included in the table to match list agreed upon by the County.

** ADT and Peak Hour Traffic Volumes provided by LOS, 2012.

To be conservative, all of the cumulative projects listed above (with the exception of Silverleaf) were assumed to be generating construction traffic during the construction phase of the proposed project. However, some of the cumulative projects have just started initiating the environmental review process and thus may add construction traffic after the proposed project is completed. Furthermore, most if not all of the cumulative solar projects are unlikely to have a peak construction period that coincides with the proposed project's construction period. To be conservative and assume a worst-case scenario, all of the peak cumulative construction volumes were used in the cumulative analysis even though it is highly unlikely that all construction peaks will coincide.

The cumulative project (new development) volumes are shown in **Figure 4.3-13**.

B. CUMULATIVE IMPACTS AND MITIGATION MEASURES

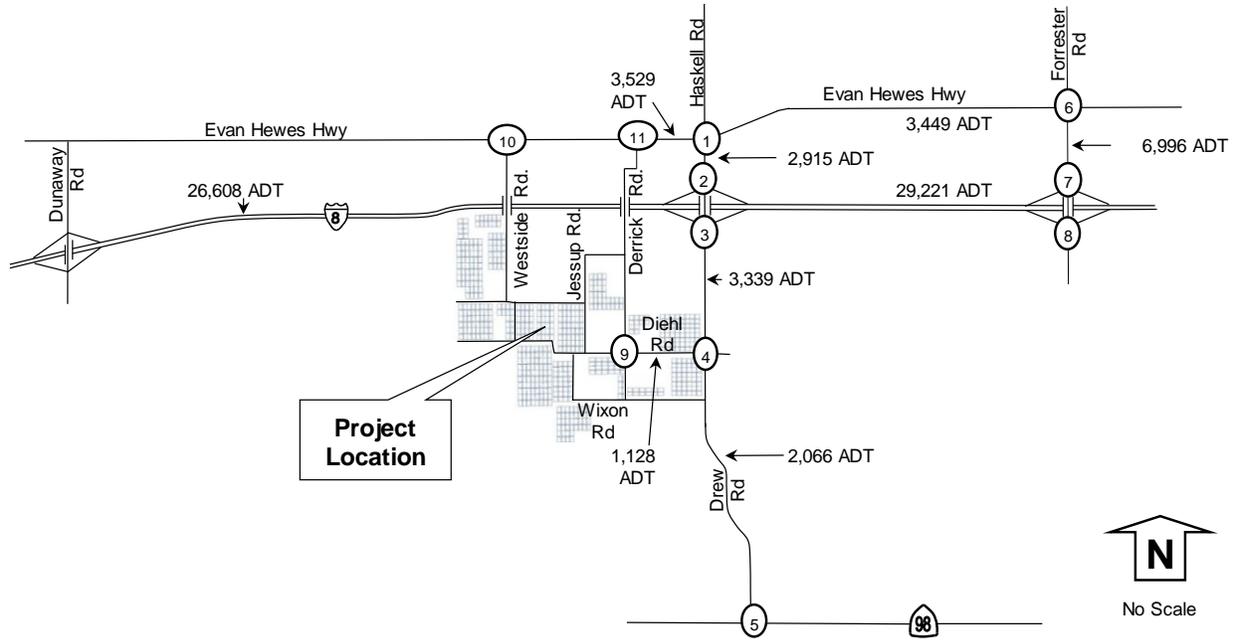
Cumulative Impacts to Intersection, Roadway and Freeway Segment LOS (Year 2013)

Impact 4.3.3 Implementation of the proposed project's construction traffic in combination with year 2013 volumes would add traffic to study area intersections, roadways and freeways during peak construction. LOS at two intersections would operate below LOS C. This impact is considered **potentially cumulatively considerable**.

Year 2013 Plus Project Plus Cumulative

This scenario documents the anticipated project construction traffic added onto year 2013 volumes. Year 2013 plus project volumes are shown in **Figure 4.3-14**. Intersection, segment, and freeway LOS are shown in **Tables 4.3-25, 4.3-26 and 4.3-27**. Intersection LOS calculations are included in Appendix P of **Appendix B** of this EIR.

4.3 TRANSPORTATION AND CIRCULATION



<table border="1"> <tr> <td>Evan Hewes Hwy</td> <td>11 (13)</td> <td>24 (11)</td> <td>6 (15)</td> <td></td> <td></td> </tr> <tr> <td>5</td> <td>(8)</td> <td>↓</td> <td>3</td> <td>(20)</td> <td></td> </tr> <tr> <td>63</td> <td>(283)</td> <td>→</td> <td>①</td> <td>←</td> <td>251 (36)</td> </tr> <tr> <td>45</td> <td>(99)</td> <td>↓</td> <td></td> <td>←</td> <td>97 (19)</td> </tr> <tr> <td>Drew Rd</td> <td>75 (51)</td> <td>12 (25)</td> <td>22 (73)</td> <td></td> <td></td> </tr> </table>	Evan Hewes Hwy	11 (13)	24 (11)	6 (15)			5	(8)	↓	3	(20)		63	(283)	→	①	←	251 (36)	45	(99)	↓		←	97 (19)	Drew Rd	75 (51)	12 (25)	22 (73)			<table border="1"> <tr> <td></td> <td>47 (7)</td> <td>105 (95)</td> <td>I-8 WB Ramps</td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td>↓</td> <td></td> <td>59 (39)</td> <td></td> </tr> <tr> <td></td> <td></td> <td>→</td> <td>②</td> <td>←</td> <td>0 (0)</td> </tr> <tr> <td></td> <td></td> <td>↓</td> <td></td> <td>403 (55)</td> <td></td> </tr> <tr> <td>Drew Rd</td> <td>44 (163)</td> <td>30 (100)</td> <td></td> <td></td> <td></td> </tr> </table>		47 (7)	105 (95)	I-8 WB Ramps					↓		59 (39)				→	②	←	0 (0)			↓		403 (55)		Drew Rd	44 (163)	30 (100)				<table border="1"> <tr> <td></td> <td></td> <td>468 (81)</td> <td>I-8 EB Ramps</td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td>↓</td> <td></td> <td>7 (37)</td> <td></td> </tr> <tr> <td></td> <td></td> <td>→</td> <td>③</td> <td>←</td> <td>0 (0)</td> </tr> <tr> <td></td> <td></td> <td>↓</td> <td></td> <td>163 (43)</td> <td></td> </tr> <tr> <td>Drew Rd</td> <td></td> <td>71 (226)</td> <td></td> <td></td> <td>66 (409)</td> </tr> </table>			468 (81)	I-8 EB Ramps					↓		7 (37)				→	③	←	0 (0)			↓		163 (43)		Drew Rd		71 (226)			66 (409)
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For- res- ter Rd	34 (1)	108 (323)																																																																																										
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For- res- ter Rd		90 (187)			14 (198)																																																																																							
Diehl Rd	20 (5)	21 (6)	23 (7)																																																																																									
5	(20)	↓	21	(5)																																																																																								
18	(189)	→	⑨	←	194 (12)																																																																																							
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Derr- ick Rd	6 (21)	5 (20)	5 (20)																																																																																									
<table border="1"> <tr> <td>Evan Hewes Hwy</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>61</td> <td>(328)</td> <td>→</td> <td>⑩</td> <td>←</td> <td>426 (26)</td> </tr> <tr> <td>7</td> <td>(0)</td> <td>↓</td> <td></td> <td>←</td> <td>3 (0)</td> </tr> <tr> <td>West- side Rd</td> <td>1 (7)</td> <td></td> <td></td> <td>←</td> <td>3 (5)</td> </tr> </table>	Evan Hewes Hwy						61	(328)	→	⑩	←	426 (26)	7	(0)	↓		←	3 (0)	West- side Rd	1 (7)			←	3 (5)	<table border="1"> <tr> <td>Evan Hewes Hwy</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>63</td> <td>(356)</td> <td>→</td> <td>⑪</td> <td>←</td> <td>292 (55)</td> </tr> <tr> <td>1</td> <td>(0)</td> <td>↓</td> <td></td> <td>←</td> <td>14 (4)</td> </tr> <tr> <td>Derr- ick Rd</td> <td>1 (0)</td> <td></td> <td></td> <td>←</td> <td>5 (14)</td> </tr> </table>	Evan Hewes Hwy						63	(356)	→	⑪	←	292 (55)	1	(0)	↓		←	14 (4)	Derr- ick Rd	1 (0)			←	5 (14)	<p>LEGEND</p> <ul style="list-style-type: none"> XX AM peak hour volumes at intersections (YY) PM peak hour volumes at intersections Z,ZZZ ADT volumes shown along segments ① Intersection Reference Number to LOS Tables — Existing Roads () Represents 0 PM volume 																																										
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Derr- ick Rd	1 (0)			←	5 (14)																																																																																							

Source: LOS, 2012.

FIGURE 4.3-14
YEAR 2013 + PROJECT + CUMULATIVE VOLUMES

4.3 TRANSPORTATION AND CIRCULATION

Intersection LOS

Figure 4.3-14 depicts Year 2013 Plus Project Volumes. **Table 4.3-25** summarizes Year 2013 Plus Project Plus Cumulative Intersection LOS. Under this scenario, the study intersections were calculated to operate at LOS C or better, except for the intersection of Forrester Road at Evan Hewes Highway (LOS D in the PM peak hour), and the intersection of Forrester Road at I-8 EB Ramp (LOS F in the PM peak hour). Based on the County of Imperial significance criteria shown in **Table 4.3-14**, the project is calculated to have a potential cumulative impact at the intersection of Forrester Road and I-8 eastbound. This would occur because under Year 2013 plus project plus cumulative conditions, the delay would increase by 3.8 seconds (which falls within the 2.0 to 9.9 seconds of delay) and would result in LOS F (i.e. an LOS of E or worse). Thus, the project's contribution to cumulative traffic along this roadway segment could be cumulatively considerable based on the calculated cumulative impact from the addition of new development traffic. This potential cumulative impact may not materialize if the other cumulative projects do not occur within the same timeframe as the proposed project. If all identified cumulative projects occur concurrently, the identified cumulative impact would be mitigated to a **less than cumulatively considerable** level by the implementation of the fair share contribution as identified in MM 4.3-1. In contrast, while the intersection of Forrester Road at Evan Hewes Highway would operate at LOS D, the delay would increase by only 0.1 (which is less than the threshold delay range of 2.0 to 9.9 seconds) and the LOS would be D which is above LOS E.

The Institute of Transportation Engineers (ITE) turn lane warrants were reviewed for applicability at the intersection of Drew Road at Diehl Road due to the concentration of project traffic. The ITE warrants are silent for application on temporary construction traffic; therefore, traffic from the operational phase was used in the warrant analysis. Neither the ITE southbound right turn lane warrant nor the ITE northbound left turn lane warrant were satisfied at the intersection of Drew Road at Diehl Road. Therefore, the construction of additional lanes is not recommended at this intersection. (ITE warrants included in Appendix Q. This document is provided on the attached CD of Technical Appendices as **Appendix B** of this EIR).

Due to the temporary nature of the project construction traffic, temporary warning signs identifying construction truck traffic per the Manual on Uniform Traffic Control Devices (MUTCD) may be required by the County.

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**TABLE 4.3-25
YEAR 2013 PLUS PROJECT PLUS CUMULATIVE INTERSECTION LOS**

Intersection & (Control) ¹	Movement	Peak Hour	Year 2013		Year 2013 Plus Project			Year 2013 Plus Project Plus Cumulative		
			Delay ²	LOS ³	Delay ²	LOS ³	Change ⁴	Delay ²	LOS ³	Impact Type ⁵
1) Drew Road/Evan Hewes Highway (U)	All	AM	7.6	A	7.7	A	0.1	8.9	A	No
	All	PM	7.6	A	7.6	A	0.0	8.9	A	No
2) Drew Road/I-8 Westbound Ramps (U)	WB LT	AM	8.7	A	10.1	B	1.4	19.3	C	No
	WB LT	PM	8.7	A	10.0	A	0.9	13.0	B	No
3) Drew Road/I-8 Eastbound Ramps (U)	EB LT	AM	10.1	B	10.1	B	0.0	14.3	B	No
	EB LT	PM	9.3	A	10.0	A	0.7	12.7	B	No
4) Drew Road/Diehl Road (U)	EB LTR	AM	8.6	A	10.5	B	1.9	15.8	C	No
	EB LTR	PM	8.6	A	10.8	B	2.2	24.6	C	No
5) Drew Road/SR-98 (U)	SB LR	AM	8.6	A	8.7	A	0.1	10.7	B	No
	SB LR	PM	9.3	A	9.7	A	0.4	11.1	B	No
6) Forrester Road/ Evan Hewes Highway (U)	All	AM	17.7	B	17.9	B	0.2	27.3	C	No
	All	PM	23.8	C	23.9	C	0.1	37.1	D	No
7) Forrester Road/I-8 westbound Ramps (U)	WB LT	AM	9.9	A	9.9	A	0.0	15.0	B	No
	WB LT	PM	9.9	A	10.4	B	0.5	12.5	B	No
8) Forrester Road/I-8 eastbound Ramps (U)	EB LT	AM	11.0	B	11.1	B	0.1	17.9	C	No
	EB LT	PM	18.0	C	21.8	C	3.8	104.7	F	Yes
9) Derrick Road/Diehl Road (U)	SB LTR	AM	8.7	A	11.0	B	2.3	11.0	B	No
	SB LTR	PM	8.7	A	10.9	B	2.2	10.9	B	No
10) Westside Road/Evan Hewes Highway (U)	NB LR	AM	9.1	A	9.2	A	0.1	9.5	A	No
	NB LR	PM	9.2	A	9.5	A	0.3	10.7	B	No
11) Derrick Road/ Evan Hewes Highway (U)	NB LR	AM	8.8	A	8.8	A	0.0	9.1	A	No
	NB LR	PM	9.4	A	9.5	A	0.1	10.6	B	No

Source: LOS, 2012.

Notes: ¹ Intersection Control - (S) Signalized, (U) Unsignalized
² Delay - HCM Average Control Delay in seconds
³ LOS: Level of Service
⁴ Change = increase in delay from project
⁵ Impact Type? (None, Project-Specific, Cumulative)

DNE: Does not exist
 NA: Not Applicable
 EB = eastbound
 WB = westbound

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Roadway Segment LOS

Table 4.3-26 summarizes Year 2013 Plus Project Plus Cumulative Roadway Segment LOS. The roadway segments were calculated to operate at LOS C or better. Five segments would operate at LOS B under Year 2013 plus project traffic plus cumulative conditions. One segment would operate at LOS A. Only the segment of Forrester Road from Evan Hewes Highway to I-8 is projected to operate at LOS C as a result of new development traffic. If a majority of the proposed new developments do not materialize within the same timeframe as the proposed project, then the cumulatively impacted intersection may continue to operate at acceptable levels of service.

**TABLE 4.3-26
YEAR 2013 PLUS PROJECT PLUS CUMULATIVE ROADWAY SEGMENT LOS**

Roadway Segment	Classification (as built)	LOS C Capacity	Year 2013			Year 2013 Plus Project			Cum. Daily Vols.	Year 2013 + Project + Cumulative			
			Daily Vol.	V/C	LOS	Daily Vol.	V/C	LOS		Daily Vol	Change in V/C	LOS	Cum Impact?
Diehl Rd Derrick Rd to Drew Rd	Minor Collector (2U)	7,100	210	0.030	A	1,128	0.159	A	0	1,128	0.159	A	No
Drew Rd Evan Hewes Highway to I-8/ I-8 to Diehl Rd/ Diehl Rd to SR 98	Prime Arterial (2U)	7,100	2,582	0.364	B	2,589	0.365	B	326	2,915	0.411	B	No
	Prime Arterial (2U)	7,100	1,092	0.154	A	1,912	0.269	B	1,427	3,339	0.470	B	No
	Prime Arterial (2U)	7,100	541	0.076	A	639	0.090	A	1,427	2,066	0.291	A	No
Evan Hewes Highway Derrick Rd to Drew Rd/ Drew Rd to Forrester Road	Prime Arterial (2U)	7,100	3,122	0.440	B	3,142	0.443	B	387	3,529	0.497	B	No
	Prime Arterial (2U)	7,100	3,005	0.423	B	3,031	0.427	B	418	3,449	0.486	B	No
Forrester Road Evan Hewes Highway to I-8	Prime Arterial (2U)	7,100	5,867	0.826	C	6,145	0.866	C	851	6,996	0.985	C	No

Source: LOS, 2012.

Notes: Classification based on 1/29/08 Circulation and Scenic Highways Element.
V/C: Volume to Capacity ratio. 2U = 2 lane undivided roadway.
Daily volume is a 24 hour volume. LOS: Level of Service. LOS based on actual number of lanes currently constructed.
Cum Impact? = identifies if a cumulative impact is calculated (yes or no)

Freeway Segment LOS

Table 4.3-27 summarizes Year 2013 Plus Project Plus Cumulative Freeway Segment LOS. All freeway segments were calculated to operate at LOS C or better. Only one freeway segment, I-8 from Drew Road to Forrester Road, would operate at LOS C during the AM peak hour in the westbound direction. I-8 from Dunaway Road to Drew Road would operate at LOS B in the PM peak hour in the westbound direction; LOS B in the PM peak hour in the eastbound direction; and LOS A in the AM peak hour in the

4.3 TRANSPORTATION AND CIRCULATION

**TABLE 4.3-27
YEAR 2013 PLUS PROJECT PLUS CUMULATIVE FREEWAY LOS**

Freeway Segment	I-8 Dunaway Road to Drew Road				I-8 Drew Road to Forrester Road			
	Year 2013 (Forecasted from 2010)							
ADT	13,600				15,400			
Peak Hour	AM		PM		AM		PM	
Directions	EB	WB	EB	WB	EB	WB	EB	WB
Number of Lanes	2	2	2	2	2	2	2	2
Capacity ¹	4,700	4,700	4,700	4,700	4,700	4,700	4,700	4,700
K Factor ²	0.1076	0.0963	0.0917	0.1517	0.1076	0.0963	0.0917	0.1517
D Factor ³	0.2616	0.7384	0.4419	0.5581	0.2616	0.7384	0.4419	0.5581
Truck Factor ⁴	0.8376	0.8376	0.8376	0.8376	0.8376	0.8376	0.8376	0.8376
Peak Hour Volume	457	1,155	658	1,375	581	1,307	745	1,557
V/C	0.097	0.246	0.140	0.292	0.110	0.278	0.159	0.331
LOS	A	A	A	A	A	A	A	B
Project Peak Hour Volume	95	4	4	95	8	174	174	8
Existing (2013) Plus Project								
Peak Hour Volume	552	1,159	662	1,470	526	1,481	919	1,565
Volume to Capacity	0.117	0.247	0.141	0.313	0.112	0.315	0.196	0.333
LOS	A	A	A	B	A	B	A	B
Increase in V/C	0.020	0.001	0.001	0.020	0.002	0.037	0.037	0.002
Impact?	None	None	None	None	None	None	None	None
Cumulative Peak Hour Volume	231	804	828	238	191	957	980	201
2013 Plus Cumulative Plus Project								
Peak Hour Volume	783	1,963	1,490	1,708	717	2,438	1,899	1,766
V/C	0.167	0.418	0.317	0.363	0.152	0.519	0.404	0.376
LOS	A	B	B	B	A	C	B	B
Increase in V/C	0.020	0.001	0.001	0.020	0.002	0.037	0.037	0.002
Impact?	None	None	None	None	None	None	None	None

Source: LOS, 2012.

Notes: ¹ Capacity of 2,350 passenger cars per hour per lane (pcphpl) from CALTRANS' Guide for the Preparation of Traffic Impact Studies, December 2002.

² Latest K factor (percentage of the ADT in both directions during the peak hour) from Caltrans (based on 2007 report).

³ Latest D factor (percentage of traffic in the peak direction during the peak hour) from Caltrans (based on 2007 report), which when multiplied by K and ADT will provide peak hour volume.

⁴ Latest truck factor from Caltrans (based on 2007 report).

LOS: Level of Service. LOS based on actual number of lanes currently constructed.

V/C: Volume to Capacity ratio.

EB = eastbound; WB = westbound

eastbound direction. The segment of I-8 from Drew Road to Forrester Road would operate at LOS A during the AM peak hour in the eastbound direction; and LOS C in the PM peak hour in the westbound direction; and LOS B in both the AM and PM peak hours in both the eastbound and westbound directions. The project's contribution to cumulative conditions is considered **less than significant**. Moreover, the cumulative increases in traffic resulting from project construction would not exceed V/C

4.3 TRANSPORTATION AND CIRCULATION

ratios or LOS standards. Therefore, impacts to freeway segment LOS under Year 2013 Plus Project Plus Cumulative Freeway LOS would be **less than cumulatively considerable**.

Horizon Year 2050 + Project Conditions

Horizon Year 2050 street segment information was obtained from the *Imperial County Circulation Element Update*, January 2008. An excerpt from the Circulation Element is included in Appendix G of the *Draft Traffic Impact Analysis*. This document is provided on the attached CD of Technical Appendices as **Appendix B** of this EIR. The horizon year 2050 plus project roadway segment information is shown in **Table 4.3-28**.

**TABLE 4.3-28
HORIZON YEAR 2050 SEGMENT OPERATIONS**

Segment	Year 2050 Recommended Classification (# of lanes)	Year 2050 ADT Volume	2050 LOS
Diehl Road Derrick Road to Drew Road	Minor Collector (2)	Not Reported	Not Reported
Drew Road Evan Hewes Highway to I-8 I-8 to Diehl Road Diehl Road to SR 98	Prime Arterial (2U) (6-Divided) Prime Arterial (2U) (6-Divided) Prime Arterial (2U) (6-Divided)	Not Reported Not Reported Not Reported	Not Reported Not Reported Not Reported
Evan Hewes Highway Derrick Road to Drew Road Drew Road to Forrester Road	Prime Arterial (2U) (6-Divided) Prime Arterial (2U) (6-Divided)	Not Reported Not Reported	Not Reported Not Reported
Forrester Road Evan Hewes Highway to I-8	Prime Arterial (2U) (6-Divided)	Not Reported	Not Reported

Source: LOS, 2012.

Notes: Classification based on 1/29/08 Circulation and Scenic Highways Element. 2=2 land roadway. Daily column is a 24 hour volume. LOS: Level of Service.

Under Horizon Year 2050 Plus Project conditions, segment volumes and LOS were not reported as documented in Appendix G of the *Draft Traffic Impact Analysis*. This document is provided on the attached CD of Technical Appendices as **Appendix B** of this EIR.

Mitigation Measures

MM 4.3.3 If all cumulative projects occur concurrently, the proposed project shall pay a fair share contribution toward necessary improvements as follows:

- 1) The fair share participation is based on the project's temporary construction traffic volume that is significantly higher than the project's traffic volume after completion of construction. At the intersection of Forrester Road at I-8 eastbound ramp, the construction traffic fair share responsibility is 6.2% and 0.5% when based on permanent operation employees (**Table 4.3-29**). LOS and fair share calculations are included in Appendix R of the *Draft Traffic Impact Analysis*. This document is provided on the attached CD of Technical Appendices as **Appendix B** of this EIR.

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**TABLE 4.3-29
IMPACT SUMMARY AND MITIGATION**

Cumulative Impact Location	Peak Hour	Without Mitigation 2013 Plus Project Plus Cumulative			Recommended Mitigation	With Mitigation 2013 Plus Project Plus Cumulative			Fair Share % Construction Traffic	Fair Share % Operations Traffic
		Delay	LOS	Impact		Delay	LOS	Impact		
1) Forrester Road at I-8 eastbound ramp	AM PM	17.9 104.7	C F	None Cumulative	Install Traffic Signal	12.1 20.2	B C	None None	6.2%	0.5%

Source: LOS, 2012.

Notes: 1) Delay – HCM Average Control delay in seconds. 2) LOS: Level of Service. 3) Impact type (None, cumulative or project-specific)

- 2) The project fair share responsibility shall be validated at month 7 and yearly during the entire construction period. If the intersection of Forrester Road/I-8 EB Ramp is calculated to operate at an unacceptable LOS during the validation period, then the Applicant shall pay the fair share amount based on project construction traffic. If the intersection of Forrester Road/I-8 EB Ramp is calculated to operate at acceptable LOS, then the Applicant should not be required to pay the fair share amount because the intersection would be documented to operate at acceptable LOS.

It is recommended that the Applicant enter into an agreement with the County to fulfill the CEQA cumulative mitigation requirement, but not be obligated to pay a fair share if the cumulatively impacted intersection never reaches failing conditions during the project's construction period.

Significance After Mitigation

Implementation of MM 4.3.3 would reduce potential cumulative impacts at the intersection of Forrester Road/I-8 EB Ramp to a **less than significant** level through payment of fair share for any improvements, if required. Therefore, residual impacts at the intersection of Forrester Road/I-8 EB Ramp following mitigation would be **less than cumulatively considerable**.

SECTION 4.4

AIR QUALITY

This section identifies federal, state and local regulations applicable to air quality and describes the environmental setting with regard to compliance with applicable standards. This section also analyzes potential air quality impacts associated with construction and operation of the proposed project. Information contained in this section is summarized from the *Air Quality Assessment* prepared for the Campo Verde Solar Energy Project by Ldn Consulting, Inc. (Ldn, 2012a). This document is provided on the attached CD of Technical Appendices as **Appendix C** of this EIR.

4.4.1 REGULATORY FRAMEWORK

A. FEDERAL

Clean Air Act

The Clean Air Act was enacted in 1970 to foster growth in the economy and industry while improving human health and the environment. This law provides the basis for the national air pollution control effort. In order to improve air quality, the Clean Air Act requires areas with unhealthy levels of criteria pollutants to develop State Implementation Plans (SIPs). A SIP describes how and when National Ambient Air Quality Standards (NAAQS) will be attained for a specific area. SIPs are a compilation of state and local regulations used by the state to achieve healthy air quality under the Federal Clean Air Act. SIPs are comprised of new and previously submitted plans, monitoring programs, modeling programs, permitting programs, district rules, state regulations, and federal controls. State and local agencies are required to involve the public in the adoption process before SIP elements are submitted to the Environmental Protection Agency (EPA) for approval or disapproval. Likewise, the EPA is required to allow public comment prior to taking action on each SIP submittal. If the SIP is not acceptable to the EPA, the EPA has authority to enforce the Clean Air Act in that state.

The most recent major changes to the Clean Air Act occurred in 1990. The 1990 amendments established new deadlines for attainment based on the severity of the pollution problem. The amendments also instigated a comprehensive planning process for attaining the NAAQS. In 1997, new national 8-hour ozone (O₃) standards and the fine particulate matter (PM_{2.5}) standards were introduced. These new standards resulted in additional statewide air quality planning efforts.

The consistency of projects with the SIP is assessed through land use and growth assumptions that are incorporated into the air quality planning document. If a proposed project is consistent with the applicable General Plan of the jurisdiction where it is located, then the project is assumed to be accounted for as part of the regional air quality planning process. When a project is consistent in this regard, it would not have an adverse regional air quality impact.

National Ambient Air Quality Standards

The National Air Quality Standards (NAAQS) were established by the EPA per the requirements of the Clean Air Act. The NAAQS are used to identify thresholds for specific pollutants. Two types of air quality standards were established by the Clean Air Act: 1) primary standards; and 2) secondary standards. Primary Standards define limits for the intention of protecting public health, which includes sensitive populations such as asthmatics, children and elderly. Secondary Standards define limits to protect public welfare to include protection against decreased visibility, damage to animals, crops, vegetation and buildings.

The EPA Office of Air Quality Planning and Standards (OAQPS) has set NAAQS for principal pollutants, which are called "criteria" pollutants. These pollutants are defined below:

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Carbon Monoxide (CO) is a colorless, odorless, and tasteless gas and is produced from the partial combustion of carbon-containing compounds, notably in internal-combustion engines. CO usually forms when there is a reduced availability of oxygen present during the combustion process. Exposure to CO near the levels of the ambient air quality standards can lead to fatigue, headaches, confusion, and dizziness. CO interferes with the blood's ability to carry oxygen.

Lead (Pb) is a potent neurotoxin that accumulates in soft tissues and bone over time. The major sources of lead emissions have historically been motor vehicles (such as cars and trucks) and industrial sources. Because lead is only slowly excreted, exposures to small amounts of lead from a variety of sources can accumulate to harmful levels. Effects from inhalation of lead near the level of the ambient air quality standard include impaired blood formation and nerve conduction. Lead can adversely affect the nervous, reproductive, digestive, immune, and blood-forming systems. Symptoms can include fatigue, anxiety, short-term memory loss, depression, weakness in the extremities, and learning disabilities in children.

Nitrogen Dioxide (NO_x) is a reactive, oxidizing gas capable of damaging cells lining the respiratory tract and is one of the nitrogen oxides emitted from high-temperature combustion, such as those occurring in trucks, cars, power plants, home heaters, and gas stoves. In the presence of other air contaminants, NO_x is usually visible as a reddish-brown air layer over urban areas. NO_x along with other traffic-related pollutants is associated with respiratory symptoms, respiratory illness and respiratory impairment. Studies in animals have reported biochemical, structural, and cellular changes in the lung when exposed to NO_x above the level of the current state air quality standard. Clinical studies of human subjects suggest that NO_x exposure to levels near the current standard may worsen the effect of allergens.

Particulate Matter (PM₁₀ or PM_{2.5}) is a complex mixture of tiny particles that consists of dry solid fragments, solid cores with liquid coatings, and small droplets of liquid. These particles vary in shape, size and chemical composition, and can be made up of multiple materials such as metal, soot, soil, and dust. PM₁₀ particles are 10 microns (µm) or less and PM_{2.5} particles are 2.5 (µm) or less. Exposure to PM levels exceeding current air quality standards increases the risk of allergies such as asthma and respiratory illness.

Ozone (O₃) is a highly oxidative unstable gas capable of damaging the linings of the respiratory tract. This pollutant forms in the atmosphere through reactions between chemicals directly emitted from vehicles, industrial plants, and many other sources. Exposure to ozone above ambient air quality standards can lead to human health effects such as lung inflammation, tissue damage and impaired lung function.

Sulfur Dioxide (SO₂) is a gaseous compound of sulfur and oxygen and is formed when sulfur-containing fuel is burned by mobile sources, such as locomotives, ships, and off-road diesel equipment. SO₂ is also emitted from several industrial processes, such as petroleum refining and metal processing. Effects from SO₂ exposures at levels near the one-hour standard include bronchoconstriction accompanied by symptoms which may include wheezing, shortness of breath and chest tightness, especially during exercise or physical activity. Continued exposure to elevated levels of SO₂ results in increased incidence of pulmonary symptoms and disease, decreased pulmonary function, and increased risk of mortality.

Table 4.4-1 identifies the federal air quality standard for specific pollutants. An area is designated as being in attainment if the concentration of a specific air pollutant does not exceed the standard for that pollutant. An area is designated as being in nonattainment for a specific pollutant if the standard for

4.4 AIR QUALITY

that pollutant is exceeded. The criteria pollutant standards are generally attained when each monitor within the region has had no exceedances during the previous three calendar years.

**TABLE 4.4-1
AMBIENT AIR QUALITY STANDARDS**

Pollutant	Average Time	California Standards ¹		Federal Standards ²		
		Concentration ³	Method ⁴	Primary ^{3,5}	Secondary ^{3,6}	Method ⁷
Ozone (O ₃)	1 Hour	0.09 ppm (180 µg/m ³)	Ultraviolet Photometry	-	Same as Primary Standard	Ultraviolet Photometry
	8 Hour	0.070 ppm (137 µg/m ³)		0.075 ppm (147 µg/m ³)		
Respirable Particulate Matter (PM ₁₀)	24 Hour	50 µg/m ³	Gravimetric or Beta Attenuation	150 µg/m ³	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	20 µg/m ³		-		
Fine Particulate Matter PM _{2.5}	24 Hour	No Separate State Standard			35 µg/m ³	Same as Primary Standard
	Annual Arithmetic Mean	12 µg/m ³	Gravimetric or Beta Attenuation	15 µg/m ³		
Carbon Monoxide (CO)	8 hour	9.0 ppm (10mg/m ³)	Non-Dispersive Infrared Photometry (NDIR)	9 ppm (10 mg/m ³)	None	Non-Dispersive Infrared Photometry
	1 hour	20 ppm (23 mg/m ³)		35 ppm (40 mg/m ³)		
	8 Hour (Lake Tahoe)	6 ppm (7 mg/m ³)		-		
Nitrogen Dioxide (NO ₂)	Annual Arithmetic Mean	0.030 ppm (57 µg/m ³)	Gas Phase Chemiluminescence	0.053 ppm (100 g/m ³) ⁸	Same as Primary Standard	Gas Phase Chemilumin- escence
	1 Hour	0.18 ppm (339 µg/m ³)		0.100 ppm ⁸		
Sulfur Dioxide (SO ₂)	24 Hour	0.04 ppm (105 µg/m ³)	Ultraviolet Fluorescence	-	-	Ultraviolet Flourescence; Spectro- photometry (Pararoosaniline Method) ⁹
	3 Hour	-		-	0.5 ppm (1300 µg/m ³)	
	1 Hour	0.25 ppm (655 µg/m ³)		75 ppb (196 µg/m ³) (See Footnote 9)	-	
Lead ¹⁰	30 Day Average	1.5 µg/m ³	Atomic Absorption	-		-
	Calendar			1.5 µg/m ³	Same as	High Volume

4.4 AIR QUALITY

**TABLE 4.4-1
AMBIENT AIR QUALITY STANDARDS**

Pollutant	Average Time	California Standards ¹		Federal Standards ²		
					Primary Standard	Sampler and Atomic Absorption
	Quarter					
	Rolling 3-Month Average			0.15 µg/m ³		
Visibility Reducing Particles	8 Hour	Extinction coefficient of 0.23 per kilometer - visibility of ten miles or more (0.07 -30 miles or more for Lake Tahoe) due to particles when relative humidity is less than 70 percent. Method: Beta Attenuation and Transmittance through Filter Tape				
Sulfates	24 Hour	25 µg/m ³	Ion Chromatography			
Hydrogen Sulfide	1 Hour	0.03 ppm (42 µg/m ³)	Ultraviolet Fluorescence			
Vinyl Chloride ¹⁰	1 Hour	0.01 ppm 0.02 (26 g/m ³)	Gas Chromatography			

Source: California Air Resources Board (CARB), 2010. ppm = parts per million ppb = parts per billion µg/m³ = micrograms per cubic meter

¹ California standards for ozone, carbon monoxide (except Lake Tahoe), sulfur dioxide (1 and 24 hour), nitrogen dioxide, suspended particulate matter—PM₁₀, PM_{2.5}, and visibility reducing articles, are values that are not to be exceeded. All others are not to be equaled or exceeded. California ambient air quality standards are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.

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 eight hour concentration in a year, averaged over three years, is equal to or less than the standard. For PM₁₀, the 24 hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 µg/m³ is equal to or less than one. For PM_{2.5}, the 24 hour standard is attained when 98 percent of the daily concentrations, averaged over three years, are equal to or less than the standard. Contact U.S. EPA for further clarification and current federal policies.

³ Concentration expressed first in units in which it was promulgated. Equivalent units given in parentheses are based upon a reference temperature of 25°C and a reference pressure of 760 torr. Most measurements of air quality are to be corrected to a reference temperature of 25°C and a reference pressure of 760 torr; ppm in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.

⁴ Any equivalent procedure which can be shown to the satisfaction of the ARB to give equivalent results at or near the level of the air quality standard may be used.

⁵ National Primary Standards: The levels of air quality necessary, with an adequate margin of safety to protect the public health.

⁶ National Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.

⁷ Reference method as described by the EPA. An "equivalent method" of measurement may be used but must have a "consistent relationship to the reference method" and must be approved by the EPA.

⁸ To attain this standard, the 3-year average of the 98th percentile of the daily maximum 1-hour average at each monitor within an area must not exceed 0.100 ppm (effective January 22, 2010). Note that the EPA standards are in units of parts per billion (ppb). California standards are in units of parts per million (ppm). To directly compare the national standards to the California standards the units can be converted from ppb to ppm. In this case, the national standards of 53 ppb and 100 ppb are identical to 0.053 ppm and 0.100 ppm, respectively.

⁹ On June 2, 2010, the U.S. EPA established a new 1-hour SO₂ standard, effective August 23, 2010, which is based on the 3-year average of the annual 99th percentile of 1-hour daily maximum concentrations. EPA also proposed a new automated Federal Reference Method (FRM) using ultraviolet technology, but will retain the older pararosaniline methods until the new FRM have adequately permeated State monitoring networks. The EPA also revoked both the existing 24-hour SO₂ standard of 0.14 ppm and the annual primary SO₂ standard of 0.030 ppm, effective August 23, 2010. The secondary SO₂ standard was not revised at that time; however, the secondary standard is undergoing a separate review by EPA. Note that the new standard is in units of parts per billion (ppb). California standards are in units of parts per million (ppm). To directly compare the new primary national standard to the California standard the units can be converted to ppm. In this case, the national standard of 75 ppb is identical to 0.075 ppm.

¹⁰ The ARB has identified lead and vinyl chloride as 'toxic air contaminants' with no threshold level of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants.

¹¹ National lead standard, rolling 3-month average: final rule signed October 15, 2008.

B. STATE

California Ambient Air Quality Standards

Individual states have the discretion to add additional pollutants beyond those identified as part of the NAAQS. The California Air Resources Board (CARB) is responsible for setting the laws and regulation for air quality on the state level. The California Ambient Air Quality Standards (CAAQS) are either the same or more restrictive than the NAAQS. The CAAQS also include four additional contaminants in keeping with discretionary power granted to the State. The additional contaminants include:

- **Visibility Reducing Particles:** particles in the air that obstruct visibility.
- **Sulfates:** are salts of Sulfuric Acid. Sulfates occur as microscopic particles (aerosols) resulting from fossil fuel and biomass combustion. They increase the acidity of the atmosphere and form acid rain.
- **Hydrogen Sulfide (H₂S):** is a colorless, toxic and flammable gas with a recognizable smell of rotten eggs or flatulence. Usually, H₂S is formed from bacterial breakdown of organic matter. Exposure to low concentrations of hydrogen sulfide may cause irritation to the eyes, nose, or throat.
- **Vinyl Chloride:** is also known as chloroethene and is a toxic, carcinogenic, colorless gas with a sweet odor. It is an industrial chemical mainly used to produce its polymer, polyvinyl chloride (PVC).

Table 4.4-1 identifies both the national (federal) and state air quality standard for specific pollutants. The CARB defines Reactive Organic Gases (ROG) as any compound of carbon, excluding carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, and ammonium carbonate.

CARB's Emission Inventory Branch uses the terms Total Organic Gases (TOG) and Reactive Organic Gases (ROG). California air pollution control districts report Total Organic Gases (TOG) to the Air Resources Board's emission inventory. For each source category, CARB derives a value for ROG by multiplying the reported TOG by the Fraction of Reactive Organic Gases (FROG). Each source category is keyed to one of several hundred available chemical speciation profiles. For each category, the FROG value is calculated as the weight fraction of those species designated by CARB as reactive in the speciation profile applicable to the category (CARB, 2011).

The relationships among these organic gas terms are summarized as follows:

- TOG - Exempt compounds = ROG
- TOG x FROG = ROG

C. REGIONAL

Regional Air Quality Management

The State of California has 35 specific air districts, which are each responsible for ensuring that the criteria pollutants are below the NAAQS and CAAQS. Air basins that exceed either the NAAQS or the CAAQS for any criteria pollutants are designated as "non-attainment areas" for that pollutant. Currently, there are 15 non-attainment areas for the federal ozone standard and two non-attainment areas for the PM_{2.5} standard in California. The state therefore created the California State Implementation Plan (SIP), which is designed to provide control measures needed for California Air basins to attain ambient air quality standards.

4.4 AIR QUALITY

Southern California Association of Governments

The California Environmental Quality Act requires regional agencies to monitor regional development. The Southern California Association of Governments (SCAG) is the designated Metropolitan Planning Organization for the counties of Los Angeles, Ventura, Orange, San Bernardino, Riverside and Imperial. SCAG is responsible for reviewing projects and plans in these six counties. Projects and plans with regional significance must demonstrate consistency with a range of adopted regional plans and policies.

One goal from the SCAG Regional Transportation Plan is identified **Table 4.4-2**.

**TABLE 4.4-2
PROJECT CONSISTENCY WITH APPLICABLE SCAG REGIONAL TRANSPORTATION PLAN GOALS**

Regional Transportation Plan Goal	Consistent with RTP?	Analysis
<p>Goal 5: Protect the environment, improve air quality and promote energy efficiency.</p>	<p>Yes</p>	<p>As a solar energy project, the proposed project would improve air quality by reducing the use of fossil fuels in energy production. Emissions associated with operation of the proposed project would not result in significant impacts to air quality. Short-term impacts associated with project construction would be reduced through compliance with Best Management Practices (BMPs) identified in Table 2.0-4 in Chapter 2.0, compliance with Imperial County Regulation VIII, Fugitive Dust Rules and mitigation measures MM 4.4.1a, MM 4.4.1b and MM 4.4.1c. Therefore, the proposed project would be consistent with this goal.</p>

D. LOCAL

Imperial County Air Pollution Control District

As previously mentioned, the State is divided into Air Pollution Control Districts (APCD) and Air Quality Management Districts (AQMD). These agencies are county or regional governing authorities that have primary responsibility for controlling air pollution from stationary sources. The Imperial County Air Pollution Control District (ICAPCD) covers all of Imperial County which includes a portion of the Salton Sea Air Basin (SSAB). The ICAPCD is primarily responsible for monitoring air quality within the County, enforcing regulations for new and existing stationary sources within the Imperial County portion of SSAB, and planning, implementing, and enforcing programs designed to attain and maintain state and federal ambient air quality standards within the District.

2009 8-Hour Ozone Modified Air Quality Management Plan (2009 Modified AQMP)

To provide control measures to try to achieve ozone attainment status, Imperial County developed an Ambient Air Quality Strategy (AQAP). The AQAP was originally adopted by the ICAPCD in 1991. A new

standard for ozone was subsequently adopted by EPA in 1997. As a result of the new standards, modified strategies to decrease higher ozone concentrations were required. In response, ICAPCD adopted the 8-hr Ozone Air Quality Management Plan (AQMP) in 2008. The AQMP was intended to guide non-attainment areas closer to NAAQS requirements. Subsequently, ICAPCD requested further modifications to the AQMP. The final *2009 8-Hour Ozone Modified Air Quality Management Plan* (2009 Modified AQMP) was adopted by ICAPCD on July 13, 2010 (ICAPCD, 2010).

2009 Imperial County State Implementation Plan for Particulate Matter Less than 10 Microns in Aerodynamic Diameter (SIP)

The Imperial Valley is classified as nonattainment for federal and state PM₁₀ standards. As a result, the ICAPCD was required to develop a PM₁₀ Attainment Plan. The final plan was adopted by the ICAPCD on August 11, 2009 (ICAPCD, 2009). The SIP brings together data and discussion regarding particulate matter in Imperial County. The SIP also identifies control strategies to reduce PM₁₀ emissions associated with construction and agricultural operations.

Regulation VIII, Fugitive Dust Rules

The ICAPCD has established rules to address fugitive dust (PM₁₀). Regulation VIII, Fugitive Dust Rules, contains rules to reduce the amount of PM₁₀ generated from manmade sources within Imperial County. The rules require actions to prevent, reduce, or mitigate the PM₁₀ emissions (ICAPCD, 2006). Specifically, a project must adhere to Rule 801-Construction and Earthmoving Activities, Rule 805-Paved and Unpaved Road, and Rule 806-Conservation Management Practices to reduce PM₁₀ emissions.

Compliance with Regulation VIII is mandatory on all construction sites, regardless of the size of project. However, because compliance with Regulation VIII is required for projects, compliance does not constitute mitigation for air quality impacts.

Screening Thresholds

The ICAPCD has established significance thresholds in the *2007 ICAPCD CEQA Handbook for the preparation of Air Quality Impact Assessments* (ICAPCD CEQA Handbook). The screening criteria within this handbook can be used to demonstrate that a project's total emissions would not result in a significant impact as defined by CEQA (refer to Methodology, below).

Rule 310-Operational Development Fee

On November 6, 2007, the ICAPCD Board of Directors adopted Rule 310-Operational Development Fee to assist the District with mitigating air impacts produced from the operation of new commercial and residential developments. The funds generated from Rule 310 for the past fiscal year are redistributed by the ICAPCD for various mitigation projects through an RFP process.

Imperial County General Plan

The General Plan Conservation and Open Space Element policies related to the proposed project are identified below. **Table 4.4-3** summarizes the project's consistency with the applicable General Plan air quality policies. While this EIR analyzes the project's consistency with the General Plan pursuant to State CEQA Guidelines Section 15125(d), the Imperial County Board of Supervisors ultimately determines consistency with the General Plan.

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**TABLE 4.4-3
IMPERIAL COUNTY GENERAL PLAN CONSISTENCY ANALYSIS**

General Plan Policies	Consistent with General Plan?	Analysis
Conservation and Open Space Element		
Protection of Air Quality		
Objective 9.1: Ensure that all facilities shall comply with current federal and state requirements for attainment for air quality objectives.	Yes	All project facilities proposed as part of the proposed project would comply with current federal and State requirements for attainment for air quality objectives through the implementation of mitigation measures MM 4.4.1a, MM 4.4.1b and MM 4.4.1c. Therefore, the proposed project is consistent with this objective.
Objective 9.2: Cooperate with all federal and state agencies in the effort to attain air quality objectives.	Yes	The Applicant would cooperate with all federal and State agencies in the effort to attain air quality objectives through the implementation of Best Management Practices (BMPs) identified in Table 2.0-4 in Chapter 2.0. In addition, compliance with Imperial County Regulation VIII, Fugitive Dust Rules and mitigation measures MM 4.4.1a, MM 4.4.1b and MM 4.4.1c would also serve to reduce construction emissions consistent with this objective. The proposed project and would be subject to all BMPs, regulations and mitigation measures.

4.4.2 ENVIRONMENTAL SETTING

A. SOLAR GENERATION FACILITY

Regional and Local Climate/Meteorological Conditions

The project site is located in the Salton Sea Air Basin (SSAB). The SSAB encompasses all of Imperial County and part of Riverside County. The SSAB experiences mild and dry winters with daytime temperatures ranging from 65 to 75 degrees Fahrenheit (°F). Summers are extremely hot with daytime temperatures ranging from 104 to 115 °F. Very little rainfall occurs in the SSAB (Ldn, 2012a).

Imperial County usually receives approximately three inches of rain per year mostly occurring in late summer or midwinter. Summer weather patterns are dominated by intense heat induction low-pressure areas over the interior desert. The flat terrain of the Imperial Valley combined with strong temperature differentials created by intense solar heating produce moderate winds and deep thermal convection.

The general wind speeds of the area are less than 10 miles per hour (mph), but occasionally increase to less than 30 mph during the months of April and May. Wind patterns reflect the temperature disparity between the cool ocean to the west and the warm desert interior. Statistics reveal that prevailing winds

4.4 AIR QUALITY

blow from the northwest-northeast. A secondary trend of wind from the southeast is also evident (Ldn, 2012a).

Local Air Quality

Criteria pollutants are measured continuously throughout Imperial County and the data is used to track ambient air quality patterns throughout the County. As previously mentioned, this data is also used to determine attainment status when compared to the NAAQS and CAAQS. The ICAPCD is responsible for monitoring and reporting monitoring data. The ICAPCD also operates 10 monitoring sites, which collected data on criteria pollutants. Four additional sites collect meteorological data which was used by the ICAPCD to assist with pollutant forecasting, data analysis and characterization of pollutant transport.

The proposed project is closest to the Calexico Grant and Ethel Street monitoring stations, which are approximately 13 and 14 miles from the project site. **Table 4.4-4** identifies the criteria pollutants monitored closest to the project. Ambient data was obtained from the California Environmental Protection Agency's Air Resources Board Website (Source: <http://www.arb.ca.gov/adam>). **Figure 4.4-1** shows the relative locations of the monitoring sites.

**TABLE 4.4-4
LATEST THREE-YEAR AMBIENT AIR QUALITY DATA NEAR PROJECT SITE**

Pollutant	Closest Recorded Ambient Monitoring Site	Averaging Time	CAAQS	NAAQS	2007	2008	2009
O ₃ (ppm)	Calexico Grant Street	1 Hour	0.09 ppm	-	0.11	0.13	0.10
	Calexico Ethel Street	8 Hour	0.070 ppm	0.075 ppm	0.09	0.09	0.08
PM ₁₀ (µg/m ³)	Calexico Ethel Street	24 Hour	50 µg/m ³	150 µg/m ³	282	110.5	275.9
PM _{2.5} (µg/m ³)	Calexico Ethel Street	24 Hour	-	35 µg/m ³	66.7	37.1	45
	Calexico Ethel Street	Annual Arithmetic Mean	12 µg/m ³	15 µg/m ³	12.9	N/A	N/A
NO ₂ (ppm)	Calexico Ethel Street	Annual Arithmetic Mean	0.030 ppm	0.053 ppm	0.014	0.014	0.014
	Calexico Ethel Street	1 Hour	0.18 ppm	-	0.107	0.146	0.102
CO	Calexico Ethel Street	8 Hour	9 ppm	9 ppm	7.53	6.34	7.46

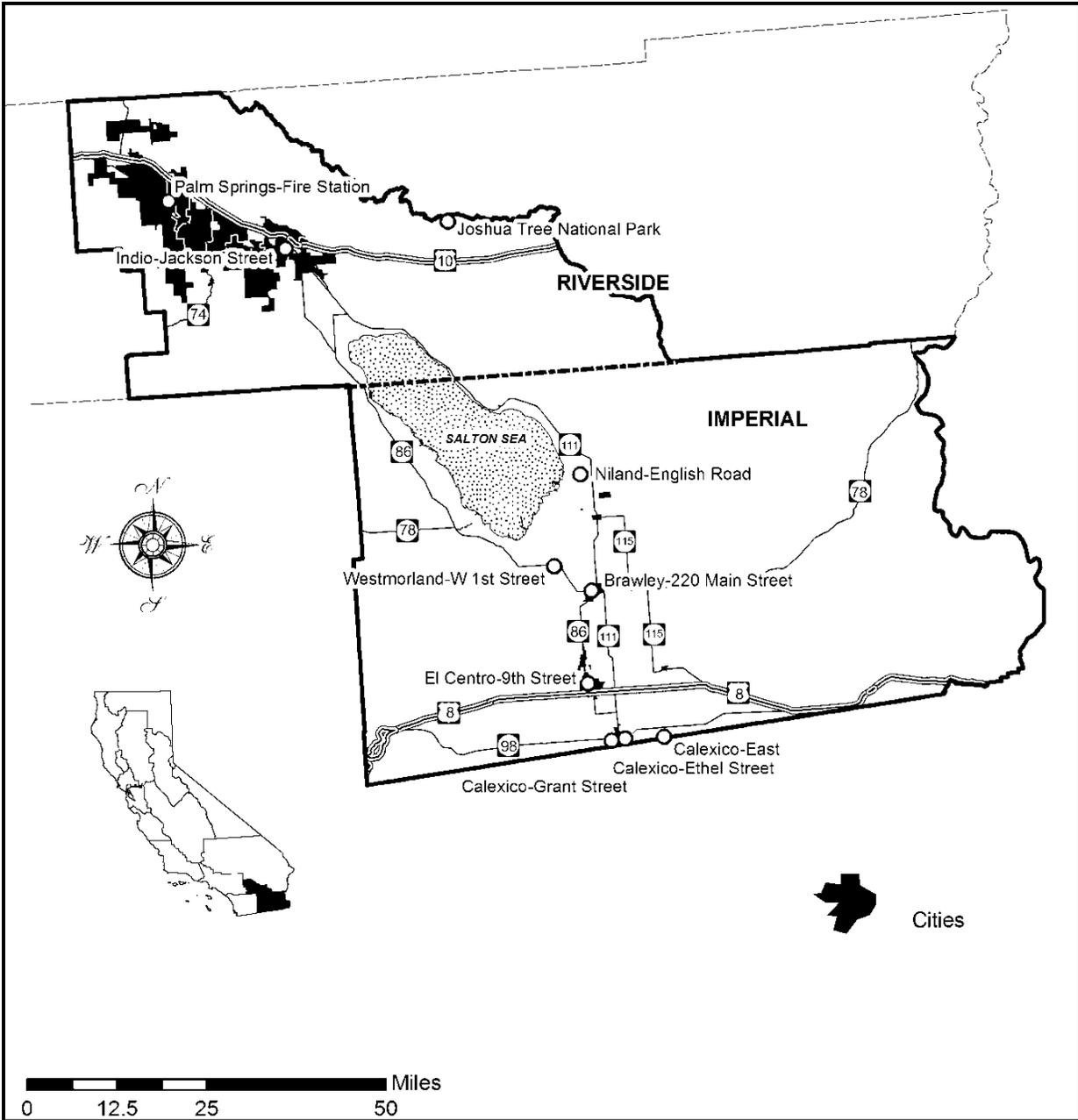
Source: Ldn, 2012a.

Notes: ppm=Parts per Million

µg/m³ = Micrograms per meter cubed

N/A=Not Available for give year

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Source: Ldn, 2012a.

**FIGURE 4.4-1
AMBIENT AIR QUALITY MONITORING STATIONS (SSAB-CARB)**

Sensitive Receptors

Sensitive receptors refer to individual or uses which could be adversely affected by exposure to air pollutants. High concentrations of air pollutants present health hazards for the general population, but more so for the young, the elderly, and the sick. Respiratory ailments, eye and throat irritations, headaches, coughing, and chest discomfort can result from exposure to smog and other air pollutants. Schools, hospitals, residences, and other facilities where people congregate, especially children, the elderly and infirm, are considered especially sensitive to air pollutants. The proposed project site is surrounded by agricultural lands on all sides as well as land under the jurisdiction of the BLM immediately to the west. Existing residential uses on the project site will be removed as part of the project thereby eliminating potential exposure of residents. No sensitive receptors are located along roadway segments.

B. GEN-TIE

The Air Quality Assessment (Ldn, 2012a) focused on construction and operations air quality emissions associated with the solar generation facility site, not on the portion of the gen-tie proposed on lands under the jurisdiction of the BLM. The portion of the project on BLM land would extend through undeveloped desert land within the existing Utility Corridor N. Regional and local air quality setting described for the solar energy site would also apply to the gen-tie. Air quality impacts associated with the gen-tie on BLM land is undergoing separate environmental analysis under NEPA.

4.4.3 IMPACTS AND MITIGATION MEASURES

A. STANDARDS OF SIGNIFICANCE

The impact analysis provided below is based on the following State CEQA Guidelines, as listed in Appendix G. The project would result in a significant impact to air quality if it would result in any of the following:

- a) Conflict with or obstruct implementation of the applicable air quality plan?
- b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?
- c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?
- d) Expose sensitive receptors to substantial pollutant concentrations?
- e) Create objectionable odors affecting a substantial number of people?

B. ISSUES SCOPED OUT AS PART OF THE INITIAL STUDY

Note that Criterion “e” was scoped out as part of the Initial Study. Criterion “e” was eliminated because the proposed project, as a solar electricity generating facility, is not anticipated to generate objectionable odors. Construction equipment may create mildly objectionable odors associated with vehicle exhausts. However, this would occur on a temporary basis with no sensitive receptors being affected. Thus no odor impact would occur and this issue is not discussed further in this EIR.

4.4 AIR QUALITY

C. METHODOLOGY

Construction Emissions Calculations

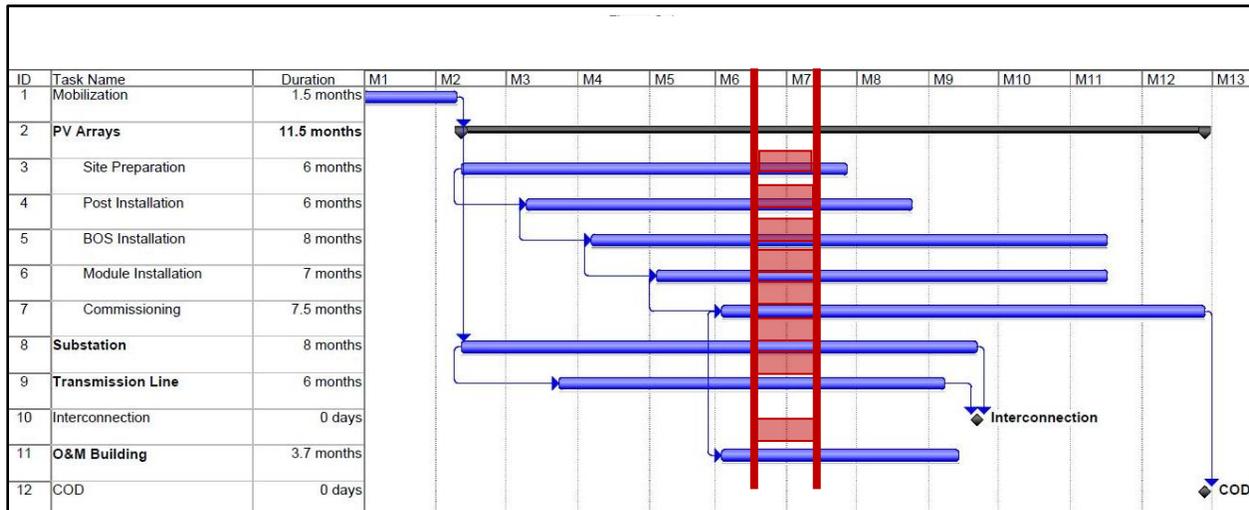
Air quality impacts related to construction were calculated using the latest URBEMIS2007 air quality model developed by CARB. URBEMIS2007 has been approved by ICAPCD and the County for construction emission calculations. URBEMIS2007 incorporates emission factors from the EMFAC2007 model for on-road vehicle emissions and the OFFROAD2007 model for off-road vehicle emissions. Default settings were used within the model.

Construction Assumptions

Construction activities are expected to take place over 12 to 24 months. The Applicant anticipates construction to start in the second quarter of 2012 following a CUP approval. As shown in Table 4.4-5, the Applicant has indicated that the construction workforce is expected to reach a peak during month seven which is anticipated to occur during the first quarter of 2013.

Ldn used the project engineer's worst case schedule which assumes simultaneous construction activities (i.e., PV Array and facility installations at the same time as transmission line installation). Peak construction activity (month seven) is projected to generate 375 average daily trips (ADT) from construction workers, deliveries and vendors.

**TABLE 4.4-5
EXPECTED WORST-CASE CONSTRUCTION PERIOD (MONTH 7)**



Source: Ldn, 2012a.

The URBEMIS2007 air quality model does not differentiate between phases other than demolition, mass grading, fine grading, trenching, building construction, architectural coating and paving. During month seven, there will be building construction, mass grading, and trenching and all modeled phases would occur simultaneously (worst case) for this project. **Table 4.4-6** shows all tasks identified within month seven construction schedule classified into three construction emission sources (building construction, mass grading, and trenching) which were used in the model. Demolition activities are not scheduled during this period and are not analyzed as demolition activities are scheduled during less intensive construction stages. **Table 4.4-6** also shows the equipment lists for the peak construction activities

scheduled to occur during month seven. All equipment is assumed to be operating simultaneously. The order in which the equipment is listed takes no precedence.

**TABLE 4.4-6
CONSTRUCTION EQUIPMENT AND DURATIONS AS MODELED**

Equipment Identification	Proposed Dates	Quantity	Hours per day
Building Construction/PV Install	1/01/2013 – 1/31/2013		
Rough Terrain Forklifts		15	1.7
Other Equipment		6	4
Cranes		4	7
Other General Industrial Equipment		3	4
Air Compressors		2	2
Forklifts		1	3.8
Aerial Lifts		1	1
Generator Sets		1	8
Tractors/Loaders/Backhoes		1	5
Welder			
Mass Grading	1/01/2013 – 1/31/2013		
Graders		2	6.8
Rubber Tired Dozers		2	6.8
Water Trucks		4	6.8
Other Equipment		3	8
Rollers		2	6.8
Tractors/Loaders/Backhoes		2	6.8
Rough Terrain Forklifts		2	1.7
Trenching	1/01/2013 – 1/31/2013		
Other General Industrial Equipment		2	8
Tractors/Loaders/Backhoes		2	6.8
Trenchers		2	4.1
Excavators		1	4.5
Generator Sets		1	0.5

Source: Ldn, 2012a.

This equipment list is based upon equipment inventory within URBEMIS2007. The quantity and types are based upon assumptions from projects of similar size and scope.

Operational Emissions Calculations

Daily operations of the project would be limited to periodic maintenance and worker trips. Although emissions would be generated from vehicle trips, any emissions would be minimal given the project only expects to add 15 to 20 ADT. On occasion (up to four times annually) the project could add up to 50 ADT during PV Panel cleaning periods. In order to be conservative, the same worst-case daily trips (375 ADT) associated with construction were modeled to estimated operational emissions.

4.4 AIR QUALITY

Health Risk Assessment Assumptions

A screening-level health risk assessment (HRA) was conducted to determine the potential for the project to result in a significant impact as defined by the CARB. PM₁₀ emitted from operation of heavy diesel powered construction equipment (diesel particulate matter, or DPM) must be analyzed to meet the CARB requirements. DPM can potentially increase the cancer risk for nearby residential receptors, if present. For purposes of this analysis, DPM was considered the primary pollutant of concern.

Cancer risk was determined for DPM at the point of maximum exposure which was deduced through dispersion modeling. SCREEN3, a dispersion model, was used to determine the maximum concentration for air pollutants at a calculated maximum radius from the project centroid (i.e., the center of the project site). Worst-case exhaust emissions generated from project construction equipment as calculated by the URBEMIS2007 air quality model were used. The worst-case cancer risk was based on the assumption of exposure to DPM for 70 years. A cancer risk concentration of less than one person per a million exposed (1:1,000,000) over a continuous 70-year exposure is considered to be less than significant by CARB. A cancer risk figure between one person and ten persons over a 70-year exposure period is acceptable but must use toxics Best Available Control Technology (T-BACT) for construction equipment. A cancer risk greater than ten persons exposed per million would be considered significant.

ICAPCD Air Quality Impact Assessment Screening Thresholds

The ICAPCD has established significance thresholds in the ICAPCD CEQA Handbook for the preparation of Air Quality Impact Assessments (AQIA). The screening criteria in the ICAPCD CEQA Handbook can be used to demonstrate that a project's total emissions would not result in a significant impact as defined by CEQA. Should emissions be found to exceed these thresholds, additional modeling is required to demonstrate that the project's total air quality impacts are below the state and federal ambient air quality standards. **Table 4.4-7** shows the screening thresholds for construction and daily operations.

**TABLE 4.4-7
ICAPCD SCREENING THRESHOLDS FOR CRITERIA POLLUTANTS**

Pollutant		Total Emissions (Pounds per Day)
Construction Emissions		
Respirable Particulate Matter (PM ₁₀ and PM _{2.5})		150
Nitrogen Oxide (NO _x)		100
Carbon Monoxide (CO)		550
Reactive Organic Gases (ROG)		75
Operational Emissions		
Pollutant	Tier I (Pounds per Day)	Tier II (Pounds per Day)
PM ₁₀ and Sulfur Oxide (SO _x)	< 150	150 or greater
NO _x and ROG	< 55	55 or greater
CO	< 550	550 or greater
Level of Significance:	Less Than Significant	Significant Impact
Level of Analysis:	Initial Study	Comprehensive Air Quality Analysis Report
Environmental Document:	Negative Declaration (ND)	Mitigated ND or EIR

Source: ICAPCD, 2007 in Ldn, 2012a.

The ICAPCD CEQA Handbook further states that any proposed project's operational development with a potential to emit less than the Tier I thresholds may still potentially have adverse impacts on the local air quality and would be required to prepare an Initial Study to help the Lead Agency determine whether

the project would have a less than significant impact. If the proposed project's operational development fits within the Tier II classification, it is considered to have a significant impact on regional and local air quality. Therefore, Tier II projects are required to implement all standard mitigation measures as well as all feasible discretionary mitigation measures. Discretionary measures are used when standard or required measures do not fully mitigate the impact.

Standard mitigation measures for construction equipment and fugitive PM₁₀ must be implemented at all construction sites. The implementation of discretionary mitigation measures, as listed in the ICAPCD CEQA Handbook, apply to those construction sites which are 5 acres or more for non-residential developments (such as the proposed project) or 10 acres or more in size for residential developments. Additionally, in an effort to reduce PM₁₀ or fugitive dust from ambient air, the project would be required to develop a dust management plan consistent with Rule 801-Construction and Earthmoving Activities of Imperial County's Regulation VIII, Fugitive Dust Rules (ICAPCD, 2006).

If the project be large enough that operational mitigation measures simply cannot bring down pollutant levels, the ICAPCD has adopted the Operation Development Fee under Rule 310. This Rule provides the ICAPCD with a sound method for mitigating emissions produced from the operation of new commercial and residential development projects. Projects immitigable through standard procedures are assessed a one-time fee for either Ozone Precursors or PM₁₀ impacts which is based upon either the square footage of the commercial development or the number of residential units. Operational impacts are not anticipated given that the proposed project creates renewable energy and is expected to add a peak of 50 average daily traffic trips (ADTs) or less.

Furthermore, to be consistent with the California Air Resource Board, ICAPCD requires PM₁₀ developed from diesel powered construction equipment (also known as diesel particulate matter, or DPM) to be analyzed.

Cumulative Emissions

In accordance with CEQA Guidelines 15130(b), the analysis of cumulative impacts incorporates a summary of projections. The following two-tiered approach was used to assess cumulative air quality impacts:

- 1) Consistency with the regional thresholds; and
- 2) Project consistency with existing air quality plans.

In addition, the cumulative analysis considers potential CO hotspots, consistent with the ICAPCD CEQA Air Quality Handbook.

D. PROJECT IMPACTS AND MITIGATION MEASURES

Conflict with or Obstruct Air Quality Plan/Violate Air Quality Standard

Impact 4.4.1 Implementation of the proposed project would increase air pollutant emissions. This is considered a **potentially significant impact**.

The project site is located within the Salton Sea Air Basin (SSAB) and is subject to the Imperial County Air Pollution Control District (ICAPCD) Rules and Regulations. Currently, the SSAB is either in attainment or unclassified for all federal and state air pollutant standards with the exception of O₃ (8-hour) and PM₁₀. Air pollutants transported into the SSAB from the adjacent South Coast Air Basin (Los Angeles, San Bernardino County, Orange County, and Riverside County) and from Mexicali (Mexico) substantially contribute to the non-attainment conditions in the SSAB.

4.4 AIR QUALITY

Construction Findings

Construction of the proposed project would potentially create temporary emissions of dust, fumes, equipment exhaust, and other air contaminants that may exceed ICAPCD CEQA significance thresholds. Construction during the seventh month of the project is considered worst-case as it would have the highest volume of traffic and equipment operation. **Table 4.4-8** provides a summary of the construction emissions including construction worker trips (the URBEMIS model outputs which show detailed emission breakdowns for off-road diesel, vendor and worker trips to and from the construction site are provided as Attachment A of **Appendix C** on the attached CD of Technical Appendices of this EIR.) These emissions are used to compare both project related unmitigated and mitigated emissions with ICAPCD's significance thresholds.

**TABLE 4.4-8
EXPECTED CONSTRUCTION EMISSIONS SUMMARY (POUNDS PER DAY)**

Year	ROG	NO _x	CO	PM ₁₀ (Dust)	PM ₁₀ (Exhaust)	PM ₁₀ (Total)	PM _{2.5} (Dust)	PM _{2.5} (Exhaust)	PM _{2.5} (Total)
2013 (lb/day) Unmitigated	17.92	130.31	99.92	198.28	7.59	205.87	41.44	6.98	48.42
Significance Threshold (lb/day)	75	100	550	-	-	150	-	-	150
ICAPCD Impact?	No	YES	No	-	-	Yes	-	-	No
2013 (lb/day) Mitigated	17.92	93.59	99.92	14.25	7.59	21.84	3.01	6.98	9.99
ICAPCD Impact?	No	NO	No	-	-	No	-	-	No

Source: Ldn, 2012a.

As shown in **Table 4.4-8**, NO_x and PM₁₀ emissions would exceed ICAPCD significance thresholds of 100 and 150 lbs/day, respectively. Thus emissions associated with construction are considered a **potentially significant impact**. In addition, the NO_x and PM₁₀ emissions caused the project to be classified as Tier II. Therefore, the project is required to implement standard and discretionary mitigation measures.

The following discretionary mitigation measures for PM₁₀ and NO_x were found (through modeling) to reduce impacts for these pollutants. The three mitigations identified below are recommended to reduce PM₁₀ emissions based on control efficiencies established by SCAQMD CEQA Air Quality Handbook and recommended in the URBEMIS 2007 air quality model. The SCAQMD CEQA Handbook states that watering twice daily can reduce PM₁₀ from 34 to 68 percent however; an average 55 percent was used as recommended by the URBEMIS model.

1. Apply water during grading/grubbing activities to all active disturbed areas at least twice daily.
2. Apply water to all onsite roadways at least three times daily or use of magnesium chloride or other County approved dust suppression additives and apply water one-time daily.
3. Reduce all construction related traffic speeds onsite to below 15 Miles per Hour (MPH).

The following NO_x recommendation is based on typical control efficiencies used in industry. An average NO_x reduction of 40 percent would occur for using Diesel Oxidation Catalyst. (Note: These reductions

would only apply to large construction equipment, not small equipment vehicles registered to drive on public highways).

1. Use Diesel Oxidation Catalyst on large diesel construction equipment as required by the ICAPCD.

The project would also be required to follow Rule 801 of Imperial County’s Rules and Regulations for Construction and Earthmoving Activities. A dust control plan would be developed for approval by the County. The dust control plan should be kept onsite and should indicate how mitigation measures will be implemented with start and completion dates. The plan would indicate specific treatments and control measures (i.e. refer to MM 4.4.1a, MM 4.4.1b and MM 4.4.1c). Activities implemented under the dust control plan should be recorded daily as ICAPCD will occasionally verify compliance with the plan.

Operational Emissions

Daily operations of the project would involve periodic maintenance and worker trips (up to 50 ADT). Although emissions are expected, compared to a worst-case project traffic generation day of 375 ADT during peak construction, emissions from worker trips are almost insignificant. **Table 4.4-9** shows the expected worst-case pollutant generation for the project as predicted in URBEMIS 2007.

The URBEMIS output for all potential pollutant emissions was below significance as set forth in Rule 310 of ICAPCD Regulations and would therefore not require additional measures to comply with CEQA. Thus, emissions associated with operations are considered **less than significant**.

**TABLE 4.4-9
EXPECTED DAILY POLLUTANT GENERATION**

	ROG	NO _x	CO	SO _x	PM ₁₀
Summer Scenario					
Operational Vehicle Emissions (Lb/Day)	4.52	5.49	43.68	0.03	4.48
SCAQMD Thresholds	55	55	550	150	150
Significant?	No	No	No	No	No
Winter Scenario					
Operational Vehicle Emissions (Lb/Day)	4.52	5.49	43.68	0.03	4.48
SCAQMD Thresholds	75	250	550	250	100
Significant?	No	No	No	No	No

*Source: Ldn, 2012a.
Daily pollutant generation assumes trip distances within URBEMIS 2007.*

Mitigation Measures

MM 4.4.1a The following mitigation requirements shall be implemented to reduce construction related PM₁₀ impacts to a level below significance during worst-case construction:

1. Apply water during grading/grubbing activities to all active disturbed areas at least three times daily.
2. Apply water to all onsite roadways at least three times daily or use of magnesium chloride or other County-approved dust suppression additives and apply water one-time daily.

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3. Reduce all construction related traffic speeds onsite to below 15 Miles per Hour (MPH).

Timing/Implementation: During construction.

Enforcement/Monitoring: Imperial County Planning and Development Services.

MM 4.4.1b The following mitigation requirements shall be implemented to reduce construction related NO_x impacts to a level below significance during worst-case construction:

- Use Diesel Oxidation Catalyst or alternative devices that achieve equivalent NO_x emission reduction on all large diesel construction equipment as required by ICAPCD.

Timing/Implementation: During construction.

Enforcement/Monitoring: Imperial County Planning and Development Services.

MM 4.4.1c All construction sites in excess of 5 acres must implement the following standard mitigation measures:

Fugitive PM₁₀ Control

- All disturbed areas, including Bulk Material storage which is not being actively utilized, shall be effectively stabilized and visible emissions shall be limited to no greater than 20 percent opacity for dust emissions by using water, chemical stabilizers, dust suppressants, tarps or other suitable material such as vegetative ground cover.
- All on-site and off-site unpaved roads shall be effectively stabilized. Visible emissions shall be limited to no greater than 20 percent opacity for dust emissions by paving, chemical stabilizers, dust suppressants and/or watering.
- All unpaved traffic areas one acre or more in size with 75 or more average vehicle trips per day shall be effectively stabilized and visible emission shall be limited to no greater than 20 percent opacity for dust emissions by paving, chemical stabilizers, dust suppressants and/or watering.
- The transport of bulk materials shall be completely covered unless six inches of freeboard space from the top of the container is maintained with no spillage and loss of bulk material. In addition, the cargo compartment of all haul trucks is to be cleaned and/or washed at delivery site after removal of bulk material.
- All track-out or carry-out shall be cleaned at the end of each workday or immediately when mud or dirt extends a cumulative distance of 50 linear feet or more onto a paved road within an urban area.
- Movement of Bulk Material handling or transfer shall be stabilized prior to handling or at points of transfer with application of sufficient water, chemical stabilizers or by sheltering or enclosing the operation and transfer line.
- The construction of any new unpaved road is prohibited within any area with a population of 500 or more unless the road meets the definition of a temporary unpaved road. Any temporary unpaved road shall be effectively stabilized and visible emissions shall be limited to no greater than 20 percent opacity for dust emission by paving, chemical stabilizers, dust suppressants and/or watering.

Construction Combustion Equipment

- All construction equipment, including all off-road and portable diesel powered equipment, shall use alternative fuel or be catalyst equipped.
- Idling time shall be minimized either by shutting equipment off when not in use or reducing the time of idling to 5 minutes as a maximum.
- The hours of operation of heavy duty equipment and/or the amount of equipment in use shall be limited, to the extent feasible.
- Fossil fueled equipment shall be replaced with electrically driven equivalents (provided they are not run via a portable generator set).

Timing/Implementation: *During construction.*

Enforcement/Monitoring: *Imperial County Planning and Development Services.*

Significance After Mitigation

Implementation of recommended discretionary mitigation measures MM 4.4.1a, MM 4.4.1b, and standard Tier II mitigation measure MM 4.4.1c will reduce dust and exhaust and would be effective to reduce NO_x and PM₁₀ generated during construction. Following implementation of the recommended and required mitigation measures, NO_x and PM₁₀ emissions would be reduced below County thresholds. Therefore, construction emissions would not conflict with or obstruct an air quality plan or violate an air quality standard and this impact would be reduced to **less than significant**.

Expose Sensitive Receptors to Substantial Pollutant Concentrations

Impact 4.4.2 Exhaust generated during construction could result in elevated levels of DPM. This is considered a **potentially significant impact**.

Air quality modeling revealed that worst-case PM₁₀ from exhaust could be as high 7.59 pounds per construction day (10-hours) or 0.0955 grams per second DPM during the construction day. Averaging this emission rate over the project site yields the average emission rate for the project area. The average emission rate over the grading area is 7.551 x 10⁻⁹ (gram/meters²)/second (refer to section 4.2 of the *Air Quality Assessment* provided on the attached CD of Technical Appendices as **Appendix C** of this EIR).

The SCREEN3 dispersion model revealed that the peak maximum 1-hr concentration is 2.414 µg/m³ during grading at a distance of roughly 2,000 meters from the centroid of the project site. (The SCREEN3 dispersion model outputs are provided as Attachment B to the Air Quality Assessment). This concentration would be lowered at any other distance from the project site. Using the risk equation the cancer risk over a 70-year continuous dose was calculated to be:

$$\text{CRDPM-70yr dose} = 0.0003 \times 2.414 = 7.242 \times 10^{-4} = 0.0007242$$

Based on these calculations, the project is expected to generate maximum DPM during the heaviest construction period of the project. This period would be for one month assuming a worst-case construction day of 10 hours for a period of six days per week. Thus, construction activities could occur for 260 hours during the peak, worst-case month.

A 70-year period has approximately 25,550 days. It follows that CRDPM would be 11 days out of 25,550 or 0.00043 times the CRDPM (11/25,550). If one million people were exposed to the maximum DPM for the duration of grading at 2,000 meters (or approximately 6,560 feet) from the project site, the estimated increased cancer risk for month seven could be:

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$$0.00043 \times .0007242 \times 1,000,000 = 0.31 \text{ individuals per million}$$

To estimate emissions during the entire project (for purposes of the health risk assessment only), worst-case diesel emissions occurring in month seven are assumed to be generated during the entire construction period of the project (using the 12-month construction schedule which would maximize the amount of equipment on-site at any one time). Using this approach, the diesel emissions estimate would be off by a factor as high as 12. Multiplying the worst-case risk (0.31 individuals) by 12, reveals that the risk would at no time exceed 3.68 individuals per million exposed for the entire construction duration over a 70-year period.

Because the project could increase the risk to more than one person per million, the project would be required to use equipment meeting requirements of T-BACT such as diesel particulate filters, catalytic converters and or selective catalytic reduction technologies.

Furthermore, because the risk is less than 10 in one million at the worst case contour of 2,000 meters (6,561 feet), no sensitive receptors either adjacent to the project or beyond the project would be exposed to DPM levels that significantly increase the risk of cancer. In other words, although there are sensitive receptors in the area, they will not be exposed to emissions that would increase their risk of cancer to above 10 in one million.

For example, the Westside Elementary School site is located approximately 84-meters (approximately 275 feet) from the closest boundary of the project and would be considered the nearest sensitive receptor. Using SCREEN3, the emissions were determined to have worst-case concentrations as high as $1.112 \mu\text{g}/\text{m}^3$ at the school site which would have a cancer risk dose of:

$$CR_{\text{DPM-70yr dose}} = 0.0003 \times 1.747 = 5.240 \times 10^{-4} = .0005240$$

With a corresponding worst-case monthly cancer risk (worst-case) of:

$$0.00043 \times .0005240 \times 1,000,000 = 0.2220 \text{ individuals per million}$$

Multiplying the worst-case risk (0.2220) by 12 results in a risk of 2.664 individuals per million. This is 1.02 individuals per million lower than the 3.68 individuals per million project related maximum as calculated above. Therefore no DPM cancer risks would be expected. The SCREEN3 dispersion model output for the discrete modeling of the Westside Elementary School is also provided in Attachment B of the *Air Quality Assessment*. This document is provided on the attached CD of Technical Appendices as **Appendix C** of this EIR.

Mitigation Measures

As noted above, the project would be required to use equipment meeting T-BACT specifications. In addition, mitigation measures identified to reduced NO_x and PM_{10} (MM 4.4.1a, 4.4.1b and 4.4.1c) would also be classified as T-BACT measures for reducing DPM. Therefore, because the project will be using T-BACT technologies per ICAPCD protocols, all health risks would be considered reduced to **less than significant**.

Significance After Mitigation

Because the project would use T-BACT technologies per ICAPCD protocols, all health risks would be reduced below thresholds. Therefore, impacts associated with exposure to substantial pollutant concentrations would be reduced to **less than significant**.

4.4.4 CUMULATIVE SETTING, IMPACTS AND MITIGATION MEASURES

A. CUMULATIVE SETTING

The cumulative setting for air quality is the geographic scope encompassed by the Salton Sea Air Basin (SSAB). Currently, the SSAB is either in attainment or unclassified for all federal and state air pollutant standards with the exception of O₃ (8-hour) and PM₁₀. Air pollutants transported into the SSAB from the adjacent South Coast Air Basin (Los Angeles, San Bernardino County, Orange County, and Riverside County) and from Mexicali (Mexico) substantially contribute to the non-attainment conditions in the SSAB. Cumulative projects within the SSAB includes any existing, recently approved, proposed, and reasonably foreseeable development envisioned by the Imperial County General Plan. A list of recently approved and proposed projects is provided in Table 3.0-1 in Chapter 3.0, Introduction to the Environmental Analysis and Assumptions Used, of this Draft EIR.

B. CUMULATIVE IMPACTS AND MITIGATION MEASURES

Violate Air Quality Standard/Cause Air Quality Violation

Impact 4.4.3 The proposed project would generate criteria pollutant emissions during construction. However, the project would be required to comply with recommended and required mitigation to reduce emissions to meet threshold levels. Therefore, the project would result in a **less than cumulatively considerable impact** with regard to violating an air quality standard.

Construction

Many of the projects listed in Table 3.0-1 are large scale renewable energy projects. As such, the majority of air emissions from these projects would be generated during construction with drastically reduced emissions occurring during operation and maintenance.

The construction phase of the proposed project may contribute to a net increase in one or more criteria pollutants as a result of point and non-point source emissions for which the region is in nonattainment under applicable federal and state ambient air quality standards. As noted above, the Imperial Valley is classified as nonattainment for federal and state PM₁₀ standards. Thus, the project's contribution to existing criteria pollutants could be cumulatively considerable without mitigation. However, as described under Impact 4.4.1 above, MM 4.4.1a, MM 4.4.1b and MM 4.4.1c would reduce PM₁₀ and NO_x emissions to less than significant levels resulting in less than cumulatively considerable contributions to existing criteria pollutants. In addition, all other cumulative projects are required to comply with Regulation VIII and would also be assumed to implement mitigation measures to reduce their individual construction air quality emissions. In this way, each individual cumulative project would reduce construction emissions on a project-by-project basis resulting in less than cumulatively considerable contributions to existing criteria pollutants. Because the proposed project would mitigate air quality emissions associated with construction, and other cumulative projects would also mitigate construction emissions on a project-by-project basis, emissions that would result in a violation of an air quality standard would be reduced to **less than cumulatively considerable**.

Operations

Emissions resulting from operations of the project for all criteria pollutants would be limited to worker vehicle trips and would be very low. Such levels of emissions should not cause localized exceedances, or contribute cumulatively to existing exceedances of the State or federal ozone and PM₁₀ standards.

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Therefore, the proposed project would not result in cumulatively considerable contributions to air quality standard violations. Operation of the proposed project, in combination with other cumulative projects identified in Table 3.0-1, would result in **less than cumulatively considerable** impacts to air quality standards and air quality violations.

Mitigation Measures

Implementation of MM 4.4.1a, MM 4.4.1b and MM 4.4.1c would reduce construction NO_x and PM₁₀ emissions to less than significant levels on a project-specific basis.

Significance After Mitigation

Following implementation of the recommended and required mitigation measures, NO_x and PM₁₀ emissions would be reduced below County thresholds. Therefore, construction emissions would not cumulatively contribute to conflicts or obstruction of an air quality plan. Impacts would be **less than cumulatively considerable**.

Cumulative Substantial Pollutant Concentrations

Impact 4.4.4 Implementation of the proposed project would not coincide with peak construction of other cumulative projects. Therefore, the proposed project would have a **less than cumulatively considerable impact** on DPM.

Construction

The ICAPCD CEQA Air Quality Handbook recommends using the emission thresholds for project construction and project operations identified previously for project impacts for analysis of potential cumulative impacts. If any construction-related emissions and operational emissions from individual projects exceed the project-specific daily emissions thresholds, those impacts are also cumulatively considerable.

Without specific emission outputs and coordination of project schedules, it is not possible to quantify cumulative emissions. Therefore, assuming a worst-case scenario simplifies the assessment. A worst-case DPM emission plume is projected to be greatest at 2,000 meters from the center of the construction activities. Cancer risk remained less than ten in one million even under worst-case parameters.

Likewise, assuming every other cumulative project has an equal worst-case DPM emission radius extended out 2,000 meters, and all projects are under construction at the same time, a cumulative impact could occur if the two plumes overlap. To simplify the analysis, the radius of the project was extended out 4,000 meters. Then, each cumulative project was analyzed to verify whether it was within the contour or, if the cumulative project is within the contour, that the cumulative project and the proposed project would not be undergoing peak construction simultaneously. None of the cumulative projects would be at peak construction at the same time as the proposed project within the 4,000 meter plume. Therefore, no cumulative health risk impacts are expected and no mitigation for cancer risk would be necessary. Impacts with regard to substantial pollutant concentrations are therefore considered **less than cumulatively considerable**.

Operations

Once operational, the proposed project would not generate DPM or expose sensitive receptors to substantial pollutants. No cumulative DPM exposure or increased cancer risk would occur during

operations of the proposed project. Therefore, the proposed project would result in **less than cumulatively considerable** impacts to pollutant concentrations during operations.

Mitigation Measures

As discussed under Impact 4.4.2, the project would be required to use equipment meeting T-BACT specifications. In addition, mitigation measures identified to reduced NO_x and PM₁₀ (MM 4.4.1a, 4.4.1b and 4.4.1c) would also be classified as T-BACT measures for reducing DPM.

Significance After Mitigation

Because the project would use T-BACT technologies per ICAPCD protocols, all health risks would be reduced below thresholds. Therefore, exposure to cumulative pollutant concentrations would be reduced to **less cumulatively considerable**.

4.4 AIR QUALITY

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SECTION 4.5

CLIMATE CHANGE AND GREENHOUSE GASES

4.5 CLIMATE CHANGE AND GREENHOUSE GASES

This section provides an analysis of potential climate change and greenhouse gases (GHG) impacts related to construction, operation, and maintenance of the proposed project. Information in this section is derived from California Air Resources Board, California Public Utility Commission, California Energy Commission, and International Panel on Climate Change sources, as well information provided in the Air Quality Assessment prepared for the project by Ldn Consulting, Inc. (Ldn, 2012a).

Atmospheric gases that absorb and emit infrared radiation are called greenhouse gases (GHG). Common GHGs include carbon dioxide (CO₂), water vapor (H₂O), methane (CH₄), nitrous oxide (N₂O), fluorinated gases, and ozone (O₃). Of these gases, CO₂ and CH₄ are emitted in the greatest quantities from human activities. Emissions of CO₂ are largely byproducts of fossil fuel combustion, whereas CH₄ results from off-gassing associated with agricultural practices and landfills. Man-made GHGs, many of which have greater heat-absorption potential than CO₂, include fluorinated gases such as hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF₆). Terminology unique to this chapter includes: carbon dioxide equivalents (CO₂e), a term used to describe the concentration of CO₂ that would cause the same level of radiative forcing (i.e., the change in net irradiance between different layers of the atmosphere) as a given type and concentration of greenhouse gas, and two units of measures, metric tons (MT) and million metric tons (MMT)

The accumulation of GHG in the atmosphere regulates Earth's temperature. Without the natural heat trapping effect of GHG, Earth's surface would be about 34°C (degrees Celsius) cooler. However, it is believed that emissions from human activities, particularly the consumption of fossil fuels for transportation and electricity generation, have elevated the concentration of these gases in the atmosphere beyond the level of naturally occurring concentrations. This phenomenon is commonly referred to as climate change.

4.5.1 REGULATORY FRAMEWORK

BACKGROUND

In 1988, the United Nations and the World Meteorological Organization established the Intergovernmental Panel on Climate Change (IPCC) to assess "the scientific, technical and socio-economic information relevant to understanding the scientific basis of risk of human-induced climate change, its potential impacts, and options for adaptation and mitigation." The most recent reports of the IPCC have emphasized the scientific consensus that real and measurable changes to the climate are occurring, that they are caused by human activity, and that significant adverse impacts on the environment, the economy, and human health and welfare are unavoidable.

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

The Kyoto Protocol is a treaty made under the UNFCCC. Countries can sign the treaty to demonstrate their commitment to reduce their emissions of greenhouse gases or engage in emissions trading. More than 160 countries, 55 percent of global emissions, are under the protocol. United States Vice President Al Gore symbolically signed the Protocol in 1998. However, in order for the Kyoto Protocol to be formally adopted, or ratified, it must be adopted by the U.S. Senate, which was not done by the Clinton administration. To date, the U.S. has not ratified the Kyoto Protocol.

4.5 CLIMATE CHANGE AND GREENHOUSE GASES

A. FEDERAL

In October 1993, President Clinton announced his Climate Change Action Plan, which had a goal to return greenhouse gas emissions to 1990 levels by the year 2000. This was to be accomplished through 50 initiatives that relied on innovative voluntary partnerships between the private sector and government aimed at producing cost-effective reductions in greenhouse gas emissions.

Environmental Protection Agency

On June 30, 2009, the EPA granted California's request for a waiver to directly limit GHG tailpipe emissions for new motor vehicles beginning with the current model year. On December 7, 2009, the EPA determined that emissions of GHGs contribute to air pollution that "endangers public health and welfare" within the meaning of the Clean Air Act. This action finalizes the EPA's "endangerment determination" initially proposed on April 17, 2009, and now obligates the EPA to regulate GHG emissions from new motor vehicles.

On December 7, 2009, the EPA Administrator signed two distinct findings regarding GHG under Section 202(a) of the Federal Clean Air Act (CAA):

- **Endangerment Finding:** The Administrator finds that the current and projected concentrations of the six key well-mixed GHG (CO₂, CH₄, N₂O, hydrofluorocarbons [HFCs], perfluorocarbons [PFCs], and SF₆) in the atmosphere threaten the public health and welfare of current and future generations.
- **Cause or Contribute Finding:** The Administrator finds that the combined emissions of these well-mixed GHG from new motor vehicles and new motor vehicle engines contribute to the greenhouse gas pollution which threatens public health and welfare.

These findings do not themselves impose any requirements on industry or other entities. However, this action is a prerequisite to finalizing EPA's proposed GHG emission standards for light-duty vehicles, which were jointly proposed by EPA and the United States Department of Transportation National highway Safety Administration of September 15, 2009.

EPA Greenhouse Gas Tailor Rule

On May 13, 2010, EPA issued the Prevention of Significant Deterioration and Title V Greenhouse Gas Tailor Rule. This final rule sets thresholds for greenhouse gas (GHG) emissions that define when permits under the New Source Review Prevention of Significant Deterioration (PSD) and Title V Operating Permit programs are required for new and existing industrial facilities.

The rule establishes a schedule that will initially focus permitting programs on the largest sources and then expands beyond certain permitting programs to cover the largest sources of GHG that may not have been previously covered by the CAA for other pollutants. Step 1 occurred from January 2, 2011 to June 30, 2011. During Step 2, from July 1, 2011 to June 30, 2013, PSD permitting requirements will cover for the first time new construction projects that emit GHG emissions of at least 100,000 tons (90,718 MT) per year even if they do not exceed the permitting thresholds for any other pollutant. Modifications at existing facilities that increase GHG emissions by at least 75,000 tons (68,039 MT) per year will be subject to permitting requirements, even if they do not significantly increase emissions of any other pollutant. In Step 2, operating permit requirements will apply to sources based on their GHG emissions even if they would not apply based on emissions of any other pollutant. Facilities that emit at least 100,000 tons (90,718 MT) per year of CO_{2e} will be subject to Title V permitting requirements.

4.5 CLIMATE CHANGE AND GREENHOUSE GASES

As part of this rule, EPA also commits to undertake another rulemaking, to begin in 2011 and conclude no later than July 1, 2012. That action will consist of an additional Step 3 for phasing in GHG permitting. Step three, if established, will not require permitting for sources with greenhouse gas emissions below 50,000 tons (45,359 MT) per year.

As a stationary source, the proposed project would not emit more than 100,000 tons of CO₂e per year, and thus would not fall within the PSD permitting requirements described above.

B. STATE

California Code of Regulations Title 24

Although not originally intended to reduce greenhouse gas emissions, California Code of Regulations Title 24 Part 6: California's Energy Efficiency Standards for Residential and Nonresidential Buildings were first established in 1978 in response to a legislative mandate to reduce California's energy consumption. The standards are updated periodically to allow consideration and possible incorporation of new energy efficiency technologies and methods. Energy efficient buildings require less electricity, natural gas, and other fuels. Electricity production from fossil fuels and on-site fuel combustion (typically for water heating) results in greenhouse gas emissions. Therefore, increased energy efficiency results in decreased greenhouse gas emissions. CARB's greenhouse gas inventory is based on 2006 Title 24 standards.

State Standards Addressing Vehicular Emissions

California Assembly Bill 1493 (Pavley) enacted on July 22, 2002, required CARB to develop and adopt regulations that reduce greenhouse gases emitted by passenger vehicles and light duty trucks. Regulations adopted by CARB will apply to 2009 and later model year vehicles. CARB estimates that the regulation will reduce climate change emissions from light duty passenger vehicle fleet by an estimated 22 percent in 2012 and 30 percent in 2016. The federal Corporate Average Fuel Economy (CAFE) standard determines the fuel efficiency of certain vehicle classes in the United States. In 2007, as part of the Energy and Security Act of 2007, CAFE standards were increased for new light-duty vehicles to 35 miles per gallon by 2020.

Executive Order S-01-07

Executive Order S-01-07 was enacted by the Governor on January 18, 2007. The order mandates the following: 1) that a statewide goal be established to reduce the carbon intensity of California's transportation fuels by at least 10 percent by 2020; and 2) that a Low Carbon Fuel Standard ("LCFS") for transportation fuels be established for California. It is assumed that the effects of the LCFS would be a 10 percent reduction in GHG emissions from fuel use by 2020.

Executive Order S-3-05

Executive Order S-3-05, signed by Governor Schwarzenegger on June 1, 2005, calls for a reduction in GHG emissions to 1990 levels by 2020 and for an 80 percent reduction in GHG emissions by 2050. Executive Order S-3-05 also calls for the California EPA (CalEPA) to prepare biennial science reports on the potential impact of continued GCC on certain sectors of the California economy. The first of these reports, "Our Changing Climate: Assessing Risks to California," and its supporting document "Scenarios of Climate Change in California: An Overview" were published by the California Climate Change Center in 2006.

4.5 CLIMATE CHANGE AND GREENHOUSE GASES

Assembly Bill 32, the California Global Warming Solutions Act of 2006

In September 2006, Governor Schwarzenegger signed California AB 32, the global warming bill, into law. AB 32 directs CARB to do the following:

- Make publicly available a list of discrete early action GHG emission reduction measures that can be implemented prior to the adoption of the statewide GHG limit and the measures required to achieve compliance with the statewide limit.
- Make publicly available a GHG inventory for the year 1990 and determine target levels for 2020.
- On or before January 1, 2010, adopt regulations to implement the early action GHG emission reduction measures.
- On or before January 1, 2011, adopt quantifiable, verifiable, and enforceable emission reduction measures by regulation that will achieve the statewide GHG emissions limit by 2020, to become operative on January 1, 2012, at the latest. The emission reduction measures may include direct emission reduction measures, alternative compliance mechanisms, and potential monetary and nonmonetary incentives that reduce GHG emissions from any sources or categories of sources that CARB finds necessary to achieve the statewide GHG emissions limit.
- Monitor compliance with and enforce any emission reduction measure adopted pursuant to AB 32.

CARB has estimated that the 1990 GHG emissions level was 427 MMT net CO₂e. In 2004, the emissions were estimated at 480 MMT net CO₂e. CARB estimates that a reduction of 173 MMT net CO₂e emissions below business-as-usual would be required by 2020 to meet the 1990 levels. This amounts to a 15 percent reduction from today's levels and a 30 percent reduction from projected business-as-usual levels in 2020.

Assembly Bill 32- Climate Change Scoping Plan

In 2008, CARB adopted its *Climate Change Scoping Plan* (Scoping Plan), which functions as a roadmap of CARB's plans to achieve GHG reductions in California required by AB 32 through subsequently enacted regulations. The Scoping Plan contains the main strategies California will implement to reduce CO₂e emissions by 169 MMT, or approximately 30 percent, from the state's projected 2020 emissions level of 596 MMT of CO₂e under a business-as-usual scenario. (This is a reduction of 42 MMT CO₂e, or almost 10 percent, from 2002–2004 average emissions, but requires the reductions in the face of population and economic growth through 2020.) The Scoping Plan also breaks down the amount of GHG emissions reductions CARB recommends for each emissions sector of the state's GHG inventory. The Scoping Plan calls for the largest reductions in GHG emissions to be achieved by implementing the following measures and standards:

- improved emissions standards for light-duty vehicles (estimated reductions of 31.7 MMT CO₂e),
- the Low-Carbon Fuel Standard (15.0 MMT CO₂e),
- energy efficiency measures in buildings and appliances and the widespread development of combined heat and power systems (26.3 MMT CO₂e), and
- a renewable portfolio standard for electricity production (21.3 MMT CO₂e).

The Cal-EPA 2012 Greenhouse Gas Reduction Report Card (January, 2012) reported that in 2010, the date for which the most current data are available, California had achieved a reduction of 8.1 MMT CO₂e

4.5 CLIMATE CHANGE AND GREENHOUSE GASES

from implementation of various measures carried out by State agencies and that a reduction of 157.8 MMT CO₂e is expected by 2020.

Senate Bill 97

Senate Bill 97, enacted in 2007, amends the CEQA statute to clearly establish that GHG emissions and the effects of GHG emissions are appropriate subjects for CEQA analysis. It directs OPR to develop draft CEQA guidelines "for the mitigation of greenhouse gas emissions or the effects of greenhouse gas emissions" by July 1, 2009, and directs the Resources Agency to certify and adopt the CEQA Guidelines by January 1, 2010.

On December 30, 2009, the Natural Resources Agency adopted amendments to the CEQA Guidelines in the California Code of Regulations. The amendments went into effect on March 18, 2010, and are summarized below:

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

Senate Bill 375

Senate Bill 375 requires that regions within the State, which have a metropolitan planning organization, must adopt a sustainable communities strategy as part of their regional transportation plans. The strategy must be designed to achieve certain goals for the reduction of GHG emissions. The bill finds that GHG from autos and light trucks can be substantially reduced by new vehicle technology, but even so, "it will be necessary to achieve significant additional greenhouse gas reductions from changed land use patterns and improved transportation. Without improved land use and transportation policy, California will not be able to achieve the goals of AB 32." SB 375 provides that new CEQA provisions be enacted to encourage developers to submit applications and local governments to make land use

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decisions that will help the State achieve its goals under AB 32," and that "current planning models and analytical techniques used for making transportation infrastructure decisions and for air quality planning should be able to assess the effects of policy choices, such as residential development patterns, expanded transit serve and accessibility, the walkability of communities, and the use of economic incentives and disincentives."

Senate Bill 1078, Senate Bill 107, and Executive Order S-14-08

SB 1078 initially set a target of 20 percent of energy to be sold from renewable sources by the year 2017. The schedule for implementation of the RPS was accelerated in 2006 with the Governor's signing of SB 107, which accelerated the 20 percent RPS goal from 2017 to 2010. On November 17, 2008, the Governor signed Executive Order S-14-08, which requires all retail sellers of electricity to serve 33 percent of their load with renewable energy by 2020.

Executive Order S-21-09

Executive Order S-21-09 was enacted by the Governor on September 15, 2009. Executive Order S-21-09 requires that the CARB, under its AB 32 authority, adopt a regulation by July 31, 2010 that sets a 33 percent renewable energy target as established in Executive Order S-14-08. Under Executive Order S-21-09, the CARB will work with the Public Utilities Commission and California Energy Commission to encourage the creation and use of renewable energy sources, and will regulate all California utilities. The CARB will also consult with the Independent System Operator and other load balancing authorities on the impacts on reliability, renewable integration requirements, and interactions with wholesale power markets in carrying out the provisions of the Executive Order. The order requires the CARB to establish highest priority for those resources that provide the greatest environmental benefits with the least environmental costs and impacts on public health.

California Renewables Portfolio Standard (RPS)

Established in 2002 under Senate Bill 1078 and modified in 2006 under Senate Bill 107 and in 2011 under Senate Bill 2, California's Renewables Portfolio Standard (RPS) is one of the most ambitious renewable energy standards in the country. The RPS program requires investor-owned utilities, electric service providers, and community choice aggregators to increase procurement from eligible renewable energy resources to 33 percent of total procurement by 2020. Solar generated electricity is considered an eligible renewable energy source for the RPS program. A Proposed Decision will be issued in the first quarter of 2012 implementing the new compliance rules and resolving initial transition issues between compliance rules for the 20 percent RPS program and new 33 percent RPS program compliance rules set by SB 2.

Senate Bill 1368

Senate Bill 1368 limits long-term investments in baseload generation by the State's utilities to power plants that meet an emissions performance standard (EPS) jointly established by the California Energy Commission and the California Public Utilities Commission.

C. LOCAL

Pursuant to the requirements of SB 97, the Resources Agency adopted amendments to the State CEQA Guidelines to provide regulatory guidance on the analysis and mitigation of GHG emissions in CEQA documents, while giving lead agencies the discretion to set quantitative or qualitative thresholds for the assessment and mitigation of GHG and GCC impacts. Imperial County has not established formal quantitative or qualitative thresholds through a public rulemaking process, but CEQA permits the lead

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agency to establish a project-specific threshold of significance if backed by substantial evidence, until such time as a formal threshold is approved.

Imperial County Air Pollution Control District (ICAPCD)

The ICAPCD has not adopted GHG thresholds for development projects. However, ICAPCD has adopted Rule 904, Prevention of Significant Deterioration (PSD) Program, to regulate GHG emissions for new and modified major stationary sources. Affected sources will be subject to the Best Available Control Technology (BACT), which considers technical feasibility, cost and other energy, environmental and economic impacts. Rule 904 applies to projects that would result in 75,000 or more tons per year of CO₂e.

4.5.2 ENVIRONMENTAL SETTING

A. GLOBAL CLIMATE CHANGE

Global climate change (GCC) is a change in the average weather of the earth that is measured by temperature, wind patterns, precipitation, and storms over a long period of time. The baseline, against which these changes are measured, originates in historical records identifying temperature changes that have occurred in the past, such as during previous ice ages. The global climate is continuously changing, as evidenced by repeated episodes of substantial warming and cooling documented in the geologic record. The rate of change has typically been incremental, with warming or cooling trends occurring over the course of thousands of years. The past 10,000 years have been marked by a period of incremental warming, as glaciers have steadily retreated across the globe. However, scientists have observed an unprecedented acceleration in the rate of warming during the past 150 years. GCC is a documented effect. Although the degree to which the change is caused by anthropogenic (man-made) sources is still under study, the increase in warming has coincided with the global industrial revolution, which has seen the widespread reduction of forests to accommodate urban centers, agriculture, and the use of fossil fuels – primarily the burning of coal, oil, and natural gas for energy. The majority of scientists agree that anthropogenic sources are a main, if not primary, contributor to the GCC warming.

The effects of increasing global temperature are far-reaching and extremely difficult to quantify. The scientific community continues to study the effects of global climate change. In general, increases in the ambient global temperature as a result of increased GHGs is anticipated to result in rising sea levels, which could threaten coastal areas through accelerated coastal erosion, threats to levees and inland water systems and disruption to coastal wetlands and habitat.

If the temperature of the ocean warms, it is anticipated that the winter snow season would be shortened. Snowpack in the Sierra Nevada provides both water supply (runoff) and storage (within the snowpack before melting), which is a major source of supply for the state. According to a California Energy Commission report, the snowpack portion of the supply could potentially decline by 70 percent to 90 percent by the end of the 21st century (CEC, 2006). This phenomenon could lead to significant challenges securing an adequate water supply for a growing state population. Further, the increased ocean temperature could result in increased moisture flux into the state; however, since this would likely increasingly come in the form of rain rather than snow in the high elevations, increased precipitation could lead to increased potential and severity of flood events, placing more pressure on California's levee/flood control system.

Sea level has risen approximately seven inches during the last century and, according to the CEC report, it is predicted to rise an additional 22 to 35 inches by 2100, depending on the future GHG emissions

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levels (CEC, 2006). If this occurs, resultant effects could include increased coastal flooding, saltwater intrusion and disruption of wetlands (CEC, 2006). As the existing climate throughout California changes over time, mass migration of species, or failure of species to migrate in time to adapt to the perturbations in climate, could also result. Under the emissions scenarios of the Climate Scenarios report (California Climate Change Center, 2006), the impacts of global warming in California are anticipated to include, but are not limited to, the following.

Public Health

Higher temperatures are expected to increase the frequency, duration, and intensity of conditions conducive to air pollution formation. For example, days with weather conducive to ozone formation are projected to increase from 25 percent to 35 percent under the lower warming range, to 75 percent to 85 percent under the medium warming range. In addition, if global background ozone levels increase as predicted in some scenarios, it may become impossible to meet local air quality standards. Air quality could be further compromised by increases in wildfires, which emit fine particulate matter that can travel long distances depending on wind conditions. The Climate Scenarios report indicates that large wildfires could become up to 55 percent more frequent if GHG emissions are not significantly reduced.

In addition, under the higher warming scenario, there could be up to 100 more days per year with temperatures above 90°F in Los Angeles and 95°F in Sacramento by 2100. This is a large increase over historical patterns and approximately twice the increase projected if temperatures remain within or below the lower warming range. Rising temperatures will increase the risk of death from dehydration, heat stroke/exhaustion, heart attack, stroke, and respiratory distress caused by extreme heat.

Water Resources

A vast network of man-made reservoirs and aqueducts capture and transport water throughout the state from northern California and the Colorado River. The current distribution system relies on Sierra Nevada snow pack to supply water during the dry spring and summer months. Rising temperatures, potentially compounded by decreases in precipitation, could severely reduce spring snow pack, increasing the risk of summer water shortages.

The state's water supplies are also at risk from rising sea levels. An influx of saltwater would degrade California's estuaries, wetlands, and groundwater aquifers. Saltwater intrusion caused by rising sea levels is a major threat to the quality and reliability of water within the southern edge of the Sacramento/San Joaquin River Delta, a major state fresh water supply. Global warming is also projected to seriously affect agricultural areas, with California farmers projected to lose as much as 25 percent of the water supply they need; decrease the potential for hydropower production within the state (although the effects on hydropower are uncertain); and seriously harm winter tourism. Under the lower warming range, the snow dependent winter recreational season at lower elevations could be reduced by as much as one month. If temperatures reach the higher warming range and precipitation declines, there might be many years with insufficient snow for skiing and snowboarding and other snow dependent recreational activities.

If GHG emissions continue unabated, more precipitation will fall as rain instead of snow, and the snow that does fall will melt earlier, reducing the Sierra Nevada spring snow pack by as much as 70 percent to 90 percent. Under the lower warming scenario, snow pack losses are expected to be only half as large as those expected if temperatures were to rise to the higher warming range. How much snow pack will be lost depends in part on future precipitation patterns, the projections for which remain uncertain. However, even under the wetter climate projections, the loss of snow pack would pose challenges to

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water managers, hamper hydropower generation, and nearly eliminate all skiing and other snow-related recreational activities.

Summary and overview of the impacts of global climate change on various sectors of California's economy and natural resources is provided below.

Agriculture

Increased GHG emissions are expected to cause widespread changes to the agriculture industry reducing the quantity and quality of agricultural products statewide. Although higher carbon dioxide levels can stimulate plant production and increase plant water-use efficiency, California's farmers will face greater water demand for crops and a less reliable water supply as temperatures rise.

Plant growth tends to be slow at low temperatures, increasing with rising temperatures up to a threshold. However, faster growth can result in less-than optimal development for many crops, so rising temperatures are likely to worsen the quantity and quality of yield for a number of California's agricultural products. Products likely to be most affected include wine grapes, fruits and nuts, and milk.

Crop growth and development will be affected, as will the intensity and frequency of pest and disease outbreaks. Rising temperatures will likely aggravate ozone pollution, which makes plants more susceptible to disease and pests and interferes with plant growth.

In addition, continued global warming will likely shift the ranges of existing invasive plants and weeds and alter competition patterns with native plants. Range expansion is expected in many species while range contractions are less likely in rapidly evolving species with significant populations already established. Should range contractions occur, it is likely that new or different weed species will fill the emerging gaps. Continued global warming is also likely to alter the abundance and types of many pests, lengthen pests' breeding season, and increase pathogen growth rates.

Forests and Landscapes

Global warming is expected to alter the distribution and character of natural vegetation thereby resulting in a possible increased risk of large wildfires. If temperatures rise into the medium warming range, the risk of large wildfires in California could increase by as much as 55 percent, which is almost twice the increase expected if temperatures stay in the lower warming range. However, since wildfire risk is determined by a combination of factors, including precipitation, winds, temperature, and landscape and vegetation conditions, future risks will not be uniform throughout the state. For example, if precipitation increases as temperatures rise, wildfires in southern California are expected to increase by approximately 30 percent toward the end of the century. In contrast, precipitation decreases could increase wildfires in northern California by up to 90 percent.

Moreover, continued global warming will alter natural ecosystems and biological diversity within the state. For example, alpine and sub-alpine ecosystems are expected to decline by as much as 60 percent to 80 percent by the end of the century as a result of increasing temperatures. The productivity of the state's forests is also expected to decrease as a result of global warming.

Rising Sea Levels

Rising sea levels, more intense coastal storms, and warmer water temperatures will increasingly threaten the state's coastal regions. Under the higher warming scenario, sea level is anticipated to rise 22 to 35 inches by 2100. Elevations of this magnitude would inundate coastal areas with saltwater,

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accelerate coastal erosion, threaten vital levees and inland water systems, and disrupt wetlands and natural habitats.

B. SOURCES AND GLOBAL WARMING POTENTIALS OF GREENHOUSE GASES

The State of California GHG Inventories performed by the California Air Resources Board (CARB), compiled statewide anthropogenic GHG emissions and sinks and includes estimates for CO₂, CH₄, N₂O, SF₆, HFCs, and PFCs. The first inventory covers the years 1990 to 2004 and the second inventory covers the years 2000 to 2008. Based on data from the inventories, a summary of emissions from economic sectors is summarized in **Table 4.5-1**. Each inventory is divided into seven broad sectors and categories including: agriculture; commercial; electricity generation; forestry; industrial; residential; and transportation. When accounting for GHGs, all types of GHG emissions are expressed in terms of CO₂e and are typically quantified in metric tons (MT) or millions of metric tons (MMT). Data sources used to calculate this GHG inventory include California and federal agencies, international organizations, and industry associations. The current inventory (2000 – 2008) uses global warming potential (GWP) values from the IPCC Second Assessment Report. To date, no GHG inventory has been prepared for Imperial County.

**TABLE 4.5-1
CALIFORNIA GREENHOUSE GAS INVENTORY FOR 1990 AND 2008 – SUMMARY BY ECONOMIC SECTOR**

Sector	1990		2008	
	MMT CO ₂ e	Percent	MMT CO ₂ e	Percent
Electricity Generation	110.63	25.5%	117.32	24.8%
Transportation	150.67	34.8%	174.99	36.9%
Industrial	103.03	23.8%	100.03	21.1%
Commercial	14.43	3.3%	14.69	3.1%
Residential	29.66	6.8%	28.45	6.0%
Agriculture & Forestry	16.93	3.9%	28.25	6.0%
Not Specified	1.27	0.3%	14.02	3.0%
Forest/Rangeland Sinks	6.69	1.5%	-3.98	-0.8%

Source: CARB, 2007; CARB, 2010a.

When accounting for GHGs, all types of GHG emissions are expressed in terms of CO₂e and are typically quantified in metric tons (MT) or millions of metric tons (MMT). GHGs have varying GWPs. The GWP is the potential of a gas or aerosol to trap heat in the atmosphere; it is the cumulative radiative forcing effect of a gas over a specified time horizon resulting from the emission of a unit mass of gas relative to a reference gas. The reference gas for GWP is CO₂; therefore, CO₂ has a GWP of 1. The other main greenhouse gases that have been attributed to human activity include CH₄, which has a GWP of 21, and N₂O, which has a GWP of 310.

Human-caused sources of CO₂ include combustion of fossil fuels (coal, oil, natural gas, gasoline and wood). Data from ice cores indicate that CO₂ concentrations remained steady prior to the current period for approximately 10,000 years. Concentrations of CO₂ have increased in the atmosphere since the industrial revolution.

CH₄ is the main component of natural gas and also arises naturally from anaerobic decay of organic matter. Human-caused sources of natural gas include landfills, fermentation of manure and cattle farming. Human-caused sources of N₂O include combustion of fossil fuels and industrial processes such

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as nylon production and production of nitric acid. Other GHGs are present in trace amounts in the atmosphere and are generated from various industrial or other uses.

Greenhouse Gases and Electricity Generation

The generation of electricity can produce GHG with the criteria air pollutants that have been traditionally regulated under the Federal and State CAAs. For fossil fuel-fired power plants, the GHG emissions include primarily CO₂, with much smaller amounts of N₂O and CH₄ (often from incomplete combustion of natural gas). For PV solar energy generation projects, the stationary source GHG emissions are much smaller than fossil fuel-fired power plants because PV facilities do not burn carbon-based fuels and therefore do not emit greenhouse gases. However, the associated maintenance vehicle emissions are the same. Other sources of GHG emissions include SF₆ from high voltage equipment and HFCs and PFCs from refrigeration/chiller equipment. GHG emissions from the electricity sector are dominated by CO₂ emissions from carbon-based fuels.

Status of RPS Procurement and New Renewable Capacity

The Renewables Portfolio Standard Quarterly Report issued by the CPUC in third quarter 2011 (CPUC, 2011) identified the following related to the status of RPS procurement and renewable capacity:

- Collectively, the large investor-owned utilities (IOUs) reported in their August 2011 RPS Compliance Filings that they served 17.0 percent of their electricity with RPS-eligible generation in 2010. Pacific Gas & Electric served 15.9 percent of its 2010 load with RPS-eligible renewable energy, Southern California Edison with 19.3 percent, and San Diego Gas & Electric with 11.9 percent.
- By the third quarter of 2011, 2,541 MW of new renewable capacity achieved commercial operation under the RPS program. Over 996 MW of new renewable capacity was forecasted to come online by the end of the 2011.
- All of the new generation that has come online in 2011 has been wind and solar photovoltaic (PV) projects.

C. SOLAR GENERATION FACILITY

The discussion provided below summarizes the primary project components and provides an overview of GHGs currently generated on the project site and the carbon sequestration potential of the project site.

The proposed project consists of two primary components located in unincorporated western Imperial County north of the Imperial Valley Substation: 1) a solar energy generation facility and associated improvements on privately owned land; and 2) the Gen-tie Line that will connect the solar energy generation facility with the Imperial Valley Substation. Project construction would occur over 12 to 24 months. Following construction, the project would operate 365 days per year and generate power during daylight hours. The project would generate over 140 megawatts of alternating current daily. The proposed project is described in detail in Chapter 2, Project Description.

All of the parcels that comprise the solar energy generation site are agricultural lands. Of the project site's 1,990 acres, approximately 1,852 acres of agricultural land would be converted to accommodate the proposed project. Of the 1,852 acres, approximately 1,822 acres (predominantly alfalfa hay) are important farmlands. The portion of the proposed gen-tie on BLM land is located entirely within an area designated by the BLM for utilities and infrastructure corridors.

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Much of the project site would be located on lands that are in active agricultural production. There are limited “point source” quantities of GHGs currently being produced on the project site in the form of emissions associated with agricultural equipment use (trucks, tractors, etc.). These are not considered major GHG sources, and as such, the existing use of the land is not a major or significant generator of GHGs. The existing agricultural operations on the site produce primarily alfalfa and Bermuda grass, which have little to no value for biomass carbon sequestration. Additionally, these crops are harvested periodically, which further reduces their value as carbon sequestration elements. As such, the existing land has little to no value for carbon sequestration, and do not provide positive impacts related to GHG reductions.

4.5.3 IMPACTS AND MITIGATION MEASURES

A. STANDARDS OF SIGNIFICANCE

The impact analysis provided below is based on the following State CEQA Guidelines, as listed in Appendix G. The project would result in a significant impact to climate change and greenhouse gases if it would result in any of the following:

- a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment. For this project, a threshold of 10,000 metric tons of CO₂-equivalent GHG emissions on an annual basis has been established.
- b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gasses.

To determine if a project would generate GHG emissions that would directly or indirectly have a significant impact on the environment and would warrant the imposition of GHG-reducing mitigation measure, the South Coast Air Quality Management District (SCAQMD) proposed a threshold of 10,000 metric tons of CO₂e for industrial projects (SCAQMD, 2008). Pursuant to CEQA Guidelines Section 15064.4(b) and 15064.7, Imperial County has determined that 10,000 metric tons of CO₂e annually is the appropriate threshold of significance to apply to the proposed project, based on the recommendation from the SCAQMD.

B. METHODOLOGY

Greenhouse Gas Emissions

The *Air Quality Assessment* prepared by Ldn Consulting (Ldn, 2012a) for the proposed project identified CO₂ emissions that would occur during the construction and operation/maintenance phases of the proposed project. The *Air Quality Assessment* is provided on the attached CD of Technical Appendices as **Appendix C** of this EIR.

Project Construction

Air quality impacts related to construction were calculated using the latest URBEMIS2007 air quality model, which was developed by CARB. URBEMIS2007 has been approved by Imperial County Air Pollution Control District and the County for construction emission calculations. URBEMIS incorporates emission factors from the EMFAC2007 model for on-road vehicle emissions and the OFFROAD2007 model for off-road vehicle emissions. Default settings were used within the model.

Project construction activities are expected to require approximately 12 to 24 months. The applicant anticipates construction to start in the second quarter of 2012 following County approval of a

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Conditional Use Permit (CUP). According to the applicant, the construction workforce is expected to reach a peak during the seventh month, which is anticipated to occur during the first quarter of 2013. Ldn Consulting used the project engineer's worst case schedule which assumes that simultaneous construction activities may occur with PV array and facility installations along transmission line installation. This peak construction activity would occur during month seven of the project construction schedule and is expected to generate 375 average daily trips from construction workers, deliveries, and vendors.

Project Operation and Maintenance

Daily operations of the project will involve primarily periodic maintenance and worker trips only and although emissions are expected, they would be minimal given the project only expects to add 15 to 20 ADT (average daily trips) and on occasion (up to four times annually) the project could add up to 50 ADT during periodic PV module cleaning periods. With this being said, for purposes of a worst case analysis, Ldn Consulting modeled the daily trips with respect to construction (375 ADT) and reported it as operations.

C. PROJECT/CUMULATIVE IMPACTS AND MITIGATION MEASURES

Due to the global nature of climate change and GHG emissions and their potential effects, GHG emissions generated by an individual project are evaluated on a cumulative basis.

Generation of Greenhouse Gas Emissions

Impact 4.5.1 The proposed project would generate greenhouse gas emissions. This impact is considered **less than significant**.

During construction, the project would result in daily activities, including worker trips, grading, demolition, construction, and paving, that would generate up to 18,791.23 pounds or 8.5 metric tons (18,791.23 pounds ÷ 2,204.62 pounds per metric ton) of CO₂ per day during peak construction periods. Less intense phases of construction would result in lesser emissions. Because construction activity impacts are relatively short-term, they contribute a relatively small portion of the overall GHG emissions during the lifetime of the project. Thus, the construction-related emissions are amortized over the maximum projected CUP term of 40 years (20 to 30 years with potential for an additional 10 years) resulting in 155.1 metric tons per year (8.5 metric tons per day x 365 days per year x 2 years of construction ÷ 40 years [40 year maximum CUP term]) or 0.4 metric tons per day (147.7 metric tons per year ÷ 365 days).

Once operational, there would be no direct emissions associated with the operation of the solar modules and the gen-tie line. However, the project would result in small amount of emissions associated with daily worker trips and periodic maintenance activities, which would result in the generation of up to 2,779.37 pounds or 1.4 metric tons (2,779.37 pounds ÷ 2,204.62 pounds per metric ton) of CO₂ per day. CO₂ is the most common and prolific type of greenhouse gas. It is anticipated that the daily emissions would be much lower as periodic maintenance activities, such as cleaning the solar arrays, and would not be conducted on a daily basis.

Emissions associated with operation and maintenance and the amortized construction emissions would result in 1.8 metric tons of CO₂ per day (1.4 metric tons + 0.4 metric tons) over the life of the project. Assuming the project operated 365 days per year, the proposed project would generate up to 657 metric tons per year of CO₂ (1.8 metric tons per day x 365 days per year). However, this is likely an overly conservative (worst-case) estimate, and actual GHG emissions on an annual basis would likely be

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considerably lower due to the fact that the majority of the project's GHG emissions come from vehicle trips associated with maintenance activities, and maintenance of the project site during operations would not occur on a daily basis.

As further described in the project description, the emissions associated with the project would be due to limited vehicle trips and periodic maintenance of the project. The solar energy conversion process would not generate GHGs. The use of project site would not result in the loss of any carbon sequestration benefits associated with the agricultural use of the project site as the project site is regularly harvested, thus releasing carbon sequestered by the crops on a regular basis. Moreover, the project will avoid CO₂ emissions that would otherwise be generated by fossil-fuel fired power plants to produce the electricity.

Even under the worst-case GHG emissions scenario described above, the proposed project may generate up to 657 metric tons per year of CO₂. This is significantly below the established threshold of 10,000 metric tons per year. Therefore, this is a less than significant impact and the project would not have a considerable contribution to cumulative GHG impacts.

Mitigation Measures

None required.

Significance After Mitigation

Not applicable.

Conflict with an Applicable Plan, Policy, or Regulation Adopted to Reduce Greenhouse Gas Emissions

Impact 4.5.2 The project would not conflict with an applicable plan, policy, or regulation adopted to reduce greenhouse gas emissions. There is **no impact**.

There are multiple state-level programs and plans in place that aim to reduce GHG levels in California. IPACD has also adopted rules to regulate GHG emissions for existing and new stationary sources. State and local GHG-related programs that are applicable to the project include:

California Executive Orders S-3-05 and Assembly Bill 32

On June 1, 2005, Governor Arnold Schwarzenegger signed Executive Order S-3-05. The goal of this Executive Order is to reduce California's GHG emissions to: 1) 2000 levels by 2010, 2) 1990 levels by 2020, and 3) 80 percent below the 1990 levels by 2050.

In 2006, this goal was further reinforced with the passage of Assembly Bill 32 (AB 32), the Global Warming Solutions Act of 2006. AB 32 sets the same overall GHG emissions reduction goals while further mandating that CARB create a plan, which includes market mechanisms, and implement rules to achieve "real, quantifiable, cost-effective reductions of greenhouse gases." Executive Order S-20-06 further directs state agencies to begin implementing AB 32, including the recommendations made by the state's Climate Action Team (CAT). Each CAT working group will develop a Near-term Implementation Plan (CATNIPs) for the specific climate change mitigation measures and adaptation strategies being addressed by the working group. These will be the measures and strategies that will be underway or completed by the end of 2010. The Energy Working Group of the Climate Action Team focuses its efforts on both greenhouse gas emission reduction and adaptation actions affecting the energy sector. The CAT prepares an annual report to the Governor consistent with the requirements of Executive Order S-3-05.

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The proposed project would assist in the reduction of California's GHG emissions consistent with the goals of Executive Order S-3-05 and Assembly Bill 32. As discussed above, the project will avoid CO₂ emissions that would otherwise be generated by fossil-fuel fired power plants to produce the electricity.

Assembly Bill 32- Climate Change Scoping Plan

On December 11, 2008 CARB adopted its *Climate Change Scoping Plan* (Scoping Plan), which functions as a roadmap of CARB's plans to achieve GHG reductions in California required by AB 32 through subsequently enacted regulations. The Scoping Plan contains the main strategies California will implement to reduce CO_{2e} emissions by 169 million metric tons (MMT), or approximately 30 percent, from the state's projected 2020 emissions level of 596 MMT of CO_{2e} under a business-as-usual scenario. (This is a reduction of 42 MMT CO_{2e}, or almost 10 percent, from 2002–2004 average emissions, but requires the reductions in the face of population and economic growth through 2020.) The Scoping Plan also breaks down the amount of GHG emissions reductions CARB recommends for each emissions sector of the state's GHG inventory. The Scoping Plan calls for the largest reductions in GHG emissions to be achieved by implementing the following measures and standards:

- improved emissions standards for light-duty vehicles (estimated reductions of 31.7 MMT CO_{2e}),
- the Low-Carbon Fuel Standard (15.0 MMT CO_{2e}),
- energy efficiency measures in buildings and appliances and the widespread development of combined heat and power systems (26.3 MMT CO_{2e}), and
- a renewable portfolio standard for electricity production (21.3 MMT CO_{2e}).

The Cal-EPA 2012 Greenhouse Gas Reduction Report Card (January, 2012) reported that in 2010, the date for which the most current data are available, California had achieved a reduction of 8.1 MMT CO_{2e} from implementation of various measures carried out by State agencies and that a reduction of 157.8 MMT CO_{2e} is expected by 2020. The proposed project would result in a net reduction in GHGs and assist the state-wide effort in meeting the renewable portfolio standard for energy production.

Emissions Performance Standard

SB 1368 requires the California Energy Commission (CEC) and the California Public Utilities Commission (CPUC) to set a global warming emissions standard for electricity used in California — regardless of whether it's generated in-state or purchased from plants in other states. The new standard applies to any new long-term financial contracts for base load electricity, and applies both to investor-owned utilities and municipal utilities. The standard for baseload generation owned by, or under long-term contract to publicly owned utilities, is an EPS of 1,100 lbs. CO₂ per MWh. While the solar facility would not result in any direct emissions of greenhouse gases, indirect emissions associated with construction activities amortized over the life of the project as well as vehicle trips and periodic maintenance activities could result in up to 3,968.3 pounds of CO₂ per day (1.8 metric tons of CO₂ per day x 2,204.62 pounds per metric ton) during peak maintenance periods, which would equate to approximately 267.6 pounds of CO₂ per MWh (3,968.3 pounds of CO₂ ÷ 10 hours of daylight per day [estimated average]) . These project-related emissions are below the threshold of 1,100 pounds of CO₂ per MWh, resulting in the project's compliance with the EPS.

California Renewables Portfolio Standard (RPS)

Established in 2002 under Senate Bill 1078, accelerated in 2006 under Senate Bill 107, and expanded under Senate Bill 2, California's Renewables Portfolio Standard (RPS) is one of the most ambitious

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renewable energy standards in the country. Senate Bill 1078 established the RPS program, requiring electric corporations to increase procurement from eligible renewable energy resources by at least 1 percent of their retail sales annually, until they reach 20 percent by 2010. Executive Order S-14-08 set a new target of 33 percent renewable energy by 2020 and Executive Order S-21-09 directed CARB to adopt regulations increasing the RPS to 33 percent by 2020. In 2011, Senate Bill 2 codified the 33 percent renewable energy by 2020 requirement into law. The proposed project provides a new source of renewable energy and will assist the State in meeting the 33 percent renewable energy requirement by 2030.

Imperial County Air Pollution Control District

While ICAPCD has not adopted GHG thresholds for development projects, the ICAPCD has adopted Rule 904, Prevention of Significant Deterioration (PSD) Program, to regulate GHG emissions for new and modified major stationary sources. The proposed project would not emit 75,000 or more tons per year of CO₂e and thus this rule does not apply to the project.

As described above, the proposed project is consistent with applicable local and State plans, policies, and regulations adopted to reduce GHG levels. There is no impact.

Mitigation Measures

None required.

Significance After Mitigation

Not applicable.

SECTION 4.6

GEOLOGY AND SOILS

This section describes federal, state and local regulations applicable to geology and soils. It also describes the environmental setting of the project site with regard to the soils, seismicity and geologic conditions on and in the vicinity of the project site. A discussion of geology and soil impacts is also provided and mitigation measures are identified to address impacts. The analysis in this section is based on the *Soil Survey of Imperial County, California, Imperial Valley Area* (USDA, 1981) and the *Preliminary Geotechnical Investigation: Proposed Mount Signal Solar Farm and Associated Structures West of Drew Road and South of Interstate 8 Imperial County, California* prepared by EGA Consultants (EGA, 2011). This document is **Appendix D** of the Technical Appendices of this EIR on the attached CD.

4.6.1 REGULATORY FRAMEWORK

A. STATE

Alquist-Priolo Earthquake Fault Zoning Act

The Alquist-Priolo Earthquake Zoning Act (Chapter 7.5, Division 2, Public Resources Code, State of California, effective May 4, 1975) provides a statewide mechanism for reducing losses from surface fault rupture. The Act promotes public safety by prohibiting siting of most structures for human occupancy across traces of active faults that constitute a hazard to structures from surface faulting or fault creep. In accordance with the Act, the Office of State Geologist delineated Special Study Zones that encompass potentially and recently active traces of four major faults: San Andreas, Calaveras, Hayward and San Jacinto. The County of Imperial is responsible for enforcing the Act by ensuring that homes, offices, hospitals, public buildings, and other structures for human occupancy that are built on or near active faults or within a special study zone, are designed and constructed in compliance with the County of Imperial Codified Ordinance (Imperial County, Seismic and Public Safety Element).

While the project site is approximately 15 kilometers (or approximately 9 miles) southwest of the San Jacinto Fault, it is not located in an Alquist-Priolo Earthquake fault zone (EGA, 2011, p. 6).

California Building Code

The California Building Code (CBC) was approved and incorporated into the Uniform Building Code in 1998. In 2007, California adopted statewide, mandatory codes based on the International Code Council's (ICC) Uniform codes. Among other elements, Chapter 16 of this code dictates the design and construction standards applicable to resist seismic shaking on structures. The CBC (2007) includes standards used in project investigation, design, and construction (including grading and erosion control). The project would be subject to the CBC.

Surface Mining and Reclamation Act

The Surface Mining and Reclamation Act of 1975 acknowledges that mineral extraction is essential to California's economy and that the reclamation of mined lands after extraction is necessary to prevent or minimize adverse effects on the environment and to protect the public health and safety. The 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 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 (MRZ) for aggregate resources (sand, gravel, and stone). Mining does occur throughout the County of Imperial as shown on the Active Surface Mining Operations Map (County of Imperial, 2003). However, the project site is not located in an area with any MRZ zones.

4.6 GEOLOGY AND SOILS

B. LOCAL

County Land Use Ordinance

Title 9 Division 15 (Geological Hazards) of the County Land Use Ordinance has established procedures and standards for development within earthquake fault zones. Per County regulations, construction of buildings intended for human occupancy which are located across the trace of an active fault are prohibited. An exception exists when such buildings located near the fault or within a designated Special Studies Zone are demonstrated through a geotechnical analysis and report not to expose a person to undue hazard created by the construction. The proposed project does not include any residential structures nor are any active faults located across the site.

Imperial County General Plan

The Seismic and Public Safety Element of the Imperial County General Plan contains goals and policies to minimize the risks associated with natural and human-made hazards including seismic/geological hazards, flood hazards, and Imperial Irrigation District Lifelines.

Table 4.6-1 analyzes the consistency of the project with the applicable policies relating to seismic hazards and soil conditions in the Imperial County General Plan. While this EIR analyzes the project's consistency with the General Plan pursuant to CEQA Guidelines Section 151250, the Imperial County Board of Supervisors ultimately determines consistency with the General Plan.

**TABLE 4.6-1
IMPERIAL COUNTY GENERAL PLAN CONSISTENCY ANALYSIS**

General Plan Policies	Consistent with General Plan?	Analysis
Seismic and Public Safety Element		
Land Use Planning and Public Safety		
Goal 1: Include public health and safety considerations in land use planning.	Yes	The proposed project is located in a rural portion of Imperial County. Public health and safety would not be affected in association with development of a solar generation facility in this area based on its remote location away from population centers. Therefore, the proposed project is consistent with this goal.
Objective 1.4 Require, where possessing the authority, that avoidable seismic risks be avoided; and that measures, commensurate with risks, be taken to reduce injury, loss of life, destruction of property, and disruption of service.	Yes	The proposed project is sited in an area subject to seismic shaking. However, no evidence of active faulting was found during a site investigation (EGA, 2011). Several faults are located within 10 miles of the project site. The proposed project could experience strong ground shaking during an earthquake. However, the project would be designed in accordance with

**TABLE 4.6-1
IMPERIAL COUNTY GENERAL PLAN CONSISTENCY ANALYSIS**

General Plan Policies	Consistent with General Plan?	Analysis
		all applicable federal, State and local building codes. No habitable structures are proposed. Damage to proposed structures can be mitigated through engineering and compliance with building standards (refer to mitigation measure 4.6.1). Therefore, the proposed project is consistent with this objective.
<p>Objective 1.7 Require developers to provide information related to geologic and seismic hazards when siting a proposed project.</p>	Yes	A Preliminary Geotechnical Investigation has been prepared by EGA Consultants for the proposed project. The Investigation was used in the analysis of geology and soils. The Investigation included recommendations to address potential geologic or seismic hazards that may be associated with the project site. These recommendations have been included in this EIR as mitigation measure 4.6.1. Therefore, the proposed project is consistent with this objective.
Emergency Preparedness		
<p>Objective 2.8 Prevent and reduce death, injuries, property damage, and economic and social dislocation resulting from natural hazards including flooding, land subsidence, earthquakes, other geologic phenomena, levee or dam failure, urban and wildland fires and building collapse by appropriate planning and emergency measures.</p>	Yes	The project site is located in a seismically active area. The Preliminary Geotechnical Investigation prepared for the project includes recommendations that all structures be designed in accordance with the California Building Code (CBC). Recommendations of the Investigation have been included as mitigation measure MM 4.6.1 to reduce risks associated with seismic hazards. Therefore, the proposed project is consistent with this objective.
Seismic/Geologic Hazards		
<p>Policy 4 Ensure that no structure for human occupancy, other than one-story wood frame structures, shall be</p>	Yes	The proposed project does not include any habitable structures and is not located within fifty feet of an active

4.6 GEOLOGY AND SOILS

**TABLE 4.6-1
IMPERIAL COUNTY GENERAL PLAN CONSISTENCY ANALYSIS**

General Plan Policies	Consistent with General Plan?	Analysis
permitted within fifty feet of an active fault trace as designated under the Alquist-Priolo Geologic Hazards Zone Act.		fault. Therefore, the proposed project is consistent with this policy.

4.6.2 ENVIRONMENTAL SETTING

A. SOLAR GENERATION FACILITY

Geology

According to a United States Geological Survey (USGS) Map of the Mt. Signal Quadrangle, the site is approximately 35 feet below mean sea level (-35 ft. msl) (EGA, 2011, p. 5). The site is located within the Salton Trough, a topographic and structural depression bound to the north by the Coachella Valley and to the south by the Gulf of California. The Salton Trough is a region of transition from the East Pacific Rise to the San Andreas system. The Salton Trough is an actively growing rift valley. As rifting continued, the Colorado River delta filled the trough and conditions gradually changed from marine, to deltaic to subaerial river and lake deposits.

The site is located in an area that was covered by lakes during the Quaternary time (i.e. a measure of geologic time). The Imperial Valley is directly underlain by lacustrine (lake) deposits, which consist of silt, sand, and clay. The Late Pleistocene to Holocene lake deposits are generally between 15 to 50 feet thick and were created by periodic flooding of the Colorado River which formed an ancient freshwater lake (Lake Cahuilla). Records indicated approximately 300 years ago the shorelines of Lake Cahuilla raised as high as 40 feet above msl. Older deposits in the region consist of non-marine and marine sediments deposited during intrusions of the Gulf of California and are located to the west of the site. Basement rock consisting of Mesozoic granite and Paleozoic metamorphic rocks are estimated to exist at depths between 15,000-20,000 feet near the center of the basin (EGA, 2011, p. 5).

Deposits to the west of the project site consist of the Pliocene Palm Spring and Imperial Formations. The Palm Spring Formation consists of non-marine sandstones and claystones. The Imperial Formation consists of fossil containing marine sediments.

Seismicity

Based on a review by EGA Consultants of the "Seismic Zone Map" published by the California Department of Mines and Geology in conjunction with Special Publication 117, there are no earthquake landslide zones on or adjacent to the site (EGA, 2011, p. 6). **Figure 4.6-1** shows the location of the site in relation to regional faults and seismicity. The Imperial Fault is located approximately 20 kilometers (km) (approximately 12 miles) east of the project site and has a maximum magnitude of 7.0 (EGA, 2011).

Groundwater

The project site is located in an area that contains groundwater. Perched groundwater was encountered between 10 and 15 feet below grade during the drilling of 25 borings in April, 2011.

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Perched levels are expected to fluctuate with changes in seasons (rainfall), canal flow, and irrigation. Therefore, perched groundwater levels encountered during drillings do not represent a permanent condition (EGA, 2011, p. 8).

Landslides

According to the Preliminary Geotechnical Investigation, hazards such as landslides do not appear to be evident on the project site (EGA, 2011, p. 7). A landslide occurs when slopes become unstable and collapse. Natural factors such as fractured or weak bedrock, heavy rainfall, erosion, earthquake activity, and fire, as well as by human alteration of topography and water content, cause landslides or slope instability. The project site is generally flat and is not prone to landslides. In addition, the project site does not adjoin any elevated areas that would make it susceptible to landslide effects.

Soil Map Units

Figure 4.6-2 depicts the ten soil map units within the boundaries of the project site. Various characteristics of the soils are summarized in Table 4.6-2, and briefly described below.

**TABLE 4.6-2
SUMMARY OF PROJECT SITE SOIL MAP UNITS**

Soil	Texture ¹	Depth of Surface Layer ¹	Wind Erodability Group ²	Erosion (K) Factor ³	Erosion Hazard Paths and Trails ⁴	Permeability Inches Per Hour ³
Badland	Gravelly Sand	10	N/A	N/A	N/A	N/A
Holtville	Silty Clay	17	5	.32	Moderate: Too clayey	.06 - .20
Imperial	Silty Clay Loam	10	5	.43	Moderate: Too clayey	.06 - .20
Imperial-Glenbar silty clay loams, wet, 0 to 2% slopes	Silty Clay Loam	12	5	.43	Moderate: Too clayey	.06 - .20
Indio-Vint Complex	Loam	12	5	.55	Slight	0.6-2.0
Meloland very fine sandy loam, wet	Very Fine Sandy Loam	12	5	.43	Moderate: Wetness	0.6-2.0
Meloland and Holtville loam, wet	Sand	27	1	.20	Severe: Soil blowing	6.0-20.0
Rositas sand, (0 to 2% slopes)	Fine Sand	9	1	.2	Severe: Too sandy	6.0-20.0
Vint loamy very fine sand, wet	Loamy Very Fine Sand	10	3	.32	Moderate: Too sandy	2.0 – 6.0
Vint-Indio very sandy loams, wet	Loamy Very Fine Sand	10	3	.32	Slight	2.0 – 6.0

Source: U.S. Department of Agricultural Soil Conservation Service, 1981, Ericsson-Grant, Inc. 2011.

Notes:

N/A = not applicable or not available.

¹ Taken from Table 11, Engineering Index Properties.

² Wind erodibility groups range from 1 to 8, with 1 being highly erodible and 8 having low erodibility. Taken from Table 12, Physical and Chemical Properties of Soils.

³ This is an index of erodibility for standard condition and includes susceptibility of soil to erosion and rate of runoff. Low K values (below 0.15) indicate low erosion potential. High K values (above 0.4) are highly erodible. Taken from Table 12, Physical and Chemical Properties of Soils

⁴ Qualitative descriptors of erosion hazard: Slight = little or no erosion is anticipated, Moderate = some erosion anticipated, Severe = significant erosion potential exists. Taken from Table 9, Recreational Development (Paths and Trails).

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102-Badland soils - steep to very steep barren land soils dissected by drainageways in local steep topography. Texture is clay to gravelly sand. Surface runoff is rapid or very rapid, and the hazard of erosion is high.

110-Holtville Silt Clays, wet - very deep, stratified soils on flood plains, and alluvial basin floors. Permeability is slow in the clayey layer and moderately rapid in the underlying material. Available water capacity is high to very high. The soil is non-saline or slightly saline. Surface runoff is slow and the hazard of erosion is slight.

114-Imperial Silty Clay, wet – very deep soil on flood plains and in basins and lakebeds. Permeability is slow and available water is very high. Soil is slightly saline and surface runoff is slow. Hazard of erosion is slight.

115-Imperial Glenbar Silty Clay Loams, wet, 0 to 2 percent slopes – nearly level soils located on flood plains and in basins and lakebeds within the irrigated area of Imperial Valley. It is formed in clayey sediment from mixed sources. Permeability is slow, and available water capacity is high to very high. The soil is non-saline to slightly saline. Surface runoff is slow, and the hazard of erosion is slight.

118-Indio Loam, wet – very deep, nearly level soil on flood plains and basin floors. Permeability is moderate and available water capacity is high to very high. Surface runoff is slow and the hazard of erosion is slight.

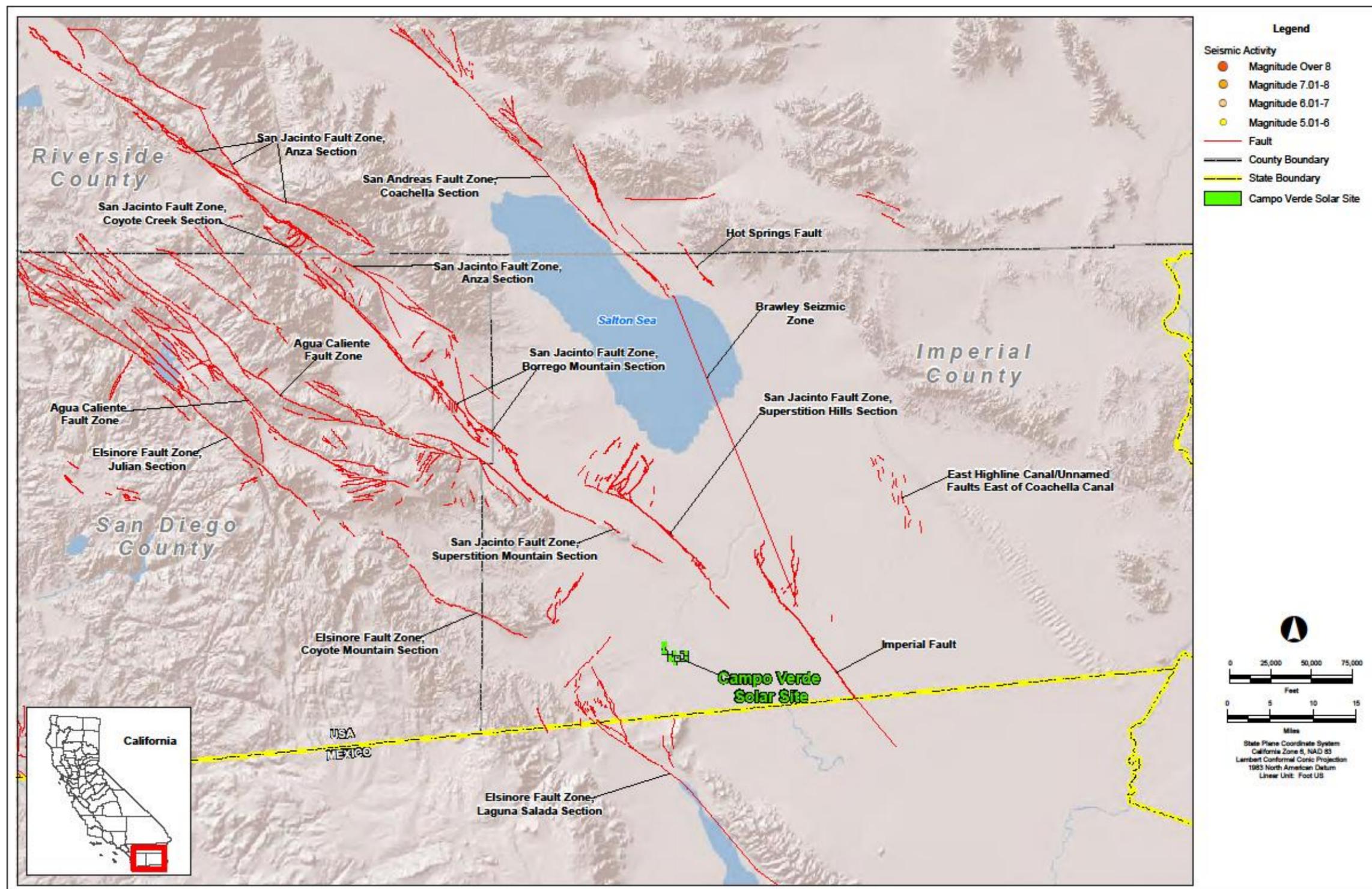
122-Meloland very fine sandy loam, wet - very deep, nearly level and found on flood plains and alluvial basin floors. Permeability is slow, and available water capacity is high to very high. Surface runoff is low, and the hazard of erosion is slight.

123-Meloland and Holtville Loams, wet - nearly level soils formed on floodplains and alluvial basin floors. Permeability of the Meloland series is slow and available water capacity is high to very high. Surface runoff is slow. The hazard of erosion is slight, and the hazard of soil blowing is moderate. Holtville loam is very deep and stratified. Permeability of the Holtville soil is slow, and available water capacity is high to very high. Surface runoff is slow, and the hazard of erosion is slight. The hazard of soil blowing is moderate.

135-Rositas series (sand) - very deep, nearly level soil on flood plains, and basin floors. Permeability is rapid and available water capacity is low. Surface runoff is slow, and the hazard of erosion is slight. There is high hazard of soil blowing.

142-Vint loamy very fine sandy loam - very deep, nearly level soils is on basin floors and flood plains. Permeability of Vint soil is moderately rapid permeability and available water capacity is moderate. Surface runoff is slow, and the hazard of erosion is slight. The hazard of soil blowing is moderate.

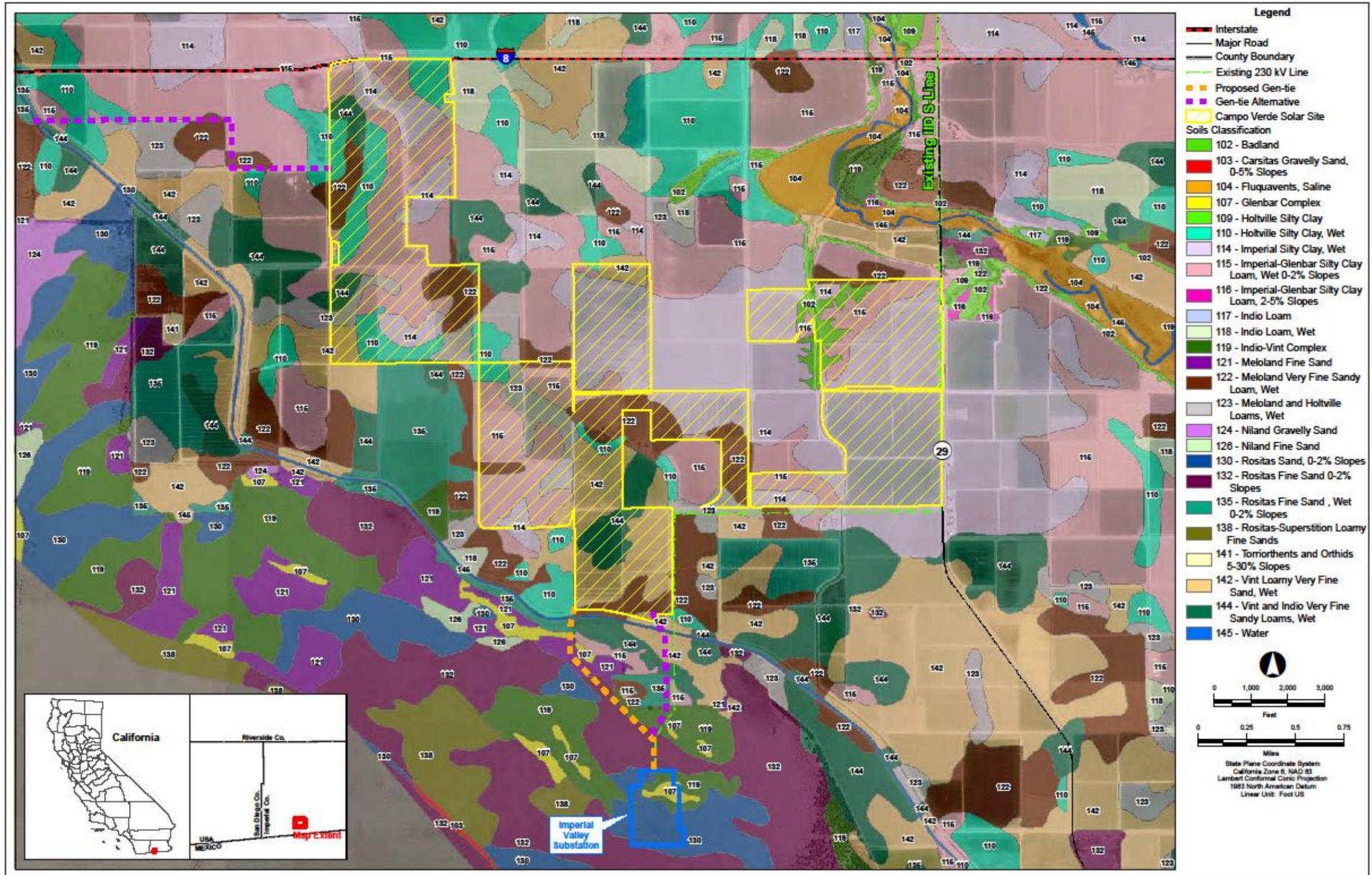
144-Vint and Indio very fine sandy loams, wet – undifferentiated unit consists of deep, nearly level soils on the bed of old Lake Cahuilla. Permeability of the Vint series is moderately rapid, and available water capacity is moderate. Surface runoff is slow, and the hazard of erosion is slight. There is moderate hazard of soil blowing. Indio very fine sand loam, wet is deep. Available water capacity is high to very high. Surface runoff is slow, and the hazard of erosion is slight. The hazard of soil blowing is moderate.



Source: kp environmental, 2012.

FIGURE 4.6-1
REGIONAL FAULTS AND SEISMICITY

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Source: kp environmental, 2012.

FIGURE 4.6-2 SOILS MAP

Subsurface Soils

Test borings revealed that the site is underlain by fill/crop, lacustrine clays, and alluvial soils. Fill and/or crop soils were encountered in the upper 1 to 2 feet in each of the 25 test borings. The fill soils consist generally of gray and olive brown, moist to very moist, soft to firm, sandy silty clay and clayey silts with mica grains and rootlets. The fill/crop soils are similar in consistency to the surficial lake deposits from which they were derived.

The fill/crop soils are underlain by lacustrine deposits associated with the ancient lakes in the area. The lacustrine deposits generally consisted of lean clay with a few thin beds of sandy silt (Ml). The lacustrine deposits were generally moist to saturated, and firm to very stiff in consistency. The lacustrine deposits are underlain by medium dense to dense, saturated, fine-grained silty sands and sands.

Liquefaction

Liquefaction of soils can be caused by strong vibratory motion in response to earthquakes. Both research and historical data indicate that loose, granular soils are susceptible to liquefaction, while cohesive clays are not adversely affected by vibratory motion. Liquefaction is generally known to occur only in saturated or near saturated granular soils at depths shallower than approximately 50 feet. The soils which predominantly underlie the site are lean, stiff, clays. Liquefaction is not considered to be a hazard in clays (EGA, 2011, p. 7).

Subsidence

Subsidence is the gradual, local settling or sinking of the earth's surface with little or no horizontal motion. Subsidence is usually the result of gas, oil, or water extraction, hydro-compaction, or peat oxidation, and not the result of a landslide or slope failure. Ground surface effects related to subsidence are generally restricted to long surface structures such as canals, drains, and sewers, which are sensitive to slight changes in elevation. According to the Imperial County Seismic and Public Safety Element, subsidence from earthquakes and other activities, including geothermal resources development, can disrupt drainage systems and cause localized flooding. Subsidence was not identified as an issue on the project site by the Preliminary Geotechnical Investigation (EGA, 2011, p. 7).

Expansive Soils

Expansive soils are primarily comprised of clay particles. Clay increases in volume when water is absorbed and shrinks when dry. Expansive soils can damage building foundations, concrete flatwork, and asphaltic concrete pavements as a result of swelling forces that reduce soil strength. In general, much of the near surface soils in the agricultural area of the Imperial Valley consist of silty clays and clays which are moderately to highly expansive. Laboratory results indicate that the subgrade earth materials possess an Expansion Index ranging from very low to medium (EGA, 2011). Thus, expansive soils are present on the project site.

Differential Settlement

Differential settlement refers to uneven settlement of a slab-on-ground foundation. When differential settlement occurs, some portions of the foundation settle more than other portions. Soil and groundwater conditions on the project site are favorable to post-liquefaction differential settlement (EGA, 2011, p. 7).

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Soil Corrosivity

Soils on the project site have characteristics which make them corrosive to metals. A major factor in determining soil corrosivity is electrical resistivity. The electrical resistivity of a soil is a measure of its resistance to the flow of electrical current. Corrosion of buried metal is an electrochemical process in which the amount of metal loss due to corrosion is directly proportional to the flow of electrical current (direct current [DC]) from the metal into the soil. Lower electrical resistivities result from higher moisture and soluble salt contents and indicate corrosive soil.

Other soil characteristics that may influence corrosivity towards metals are pH, soluble salt content, soil types, aeration, anaerobic conditions, and site drainage. Soil pH values ranged from 7.6 to 8 which are considered mildly to moderately alkaline. The soluble salt content of the samples ranges from low to very high. Chloride and sulfate salts are the predominant constituents.

Mineral Resources

Imperial County contains diverse mineral resources. Those with the highest economic value include gold, gypsum, sand, gravel, lime, clay, and stone. Geologic factors restrict mining operations to the relatively few locations where mineral deposits are feasible for extraction. The majority of the mining areas are in the eastern portion of Imperial County as depicted on Figure 5, Mining Resources, of the Imperial County General Plan Conservation and Open Space Element (Imperial County, 1993). The solar generation facility site currently consists of agricultural land. A portion of the gen-tie extends through desert lands with native vegetation cover. The project site appears to contain no mineral resources, and no mining activities occur in the vicinity of, or on, the project site.

B. GEN-TIE

The Preliminary Geotechnical Investigation did not include the portion of the gen-tie to be located on lands under the jurisdiction of the BLM. This portion of the project is undergoing separate environmental analysis under NEPA. However, the regional settings such as seismicity described for the solar generation facility would also apply to the gen-tie.

4.6.3 IMPACTS AND MITIGATION MEASURES

A. STANDARDS OF SIGNIFICANCE

The impact analysis provided below is based on the following State CEQA Guidelines, as listed in Appendix G. The project would result in a significant impact to geology and soils if it would result in any of the following:

- a) Expose people or structures to 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? Refer to Division of Mines and Geology Special Publication 42?
 - ii) Strong Seismic ground shaking?
 - iii) Seismic-related ground failure, including liquefaction and seiche/tsunami?
 - iv) Landslides?

- b) Result in substantial soil erosion or the loss of topsoil?
- c) 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 landslides, lateral spreading, subsidence, liquefaction or collapse?
- d) Be located on expansive soil, as defined in the latest Uniform Building Code, creating substantial risk to life or property?
- e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?

B. ISSUES SCOPED OUT AS PART OF THE INITIAL STUDY

Several checklist criteria were eliminated from further evaluation as part of the Initial Study and review of the Preliminary Geotechnical Investigation. Surface rupture is the opening of the earth when a deep fault moves. Rupture typically is associated with pre-existing fault strands but may occur suddenly during an earthquake or over time in the form of fault creep. The project site is not located within a State of California, Alquist-Priolo Earthquake Fault Zone and no active faults are known to cross the site (EGA, 2011, p. 6). Thus, no impact is identified relative to fault rupture and this issue will not be discussed further.

The project site is not near a large body of water and is not along the coast. The project site is approximately 100 miles inland from the Gulf of California most likely precluding damage due to seismically induced waves. Therefore, no impact would occur with respect to a tsunami. However, it is possible that a seiche could occur within one of the shallow reservoirs adjacent to the proposed PV arrays. This could result in limited earthquake induced flooding at the site (EGA, 2011, p. 7). No impact is anticipated based on the amount of water involved.

Subsidence or collapse was not identified as a potential geologic issue in the Preliminary Geotechnical Investigation prepared for the project site (EGA, 2011). As such, it is not discussed further with regard to the proposed project. Other geologic hazards such as landsliding do not appear to be evident at the project site or adjacent site. Topography for soil landslides, soil creep, or lateral spreading is insufficient. In addition, as identified in the Seismic and Public Safety Element of the County of Imperial General Plan, the hazard of landsliding is unlikely due to the regional planar topography. Thus, no impact is identified for these issue areas.

One additional issue, corrosive soils, was identified in the Preliminary Geotechnical Investigation and is discussed below.

C. METHODOLOGY

Existing conditions were evaluated based on potential to be affected by construction activities, operation and maintenance activities, and decommissioning of the project. Construction, operation, and maintenance activities were identified based on analysis provided in the Applicant's Plan of Development (Campo Verde Solar, 2011). Impacts to geology and soil resources were formulated based on the findings of the *Preliminary Geotechnical Investigation: Proposed Mount Signal Solar Farm and Associated Structures West of Drew Road and South of Interstate 8 Imperial County, California* prepared by EGA Consultants (EGA, 2011) included in **Appendix D** of the Technical Appendices of this EIR on the attached CD.

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D. PROJECT IMPACTS AND MITIGATION MEASURES

Strong Seismic Ground Shaking

Impact 4.6.1 The project site is located in a seismically active region and would be subject to strong seismic ground shaking in the event of an earthquake. This is considered a **potentially significant impact**.

One of the seismic hazards most likely to impact the project site is strong ground shaking during an earthquake. The project site is located in the seismically active Imperial Valley in Southern California and could experience moderate to strong ground motion from earthquakes in the region. Multiple faults are located in the vicinity of the project. The faults closest to the project site include the San Jacinto Fault (Superstition Hills Section approximately 7 miles to the northeast; Superstition Mountain Section approximately 10 miles to the north), the Imperial Fault (approximately 15 miles east of the project site); and the Elsinore Fault (Laguna Salada Section, approximately 10 miles to the southwest of the project site) as shown in **Figure 4.6-2**. The Superstition Hills Section and Superstition Mountain Section both have a Maximum Magnitude (Mmax) of 6.6; the Imperial Fault has an Mmax of 7.0; and the Laguna Salada Section has a 7.0 Mmax (BRG, 2008).

The amount of ground shaking in an area during an earthquake depends on several factors: 1) proximity of the area to the fault; 2) the depth of focus; 3) the location of the epicenter; and 4) the size (magnitude) of the earthquake. Soil type also plays a role in the intensity of shaking. Bedrock or other dense or consolidated materials are less prone to intense ground shaking than alluvial soils. The site is underlain by fill/crop, lacustrine clays, and alluvial soils. Thus, the site includes soils that are susceptible to ground shaking.

Imperial County is classified as Seismic Zone 4 by the Uniform Building Code (Sections 1626 through 1635). Developments within in Seismic Zone 4 (highest risk on a scale of 0 to 4) are required to incorporate the most stringent earthquake resistant measures. While the project would not include habitable structures, the solar facilities proposed on the site could be damaged by strong seismic shaking. Thus, impacts associated with strong seismic shaking are considered **potentially significant**.

Mitigation Measures

MM 4.6.1 The proposed development shall be designed in accordance with seismic considerations contained in the 2010 California Building Code, 2010 Uniform Building Code or the standards of care established by the Structural Engineers Association of California and the County of Imperial building requirements.

Timing/Implementation: Prior to approval of final building plans/As part of project design.

Enforcement/Monitoring: Imperial County Department of Planning and Development Services.

Significance After Mitigation

Implementation of mitigation measure MM 4.6.1 would reduce potential structural damage caused by strong seismic ground shaking by adhering to the appropriate codes and standards of care. Thus, this impact is can be mitigated to a **less than significant** level through adherence to applicable codes and standards.

Liquefaction/Unstable Soils

Impact 4.6.2 Soils on the project site could be subject to liquefaction. However, if liquefaction were to occur, it will only be in small areas of the site and result in ¼-inch differential settlement of the arrays. This is considered a **less than significant impact**.

According to the Soil Survey of Imperial County, the proposed project site is covered with ten soil types (refer to **Table 4.6-2**) (USDA, 1981) and (**Figure 4.6-2**). Some of these soils are prone to liquefaction under certain conditions. The soils which predominantly underlie the site are lean, stiff, clays. Liquefaction is not considered to be a hazard in clays. However, liquefaction is known to occur in saturated or near saturated granular soils at depths shallower than 50 feet.

Sandy zones underlying the lacustrine clays down to 50 feet in depth may liquefy given the Design Basis Earthquake (i.e. the earthquake which the structure is required to safely withstand with repairable damage). Assuming a groundwater level of 5 feet, the total post-liquefaction settlement is estimated to vary from roughly 0 to 1/2-inch at the site. According to State guidelines, a differential settlement equal to approximately one-half of the anticipated total liquefaction settlement may be conservatively assumed for structural design. Consequently, a 1/4-inch post-liquefaction differential settlement is estimated to occur across the length of the proposed arrays (EGA, 2011, p. 7). A total dynamic settlement of up to 1/2-inch may occur at the site. Piles may experience increased internal stress and undergo a small fraction of the total dynamic settlement. This level of settlement is considered a **less than significant impact** on the project site.

The soils that predominantly underlie the proposed gen-tie route within the solar generation facility site are stiff clays from ancient lake deposits. As a result, liquefaction is not likely along the gen-tie route within the solar energy site. The portion of the gen-tie on BLM land is being analyzed under separate analysis.

The proposed solar generation facility and gen-tie will be designed in accordance with a Final Geotechnical Evaluation report(s) that will be prepared by a licensed professional engineer during the final design phase. This Final Geotechnical Evaluation report will be submitted to Imperial County Planning and Development Services Department for review and approval prior to obtaining building permits as required by the Imperial County requirements.

Mitigation Measures

None Required.

Significance After Mitigation

Not Applicable.

Erosion

Impact 4.6.3 Construction activities would result in earth disturbance and potential for erosion and loss of top soil. Multiple requirements have been established to address erosion which the Applicant must comply with. Therefore, this impact is considered **less than significant**.

Soil erosion could result during construction of the proposed project in association with grading and earthmoving activities. Minor grading would be done over the project site because the current topography is suitable for the placement of PV panels with minimal site preparation or improvements.

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Existing vegetation will be grubbed and the soil surface will be smoothed and compacted to prepare the site for installation of the PV solar panels. Excavation would be required for activities such as trenching for underground wiring and cables, for placing electric poles, preparing equipment pads and for the O&M building. All excavations are anticipated to be relatively shallow.

During construction, erosion would be controlled in accordance with County standards including preparation, review and approval of a grading plan by the County Engineer; implementation of a dust control plan (Rule 801) (discussed further in Section 4.3, Air Quality); and compliance with the National Pollutant Discharge Elimination System (NPDES) Construction General Permit (discussed further in Section 4.11, Hydrology and Water Quality). These actions would mitigate the potential soil erosion impacts to less than significant.

The generally flat topography of the site and the low average annual precipitation for the area would reduce the likelihood of substantial erosion and loss of topsoil. Daily operations and routine maintenance (such as occasional PV panel washing) are not anticipated to increase erosion. Further, to control erosion during operation of the project, the solar field would be coated with a permeable dust suppressant and the roadways within and around the solar field would be covered with gravel. Likewise, during operation soil erosion and sedimentation would be controlled in accordance with the Best Management Practices (BMPs) included as part of the project's Storm Water Pollution Prevention Plan (SWPPP) (discussed further in Section 4.11, Hydrology and Water Quality). Thus, erosion impacts would be reduced to less than significant levels during operations.

During decommissioning, soil erosion and sedimentation is anticipated to be controlled in accordance with implementation of a Dust Control Plan (Rule 801) and compliance with the National Pollutant Discharge Elimination System (NPDES) Construction General Permit. These actions would mitigate the potential soil erosion impacts to a **less than significant level**.

Mitigation Measures

None required.

Significance After Mitigation

Not applicable.

Expansive Soils

Impact 4.6.4 Some of the soils identified on the project site have expansive characteristics. This is considered a **potentially significant impact**.

Soils on the project site predominately consist of clays with imbedded silts and sandy silts. The native clays within the agricultural lands exhibit very low to medium swell potential when tested according to the Uniform Building Code Standard 18-2 methods. The project site structures (building/inverter foundations, concrete flatwork, etc.) could be subject to some potential swelling forces and reduction in soil strength resulting from saturation of the soil. Exposure of proposed structures to expansive soils on the project site is not anticipated to cause damage to the majority of the proposed structures. However, inverter pads located on areas of expansive soils (EGA, 2011) could be subject to damage due to their weight. This is considered a **potentially significant impact**.

Soils on the gen-tie route with the solar generation facility predominately consist of sands and sandy loams. Therefore, the Gen-tie is not expected to be subject to direct impacts resulting from potential swelling forces and reduction in soil strength resulting from saturation.

Decommissioning would result in the dismantling and removal of all infrastructure constructed as part of the project. The solar field would be removed and no longer be subject to potential swelling forces and reduction in soil strength resulting from saturation of the soil. Thus, following decommissioning, no impacts resulting from exposure to expansive soils would occur.

Mitigation Measure

MM 4.6.4 The proposed solar generation facility and gen-tie shall be designed in accordance with a Final Geotechnical Evaluation report that will be prepared by a licensed professional engineer during the final design phase. The Final Geotechnical Evaluation report will be submitted to Imperial County Department of Planning and Development Services for review and approval prior to issuance of building permits as required by the Imperial County. The Final Geotechnical Evaluation report will include an analysis and recommendations regarding design for expansive soil conditions.

Timing/Implementation: Prior to issuance of building permits.

Enforcement/Monitoring: Imperial County Department of Planning and Development Services.

Significance After Mitigation

Implementation of mitigation measure MM 4.6.4 would reduce exposure of Power Conversion Station (PCS) vaults or pad structures to damage caused by expansive soils. Thus, impacts associated with expansive soils on the project site would be reduced to **less than significant**.

Soil Capability to Support Septic Systems

Impact 4.6.5 The project proposes to construct a septic system to accommodate wastewater flows generated on the project site. The project will be engineered in compliance with County Environmental Health Department standards. Therefore, soil capability to support septic systems is considered a **less than significant impact**.

The project site and surrounding areas are rural and not served by municipal wastewater. Rural residences in this portion of the County use septic systems for sanitary waste. Temporary septic systems or holding tanks and portable toilets will be used during the construction phase of the project to provide needed sanitary facilities for workers on site. However, during operations, the project proposes to collect wastewater from sinks and toilets located in the O&M building and convey the waste stream to an onsite sanitary waste septic system. Alternatively, the project may be designed to direct sanitary waste streams to an underground tank for storage.

The proposed project is underlain by 10 soil types (refer to **Table 4.6-2**). These soils have moderate absorptive capabilities and provide moderate infiltration and drainage but can be used effectively for septic leach systems with the proper design. The septic system would be engineered based on on-site soil characteristics, and designed and installed in compliance with County Environmental Health Department standards. If a leach field is proposed, it would be engineered based on on-site soil characteristics and designed and installed in compliance with County Environmental Health Department standards. If the County prefers that a leach field not be used, an underground tank would be installed according to County specifications. Therefore, impacts to soil ability to support the use of septic tanks or alternative wastewater disposal systems are considered **less than significant**.

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Mitigation Measures

None required.

Significance After Mitigation

Not applicable.

Soil Corrosivity

Impact 4.6.6 Soils within the project site are severely corrosive. Portions of metal structures coming in contact with these soils could be damaged. This is considered a **potentially significant impact**.

Resistivity determinations on the soil indicate very severe potential for metal loss because of electrochemical corrosion processes. Additionally, negligible to severely high levels of sulfate ions in the native soils could weaken concrete structures they come in contact with. Chloride and sulfate salts are also present in onsite soils. Chloride is particularly corrosive to ferrous metals, and in the higher concentrations measured in the soil samples, chloride can overcome the corrosion inhibiting effect of concrete on reinforcing steel. High concentrations of sulfate, as was measured in the soil samples, can react with components in concrete to cause degradation and reduced strength in a mechanism known as sulfate attack (EGA, 2011).

Likewise, the ammonium and nitrate concentration was high enough to be aggressive to copper. Tests were not made for sulfide and negative oxidation-reduction (redox) potential because these samples did not exhibit characteristics typically associated with anaerobic conditions. This soil is classified as severely corrosive to ferrous metals, aggressive to copper, severe for sulfate attack on concrete, and aggressive with respect to exposure of reinforcing steel to the migration of chloride. Laboratory testing indicates that the soluble sulfate content of on-site soils likely to come in contact with concrete is negligible to severe. Soils were also considered to be severely corrosive towards ferrous metals (EGA, 2011, p. 13). Potential damage to foundations as a result of soil chemistry is considered a **potentially significant impact**.

As part of decommissioning, all concrete foundations (if used for poles and towers) will be removed to a depth of at least 4-feet below ground level and demolished. Likewise, other concrete foundations, such as those for buildings and inverter pads, would be demolished and removed or used onsite for fill as needed as part of decommissioning. The site would be reclaimed for agricultural uses cleared of structures with concrete foundations. Therefore, no impacts associated with corrosive soils are anticipated to occur under decommissioning of the project.

Soils on the gen-tie route portion of the solar generation facility site predominately consist of sands and sandy loams. The soil resistivity and corrosivity conditions at the proposed gen-tie are not expected to cause damage to structure foundations. As part of decommissioning, all concrete foundations would be removed to a depth of at least 4-feet below ground level and demolished. The gen-tie structure locations would be reclaimed. Thus, no impacts associated with corrosive soils would occur in association with decommissioning the gen-tie.

Mitigation Measures

MM 4.6.6 A Field Resistivity and Ground Potential Rise Evaluation shall be prepared by a qualified engineer, which shall include specific measures to address corrosion impacts. Potential

measures may include, but are not limited to, galvanization, epoxy coatings, thicker steel, and cathodic protection.

Timing/Implementation: Prior to issuance of the structural post building permit.

Enforcement/Monitoring: Imperial County Department of Planning and Development Services.

Significance After Mitigation

Implementation of mitigation measure MM 4.6.6 would ensure that the project is designed and constructed to protect against corrosion. With implementation of this measure impacts resulting from soil corrosivity would be reduced to **less than significant**.

4.6.4 CUMULATIVE SETTING, IMPACTS AND MITIGATION MEASURES

A. CUMULATIVE SETTING

The geographic scope for the cumulative geology and soils setting is the Imperial Valley portion of the Salton Trough physiographic province of Southern California. In general, geology and soils impacts are site-specific and limited to the boundaries of a proposed project rather than cumulative in nature. Project-specific impacts within the geographic scope are based on the soil characteristics and topography of each site. A list of approved, proposed, and reasonably foreseeable projects is identified in Table 3.0-1 in Chapter 3.0, Introduction to the Environmental Analysis and Assumptions Used.

B. CUMULATIVE IMPACTS AND MITIGATION MEASURES

Cumulative Exposure to Geologic and Seismic Impacts

Impact 4.6.7 Implementation of the proposed project, in combination with existing, approved, proposed, and reasonably foreseeable development, may result in cumulative exposure to geologic and seismic hazards. This is considered a **less than cumulatively considerable impact**.

Ground Shaking

As discussed above, the project site is located in a seismically active area which would make it susceptible to seismic ground shaking in the event of an earthquake. Exposure of the site to strong seismic ground shaking is a potentially significant site-specific impact. Mitigation measure MM 4.6.1 requires structures to be in conformance with the 2010 California Building Code, 2010 Uniform Building Code or the standards of care established by the Structural Engineers Association of California and the County of Imperial building requirements. Implementation of MM 4.6.1 would reduce the project's exposure to damage from seismic ground shaking to less than significant. Furthermore, ground shaking impacts to the proposed project are not expected to combine with approved, proposed, and reasonably foreseeable projects identified in Table 3.0-1 in Chapter 3.0, Introduction to the Analysis and Assumptions Used. The proposed project would have a less than cumulatively considerable contribution to ground shaking impacts and result in a **less than cumulatively considerable impact**.

Expansive Soils

Development of the proposed project would be subject to expansive soils. Inverter pads located on areas of expansive soils (EGA, 2011) could be subject to damage due to their weight. Mitigation measure MM 4.6.4 requires that the proposed solar generation facility and gen-tie be designed in

4.6 GEOLOGY AND SOILS

accordance with a Final Geotechnical Evaluation and associated recommendations regarding design for expansive soil conditions. Implementation of MM 4.6.4 would reduce the project's potential exposure to damage from expansive soils to less than significant. Furthermore, expansive soil impacts to the proposed project are not expected to combine with similar impacts of approved, proposed, and reasonably foreseeable projects identified in Table 3.0-1 in Chapter 3.0, Introduction to the Analysis and Assumptions Used. Therefore, the proposed project would have a less than cumulatively considerable contribution to exposure to expansive soils and result in a **less than cumulatively considerable impact**.

Soil Erosion

Construction soil erosion impacts are considered potentially significant short-term, site-specific impacts under CEQA. Erosion would be controlled on-site with site-specific measures, a grading plan approved by the County Engineer, implementation of a dust control plan (Rule 801), and compliance with the National Pollutant Discharge Elimination System (NPDES) Construction General Permit. Therefore, soil erosion impacts are not expected to combine with similar impacts of past, present, or reasonably foreseeable projects. The proposed project would have a less than cumulatively considerable contribution to soil erosion impacts. Therefore, cumulative impacts associated with soil erosion would be **less than cumulatively considerable**.

Corrosive Soils

Chloride and sulfate salts are present in soils on the solar generation facility site representing a potential threat to concrete foundations. Ammonium and nitrate content in onsite soils would be aggressive to copper and some soils were also considered to be severely corrosive towards ferrous metals (EGA, 2011, p. 13). Mitigation measure MM 4.6.6 would require preparation of a Field Resistivity and Ground Potential Rise evaluation which would identify specific measures to address corrosion impacts. These measures could include galvanization, epoxy coatings, thicker steel, and cathodic protection thereby mitigating damage due to corrosive soils. Corrosive soils impacts are would not combine with approved, proposed, and reasonably foreseeable projects identified in Table 3.0-1 in Chapter 3.0, Introduction to the Analysis and Assumptions Used. The proposed project would have a less than cumulatively considerable contribution to corrosive soils impacts. Thus, cumulative impacts associated with corrosive soils would be **less than cumulatively considerable**.

Mitigation Measures

As discussed throughout this analysis, the proposed project would be subject to all applicable building codes and standards (MM 4.6.1) as well as any further engineering requirements set forth in the Final Geotechnical Evaluation (MM 4.6.4). Likewise, the project would be responsible for incorporating measures from Field Resistivity and Ground Potential Rise evaluation (MM 4.6.6). Therefore, following mitigation, cumulative geological and seismic impacts would be reduced to **less than cumulatively considerable**.

Significance After Mitigation

Project-specific impacts are mitigated on a project-by-project basis. Following implementation of the mitigation measures MM 4.6.2, MM 4.6.4 and MM 4.6.6, geology and soils impacts would be reduced to less than cumulatively considerable levels.

SECTION 4.7

CULTURAL RESOURCES

This section provides a background discussion of the regulatory framework and the environment setting with regard to cultural and paleontological resources. Cultural resources consist of archaeological sites from the prehistoric and historic periods, and buildings, structures, and objects from the historic period. Paleontological resources are the fossil remains of animals and plants from the past. Paleontological resources are not cultural resources because they are not the result of human activity. However, paleontological resources are combined with cultural resources for the purposes of CEQA because they are considered in the Cultural Resources section of the Environmental Checklist Form (State CEQA Guidelines, Appendix G). Therefore, impacts to paleontological resources are also analyzed in this section.

The regulatory framework identifies the federal, state, and local regulations applicable to cultural and paleontological resources. The environmental setting discusses the Area of Potential Effect, the cultural context, records search results, field inventory results, and Native American concerns. Impacts on historic resources (i.e. significant cultural resources) and paleontological resources that would result from constructing the project are analyzed based on state and local laws and regulations.

Information contained in this section is summarized from multiple sources including *Inventory, Evaluation and Analysis of Impacts on Historic Resources on Private Lands Within the Area of Potential Effect of the Campo Verde Solar Project, Imperial County, California* prepared by ASM Affiliates, Inc (Davis et. al, 2011), *Inventory Report of the Cultural Resources Within the Campo Verde Solar Energy Gen-tie Line, Imperial County, California* (Mitchell, 2011) and the “California Historical Resources Information System Records Search” prepared by the South Coastal Information Center (SCIC, 2011). This document is provided on the attached CD of Technical Appendices as **Appendix E** of this EIR.

4.7.1 REGULATORY FRAMEWORK

A. FEDERAL

Cultural Resources

National Environmental Policy Act (NEPA)

NEPA establishes national policy for the protection and enhancement of the environment. Part of the function of the federal government in protecting the environment is to “preserve important historic, cultural, and natural aspects of our national heritage.” Cultural resources need not be determined eligible for the National Register of Historic Places (NRHP) as in the National Historic Preservation Act (NHPA) of 1966 (as amended) to receive consideration under NEPA. Instead NEPA is implemented by regulations of the Council on Environmental Quality, 40 Code of Federal Regulations (CFR) 1500-1508. NEPA provides for public participation in the consideration of cultural resources issues, among others, during agency decision-making. NEPA only applies to the portion of the project on federal land (the BLM gen-tie route) which is being considered by BLM in a separate environmental document.

National Historic Preservation Act (NHPA)

Federal law concerning cultural resources which could be affected by certain federal undertakings is the National Historic Preservation Act (NHPA) of 1966, as amended. Section 106 of the Act requires that federal agencies take into account the effects of a “federal undertaking” on properties listed in or eligible for the National Register of Historic Places (NRHP). The agencies must afford the Advisory Council on Historic Preservation (ACHP) a reasonable opportunity to comment on the undertaking. A federal undertaking is a project that is federally funded or that requires a federal permit or license.

4.7 CULTURAL RESOURCES

Regulations which stipulate the procedures for complying with Section 106 (36 CFR 800) require:

- Definition of the Area of Potential Effects (APE);
- Identification of cultural resources within the APE;
- Evaluation of the identified resources in the APE using NRHP eligibility criteria;
- Determination of whether the effects of the undertaking or project on eligible resources will be adverse; and
- Agreement on and implementation of mitigation measures if there will be adverse effects.

The federal agency must seek concurrence from the State Historic Preservation Officer (SHPO) and, in some cases, the ACHP, for its determinations of eligibility, effects, and proposed mitigation measures. Section 106 procedures for a specific project can be modified by negotiation of a Programmatic Agreement (PA) between the federal agency, the State Historic Preservation Officer (SHPO), and the project proponent.

Effects to a cultural resource are potentially adverse only if the resource has been determined eligible for the National Register of Historic Places (NRHP) by the lead federal agency with concurrence by the SHPO. The NRHP eligibility criteria are contained in the following statement:

The quality of significance in American history, architecture, archaeology, and culture is present in districts, sites, buildings, structures, and objects of state and local importance that possess aspects of integrity of location, design, setting, materials, workmanship, feeling, association, and

- (A) Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage;
- (B) Is associated with the lives of persons important in our past;
- (C) Embodies 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; or
- (D) Has yielded, or may be likely to yield, information important in prehistory or history.

In addition, the resource must be at least 50 years old, except in exceptional circumstances (36 CFR 60.4).

Archaeological sites are usually evaluated under Criterion D, the potential to yield information important in prehistory. An archaeological test program may be necessary to determine whether the site has the potential to yield important data. The lead federal agency, in this case, the BLM, makes the determination of eligibility based on the results of the test program and seeks concurrence from the SHPO.

Section 106 of the NHPA only applies to the portion of the proposed project on federal land (the segment of the gen-tie on BLM land). An Environmental Assessment is being prepared by the BLM for this portion of the proposed project.

Native American Graves Protection and Repatriation Act (1990); Title 25, United States Code (USC) Section 3001, et seq.

The statute defines "cultural items," "sacred objects," and "objects of cultural patrimony;" establishes an ownership hierarchy; provides for review; allows excavation of human remains, but stipulates return

of the remains according to ownership; sets penalties; calls for inventories; and provides for the return of specified cultural items.

Paleontological Resources

Paleontological resources are protected from vandalism and unauthorized collection on federal land by the Federal Antiquities Act of 1906 (PL 59-209; 16 United States Code section 431 *et seq.*; 34 Stat. 25). The National Environmental Policy Act of 1969, as amended, requires analysis of potential environmental impacts to important historic, cultural, and natural aspects of our national heritage (United States Code, section 4321 *et seq.*; 40 Code of Federal Regulations, section 1502.25). The BLM uses the Potential Fossil Yield Classification (PFYC) to classify geological formations by their potential to yield important fossils (BLM, 2009). The lowest sensitivity is PFYC Class 1 and the highest is PFYC Class 5. These statutes apply only to the portion of the project on federal land (the BLM gen-tie route) which is being considered by BLM in a separate environmental document.

B. STATE

Cultural Resources

California Environmental Quality Act (CEQA)

The California Environmental Quality Act (CEQA) is the state law that addresses the evaluation of a project's impacts on cultural resources. A "project" is an activity that may cause a direct or indirect physical change in the environment and that is undertaken or funded by a state or local agency, or requires a permit, license, or lease from a state or local agency. CEQA requires that impacts to "Historical Resources" be identified and, if the impacts will be significant, that mitigation measures to reduce the impacts be applied.

A "Historical Resource" is a resource that 1) is listed in or has been determined eligible for listing in the California Register of Historical Resources (CRHR) by the State Historical Resources Commission, or has been determined historically significant by the CEQA lead agency because it meets the eligibility criteria for the CRHR, 2) is included in a local register of historical resources, as defined in Public Resources Code 5020.1(k), or 3) has been identified as significant in a historical resources survey, as defined in Public Resources Code 5024.1(g) [CCR Title 14, Section 15064.5(a)].

The eligibility criteria for the CRHR are as follows [CCR Title 14, Section 4852(b)]:

- (1) It is associated with events that have made a significant contribution to the broad patterns of local or regional history, or the cultural heritage of California or the United States;
- (2) It is associated with the lives of persons important to local, California, or national history.
- (3) It embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of a master or possesses high artistic values; or
- (4) It has yielded, or has the potential to yield, information important to the prehistory or history of the local area, California, or the nation.

In addition, the resource must retain integrity. The integrity of a resource is evaluated with regard to the retention of location, design, setting, materials, workmanship, feeling, and association [CCR Title 14, Section 4852(c)]. Resources that have been determined eligible for the NRHP are automatically eligible for the CRHR.

4.7 CULTURAL RESOURCES

Archaeological sites are usually evaluated under Criterion 4, the potential to yield information important in prehistory. An archaeological test program may be necessary to determine whether the site has the potential to yield important data. Imperial County, as the CEQA lead agency, makes the determination of eligibility based on the results of the test program.

AB 4239

AB 4239 established the Native American Heritage Commission (NAHC) as the primary government agency responsible for identifying and cataloging Native American cultural resources. The bill authorized the Commission to act in order to prevent damage to and insure Native American access to sacred sites and authorized the Commission to prepare an inventory of Native American sacred sites located on public lands.

Public Resources Code 5097.97

No public agency and no private party using or occupying public property or operating on public property under a public license, permit, grant, lease, or contract made on or after July 1, 1977, shall in any manner whatsoever interfere with the free expression or exercise of Native American religion as provided in the United States Constitution and the California Constitution; nor shall any such agency or party cause severe or irreparable damage to any Native American sanctified cemetery, place of worship, religious or ceremonial site, or sacred shrine located on public property, except on a clear and convincing showing that the public interest and necessity so require.

Public Resources Code 5097.98 (b) and (e)

Public Resources Code 5097.98 (b) and (e) require a landowner on whose property Native American human remains are found to limit further development activity in the vicinity until he/she confers with the NAHC-identified Most Likely Descendants (MLDs) to consider treatment options. In the absence of MLDs or of a treatment acceptable to all parties, the landowner is required to reenter the remains elsewhere on the property in a location not subject to further disturbance.

California Health and Safety Code, Section 7050.5

California Health and Safety Code, Section 7050.5 makes it a misdemeanor to disturb or remove human remains found outside a cemetery. This code also requires a project owner to halt construction if human remains are discovered and to contact the county coroner.

Paleontological Resources

CEQA Guidelines Appendix G provides a checklist of questions that a lead agency should typically address if relevant to a project's environmental impacts. Appendix G Section (V)(c) asks if the project will directly or indirectly destroy a unique paleontological resource, site, or unique geological feature.

The Society of Vertebrate Paleontology (SVP), a national organization, has established a set of procedures and standards for assessing and mitigating impacts to vertebrate paleontological resources (SVP 2010).

C. LOCAL

Cultural Resources

Imperial County General Plan

The Imperial County General Plan provides goals, objectives, and policies for the identification and protection of significant cultural resources. The Open Space Element of the General Plan includes goals, objectives, and policies for the protection of cultural resources and scientific sites that emphasize identification, documentation, and protection of cultural resources. **Table 4.7-1** provides a consistency analysis of the applicable Imperial County General Plan policies relevant to cultural resources as they relate to the proposed project. While this EIR analyzes the project’s consistency with the General Plan pursuant to State CEQA Guidelines Section 15125(d), the Imperial County Board of Supervisors ultimately determines consistency with the General Plan.

**TABLE 4.7-1
IMPERIAL COUNTY GENERAL PLAN CONSISTENCY ANALYSIS**

GENERAL PLAN POLICIES	CONSISTENT WITH GENERAL PLAN?	ANALYSIS
<p>Cultural Resources Conservation Policy</p> <p>Identify and document significant historic and prehistoric resources, and provide for the preservation of representative and worthy examples; and recognize the value of historic and prehistoric resources, and assess current and proposed land uses for impacts upon these resources.</p> <p>Programs</p> <ul style="list-style-type: none"> • The County will use the environmental impact report process to conserve cultural resources. Public awareness of cultural heritage will be stressed. All information and artifactual resources recovered in this process will be stored in an appropriate institution and made available for public exhibit and scientific review. • Encourage the use of open space easements in the conservation of high value cultural resources. • Consider measures which would provide incentives to report archeological discoveries immediately to the Imperial Valley College - Baker Museum. • Coordinate with appropriate federal, state, and 	<p style="text-align: center;">Yes</p>	<p>As part of the environmental review (EIR process) for the Campo Verde Solar Project, historic and prehistoric resources were identified and documented. Historical Resources in the project study area are being preserved.</p>

4.7 CULTURAL RESOURCES

<p>local agencies to provide adequate maps identifying cultural resource locations for use during development review. Newly discovered archeological resources shall be added to the "Sensitivity Map for Cultural Resources".</p> <ul style="list-style-type: none"> • Discourage vandalism of cultural resources and excavation by persons other than qualified archaeologists. The County shall study the feasibility of implementing policies and enacting ordinances toward the protection of cultural resources such as can be found in California Penal Code, Title 14, Point 1, Section 622-1/2. 		
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4.7.2 ENVIRONMENTAL SETTING

The project area is within the western portion of the Colorado Desert, which is also part of the larger Sonoran Desert. The area is located between the Colorado River on the east, the Yuha Desert on the west, the Salton Sea to the north, and the U.S.-Mexico International Border to the south. The topography in the project area is relatively level and consists of irrigated agricultural fields. Irrigation water is provided by a network of canals and ditches that bring water from the Colorado River via the All-American Canal. Prior to conversion of the area to agriculture, native vegetation consisted of creosote, ocotillo, brittle bush, ephedra, and white bursage, as well as other native annuals and grasses. The New River, which carries excess irrigation water from drains installed in fields to the Salton Sea, is located about 0.25-mile north of the northeast corner of the project area.

A. PALEONTOLOGY

Paleontological resources (fossils) are the remains of prehistoric plant and animal life. Fossil remains, such as bones teeth, shell, and wood, are found in geologic deposits (rock formations) within which they were originally buried. The following provides an overview of the geologic formations that underlie the project area and their potential to yield significant fossils (Demere and Siren, 2011).

Geologic Formations

Quaternary Alluvium (Qa)

The Quaternary alluvium consists of Recent sediments including aeolian sand and alluvial sand and gravel. These surficial deposits are likely entirely Holocene in age (less than 10,000 years). Because of the young age of the sediments, Quaternary alluvium usually does not yield significant fossils.

Lake Cahuilla Sediments (Qc)

Lake Cahuilla sediments are sedimentary rocks that underlie much of the project site. These sediments contain fossils of freshwater molluscs (including freshwater mussel) and fish (desert pupfish, bonytail, and razorback sucker) that lived in Lake Cahuilla, a large lake that existed intermittently during the Holocene when the Colorado River overflowed into the Salton trough. Terrestrial fossils, including various species of lizards and snakes, as well as mammals, including cottontail rabbit, kangaroo rat, wood rat, pocket mouse, and ground squirrel. Lake Cahuilla sediments have the potential to yield significant fossils because of the paleoclimatic and paleoecological information they can provide.

Brawley Formation (Qbr)

The Brawley Formation consists of sedimentary rocks (including siltstone) that crop out in rocks in the central portion of the project area and are also found subsurface in the vicinity of the Imperial Valley Substation. The Brawley Formation is Pleistocene in age (0.4 to 1.07 million years old) and has yielded fossils of freshwater lacustrine vertebrates (fish) and invertebrates (molluscs).

Field Survey

During the field survey Lake Cahuilla sediments and rock from the Brawley Formation were observed in low outcrops within and directly adjacent to the project area. In the vicinity of the Imperial Valley Substation, Lake Cahuilla sediments extend six to eight feet below the surface and overlie sedimentary rocks of the Brawley Formation (Demere and Siren, 2011).

B. CULTURAL RESOURCES

Prehistory

Little archaeological material dating to the Early and Middle Holocene Periods (8,000 to 1,000 B.C.) is known from the Salton Trough area of the Colorado Desert. The only indications of use of this area during this long period of time consist of large dart points found on the former lake bed of Lake Cahuilla (an older and larger version of the Salton Sea) and in the nearby desert (Mitchell, 2011). The sparse occupation during the Middle Holocene may be related to extremely arid climatic conditions and of the lack of water in the Salton Trough (Lake Cahuilla was likely dry during this period). While the population of the region was likely sparse during this period, small bands of mobile Desert Archaic people presumably moved among areas where water (at springs) and plant food resources were available.

Higher population and greater numbers of sites appear to correlate with the presence of Lake Cahuilla which filled the Salton Trough when water flowed into the trough from the Colorado River. When water ceased to flow from the river, the lake dried, markedly reducing the availability of resources. Occupation of the Salton Trough during the Late Prehistoric Period (A.D. 700 to Contact) correlates with three cycles of inundation and drying in Lake Cahuilla that occurred between A.D. 1,200 and 1,680 (Mitchell, 2011). When the lake was present, lacustrine resources, such as fish, shellfish, and waterfowl were available. When the lake was absent, very few resources were available and human population was low. Lake Cahuilla was much larger than the current Salton Sea. Whereas the current Salton Sea shoreline is about 70 meters (230 feet) below sea level, the maximum Lake Cahuilla shoreline was near sea level (Mitchell, 2011). The entire Imperial Valley between East Mesa and West Mesa was underwater when Lake Cahuilla was present.

Late Prehistoric archaeological sites in this area belong to the Patayan pattern characterized by use of the bow and arrow and ceramics. The Patayan pattern began about A.D. 700 with the introduction of the bow and arrow, indicated archaeologically by the presence of small projectile points (arrow points) and, along the Colorado River, by the appearance of ceramics. In the southern Salton Trough area, ceramics first appear about A.D. 1000 (Mitchell, 2011).

Along the lower Colorado River, the Patayan settlement-subsistence system consisted of horticulture, hunting, and gathering in riparian habitats. People lived in multi-seasonal residential bases along the river. When Lake Cahuilla was present in the Salton Trough, they also occupied temporary camps for fishing, hunting, and gathering on the eastern shore of Lake Cahuilla. On the west side of the Salton Trough, the Patayan pattern consisted of a seasonal round among upland and lowland habitats. When Lake Cahuilla was present, seasonal residential bases and temporary camps were occupied on the

4.7 CULTURAL RESOURCES

western shore of Lake Cahuilla in order to obtain resources from the lake including fish, shellfish, and waterfowl (Mitchell, 2011).

Obsidian from the Obsidian Butte source on the southeast margin of the Salton Sea was used for making flaked stone tools throughout southern California during the Late Prehistoric Period. However, obsidian from Obsidian Butte could only be obtained when lake levels were low, since it is at an elevation of -40 meters (130 feet below sea level).

Ethnography

The Kumeyaay

The Kumeyaay are the Yuman-speaking native people of central and southern San Diego County and the northern Baja Peninsula in Mexico. Spanish missionaries and settlers used the collective term Diegueño for these people, which referred to people living near the presidio and mission of San Diego de Alcalá. Today, these people refer to themselves as Kumeyaay or as Tipai and Ipai, which are northern and southern subgroups of the Kumeyaay (Mitchell, 2011).

The territory of the Kumeyaay extended north from Todos Santos Bay near Ensenada, Mexico to Agua Hedionda Lagoon in north San Diego County, and east to the Imperial Valley. The primary source of Kumeyaay subsistence was vegetal food. Seasonal travel followed the ripening of plants from the lowlands to higher elevations of the mountain slopes. Acorns, grass and sage seeds, cactus fruits, wild plums, pinyon nuts, and agave stalks were the principal plant foods. Women sometimes transplanted wild onion and tobacco plants to convenient locations, and sowed wild tobacco seeds. Deer, rabbits, small rodents, and birds provided meat. Village locations were selected for seasonal use and were occupied by clans or bands of related people. Three or four clans might winter together, then disperse into smaller bands during the spring and summer (Mitchell, 2011).

It is estimated that the pre-contact Kumeyaay population ranged from approximately 3,000 (Kroeber 1925) to 9,000 (Mitchell, 2011). Beginning in 1775, the semi-nomadic life of the Kumeyaay began to change as a result of contact with European-Americans, particularly from the influence of the Spanish missions. Through successive Spanish, Mexican, and Anglo-American control, the Kumeyaay were forced to adopt a sedentary lifestyle and accept Christianity. As of 1968, Kumeyaay population was approximately 1,500 (Mitchell, 2011).

The Colorado River Peoples: The Quechan and Cocopah

The Quechan and Cocopah are the Yuman-speaking people who lived along the lower Colorado River and also made use of resources in the Imperial Valley. The first historic accounts of the traditional inhabitants of the lower Colorado River were made by Spanish and, later, American explorers. The Lower Colorado River area was one of shifting tribal territory and tribal boundaries in ethnohistoric times due to inter-tribal warfare. When the Spanish explorers Díaz and Alarcón sailed up the lower Colorado River in 1540 the scene they observed was one of incessant warfare (Mitchell, 2011).

The Quechan and Cocopah obtained food through seasonal rounds of hunting, fishing, and gathering supplemented by small-scale agricultural practices. The Cocopah derived about 30 percent of their diet from agriculture while the Quechan derived about 40 percent of their diet from agriculture (Bee 1983). Cultivated crops included maize, beans, squash, melon, and various semi-wild grasses. The river Yumans used more than 75 wild plant foods as food sources, the most important being mesquite and screwbean. The primary source of dietary protein came from fish caught in the Colorado River. Among the more important species were the humpbacked sucker and Colorado pike minnow. Regularly hunted game

included small mammals such as rabbits, squirrels, and pack rats. Larger game included deer and bighorn sheep (Mitchell, 2011).

History

In 1769, stimulated by Russian and English encroachment on the northwest Pacific Coast, Spain began to establish a series of missions and presidios along the coastal plains of California that eventually stretched from San Diego to San Francisco. The Spanish established a presidio and mission at San Diego. Lt. Pedro Fages, who was stationed at the San Diego presidio, explored the Imperial Valley area in 1772, 1782, and 1785. The Anza expedition, led by Captain Juan Bautista de Anza, crossed the Imperial Valley in 1774. Beginning at the Spanish presidio at Tubac in what is now southern Arizona, the expedition crossed the Colorado River near Yuma, and passed through the Imperial Valley on its way to Mission San Gabriel in the Los Angeles area (Mitchell, 2011).

The first formal record of the region made by an American was that of Lieutenant-Colonel W. H. Emory, who, in 1846, traveled what was known as the Southern Route from Yuma, through the southern portion of Imperial Valley and the Salton Sink, followed the Carrizo Wash to Warner Springs. From here there were routes leading to San Diego and Los Angeles. The following year, Emory accompanied General Stephen W. Kearny's American Army of the West expedition over the same route. In 1848, the Mormon Battalion followed the Southern Route and established the first wagon road (Mitchell, 2011). During the Gold Rush of the late 1840s and early 1850s, thousands of prospectors and other immigrants came to California by the Southern Route. Semi-weekly stage service by the Butterfield Overland Mail Company from St. Louis to San Francisco began in 1858. The segment of the route between Yuma and Los Angeles crossed the Imperial Valley. Service ended in 1861 at the beginning of the Civil War (Mitchell, 2011).

As early as 1890, settlers began to enter the Imperial Valley of California. Prior to this, many settlers and travelers passed through the valley on their way to San Diego or Los Angeles from Ft. Yuma on the Colorado River. People viewed the Imperial Valley as a barren waste-land that was subject to instant flooding and plagues of insects in addition to arid land and scorching heat throughout the year (Mitchell, 2011). A few settlers started the town of Imperial, and by 1900 many more settlers entered the valley and began to farm the land; however, no real development took place until water was brought into the area in 1901. This occurred with the construction of the Alamo Canal, which was a 4 mile-long waterway that connected the Colorado River to the head of the Alamo River. The canal was constructed in 1901 to provide irrigation to the Imperial Valley. A small portion of the canal was located in the United States but the majority of the canal was located in Mexico. The Alamo Canal is also known as the Imperial Canal (Mitchell, 2011), and by 1903 hydroelectric power was being harnessed as well. By 1904 the City of Imperial was officially formed. In 1905 there were a series of floods that diverted the Colorado River into the valley and the Salton Sea was formed. Imperial County, originally part of San Diego County, was founded August 7, 1907. The same year the cities of El Centro, Brawley, and Holtville were also formed.

After the flooding of the Salton Sea was brought under control in early 1907, agricultural development resumed in Imperial Valley. The Imperial Irrigation District (IID) was established in July of 1911, covering an area of 817 square miles, the largest irrigation district in the world at that time. In June, 1916, the IID purchased the canal system built by the California Development Company (IID, n.d.).

By the mid-1920s 500,000 acres in Imperial Valley were being irrigated. In 1934 construction began on a new irrigation canal system for the valley that would be primarily on U.S. soil, the All-American Canal, which was completed in 1940 (IID, n.d.). The population by this time had grown to more than 61,000 in Imperial Valley. In the 1950s and 1960s farmers were encouraged to level and tile their fields, and install

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concrete ditches. In 1950 there were approximately 1,550 farmers, but presently there are approximately 500 farmers in Imperial Valley.

Patents (federal deeds) were issued for land in the project area beginning in 1911 (Mitchell, 2011). All land in the Imperial Valley was originally public land owned by the federal government. Settlers could purchase land from the federal government, obtain it through homesteading, or through the Desert Land Act which required irrigating the land for three years. When the settler had met the requirements, the settler received a patent and assumed ownership of the land. Most of the federal patents for land in the Project area were issued between 1911 and 1920. The federal government also issued patents to the State of California for land in the project area. The state then sold much of this land to settlers.

Cultural Resources in the Project Area

Records Search

A cultural resources records search was conducted by the South Coastal Information Center (SCIC), a component of the California Historical Resources Information System (CHRIS). The SCIC archives site records, maps, and reports for cultural resources in San Diego and Imperial Counties. The SCIC is located at San Diego State University in San Diego, California. The purpose of the records search was to determine the extent of previous cultural resources investigations within a 1-mile radius of the project area, and to determine whether any archaeological sites or architectural resources have been previously identified within the project area. Materials reviewed as part of the records search included archaeological site records, historic maps, and listings of resources on the NRHP, the California Register of Historical Resources (CRHR), California Points of Historical Interest, and California Historical Landmarks.

The records search revealed that 47 cultural resources investigations have been conducted within one mile of the project. Of these 47 investigations, 6 are within or crossing the project area. Four of the six previous studies applicable to the project area were conducted between 1975 and 1980 (Mitchell, 2011), and are all linear projects. One study, also a linear study was conducted in 1993 for the Imperial Irrigation District East Lowline and Trifolium Interceptors Environmental Impact Report (Mitchell, 2011). The most recent study within the project area was the survey of a staging area for the Sunrise Powerlink Project by Gallegos and Associates (Mitchell, 2011).

The records search identified a total of 139 previously recorded cultural resources within the one-mile records search radius. As shown in **Table 4.7-2** eight of the previously recorded cultural resources are within the project study area.

**TABLE 4.7-2
PREVIOUSLY RECORDED CULTURAL RESOURCES IN THE PROJECT AREA**

Site Number	Type	Age	Location	Comment
CA-IMP-3404	Cross Wagon Road	Historic	Proposed Project Study Area	
CA-IMP-3406	Cross Wagon Road (different segment)	Historic	Proposed Project Study Area	
CA-IMP-7834	Westside Main Canal	Historic	Proposed Project Study Area	Part of the All-American Canal System
CA-IMP-8821	Fox Glove Canal	Historic	Proposed Project	

**TABLE 4.7-2
PREVIOUSLY RECORDED CULTURAL RESOURCES IN THE PROJECT AREA**

Site Number	Type	Age	Location	Comment
			Study Area	
CA-IMP-8983	Wormwood Canal	Historic	Proposed Project Study Area	
P-13-012689	Portion of Fern Canal and Fern Drain	Historic	Proposed Project Study Area	Part of the All-American Canal System
P-13-012692	Fern Check of the Westside Main Canal	Historic	Proposed Project Study Area	Part of the All-American Canal System
P-13-012693	Portion of the Fig Canal	Historic	Proposed Project Study Area	Part of the All-American Canal System

Source: SCIC, 2011.

Key to Site numbers: Site numbers beginning with P- are Primary numbers assigned by the SCIC; Site numbers beginning with CA-IMP- are Trinomial numbers assigned by the SCIC.

All of the previously recorded cultural resources are from the historic period. Two (CA-IMP-3404 and CA-IMP-3406) are segments of the Cross Wagon Road. The other six resources are water conveyance facilities related to agriculture in the Imperial Valley, and include a portion of the Westside Main Canal (CA-IMP-7834); a portion of the Foxglove Canal (CA-IMP-8821); a portion of the Wormwood Canal (CA-IMP-8983); a portion of the Fern Canal and the Fern Drain (P-13-012689); a portion of the Forget-Me-Not Canal (P-13-012690); the Fern Check of the Westside Main Canal (P-13-012692); and a portion of the Fig Canal (P-13-012693).

Native American Consultation

The NAHC conducted a Sacred Lands File search of the project area of potential effect (APE) and found Native American cultural resources were not identified within their inventory; however, they were aware of recorded archaeological sites and Native American cultural resources in close proximity to the APE. Dave Singleton of the NAHC provided a list of Native American contacts for the project area in his letter of July 7, 2011. This letter is included as part of **Appendix E** provided on the attached CD of Technical Appendices of this EIR.

On August 3, 2011 kp environmental, LLC (kpe), the preparer of the cultural resources technical report for the project, sent e-mails to the following Native American contacts on the NAHC list:

- Gwendolyn Parada - Chairperson, La Posta Band of Mission Indians
- Leroy J. Elliott – Chairperson, Manzanita Band of Kumeyaay Nation
- Monique LaChappa – Chairperson, Campo Kumeyaay Nation
- Keeny Escalanti, Sr. - President, Fort Yuma Quechan Tribe
- Will Micklin – Executive Director, Ewiiapaayp Band of Kumeyaay Indians
- Michael Garcia – Vice Chairman, Ewiiapaayp Band of Kumeyaay Indians
- Jill McCormick – Tribal Archaeologist, Cocopah Indian Tribe
- Bridget Nash-Chrabasz – THPO, Fort Yuma Quechan Tribe

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- Preston J. Arrow-Weed, Ah-Mut-Pipa Foundation
- Bernice Paipa – Vice Spokesperson, Kumeyaay Cultural Repatriation Committee

A letter was sent to:

- Carmen Lucas, Kwaaymii Band of Mission Indians

Ms. Lucas requested a visit to the project area. Ms. Lucas and other Native American representatives were invited to an on-site meeting on behalf of First Solar, Inc. The meeting was held on December 6, 2011 and was attended by Carmen Lucas (of the Kwaaymii Band of Mission Indians) and Jill McCormick (Tribal Archaeologist for the Cocopah Indian Tribe). Ms. Lucas requested tribal monitors during the field surveys. Ms. Lucas and Ms. McCormick requested that the landscape and viewshed be considered, especially because Mount Signal is nearby, an important place for the Cocopah. The group was shown prehistoric pottery fragments at archaeological site CA-IMP-11758 in the project area. The prehistoric pottery fragments are in a refuse dump that mostly consists of material from the historic period. Ms. Lucas and Ms. McCormick requested that CA-IMP-11758 be avoided and that Native American monitors be present during construction near the site. A second field meeting was held on January 5, 2012 and was attended by Lorey Cachora and Ken Bathke (both from the Fort Yuma Quechan Tribe). They also visited site CA-IMP-11758 which Mr. Cachora requested be avoided. He also suggested that animals and plants that have meaning to Native Americans be considered. He would like to see a plan for land reclamation.

Several Tribes and one tribal organization have requested and received copies of the technical cultural report to review. These include: Campo Kumeyaay Nation, Cocopah Indian Tribe, Fort Yuma Quechan Tribe, Kwaaymii Band of Mission Indians, La Posta Band of Mission Indians, and the Kumeyaay Cultural Repatriation Committee. On March 5, 2012, the Cocopah Indian Tribe commented on the technical report by letter. The Tribe requested that both archaeological and tribal monitors be present during all construction activities, and offered to provide Cocopah tribal monitors for this project (McCormick, 2012).

Field Survey

An archaeological field survey of a portion of the project study area on private lands was conducted by the Environmental Planning Group (EPG) in 2007 (Mitchell, 2011). The rest of the project study area on private lands was surveyed by KP Environmental in 2011 (Mitchell, 2011). An inventory of historic period buildings, structures and facilities was completed by ASM Affiliates (Davis et. Al, 2011). During the field survey, systematic pedestrian transects, spaced at intervals of 15 meters, were utilized. The survey area for the gen-tie routes consisted of 150 feet on each side of the centerline of the route. The survey team closely examined the ground surface for evidence of prehistoric and historic resources. An archaeological site was defined as at least three associated artifacts or a single feature. Cultural resources not meeting the site criteria were recorded as isolated finds. Cultural resources located during the survey were recorded using Department of Parks and Recreation (DPR) 523 Forms. Previously recorded resources CA-IMP-3404 and CA-IMP-3406, segments of the Cross Wagon Road, could not be found during the current field surveys.

The field surveys identified 29 cultural resources more than 50 years old in the project area. They consist of 7 historic period water conveyance facilities (canals, drains, and ditches), 10 historical buildings (9 houses and a shed), 1 historic archaeological site (CA-IMP-11758), as well as 11 isolates (1 or 2 artifacts each). The isolates are numbered. **Table 4.7-3** summarizes the water conveyance facilities, buildings, archaeological site, and isolated finds (isolates) that are located in the solar energy field study area and along the gen-tie route. The isolated finds, which have no potential to be eligible resources, are not described.

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**TABLE 4.7-3
CULTURAL RESOURCES IDENTIFIED IN THE PROJECT AREA**

Site Number	Description	Resource Type	Age	Location
CA-IMP-7834 & P-13-013760	Westside Main Canal and Westside Drain (P-13-013760)	Structure/Facility	Historic	Solar generation facility site
P-13-008983	Wormwood Canal	Structure/Facility	Historic	Solar generation facility site
P-13-012688	Dixie Drains 2, 3, & 4, Dixie Lateral 1 (portions)	Structure/Facility	Historic	Solar generation facility site
P-13-012689	Fern Canal and Fern Drain	Structure/Facility	Historic	Solar generation facility site
P-13-012693	Fig Canal	Structure/Facility	Historic	Solar generation facility site
P-13-013748	Fig Drain	Structure/Facility	Historic	Solar generation facility site
P-13-013747	Diehl Drain	Structure/Facility	Historic	Solar generation facility site
P-13-013761	Wixom Drain	Structure/Facility	Historic	Solar generation facility site
1210 Drew Road	Residence	Building	Historic	Solar generation facility site
1220 Drew Road	Residence	Building	Historic	Solar generation facility site
1276 Drew Road	Residence	Building	Historic	Solar generation facility site
1796 West Graham Road	Residence	Building	Historic	Solar generation facility site
2596 West Hardy Road	Residence	Building	Historic	Solar generation facility site
Liebert Road	Shed	Building	Historic	Solar generation facility site

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**TABLE 4.7-3
CULTURAL RESOURCES IDENTIFIED IN THE PROJECT AREA**

Site Number	Description	Resource Type	Age	Location
West Stephens Road	Residence	Building	Historic	Solar generation facility site
2396 West Vaughn Road	Residence	Building	Historic	Solar generation facility site
2104 West Wixom Road	Residence	Building	Historic	Solar generation facility site
1651 Westside Road	Residence	Building	Historic	Solar generation facility site
CA-IMP-11758	Historic refuse scatter; 19 th century kaolinite pipestem fragment and 3 prehistoric pottery fragments also found within the trash scatter	Archaeological Site	Historic	Solar generation facility site
P-13-013749	Isolate bottle base and nail	Isolate	Historic	Solar generation facility site
P-13-013750	Isolate bottle base	Isolate	Historic	Solar generation facility site
P-13-013751	Isolate whiteware ceramic fragment	Isolate	Historic	Solar generation facility site
P-13-013752	Isolate whiteware ceramic fragment	Isolate	Historic	Solar generation facility site
P-13-013753	Isolate glass fragments: 1 purple dating to 1890-1920; and 1 clear 1935-1964	Isolate	Historic	Solar generation facility site
P-13-013755	Isolate "SMIRNOFF" bottle dating to 1932-1964.	Isolate	Historic	Solar generation facility site
P-13-013756	Isolate 1911 Liberty Head nickel	Isolate	Historic	Solar generation facility site
P-13-013757	Isolate green/black bottle glass fragment	Isolate	Historic	Solar generation facility site

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**TABLE 4.7-3
CULTURAL RESOURCES IDENTIFIED IN THE PROJECT AREA**

Site Number	Description	Resource Type	Age	Location
CA-IMP-5297 (Isolate)	Isolate Flakes – Collected	Isolate	Prehistoric	Solar generation facility site
CA-IMP-5298 (Isolate)	Isolate Mano - Collected	Isolate	Prehistoric	Solar generation facility site

Source: Mitchell, 2011.

Key to Site numbers: Site numbers beginning with P- are Primary numbers assigned by the SCIC; Site numbers beginning with CA-IMP- are Trinomial numbers assigned by the SCIC.

CA-IMP-7834 is the Westside Main Canal, a water conveyance facility. Westside Main Canal was constructed circa 1907 as one of four canals constructed for the earliest irrigation system in the Imperial Valley. It was later connected to the All-American Canal which extends westward from Yuma, Arizona along the north side of the U.S.-Mexico border and terminates at the Westside Main Canal. The segment of the Westside Main Canal within the project area is approximately 5.5 miles long, beginning just north of its intersection with Interstate 8 extending southeast approximately 5 miles to its intersection with Liebert Road and the Fern Canal. The Westside Main Canal extends another 0.5 miles past Liebert Road within the project area. The canal is approximately eight feet deep and approximately 40 feet wide. Numerous laterals extend from the canal into the project area. The Westside Drain consists of an earthen irrigation drainage ditch. The ditch is trapezoidal in shape with earthen banks and levees on either side that provide vehicular access along the length of the canal. The Westside Drain (P-13-013760) drains into Dixie Drain 3 which in turn empties into Salt Creek which ultimately empties into the Salton Sea. Improvements were made to the existing Westside Drain when the All American Canal was completed in 1941. The Westside Drain is part of the Westside Main Canal system.

CA-IMP-8821 is the Foxglove Canal. The Foxglove Canal is an irrigation canal constructed circa 1912. It is located east of and directly parallel to the Westside Main Canal. The canal begins at a point just west of Hyde Road, and flows north to the canal's terminus one mile north of the intersection of Westmoreland and West Hetzel Road. The concrete-lined irrigation canal is approximately 12 feet wide and about 6 feet deep. Modifications were made to the canal in the 1960s. The entire canal is approximately 9 miles long.

P-13-008983 is the Wormwood Canal. The Wormwood Canal is a concrete-lined irrigation canal constructed in 1911 and modified in the 1960s. It extends from the Westside Main Canal at Fisher Road and continues eastward to Wormwood Road before extending northwesterly to Drew Road. The canal is approximately 10 feet wide and about 6 feet deep and is accessible from Old Highway 80, State Route 98, and Interstate 8. The project area also includes Wormwood Lateral 7 (an extension of the canal system from 1950) as well as the earthen Wormwood Drain, one of the earliest drains in the Imperial Valley, dating to at least 1909. Wormwood Drain primarily extends along Wormwood Canal, paralleling Drew Road, northward from Graham Road to the New River.

P-13-012688 consists of the Dixie Drains and Lateral 1. The Dixie Drains are part of a larger drainage system that empties into the New River south of Worthington Road. The Dixie drains were constructed after 1922 and before 1949, possibly circa 1940. The earthen drainage ditches are approximately 10 feet wide and about 6 feet deep. Dixie Lateral 1 is an irrigation canal lateral that extends eastward from the Westside Main Canal west of Hyde Road and south of West Vaughn Road. The earthen canal is

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approximately 10 feet wide and about 6 feet deep. Lateral 1 was constructed before 1914 and was extended to connect with Dixie Drain 3 in later years.

P-13-012689 consists of the Fern Canal. The Fern Canal is an irrigation canal constructed circa 1909. In the project area, it is located west of Liebert Road, and flows north from the Westside Main Canal beyond Interstate 8. The canal is approximately 10 feet wide and about 6 feet deep. The canal is lined with concrete. Modifications were made to the canal in the 1960s. The entire canal is approximately 10 miles long.

P-13-012690 is the Forget-Me-Not Canal. The Forget-Me-Not Canal is an irrigation canal constructed circa 1909. It is located east of the Westside Main Canal and extends northward along Hyde Road. The earthen irrigation canal is approximately 10 feet wide and about 6 feet deep. The Forget-Me-Not Lateral 1 is an irrigation lateral constructed circa 1909. It is located west of the Westside Road and flows eastward from the Forget-Me-Not canal and empties into the Westside Drain. The concrete-lined lateral is approximately 10 feet wide and about 6 feet deep. Modifications were made to the canal in the 1960s and 1970s.

P-13-012693 is the Fig Canal. The Fig Canal is an irrigation canal constructed circa 1909. It is located east of the Westside Main Canal and flows north from the Fern Canal at Liebert Road and West Wixom Road to the Fig Spill around Evan Hewes Highway (Old Highway 80) near Seeley. The canal is approximately 10 feet wide and approximately 6 feet deep. The canal is lined with concrete. Modifications were made to the canal in the 1970s.

P-13-013748 is the Fig Drain. The Fig Drain is an earthen irrigation drainage ditch that flows north to the New River. It is located between Drew Road and Derrick Road. The drain is approximately 10 feet wide and about 6 feet deep. It was originally constructed after 1922 and before 1949, possibly circa 1940. The entire drain is approximately 4 miles long.

P-13-013747 is the Diehl Drain. The Diehl Drain is an irrigation drainage ditch constructed after 1922 and before 1949, possibly circa 1940. It is located northeast of the Westside Main Canal and flows north and south. The drain is an earthen ditch approximately 10 to 20 feet wide and approximately 10 feet deep. The entire drain is approximately one mile long and connects with the Fig Drain.

P-13-013761 is the Wixom Drain. The Wixom Drain is an earthen irrigation drainage ditch constructed after 1922 and before 1949, possibly circa 1940. It is located east of the Westside Main Canal and flows north to the New River from the Fig Canal at Liebert Road and West Wixom Road. The drainage ditch is approximately two miles long, 10 to 20 feet wide and about 10 to 15 feet deep.

1210 Drew Road is a one-story vernacular building constructed as a single-family residence circa 1955. It is a wood frame building, rectangular in plan with a concrete foundation. The exterior is clad in stucco siding. The roof is a low-pitched, side gable roof covered with a asphalt roll roofing material. There is a front gable roof projection with widely overhanging eaves. Modifications to the building include replacement siding, windows, and doors.

1220 Drew Road is a one-story vernacular building constructed as a single-family residence circa 1940. It is a wood frame building, rectangular in plan with a concrete foundation. The exterior is clad in horizontal wood board siding. The roof is a low-pitched front gable roof with overhanging eaves and exposed rafter tails. An addition was constructed along the eastern side of the building at a later time.

1276 Drew Road is a one-story vernacular building constructed as a single-family residence circa 1940. It is a wood frame building, rectangular in plan with a concrete foundation. The exterior is clad in

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horizontal wood board siding. The roof is a low-pitched front gable roof with a shed roof extension surrounding the north, west, and south facades. Additions include a rear one-story front gable addition on the east elevation. Modifications to the building include an enclosed shed roof porch enclosure.

1796 West Graham Road is a one-story vernacular building constructed as a single-family residence circa 1955. It is a wood frame building, rectangular in plan, with a concrete foundation. The exterior is clad in stucco. The roof is a low-pitched side gable roof with a front gable dormer. Modifications to the building include replaced windows, doors, and siding.

2596 West Hardy Road is a one-story vernacular building constructed as a single-family residence circa 1955. It is a wood frame building, rectangular in plan, with a concrete foundation. The exterior is partially clad in horizontal siding. The roof is nearly flat with widely overhanging eaves.

Liebert Road Shed. The Liebert Road Shed is a one-and-one-half story vernacular building constructed circa 1940. The shed is wood framed and rectangular in plan with a concrete foundation. The exterior is clad in vertical wood board siding. The roof is a front gable low-pitched roof with wide eaves.

West Stevens Road Property. The West Stevens Road property is a one-story vernacular building constructed as a single-family residence circa 1940. It is a wood frame building, near rectangular in plan with a wood post and beam foundation. The exterior is clad in horizontal and vertical wood board siding. The roof is a low-pitched side gable roof with moderate eaves and is covered with asphalt sheets. The primary entrance is located on the east façade. Additions include a shed roof addition on the north façade, and two other one-story additions on the south elevation. The windows and doors are missing.

2396 West Vaughn Road is a one-story vernacular building constructed as a single-family residence circa 1955. It is a wood frame building, T-shaped in plan with a concrete foundation. The exterior walls are clad in stucco. There is a low-pitched cross-gable roof covered in asphalt shingles. The roof has widely overhanging eaves. Modifications to the building include replaced windows and doors.

2104 West Wixom Road is a one-story vernacular building constructed as a single-family residence circa 1955. It is a wood frame building, near rectangular in plan with a concrete foundation. The exterior is clad with a stone veneer. There is a cross-gable roof with shallow eaves covered with asphalt roll roofing material. Modifications to the building include replaced windows.

1651 Westside Road is a one-story Ranch house constructed as a single-family residence circa 1955. It is a wood frame building, rectangular in plan with a concrete foundation. The exterior walls are clad in stucco. The roof is a low-pitched side gable roof covered with asphalt roll roofing material. There is a front gable roof projection on the south side of the building. Modifications to the building include replaced windows.

CA-IMP-11758 is an archaeological site from the historic period and consists of a refuse scatter situated on the west bank of Fig Drain and spread over an area 205 feet north to south by 73 feet east to west. The main concentration is on the east-facing slope of the bank. There are several piles of large broken chunks of concrete and metal debris that has been dumped along the upper bank to the north. Several additional historic artifacts were found widely dispersed throughout these piles. Artifacts identified in the main concentration consist of several black/green bottles, a nineteenth century ball clay (kaolinite) pipe stem, a *Bos taurus* (cattle) metacarpal diaphysis, and three prehistoric ceramic sherds. Five bottle bases and two neck and finish portions are present. The bases are all kick-up, with a pontil mark present on one and the number "8" embossed on another. One of the two bottle necks has an applied finish. The prehistoric ceramics are buffware, all from the same vessel. Wipe marks are visible and one sherd exhibited possible red painted decoration. The northernmost artifact is a historic period yellow ceramic

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fragment. The piece has a yellow glaze and a portion of some type of handle is present. Also found was a single can with an external friction lid, a piece of cut bone (possibly pig), a fragment of a brown glass bottle base which exhibits an Owens suction scar and kurling around the edge of the bottle base. Additionally, there was a metal hinge, a piece of milled lumber, a light green colored bottle fragment, and a ceramic fragment with white glaze. The site is located within a very disturbed area, bounded by agricultural fields to the west and north and by a large earthen ditch to the east. It is likely that this is a secondary deposit and the result of illegal trash dumping.

There are ten isolates from the historic period that consist of one or two artifacts each. The two prehistoric isolates (CA-IMP-5297 and CA-IMP-5298) were collected in 2007 and no longer exist in the project area.

In addition to the cultural resources described above, a memorial to Margarito Hernandez was found during the field survey. The memorial consists of a concrete monument on a concrete footing and is surmounted by a concrete cross. There is also a wooden cross and flowering plants in the ground around the memorial. The memorial is not a historic resource because it is less than 50 years old (the inscription on the memorial indicates Mr. Hernandez died in 2010). However, this memorial is likely important to the local community and should be avoided during project construction.

4.7.3 IMPACTS AND MITIGATION MEASURES – CULTURAL RESOURCES

A. STANDARDS OF SIGNIFICANCE

The impact analysis provided below is based on the following questions from the Environmental Checklist Form (State CEQA Guidelines, Appendix G). The project would result in a significant impact to cultural resources if it would result in any of the following:

- a) Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?
- b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?
- c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?
- d) Disturb any human remains, including those interred outside of formal cemeteries?

Impacts to a Historical Resource, as defined by CEQA (listed in an official historic inventory or survey or eligible for the CRHR), are significant if the resource is demolished or destroyed or if the characteristics that made the resource eligible are materially impaired [CCR Title 14, Section 15064.5(b)]. CEQA Historical Resources include resources that are eligible for the NRHP or the CRHR [CCR Title 14, Section 15064.5(a)]. Such resources can be buildings, structures, and facilities from the historic period and prehistoric and historic archaeological sites. Demolition or alteration of eligible buildings, structures, and features to the extent that they would no longer be eligible would result in a significant impact. Whole or partial destruction of eligible archaeological sites would result in a significant impact. In addition to impacts from construction resulting in destruction or physical alteration of an eligible resource, impacts to the integrity of setting (sometimes termed “visual impacts”) of eligible buildings and above-ground structures and facilities in the project area could also result in significant impacts. All potentially significant impacts would occur as a result of construction. Operation and maintenance of the solar field and gen-tie will not result in any further impacts to cultural resources.

B. METHODOLOGY

The identified cultural resources in the project study area were evaluated to determine if they are eligible for the CRHR. If evaluated as eligible for the CRHR, the resources were found to be Historical Resources as defined by CEQA. Construction activities were analyzed to determine whether they would demolish or destroy the Historical Resource or if they would materially impair the characteristics that made the resource eligible for the CRHR. If the construction activities would demolish or destroy the Historical Resource or if they would materially impair the characteristics that make it eligible, the impact is determined to be significant. If a cultural resource is not a Historical Resource as defined by CEQA, there is no potential for impacts and impacts are not analyzed. In the following Section D the cultural resources that are not eligible for the CRHR are listed and the reasons why they are not eligible are discussed. Because these ineligible resources are not Historical Resources, they are not further considered and there is no impact analysis for these resources. After the discussion of the ineligible resources, impact analyses are provided for the Historical Resources (resources eligible for the CRHR).

C. ISSUES SCOPED OUT AS PART OF THE INITIAL STUDY

None of the criteria identified for Cultural Resources in Appendix G of the State CEQA Guidelines, were scoped out as part of the Initial Study.

D. PROJECT IMPACTS AND MITIGATION MEASURES

Ineligible Resources

Canals and Drains

The canals and drains in the project area (other than the Westside Main Canal system) are not eligible for the NRHP or the CRHR under any criteria. These ineligible canals and drains are:

- Foxglove Canal
- Wormwood Canal
- Dixie Drains 2, 3, & 4, Dixie Lateral 1
- Fern Canal and Fern Drain
- Forget-Me-Not Canal
- Fig Canal
- Fig Drain
- Diehl Drain
- Wixom Drain

Although these canals and drains are associated with the early irrigation system of the Imperial Valley, and the important local theme of agricultural development, these canals and drains do not convey that theme as well as other similar resources (such as the Westside Main Canal and the All-American Canal), in part due to their loss of integrity. Therefore, the canals and drains listed above are not eligible for the CRHR under Criterion 1 (association with important historical events). These canals and drains are not associated with any historically important persons and, therefore, are not eligible for the CRHR under Criterion 2. These canals and drains do not have any distinctive engineering characteristics and are not the work of a master. Therefore, they are not eligible for the CRHR under Criterion 3. They have no potential to yield important information in history, other than what has already been recorded. Therefore, they are not eligible for the CRHR under Criterion 4.

The canals and drains listed above are not Historical Resources for the purposes of CEQA and there would be no impact on Historical Resources at the locations of the canals and drains as a result of the proposed project.

4.7 CULTURAL RESOURCES

Residential Buildings

The residential buildings in the project area are not eligible for the NRHP or the CRHR under any criteria. These ineligible residential buildings are:

- 1210 Drew Road
- 1220 Drew Road
- 1276 Drew Road
- 1796 West Graham Road
- 2596 West Hardy Road
- West Stevens Road
- 2396 West Vaughn Road
- 2104 West Wixom Road
- 1651 Westside Road

Research failed to tie these buildings to events that have made a significant contribution to the broad patterns of local or regional history, or the cultural heritage of California or the United States. Therefore, the residential buildings listed above are not eligible for the CRHR under Criterion 1. Research failed to link the buildings with the lives of persons important to local, California, or national history. Therefore, the residential buildings listed above are not eligible for the CRHR under Criterion 2. None of these buildings embody distinctive characteristics of a type, period, region, or method of construction; nor do they represent the work of a master, or possess high artistic values that would qualify them for listing. Therefore, the residential buildings listed above are not eligible for the CRHR under Criterion 3. Finally, because these resources are a common property type, they do not have the potential to provide information that is not available through historic research. Therefore, none of these buildings are eligible for listing in the CRHR under Criterion 4.

The residential buildings listed above are not Historical Resources for the purposes of CEQA and there would be no impact on Historical Resources at the locations of these buildings as a result of the proposed project.

Leibert Road Shed

The Leibert Road Shed is not eligible for the NRHP or the CRHR under any criteria. Research failed to tie this building to events that have made a significant contribution to the broad patterns of local or regional history, or the cultural heritage of California or the United States. Therefore, the Leibert Road Shed is not eligible for the NRHP and the CRHR under Criterion A/1. Research failed to link the building with the lives of persons important to local, California, or national history. Therefore, the Leibert Road Shed is not eligible for the NRHP and the CRHR under Criterion B/2. The building does not embody the distinctive characteristics of a type, period, region, or method of construction; does not represent the work of a master, or possess high artistic values that would qualify it for listing. Therefore, the Leibert Road Shed is not eligible for the NRHP and the CRHR under Criterion C/3. Finally, because the shed is a common property type, it does not have the potential to provide information that is not available through historic research. Therefore, the Leibert Road Shed is not eligible for listing in the NRHP or the CRHR under Criterion D/4.

The Leibert Road Shed is not a Historical Resource for the purposes of CEQA and there would be no impact on Historical Resources at the location of the shed as a result of the proposed project.

Isolates

The isolates cannot be associated with historically important events or persons and have no architectural or engineering characteristics. Therefore, they are not eligible for the CRHR under Criteria 1, 2, and 3. The isolates, which each consist of only one or two artifacts, do not have sufficient

information potential to be eligible under Criteria 4. The isolates are not Historical Resources for the purposes of CEQA and there would be no impact on Historical Resources at the locations of the isolates as a result of the proposed project.

CRHR-Eligible Resource

Changes in Setting to the Westside Main Canal System

Impact 4.7.1 Implementation of the proposed project would result in changes in the setting of the Westside Main Canal system. This impact is considered **less than significant**.

The Westside Main Canal system (CA-IMP-7834), including the canal, lateral, and Westside Drain segments is in the project area (in the solar generation facility site, the proposed gen-tie route) and is eligible for the CRHR under Criterion 1 for its significance in the agricultural and economic development of the Imperial Valley. The earthen canal was integral to the development of irrigated commercial agriculture since its construction in the early 1900s. The Westside Main Canal system (CA-IMP-7834) is a Historical Resource for the purposes of CEQA.

Portions of the Westside Main Canal system, a Historical Resource, are located within the solar field and the canal system will be crossed by the proposed gen-tie. However, the Westside Main Canal system will not be destroyed or altered by the construction or installation of the solar generation facility site or gen-tie.

The project will result in changes in the viewshed and the setting of the Westside Main Canal system. The viewshed from the canal is not a character-defining feature of this historic resource, nor a quality that contributes to its NRHP and CRHR eligibility. A small portion of the overall setting of the Westside Main Canal will be altered by the solar field, but not to a level that would significantly compromise the integrity of its setting. Since the changes in the setting as a result of project construction will not materially impair the characteristics that made the resource eligible, impacts to this Historical Resource will be **less than significant**.

Mitigation Measures

None required.

Significance After Mitigation

Not applicable.

Unevaluated Resources

Impact to Archaeological Site CA-IMP-11758

Impact 4.7.2 Archaeological site CA-IMP-11758 could be damaged inadvertently during construction of the adjacent solar field. This is considered a **potentially significant impact**.

CA-IMP-11758 (MS 6) is a refuse dump from the historical period. It has not been formally evaluated using CRHR eligibility criteria because it is on the bank of Fig Drain, which also will not be impacted by the project. Nevertheless, damage to CA-IMP-11758 is considered a **potentially significant impact**.

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Mitigation Measure

MM 4.7.2 A qualified and experienced archaeological monitor, will monitor the installation of temporary orange construction fencing around the boundaries of archaeological site CA-IMP-11758. The on-site Construction Manager (who is defined as the individual with the authority to halt all construction-related activities) shall be required to stake in advance the line where the fence will be installed and will provide a minimum of 48 hours advance notice to the archaeological monitor before fence installation occurs. The Construction Manager shall be responsible for maintaining the fencing in working order throughout the duration of construction, which may include periodic maintenance or replacement. The Construction Manager shall not allow passage of non-authorized personnel to enter the site through the fence. The archaeological monitor will monitor the effectiveness of the protective measures described in this measure at least twice per month during construction to ensure that unanticipated effects are avoided. If an unanticipated effect is discovered, the monitor will immediately notify the Construction Manager and give interim directions for protecting the site from further effects, which may include mandatory cessation of activity within 100 feet or more of the discovery. The Construction Manager will be responsible for promptly implementing those interim measures. The archaeological monitor will monitor the removal of the temporary fencing after construction is completed. The Construction Manager shall be required to provide a minimum of 48 hours advance notice to the archaeological monitor before fence removal occurs.

Timing/Implementation: Prior to, during, and after construction of solar field.

Enforcement/Monitoring: Archaeological Monitor and Imperial County Department of Planning and Development Services.

Significance After Mitigation

Implementation of mitigation measure MM 4.7.2 would require an archaeological monitor to oversee installation and removal of temporary construction fencing around archaeological site CA-IMP-11758. The monitor will also be present during construction activities to ensure the effectiveness of protective measures. With implementation of MM 4.7.2, impacts to archaeological site CA-IMP-11758 would be reduced to **less than significant**.

Unrecorded Subsurface Cultural Resources

Impacts to Unrecorded Subsurface Archaeological Resources

Impact 4.7.3 Unrecorded subsurface archaeological resources could be damaged during construction. This is considered a **potentially significant impact**.

Although the potential for subsurface archaeological resources in the project area is low, there remains a possibility that unrecorded cultural resources are present beneath the ground surface, and that such resources could be exposed during project construction. Therefore, potential to encounter subsurface archaeological resources is considered a **potentially significant impact**.

Mitigation Measure

MM 4.7.3 If subsurface deposits believed to be cultural in origin are discovered during construction, then all work must halt within a 200-foot radius of the discovery. A

qualified professional archaeologist shall be retained to evaluate the significance of the find. A Native American monitor, following the Guidelines for Monitors/Consultants of Native American Cultural, Religious, and Burial Sites established by the Native American Heritage Commission, may also be required. Work cannot continue at the discovery site until the archaeologist conducts sufficient research and data collection to make a determination that the resource is either 1) not cultural in origin; or 2) not potentially significant or eligible for listing on the NRHP or CRHR. If a potentially-eligible resource is encountered, then the archaeologist, lead agency, and project proponent shall arrange for either 1) total avoidance of the resource, if possible; or 2) test excavations to evaluate eligibility for the CRHR and, if eligible, data recovery as mitigation.

Timing/Implementation: During construction.

Enforcement/Monitoring: Qualified archaeologist and Imperial County Department of Planning and Development Services.

Significance After Mitigation

Implementation of mitigation measure MM 4.7.3 requires construction activities to be halted in the event that potential subsurface resources are discovered during construction. No further construction would occur until after an assessment of the resource by a qualified professional archaeologist has been made. Following implementation of MM 4.7.3, impacts to unrecorded subsurface archaeological resources would be **less than significant** after mitigation.

Impacts to Subsurface Human Remains

Impact 4.7.4 Subsurface human remains could be impacted during construction. This is considered a **potentially significant impact**.

Although the potential for encountering subsurface human remains in the project area is low, there remains a possibility that human remains are present beneath the ground surface, and that such remains could be exposed during project construction. Therefore, potential to encounter subsurface human remains is considered a **potentially significant impact**.

Mitigation Measure

MM 4.7.4 In the event that evidence of human remains is discovered, construction activities within 200 feet of the discovery will be halted or diverted and the Imperial County Coroner will be notified (Section 7050.5 of the Health and Safety Code). If the Coroner determines that the remains are Native American, the Coroner will notify the Native American Heritage Commission which will designate a Most Likely Descendant (MLD) for the Project (Section 5097.98 of the Public Resources Code). The designated MLD then has 48 hours from the time access to the property is granted to make recommendations concerning treatment of the remains (AB 2641). If the landowner does not agree with the recommendations of the MLD, the NAHC can mediate (Section 5097.94 of the Public Resources Code). If no agreement is reached, the landowner must rebury the remains where they will not be further disturbed (Section 5097.98 of the Public Resources Code). This will also include either recording the site with the NAHC or the appropriate Information Center; using an open space or conservation zoning designation or easement; or recording a document with the county in which the property is located (AB 2641).

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Timing/Implementation: During construction.

Enforcement/Monitoring: Applicant, Imperial County Department of Planning and Development Services, Imperial County Coroner.

Significance After Mitigation

Implementation of mitigation measure MM 4.7.4 requires construction activities to be halted or diverted in the event that human remains are discovered. The County Coroner and Native American Heritage Commission will be notified as appropriate. Following implementation of MM 4.7.4, impacts to unrecorded subsurface human remains would be **less than significant** after mitigation.

Paleontological Resources

Impacts to Fossil Remains

Impact 4.7.5 Fossil remains could be destroyed by excavation and other earth-moving activities. This is considered a **potentially significant impact**.

Previously undisturbed Lake Cahuilla sediments underlie most of the project area. The Brawley Formation immediately underlies the Lake Cahuilla sediments. The rest of the project area is underlain either by Quaternary alluvium or the Brawley Formation. The Lake Cahuilla sediments and the Brawley Formation have a high Potential Fossil Yield Classification (PFYC) (BLM, 2009) while the Quaternary alluvium has a moderate or unknown PFYC. Project-related excavation and other earth-moving activities have the potential to physically destroy non-renewable scientifically important fossil remains in these formations and sediments, resulting in a **potentially significant impact**.

Mitigation Measure

MM 4.7.5 Ground-disturbing activities in the Lake Cahuilla sediments, Quaternary alluvium, and the Brawley Formation must be monitored by a qualified paleontological monitor. Paleontological monitors will be equipped to salvage fossils as they are unearthed (to help avoid construction delays) and to remove samples of sediments that are likely to contain the remains of small fossil invertebrates and vertebrates. Monitors are empowered to temporarily halt or divert equipment to allow removal of abundant or large specimens. Recovered specimens will be prepared to a point of identification and permanent preservation, including washing of sediments to recover small invertebrates and vertebrates. Fossil specimens will be curated by accessioning them into an established, accredited museum repository with permanent retrievable paleontological storage. A report of findings with an appended itemized inventory of specimens will be prepared. The report and inventory, when submitted to the Imperial County Department of Planning and Development Services, along with confirmation of the curation of recovered specimens into an established, accredited museum repository, will signify completion of the program to mitigate impacts to paleontological resources.

Timing/Implementation: During construction of solar field and gen-tie line.

Enforcement/Monitoring: Applicant and Imperial County Department of Planning and Development Services.

Significance After Mitigation

Implementation of mitigation measure MM 4.7.5 requires that a qualified paleontological monitor be present when conducting construction activities in the Lake Cahuilla sediments. The monitor would be empowered to halt or divert construction away from large specimens and to curate fossil specimens. Implementation of MM 4.7.5 would reduce impacts to fossil remains would be **less than significant** after mitigation.

4.7.4 CUMULATIVE SETTING, IMPACTS AND MITIGATION MEASURES

A. CUMULATIVE SETTING

The geographic scope of the cumulative setting for cultural resources includes irrigated agricultural lands and desert within a fifteen-mile radius from the project site which includes the southwestern section of the high water mark of ancient Lake Cahuilla within the Yuha Basin. This geographic scope of analysis is appropriate because the archaeological, historical, and paleontological resources within this radius are expected to be similar to those in the project site based on proximity; similarity of environments, landforms, and hydrology. Likewise, similar geology within this vicinity would likely yield fossils of similar sensitivity and quantity. This scope encompasses the area within one mile of the 40-foot contour of ancient Lake Cahuilla. The project vicinity possesses the potential for significant cultural resources that, in many cases, have not been well documented or recorded. Thus, there is the potential for ongoing and future development projects in the vicinity to disturb landscapes that may contain known or unknown cultural resources.

A. CUMULATIVE IMPACTS AND MITIGATION MEASURES

Cumulative impacts to Archaeological and Historic Resources

Impact 4.7.6 Implementation of the proposed project, in combination with existing, approved, proposed, and reasonably foreseeable development in the cumulative setting, has the potential to result in impacts to archaeological and historic resources. However, impacts are addressed on a project-by-project basis. Therefore, this is considered a **less than cumulatively considerable impact**.

Potential construction impacts of the proposed project, in combination with other projects in the area, could contribute to a cumulatively significant impact on archaeological and historical resources.

Table 4.7-4 provides a summary of the cumulative projects that contain cultural resources.

**TABLE 4.7-4
SUMMARY OF CULTURAL RESOURCES FOR CUMULATIVE PROJECTS**

Project	Number of Resources	Notes
Imperial Valley Solar ¹	149 cultural resources would be affected	
Sunrise 500-kV Line IV West Solar Farm Interconnection to Imperial Valley Substation ¹	33 cultural resources would be affected	
Ocotillo Sol ¹	Currently no published environmental documents available for this project. Considering that the project	Ocotillo Sol is within one mile of the 40-foot contour of ancient Lake Cahuilla.

4.7 CULTURAL RESOURCES

**TABLE 4.7-4
SUMMARY OF CULTURAL RESOURCES FOR CUMULATIVE PROJECTS**

Project	Number of Resources	Notes
	site is located in an area that has been known to contain cultural resources, it can reasonably be expected the project may have some unknown cultural resources.	
Dixieland ¹	10 cultural resources would be affected.	
Solar Reserve Imperial Valley ¹	There are currently no published environmental documents available for this project.	A portion of the North Gila to Imperial Valley #2 Transmission Line may be within one mile of the 40-foot contour of ancient Lake Cahuilla.
County Center II Expansion ¹	3 cultural resources potentially affected.	The County Center II Expansion project appears to be within one mile of the 40-foot contour of ancient Lake Cahuilla.
Imperial Solar Energy Center West ¹	3 cultural resources would be affected	
Imperial Solar Energy Center South ¹	1 cultural resource would be affected.	
Mount Signal Solar Farm ²	20 cultural resources*	
Calexico I-A ²	*	
Calexico I-B ²	*	
Calexico II-A ²	*	
Calexico II-B ²	*	
Proposed Project	29 cultural resources	
Total Cultural Resources	248 cultural resources	

Sources: ¹County of Imperial, 2011; ²HDR, 2012 Table 4.5-1, p. 4.5-6 and Table 4.5-3, p. 4.5-9; ³Mitchell, 2011.

*Mount Signal Solar Farm and Calexico I-A, II-A, I-B and II-B were all assessed in one document; resources identified includes those on BLM land associated with the off-site transmission facility.

As shown in **Table 4.7-4**, 29 cultural resources were identified in the project area. Previous studies in the geographic scope (i.e. the southwestern section of the high water mark of ancient Lake Cahuilla within the Yuha Basin) indicates that there are an additional 893 cultural resources sites within the southern two-thirds of the geographic scope including temporary camps, lithic scatters, ceramic and lithic scatters, ceramic scatters, rock features, trails or trail markers, historic period sites, and prehistoric isolates. It can reasonably be estimated that the northern third would also have cultural resources proportionate to the southern area, which would provide an estimated total of 1,353 cultural resources in the entire geographic scope (County of Imperial, 2011). An estimated 248 sites would be potentially affected by the cumulative projects, including the proposed project (**Table 4.7-4**).

4.7 CULTURAL RESOURCES

Potential impacts to archaeological site CA-IMP-11758 resulting from the proposed project would be mitigated through implementation of MM 4.7.2. In addition, the Westside Main Canal system (CA-IMP-7834), considered a Historical Resource for the purposes of CEQA, would not be destroyed or altered by the construction or installation of the solar generation facility site or gen-tie. Project-specific mitigation measures would also reduce potential project impacts to unrecorded archaeological resources (MM 4.7.3) and human remains (MM 4.7.4) during construction of the proposed project. Future projects with potentially significant impacts to archaeological and historical resources would be required to comply with federal, state, and local regulations and ordinances protecting cultural resources through implementation of similar project-specific mitigation measures during construction. Therefore, through compliance with regulatory requirements, standard conditions of approval, and mitigation measures MM 4.7.2, MM 4.7.3 and MM 4.7.4, the proposed project would have a less than cumulatively considerable contribution to impacts to archaeological and historical resources. Likewise, the proposed project would have a **less than cumulatively considerable impact** to archaeological and historic resource.

During operations and decommissioning of the project, no additional impacts to archeological or historical resources would be anticipated because the soil disturbance would have already occurred and been mitigated during construction.

Mitigation Measures

None required.

Significance After Mitigation

Implementation of project-specific mitigation measures MM 4.7.2, MM 4.7.3 and MM 4.7.4 would address potential impacts to archaeological and historic resources through construction monitoring, curation of resources and proper handling of human remains if discovered. Therefore, following implementation of these mitigation measures, cumulative impacts associated with cultural resources would be **less than cumulative considerable**.

Cumulative Impacts to Paleontological Resources

Impact 4.7.7 Implementation of the proposed project in combination with existing, approved, proposed, and reasonably foreseeable development in the cumulative setting, has the potential to result in impacts to fossil remains and fossil bearing geological formations. However, such impacts are addressed on a project-by-project basis. Therefore, this is considered a **less than cumulatively considerable impact**.

Excavation activities associated with the proposed project in conjunction with other projects in the geographic scope could contribute to the progressive loss of fossil remains, as-yet unrecorded fossil sites, associated geological and geographic data, and portions of fossil-bearing geological formations.

Table 4.7-5 provides a summary of the cumulative projects that contain paleontological resources.

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**TABLE 4.7-5
SUMMARY OF PALEONTOLOGICAL RESOURCES FOR CUMULATIVE PROJECTS**

Project	Notes
Imperial Valley Solar ¹	The paleontological formations on this site that have moderate to high sensitivity could be adversely affected during construction as a result of disturbance by grading or construction activities. However, it was determined that with the implementation of avoidance, minimization, and mitigation measures, the project would have a less than significant impact on paleontological resources.
Sunrise 500-kV Line IV West Solar Farm Interconnection to Imperial Valley Substation ¹	
Ocotillo Sol ¹	There are currently no published environmental documents available for this project. Therefore it is not possible to provide a conclusion of the project's environmental effects. However, considering that the project site is located in an area that has been known to contain paleontological resources, it can reasonably be expected that the project may have some unknown paleontological resources. It can also be reasonably anticipated that the lead agency will follow their precedent set on similar projects and require the implementation of avoidance, minimization, and mitigation measures that would reduce any impact on paleontological resources to a less than significant level. The determination will be made by the lead agency of this project after a thorough review of the project site.
North Gila to Imperial Valley #2 Transmission Line ¹	There are currently no published environmental documents available for this project. Therefore it is not possible to provide a conclusion of the project's environmental effects. However, considering that the project site is located in an area that has been known to contain paleontological resources, it can reasonably be expected that the project may have some unknown paleontological resources. It can also be reasonably anticipated that the lead agency will follow their precedent set on similar projects and require the implementation of avoidance, minimization, and mitigation measures that would reduce any impact on paleontological resources to a less than significant level. The determination will be made by the lead agency of this project after a thorough review of the project site.
Dixieland ¹	Freshwater invertebrate and terrestrial invertebrate fossils were collected within one-mile of this site within the Quaternary lake

4.7 CULTURAL RESOURCES

**TABLE 4.7-5
SUMMARY OF PALEONTOLOGICAL RESOURCES FOR CUMULATIVE PROJECTS**

Project	Notes
	deposits associated with Lake Cahuilla. The paleontological formations on this site have high sensitivity and could be adversely affected during construction as a result of disturbance by grading or construction activities. However, it was determined that with the implementation of avoidance, minimization, and mitigation measures, the project would have a less than significant impact on paleontological resources.
County Center II Expansion ¹	There are no paleontological resources that would be affected.
Imperial Solar Energy Center West ¹	The paleontological resources on this site have the potential to result in disturbance from grading or construction activities; unauthorized, unmonitored excavations; unauthorized collection of fossil materials; dislodging of fossils from their preserved environment; and/or, physical damage of fossil specimens. However, it was determined that with the implementation of avoidance, minimization, and mitigation measures, the project would have a less than significant impact on paleontological resources.
Imperial Solar Energy Center South ¹	
Mount Signal Solar Farm ²	The study area for these projects and the off-site transmission facility on BLM land is located in the Imperial Valley portion of the Salton Trough physiographic province of Southern California. The Imperial Valley is underlain by geologic units comprised of quaternary lake deposits of the ancient Lake Cahuilla which are known to yield fossil remains. Therefore, paleontological sensitivity of these lakebed deposits within the project study areas is considered high. However it is noted that the solar farms are located within highly disturbed farmland and as such any surface or near-surface level paleontological resources are likely to have been disturbed (HDR, 2012, p. 4.5-5).
Calexico I-A ²	
Calexico I-B ²	
Calexico II-A ²	
Calexico II-B ²	
Proposed Project	Excavation and other earth-moving activities have the potential to physically destroy non-renewable scientifically important fossil remains in these formations and sediments

Sources: ¹County of Imperial, 2011; ²HDR, 2012.

As shown in **Table 4.7-5**, cumulative development in the Imperial Valley portion of the Salton Trough physiographic province of Southern California has the potential to destroy or otherwise impact paleontological resources. There is a potential for paleontological resources on the project site, and others in the geographic scope, to be impacted during construction. A cumulative impact would occur if the proposed project, in combination with cumulative projects, would damage or destroy paleontological resources. However, with the implementation of mitigation measure MM 4.7.5, the proposed project would have a less than significant impact on to paleontological resources on a project-level and a less than cumulatively considerable contribution to cumulative impacts to paleontological

4.7 CULTURAL RESOURCES

resources. Likewise, other projects in the area would be required to comply with existing regulations and undergo CEQA review to assure that any impacts are appropriately evaluated and, if necessary, mitigated. Therefore, through compliance with regulatory requirements, standard conditions of approval, and mitigation measure MM 4.7.5, the proposed project would have a less than cumulatively considerable impact on paleontological resources.

During operations and decommissioning of the project, no additional impacts to paleontological resources would be anticipated because the soil disturbance would have already occurred and been mitigated during construction.

Mitigation Measures

None required.

Significance After Mitigation

Implementation of mitigation measure MM 4.7.5 would require a qualified paleontological monitor be present when conducting construction activities in the Lake Cahuilla sediments, and halt or divert construction away from large specimens and to curate fossil specimens. Following implementation of mitigation measure MM 4.7.5, cumulative impacts associated with paleontological resources would be **less than cumulative considerable**.

SECTION 4.8

NOISE

This section defines technical terminology used in the analysis of noise; identifies federal, state and local regulations applicable to noise; and describes the environmental setting with regard to existing ambient noise levels. This section also analyzes potential noise impacts associated with construction and operation of the proposed project. The information in this section is based on the *Noise Assessment, Campo Verde Solar, County of Imperial* prepared by Ldn Consulting, Inc. (Ldn, 2012b). This document is provided on the attached CD of Technical Appendices as **Appendix F** of this EIR.

DEFINITIONS AND TERMINOLOGY

The following discussion includes a variety of acronyms used to describe noise. To facilitate understanding of this section, the following glossary of terms is provided as an introduction to the environmental setting for noise. While some of the terms are technical in nature, these acronyms and abbreviations are essential to describe and characterize noise.

Noise is defined as unwanted or annoying sound which interferes with or disrupts normal activities. Exposure to high noise levels has been demonstrated to cause hearing loss. The individual human response to environmental noise is based on the sensitivity of that individual, the type of noise that occurs and when the noise occurs.

Measurements

Decibel (dB). The decibel (dB) is the standard unit of measurement of noise. The decibel measurement is logarithmic which means that an increase of one decibel equates to a tenfold increase in the noise level. A noise level of zero (0) dB is barely audible and is considered the threshold of human hearing while noise levels in excess of 120 dB approach the pain threshold (e.g. jet engine noise). In between these extremes a quiet rural area would have sound levels of approximately 20 dB and normal speech has a sound level of approximately 60 dB.

The smallest change in sound level detectable by the human ear is approximately 3 dB. The average person perceives a change in sound level of 10 dB as a doubling (or halving) of the level of loudness.

A-weighting/dBA. Because the human ear is unable to differentiate differences in sound levels at all frequencies, a special frequency-dependent rating scale, referred to as A-weighted sound pressure level, or dBA, has been developed to relate noise to human sensitivity. A-weighting compensates for the variability in perceived noise levels by weighing some sound frequencies more than others. The A-weighted sound level adequately describes the instantaneous noise whereas community noise is measured using dBA.

Leq. The equivalent sound level, or L_{eq} , represents a steady sound level containing the same total acoustical energy as the actual fluctuating sound level over a given time interval. L_{eq} refers to the true equivalent sound level averaged over a sample length of time.

Community Noise Equivalent Level (CNEL). The Community Noise Equivalent Level (CNEL) is the 24-hour A-weighted average for sound, with corrections for evening and nighttime hours. The corrections require an addition of 5 decibels to sound levels in the evening hours between 7 p.m. and 10 p.m. and an addition of 10 decibels to sound levels at nighttime hours between 10 p.m. and 7 a.m. These additions are made to account for the increased sensitivity during the evening and nighttime hours when sound appears louder.

For example, noise samples taken between the hours of 7 p.m. and 10 p.m. are boosted by 5 dB to reflect increased sensitivity to noise in evening hours. Similarly, noise samples taken during the overnight and early morning hours between 10 p.m. and 7 a.m. are weighted by 10 dB to reflect even

4.8 NOISE

greater sensitivity to noise during the hours when most people would be sleeping. The CNEL scale is used by Imperial County for land use/noise compatibility assessment.

Localized Noise

Sound from a small localized source (a “point” source) radiates uniformly outward as it travels away from the source. The sound level attenuates or drops-off at a rate of 6 dBA for each doubling of distance.

Mobile Noise

Because mobile/traffic noise levels are calculated on a logarithmic scale, a doubling of the traffic noise or acoustical energy results in a noise level increase of 3 dBA. Therefore the doubling of the traffic volume, without changing the vehicle speeds or mix ratio, results in a noise increase of 3 dBA. Mobile noise levels radiate in an almost oblique fashion from the source and decrease at a rate of 3 dBA for each doubling of distance under hard site conditions and at a rate of 4.5 dBA for soft site conditions. In contrast, fixed or point sources radiate outward uniformly as it travels away from the source. Point source sound levels attenuate or decrease at a rate of 6 dBA for each doubling of distance.

Noise Attenuation

Noise attenuation refers to the decline in noise level that occurs in association with increased distance from the receptor. Sounds generated from a point source typically attenuate or decrease at a rate of 6 dBA for each doubling of distance. For example, a noise level of 87 dBA measured at 50 feet from the noise source would be reduced to 81 dBA at 100 feet from the source and be further reduced to 75 dBA at 200 feet from the source. When the noise source is a continuous line (e.g., vehicle traffic on a highway), the noise levels radiate in an almost oblique fashion from the source and drop off at a rate of 3 dBA for each doubling of distance under hard site conditions (e.g. concrete, asphalt and hard pack dirt) and at a rate of 4.5 dBA for soft site conditions (e.g. areas having slight grade changes, landscaped areas and vegetation). Barriers, obstructions, and weather conditions can all affect how noise travels.

Noise Reduction Methods

The most effective noise reduction methods consist of controlling the noise at the source, blocking the noise transmission with barriers or relocating the receiver. Any or all of these methods could be required to reduce noise levels to an acceptable level.

4.8.1 REGULATORY FRAMEWORK

A. FEDERAL

The Noise Control Act of 1972 (P.L. 92-574)

The Noise Control Act and several other federal laws require the federal government to set and enforce uniform noise standards for aircraft and airports, interstate motor carriers and railroads, workplace activities, medium and heavy-duty trucks. Most federal noise standards focus on preventing hearing loss by limiting exposure to sounds of 90 dBA and higher. However, some are stricter and focus on limiting exposure to quieter levels that are annoying to most individuals and can diminish one’s quality of life.

Occupational Safety and Health Act of 1970

The Federal Occupational Safety and Health Administration (OSHA) regulates onsite noise levels and protects workers from occupational noise exposure. To protect hearing, worker noise exposure is limited to 90 decibels with A-weighting (dBA) over an 8-hour work shift (29 Code of Regulations [CFR] 1910.95). Employers are required to develop a hearing conservation program when employees are exposed to noise levels exceeding 85 dBA. These programs include provision of hearing protection devices testing employees for hearing loss on a periodic basis.

B. STATE

The California Occupational Safety and Health Administration (CalOSHA) has codified employee noise exposure limits as part of the State Occupational Noise Exposure Regulations (California Code of Regulations, Title 8, Section 5095–5099). The CalOSHA regulations are the same as the Federal OSHA standards in terms of dBA and duration.

The Governor’s Office of Planning and Research published the *State of California General Plan Guidelines 2003* to provide direction on preparation of the various elements of a General Plan. With regard to noise, “Appendix C - Guidelines for the Preparation and Content of the Noise Element of the General Plan” provides guidance for the acceptability of projects within specific noise contours. The Guidelines identify various land use categories and Table 1 of the Guidelines includes adjustment factors that may be used to arrive at noise acceptability standards that reflect the noise control goals of a specific community. Imperial County used the adjustment factors to modify the state’s Noise/Land Use Compatibility standards for the purpose of implementing the Noise Element of its General Plan.

C. LOCAL

County of Imperial General Plan

The Noise Element of the Imperial County General Plan identifies and defines existing and future environmental noise levels from sources of noise within or adjacent to the County; establishes goals and objectives to address these impacts, and provides Implementation Programs to implement these goals and objectives. **Table 4.8-1** summarizes the project’s consistency with the applicable General Plan noise policies. While this EIR analyzes the project’s consistency with the General Plan pursuant to State CEQA Guidelines Section 15125(d), the Imperial County Board of Supervisors ultimately determines consistency with the General Plan.

**TABLE 4.8-1
IMPERIAL COUNTY GENERAL PLAN CONSISTENCY ANALYSIS**

General Plan Policies	Consistent with General Plan?	Analysis
Noise Element		
Programs and Policies		
1) Acoustical Analysis of Proposed Projects The County shall require the analysis of proposed discretionary projects which may generate excessive noise or which may be impacted by existing excessive noise levels, including but not limited to the following:	Yes	A Noise Assessment was prepared for the project by Ldn Consulting, Inc., (Ldn, 2012b). Short-term construction and long-term operational noise levels were found to be less than established

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**TABLE 4.8-1
IMPERIAL COUNTY GENERAL PLAN CONSISTENCY ANALYSIS**

General Plan Policies	Consistent with General Plan?	Analysis
<ul style="list-style-type: none"> • An analysis shall be required for any project which would be located, all or in part, in a Noise Impact Zone as specified above. • An analysis shall be required for any project which has the potential to generate noise in excess of the Property Line Noise Limits stated in Table 9. • An analysis shall be required for any project which, although not located in a Noise Impact Zone, has the potential to result in a significant increase in noise levels to sensitive receptors in the community. • An acoustical analysis and report shall be prepared by a person deemed qualified by the Director of Planning. The report shall describe the existing noise environment, the proposed project, the projected noise impact and, if required, the proposed mitigation to ensure conformance with applicable standards. 		<p>thresholds. The proposed project is consistent with this policy.</p>
<p>2) Noise/Land Use Compatibility. Where acoustical analysis of a proposed project is required, the County shall identify and evaluate potential noise/land use conflicts that could result from the implementation of the project. Projects which result in noise levels that exceed the "Normally Acceptable" criteria of the Noise/Land Use Compatibility Guidelines, Table 7, shall include mitigation measures to eliminate or reduce to an acceptable level the adverse noise impacts.</p>	<p align="center">Yes</p>	<p align="center">Refer to analysis of Policy 1.</p>
<p>5) New Noise Generating Projects. The County shall identify and evaluate projects which have the potential to generate noise in excess of the Property Line Noise Limits. An acoustical analysis must be submitted which demonstrates the project's compliance.</p>	<p align="center">Yes</p>	<p align="center">Refer to analysis of Policy 1.</p>

**TABLE 4.8-1
IMPERIAL COUNTY GENERAL PLAN CONSISTENCY ANALYSIS**

General Plan Policies	Consistent with General Plan?	Analysis
<p>6) Project Which Generate Off-site Traffic Noise. The acoustical analysis shall identify and evaluate projects which will generate traffic and increase noise levels on off-site roadways. If the project site has the potential to cause a significant noise impact to sensitive receptors along those roadways, the acoustical analysis report shall consider noise reduction measures to reduce the impact to a level less than significant.</p>	Yes	Refer to analysis of Policy 1.

Operational Standards

The Property Line Noise Limits listed in Table 9 of the Imperial County General Plan Noise Element and the County's Ordinance, Title 9, Division 7 (Noise Abatement and Control) Section 90702.00 Subsection A provides acceptable Sound level limits based on the property zoning. **Table 4.8-2** identifies property line sound level limits that apply to noise generation from one property to an adjacent property.

**TABLE 4.8-2
PROPERTY LINE NOISE LEVEL LIMITS**

Zone	Time	Applicable Limit One-hour Average Sound Level
Residential Zones	7 a.m. to 10 p.m.	50 dB
	10 p.m. to 7 a.m.	45 dB
Multi-residential Zones	7 a.m. to 10 p.m.	55 dB
	10 p.m. to 7 a.m.	50 dB
Commercial Zones	7 a.m. to 10 p.m.	60 dB
	10 p.m. to 7 a.m.	55 dB
Light Industrial/Industrial Park Zones	Anytime	70 dB
General Industrial Zones	Anytime	75 dB
<p>When the noise-generating property and the receiving property have different uses, the more restrictive standard shall apply. When the ambient noise level is equal to or exceeds the Property Line noise standard, the increase of the existing or proposed noise shall not exceed 3 dB Leq.</p> <p>The sound level limit between two zoning districts (different land uses) shall be measured at the property line between the properties.</p> <p>Fixed-location public utility distribution or transmission facilities located on or adjacent to a property line shall be subject to the noise level limits of subsection A of this section, measured at or beyond six feet from the boundary of the easement upon which the equipment is located.</p> <p>This section does not apply to noise generated by helicopters at heliports or helistops authorized by a conditional use permit.</p> <p>This section does not apply to noise generated by standard agricultural field operating practices such as planting and harvesting of crops. The County of Imperial has a Right to Farm Ordinance (1031) which serves as recognition to agricultural practices to new development. Agricultural/industrial operations shall comply with the noise levels prescribed under the general industrial zones.</p>		

Source: Ldn, 2012b.

County Ordinance, Title 9, Division 7 states that it is unlawful for any person to make or cause any noise to the extent that the one-hour average sound level, at any point on or beyond the boundaries of their property, exceeds the applicable limits shown in **Table 4.8-2**. The standards imply the existence of a

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sensitive receptor on the adjacent, or receiving, property. In the absence of a sensitive receptor, an exception or variance to the standards may be appropriate. These standards do not apply to construction noise and are intended to be enforced through the County's code enforcement program on the basis of complaints received from persons impacted by excessive noise. It is important to note that a noise nuisance may occur even though an objective measurement with a sound level meter is not available. In such cases, the County may act to restrict disturbing, excessive, or offensive noise which causes discomfort or annoyance to reasonable persons of normal sensitivity residing in an area.

Construction Noise Standards

The Noise Element of the Imperial County General Plan requires that construction noise from a single piece of equipment or a combination of equipment not exceed 75 dB Leq, when averaged over an 8-hour period, measured at the nearest sensitive receptor. This standard assumes a construction period, relative to an individual sensitive receptor for days or weeks. In cases of extended length construction times, the standard may be tightened so as not to exceed 75 dB Leq when averaged over a 1-hour period.

Construction equipment operation is required to be limited to the hours of 7 a.m. to 7 p.m., Monday through Friday, and 9 a.m. to 5 p.m. Saturday. No commercial construction operations are permitted on Sunday or holidays.

Noise/Land Use Compatibility Guidelines

Land use compatibility refers to the acceptability of a land use in a specified noise environment. **Figure 4.8-1** provides the Imperial County Noise/Land Use Compatibility Guidelines. The figure includes acceptable and unacceptable community noise exposure limits for various land use categories as currently defined by the State of California. When an acoustical analysis is performed, conformance of the proposed project with the Noise/Land Use Compatibility Guidelines is used to evaluate the potential noise impacts and provides criteria for environmental impact findings and conditions for project approval.

The increase of noise levels generally results in an adverse impact to the noise environment. The Noise/Land Use Compatibility Guidelines are not intended to allow the increase of ambient noise levels up to the maximum without consideration of feasible noise reduction measures. The following guidelines are established by the County of Imperial for the evaluation of significant noise impact.

- a. If the future noise level after the Project is completed will be within the "normally acceptable" noise levels shown in the Noise/Land Use Compatibility Guidelines, but will result in an increase of 5 dB CNEL or greater, the Project will have a potentially significant noise impact and mitigation measures must be considered.
- b. If the future noise level after the Project is completed will be greater than the "normally acceptable" noise levels shown in the Noise/Land Use Compatibility Guidelines, a noise increase of 3 dB CNEL or greater shall be considered a potentially significant noise impact and mitigation measures must be considered.

Guidelines for the Determination of Significance

The Project and surrounding properties are zoned as A-2 - General Agriculture, A-2-R - General Agriculture, Rural Zone, and A-3 - Heavy Agriculture. Solar energy electrical generators, electrical power generating plants, substations, and facilities for the transmission of electrical energy are allowed as

Land Use Category	Community Noise Exposure Ldn or CNEL, dB					
	55	60	65	70	75	80
Residential	Normally Acceptable	Normally Acceptable	Conditionally Acceptable	Normally Unacceptable	Clearly Unacceptable	Clearly Unacceptable
Transient Lodging – Motels, Hotels	Normally Acceptable	Normally Acceptable	Conditionally Acceptable	Normally Unacceptable	Clearly Unacceptable	Clearly Unacceptable
Schools, Libraries, Churches, Hospitals, Nursing Homes	Normally Acceptable	Normally Acceptable	Conditionally Acceptable	Normally Unacceptable	Clearly Unacceptable	Clearly Unacceptable
Auditoriums, Concert Halls, Amphitheaters	Conditionally Acceptable	Conditionally Acceptable	Conditionally Acceptable	Conditionally Acceptable	Clearly Unacceptable	Clearly Unacceptable
Sports Arena, Outdoor Spectator Sports	Conditionally Acceptable	Conditionally Acceptable	Conditionally Acceptable	Conditionally Acceptable	Clearly Unacceptable	Clearly Unacceptable
Playgrounds, Neighborhood Parks	Normally Acceptable	Normally Acceptable	Normally Acceptable	Normally Unacceptable	Clearly Unacceptable	Clearly Unacceptable
Golf Courses, Riding Stables, Water Recreation, Cemeteries	Normally Acceptable	Normally Acceptable	Normally Acceptable	Normally Unacceptable	Clearly Unacceptable	Clearly Unacceptable
Office Buildings, Business Commercial and Professional	Normally Acceptable	Normally Acceptable	Conditionally Acceptable	Conditionally Acceptable	Clearly Unacceptable	Clearly Unacceptable
Industrial, Manufacturing Utilities, Agriculture	Normally Acceptable	Normally Acceptable	Normally Acceptable	Conditionally Acceptable	Clearly Unacceptable	Clearly Unacceptable

-  **Normally Acceptable:** Specified land use is satisfactory based upon the assumption that any buildings involved are of normal conventional 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 requirements is made and needed noise insulation features included in the design. Conventional construction, but with closed windows and fresh air supply systems or air conditioning will normally suffice.
-  **Normally Unacceptable:** New construction or development should generally be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirements must be made and needed noise insulation features included in the design.
-  **Clearly Unacceptable:** New construction or development should generally not be undertaken.

Source: Imperial County General Plan, Noise Element, Table 7.

**FIGURE 4.8-1
NOISE/LAND USE COMPATIBILITY GUIDELINES**

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conditional uses in Agricultural zones. In keeping with the provisions of the zoning designation, the Applicant is seeking a Conditional Use Permit (CUP).

To be conservative, for the purposes of this analysis the most restrictive applicable sound limits identified in Section 90702.00 of the Noise Ordinance were applied to accommodate the planning of not just existing but potential future residential uses that could be adjacent to the proposed solar energy site. Section 90702.00 of the Noise Ordinance sets a residential sound level limit of 50 dBA Leq for daytime hours of 7 a.m. to 10 p.m. and 45 dBA Leq during the noise sensitive nighttime hours of 10 p.m. to 7 a.m. Most of the proposed project components will operate only during the daytime hours. However, a few components may operate during nighttime or early morning hours. Therefore the most restrictive and conservative approach is to apply the 45 dBA Leq nighttime standard at the property lines.

4.8.2 ENVIRONMENTAL SETTING

The noise analysis provided in this section is summarized from the Noise Assessment Campo Verde Solar Energy Project County of Imperial prepared by Ldn Consulting, Inc., (Ldn, 2012b). This document is provided on the attached CD of Technical Appendices as **Appendix F** of this EIR.

A. SOLAR GENERATION FACILITY

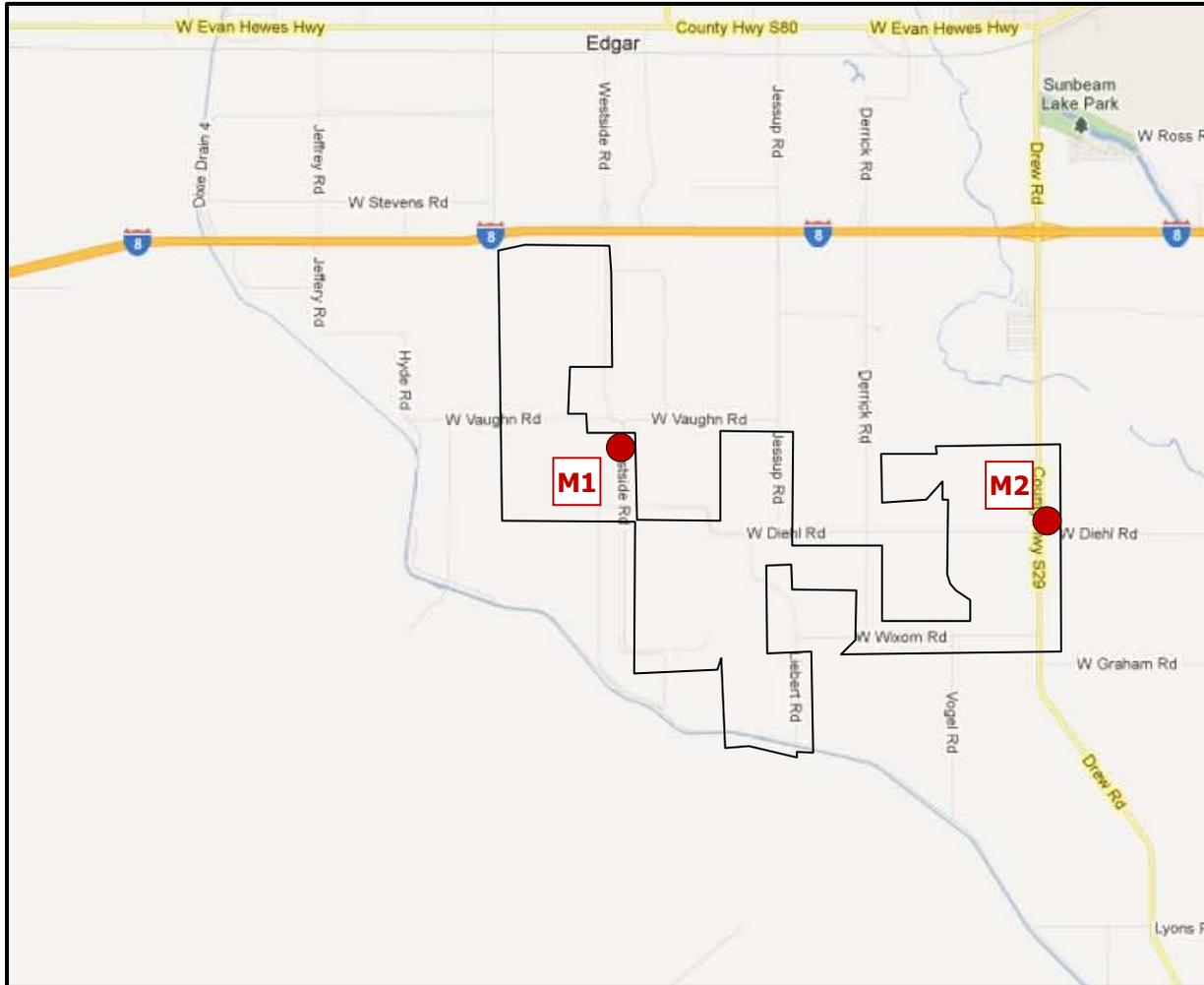
Existing Noise Levels

On-site Ambient Noise

To determine the existing noise environment and to assess potential noise impacts, noise measurements were taken at two locations on the project site to determine the worst case conditions at the nearest proposed noise sensitive land use (NSLU). The noise measurement locations were determined based on site access and noise impact potential. Both locations had a direct line of site to the adjacent roadways. Monitoring location 1 (M1) was located approximately 30-feet from Westside Road near the intersection of Vaughn Road. Monitoring location 2 (M2) was taken in the eastern portion of the site approximately 30-feet from Drew Road at the intersection of Diehl Road. **Figure 4.8-2** graphically depicts the noise monitoring locations.

The noise measurements were recorded on August 18, 2011 by Ldn Consulting between approximately 10:45 a.m. and 11:45 a.m. Noise measurements gathered at the project site were taken using a Larson-Davis Model LxT Type 1 precision sound level meter, programmed, in "slow" mode, to record noise levels in "A" weighted form. The sound level meter and microphone were mounted on a tripod, five feet above the ground and equipped with a windscreen during all measurements. The sound level meter was calibrated before and after the monitoring using a Larson-Davis calibrator, Model CAL 200.

The results of the noise measurements are presented in **Table 4.8-3**. The existing noise levels in the project area consisted primarily of low traffic volumes along Drew Road and Westside Road and background noise from distant agricultural operations on and adjacent to the site. The noise measurements were monitored for a period of 15 minutes each.



Source: Ldn, 2012b.

**FIGURE 4.8-2
PROJECT SITE NOISE MEASUREMENT LOCATIONS**

**TABLE 4.8-3
PROJECT SITE AMBIENT NOISE LEVELS - MEASURED AUGUST 18, 2011**

Location	Description	Time	Noise Levels (dBA)					
			L _{eq}	L _{min}	L _{max}	L10	L50	L90
M1	Along Westside Road	10:45 a.m. – 11:00 a.m.	50.4	34.3	70.5	51.1	38.7	36.3
M2	Along Drew Road	11:30 a.m. – 11:45 a.m.	54.8	35.8	74.1	52.8	41.6	38.2

Source: Ldn, 2012b.

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The ambient Leq noise levels measured in the area of the project during the late morning and mid-day were found to be between 50 to 55 dBA Leq on the western portion of the site and 90 percent (L90) of the noise levels were in the 36 to 38 dBA range. The existing noise levels were found to be below County thresholds (identified in **Table 4.8-2**) for all sensitive land uses.

Corona Affect

The project site is located in a rural portion of Imperial County dominated by agriculture and desert. In addition to noise from agricultural operations and traffic along area roadways, the primary source of ambient noise in the area is audible power line noise generated from electric Corona discharge (i.e. the electrical ionization of the air that occurs near the surface of an energized conductor and suspension hardware due to very high electric field strength). This phenomenon is referred to as the “Corona Affect” and is usually experienced as a random crackling or hissing sound. The amount of Corona produced by a transmission line is a function of the voltage of the line, the diameter of the conductors, the locations of the conductors in relation to each other, the elevation of the line above sea level, the condition of the conductors and hardware, and the local weather conditions.

The electric field gradient is greatest at the surface of the conductor. Large-diameter conductors have lower electric field gradients at the conductor surface and, hence, lower Corona than smaller conductors. Irregularities, such as nicks and scrapes on the conductor surface, concentrate the electric field at these locations and increase the electric field gradient and thus the resulting Corona. Similarly, dust or insects on the conductor surface can cause irregularities and are a source for Corona along with moisture from fog or raindrops. Corona noise is primarily audible during wet weather conditions such as fog and rain. Heavy rain will typically generate a noise level from the falling rain drops hitting the ground that will exceed the noise generated by Corona and thereby mask the audible noise from the transmission line.

Corona increases at higher elevations where the density of the atmosphere is less than at sea level. Audible noise will vary with elevation with the relationship of $X/300$ where X is the elevation of the transmission line above sea level measured in meters (Ldn, 2012b). Audible noise at 600 meters (approximately 2,000 feet) in elevation will be twice the audible noise at 300 meters (approximately 1,000 feet), all other things being equal. The maximum Corona noise during wet weather conditions is usually less than 40 dBA at the edge of the right-of-way (ROW) (Ldn, 2012b). Corona typically becomes a design concern for transmission lines at 345-kV and above and is less noticeable from lines like the gen-tie for the project that are operated at lower voltages (i.e. 230-kV or lower).

B. GEN-TIE

The Noise Assessment focused on noise generated on the solar generation facility site, not on the portion of the gen-tie to be located on lands under the jurisdiction of the BLM. The portion of the project on BLM land would extend through undeveloped desert land within the existing Utility Corridor N. The noise setting would be dominated by noise from existing electrical facilities in Utility Corridor N. This portion of the gen-tie is undergoing separate environmental analysis under NEPA.

4.8.3 IMPACTS AND MITIGATION MEASURES

A. STANDARDS OF SIGNIFICANCE

The impact analysis provided below is based on the following State CEQA Guidelines, as listed in Appendix G. The project would result in a significant impact to noise if it would result in any of the following:

- a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?
- b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?
- c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?
- d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?
- e) 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 expose people residing or working in the project area to excessive noise levels?
- f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?

B. ISSUES SCOPED OUT AS PART OF THE INITIAL STUDY

Note that three CEQA significance criteria were scoped out as part of the Initial Study. Criterion “b” was eliminated from further analysis because operation of a solar generation facility would not create excessive groundborne vibration or noise levels. In addition, grading associated with project development is unlikely to generate groundborne vibration or noise levels through blasting or other construction related activity, as the project is characterized by flat topography. Therefore, no impact is identified for this issue area. Criteria “e” and “f” were also eliminated because the project site is not located within two miles of a public airport or a private airstrip. Thus, the project site would not be exposed to excessive aircraft noise. No impacts have been identified for these issue areas.

C. METHODOLOGY

Construction Noise

Grading

Calculations of the expected construction noise impacts were completed using a point-source noise prediction model. The essential model input data for these performance equations include the source levels of each type of equipment, relative source to receiver horizontal and vertical separations, the amount of time the equipment is operating in a given day, also referred to as the duty-cycle and any transmission loss from topography or barriers. To determine the worst-case noise levels for the grading operations no topographic attenuation or barrier reductions were used.

The noise levels used in this analysis for the mass grading and trenching operations (i.e. smoothing and compacting surface soils to prepare the site for installation of the PV panels) were based on the anticipated list of equipment provided by the Applicant (refer to **Table 4.8-4**).

PV Panel Installation

The noise levels used for the installation of the PV panels were based on the anticipated list of equipment provided by the Applicant (refer to **Table 4.8-5**).

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Off-site Traffic Noise

The off-site project related roadway segment noise levels projected in this report were calculated using the methods in the Highway Noise Model published by the Federal Highway Administration (FHWA Highway Traffic Noise Prediction Model, FHWA-RD-77-108, December, 1978). The FHWA Model uses the traffic volume, vehicle mix and speed to compute the equivalent noise level. A spreadsheet calculation was used which computes equivalent noise levels for each of the time periods used in the calculation of CNEL. Weighting these equivalent noise levels and summing them gives the CNEL for the traffic projections. The noise contours are then established by iterating the equivalent noise level until the distance to the desired noise contour(s) are found.

Because mobile/traffic noise levels are calculated on a logarithmic scale, a doubling of the traffic noise or acoustical energy results in a noise level increase of 3 dBA. Therefore the doubling of the traffic volume, without changing the vehicle speeds or mix ratio, results in a noise increase of 3 dBA. The future traffic noise model uses a typical, conservative vehicle mix of 95 percent autos, 3 percent medium trucks and 2 percent heavy trucks for all analyzed roadway segments. The vehicle mix provides the hourly distribution percentages of automobile, medium trucks and heavy trucks for input into the FHWA Model.

To determine if roadway noise level increases associated during the construction of the Project will create noise impacts, the noise levels for the existing conditions were compared with the noise level increase from the project' peak related construction traffic. The worst case construction related noise increases would occur when comparing the existing 2011 conditions prior to construction beginning in the year 2012. To be conservative, the construction phase's peak, one month, traffic volume was used. Noise contours were developed based on the Draft Traffic Impact Assessment (LOS, 2011) for the following traffic scenarios:

- Existing Year 2011: Current noise conditions without the construction of the project
- Existing Year 2011 Plus Project: Current noise conditions plus the peak construction related traffic
- Existing Year 2011 vs. Existing Year 2011 Plus Project: Comparison of the project construction traffic related noise level increases in the vicinity of the project site

Corona Affect Noise

To assess potential noise impacts from the Corona Affect, measurements were taken mid-span between two power poles along an existing San Diego Gas & Electric (SDG&E) transmission line located in the Borrego Springs area. The noise measurement location is provided graphically in **Figure 4.8-3**, denoted as Corona Measurement. The noise measurements were taken by Ldn Consulting in December 2009, between approximately 9:30 a.m. and 10:00 a.m. in dry, calm and clear conditions. The measurements were taken to determine the local conditions and to establish a baseline for the Corona Affect of the proposed gen-tie line. Sound levels for the proposed on-site equipment were obtained from the manufacture's specifications.

Noise measurements of the Corona Affect were taken using a Larson-Davis Model LxT Type 1 precision sound level meter, programmed, in "slow" mode, to record noise levels in A weighted form. The LxT was set to record in the low range of -10 to 110 dBA. The sound level meter and microphone were mounted on a tripod, five feet above the ground and equipped with a windscreen during all measurements. The sound level meter was calibrated before and after the monitoring using a Larson-

Davis calibrator, Model CAL 200. The noise measurement location was determined based on access and low ambient conditions to capture only the potential transmission line noise levels.



Source: Ldn, 2012b.

**FIGURE 4.8-3
CORONA AFFECT NOISE MEASUREMENT LOCATION**

Operational Noise

Calculations of the expected operational noise levels and potential impacts were completed using a point-source noise prediction model. The essential model input data for these performance equations include the source levels of each type of equipment, relative source to receiver horizontal and any vertical separations, the amount of time the equipment is operating in a given day, also referred to as the duty-cycle and any transmission loss from topography or barriers. To determine the worst-case noise levels for the operations no topographic attenuation, duty-cycle reductions or barrier reductions were used. A drop-off rate of 6 dBA per doubling of distance was used for all operational pieces of equipment.

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D. PROJECT IMPACTS AND MITIGATION MEASURES

Noise Levels in Excess of Standards/Substantial Temporary Noise Increase

Impact 4.8.1 Heavy equipment and traffic generated during construction would generate short-term increases in noise on and in the vicinity of the project site. This impact is considered **less than significant**.

The project construction period is expected to last from 12 to 24 months and includes all site preparation, installation of the PV panels and all utilities including the gen-tie line. Grading and subsequent installation of the utilities and the PV panels are discussed separately below.

Construction noise represents a short-term impact on ambient noise levels. Noise generated by construction equipment (haul trucks, water trucks, graders, dozers, loaders and scrapers) can reach relatively high levels. Grading activities represent one of the highest potential sources for noise impacts.

The U.S. Environmental Protection Agency (U.S. EPA) has compiled data regarding the noise generating characteristics of specific types of construction equipment. Noise levels generated by heavy construction equipment at a distance of 50 feet can range from 60 dBA for a small tractor up to 100 dBA for rock breakers. However, these noise levels diminish rapidly with distance from the construction site at a rate of approximately 6 dBA per doubling of distance.

Most of the construction activities will consist of clearing and grubbing the site and the trenching of utilities for the preparation of the PV panels. The equipment is anticipated to be spread out over the entire site with some equipment potentially operating near the property line while the rest of the equipment may be located over 1,000 to 2,000 feet from the same property line. This would result in an acoustical center for the grading operation of more than 500 feet from the nearest property line.

As shown in **Table 4.8-4**, if all the equipment was operating in the same location, (which is not physically possible) at a distance as close as 140 feet from the nearest property line, the point source noise

**TABLE 4.8-4
CONSTRUCTION GRADING NOISE LEVELS**

Construction Equipment	Quantity	Duty Cycle (Hours/Day)	Source Level @ 50-Foot (dBA)	Combined Noise Level @ 50-Foot (dBA Leq-8h)
Graders	2	6.8	74	76.3
Rubber Tired Dozers	2	6.8	72	74.3
Water Trucks	4	6.8	70	75.3
Other Equipment	3	8	72	76.8
Rollers	2	6.8	75	77.3
Tractors/Loaders/Backhoes	2	6.8	73	75.3
Rough Terrain Forklifts	2	1.7	72	68.3
Combined Levels @ 50 Feet (dBA)				83.9
Distance To Property Line				140
Noise Reduction Due To Distance				-8.9
NEAREST PROPERTY LINE NOISE LEVEL				75.0
County of Imperial Threshold				75
IMPACT?				NO

Source: Ldn, 2012b.

attenuation from construction activities is -8.9 dBA. This would result in an anticipated worst case eight-hour average combined noise level of less than 75 dBA at the property line. Based on the attenuation and the spatial separation of the equipment, the noise levels would comply with the County of Imperial’s 75 dBA standard at all project property lines. In addition, the project must comply with County standards regarding construction hours (i.e. construction limited to normal weekday working hours, 7 a.m. to 7 p.m., Monday through Friday). Therefore, grading noise impacts are considered less than significant.

PV Panel Installation

The installation of the PV panels would use a variety of equipment. **Table 4.8-5** summarizes the list of equipment provided by the Applicant which is anticipated to be used for PV panel installation. Based on normal installation procedures the equipment is anticipated to be spread out over the entire site similar to the mass grading operation. Some equipment will be operating near the property line while the rest of the equipment may be located over 1,000 to 2,000 feet from the same property line. This would result in an acoustical center for the PV installation operation of more than 500 feet from the nearest property line. The distance to the property lines would increase as the interior panels are installed and the noise levels would decrease due to distance.

As shown in **Table 4.8-5**, if all the equipment was operating in the same location (which is not physically possible), at a distance as close as 130 feet from the nearest property line, the point source noise attenuation from construction activities would be -8.3 dBA. This would result in an anticipated worst-case 8-hour average combined noise level of less than 75 dBA at the property line. Based on the attenuation and the spatial separation of the equipment, the noise levels would comply with the County of Imperial’s 75 dBA standard at all project property lines. Therefore, construction noise impacts resulting from PV panel installation would be less than significant.

**TABLE 4.8-5
PV PANEL INSTALLATION NOISE LEVELS**

Construction Equipment	Quantity	Duty Cycle (Hours/Day)	Source Level @ 50-Feet(dBA)	Combined Noise Level @ 50-Feet (dBA Leq-8h)
Rough Terrain Forklifts	8	1.7	72	74.3
Cranes	4	1.8	75	74.5
Generator Sets	1	8	74	74.0
Tractors/Loaders/Backhoes	1	8	73	73.0
Air Compressors	2	4	76	76.0
Forklifts	2	7	72	74.4
Water Trucks	3	2	70	68.8
Aerial Lifts	1	8	70	70.0
Crawler Tractors	1	8	72	72.0
Combined Levels @ 50 Feet (dBA)				83.0
Distance To Property Line				130
Noise Reduction Due To Distance				-8.3
NEAREST PROPERTY LINE NOISE LEVEL				74.7
County of Imperial Threshold				75
IMPACT?				NO

Source: Ldn, 2012b.

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Roadway Noise

Table 4.8-6 provides the noise levels and the distances to the 60 dBA CNEL contours for the roadways in the vicinity of the project site for the Existing Year 2011 Scenario without project construction traffic. As shown the noise level at 50-feet would range from 51.3 to 68.8 dBA CNEL.

**TABLE 4.8-6
EXISTING TRAFFIC NOISE LEVELS (WITHOUT PROJECT)**

Roadway Segment	ADT ¹	Vehicle Speeds (MPH) ¹	Noise Level @ 50-Feet (dBA CNEL)	60 dBA CNEL Contour Distance (Feet)
Diehl Road				
Derrick Road to Drew Road	199	40	51.3	13
Drew Road				
Evan Hewes Highway to I-8	2,443	55	65.3	112
I-8 to Diehl Road	1,033	55	61.5	63
Diehl Road to SR-98	512	55	58.5	40
Evan Hewes Highway				
Derrick Road to Drew Road	2,954	40	63.0	79
Drew Road to Forrester Road	2,843	40	62.8	77
Forrester Road				
Evan Hewes Highway to I-8	5,551	55	68.8	194

Source, Ldn, 2012b. ¹ Campo Verde Solar Draft Traffic Impact Analysis prepared by LOS Engineering, Inc., 2012.

In contrast to **Table 4.8-6**, **Table 4.8-7** shows the Existing Year 2011 Plus Project construction traffic. Note that the values given do not take into account any noise barriers or topography that may affect ambient noise levels. As shown the noise level at 50-feet would range from 58.8 to 69.3 dBA CNEL.

**TABLE 4.8-7
EXISTING PLUS PROJECT TRAFFIC NOISE LEVELS**

Roadway Segment	ADT ¹	Vehicle Speeds (MPH) ¹	Noise Level @ 50-Feet (dBA CNEL)	60 dBA CNEL Contour Distance (Feet)
Diehl Road				
Derrick Road to Drew Road	1,128	40	58.8	42
Drew Road				
Evan Hewes Highway to I-8	2,589	55	65.5	117
I-8 to Diehl Road	1,912	55	64.2	95
Diehl Road to SR-98	639	55	59.5	46
Evan Hewes Highway				
Derrick Road to Drew Road	3,142	40	63.3	83
Drew Road to Forrester Road	3,031	40	63.1	81
Forrester Road				
Evan Hewes Highway to I-8	6,145	55	69.3	208

Source: Ldn, 2012b. ¹ Source: Campo Verde Solar Draft Traffic Impact Analysis prepared by LOS Engineering, Inc., 2012.

Table 4.8-8 presents the comparison of the Existing Year 2011 with and without Project related noise levels. The overall roadway segment noise levels will increase from 0.3 dBA CNEL to 12.9 dBA CNEL during the construction of the project based on the anticipated project related construction traffic.

**TABLE 4.8-8
EXISTING VS. EXISTING PLUS PROJECT TRAFFIC NOISE LEVELS**

Roadway Segment	Existing Noise Level @ 50-Foot (dBA CNEL)	Existing Plus Project Noise Level @ 50-Foot (dBA CNEL)	Project Related Noise Level Increase (dBA CNEL)	County Noise Increase Threshold	Potential Impact?
Diehl Road					
Derrick Road to Drew Road	51.3	58.8	7.5	5	Yes
Drew Road					
Evan Hewes Highway to I-8	65.3	65.5	0.3	3	No
I-8 to Diehl Road	61.5	64.2	2.7	3	No
Diehl Road to SR-98	58.5	59.5	1.0	5	No
Evan Hewes Highway					
Derrick Road to Drew Road	63.0	63.3	0.3	3	No
Drew Road to Forrester Road	62.8	63.1	0.3	3	No
Forrester Road					
Evan Hewes Highway to I-8	68.8	69.3	0.4	3	No

Source: Ldn, 2012b.

Sound Levels provided are worst-case and do not take into account topography or shielding from barriers.

As shown in **bold** in the last column of **Table 4.8-8**, project construction traffic creates a short-term noise increases during the peak construction of more than 5 dBA CNEL on the segment of Diehl Road from Derrick Road to Drew Road. However, the noise level is below the 60 dBA CNEL threshold and in the “normally acceptable” category. Additionally, no sensitive receptors exist along this roadway segment. Therefore, construction roadway noise impacts are considered less than significant.

Mitigation Measures

None required.

Significance After Mitigation

Not applicable.

Noise Levels in Excess of Standards/Substantial Permanent Noise Increase

Impact 4.8.2 The proposed project would generate noise associated with operation of on-site equipment. This impact is considered **less than significant**.

Stationary noise sources associated with operation of the proposed project include noise from the transformers, inverters, substation and the gen-tie. The project proposes the installation of up to 170 small-scale, above ground enclosures and shelters that would be located within the PV module fields to shade inverter/distributor transformers and switching gear. These structures would have a footprint approximately 9-feet by 30-feet in size and be approximately 10 feet in height at the roof apex. The enclosures will be constructed of either metal or concrete and designed for outdoor use. The shelters would be open on the sides and constructed of wood and steel and would be neutral in color. Each of these locations may house a Satcon PowerGate Plus 1 MW Commercial Solar PV Inverters, or equivalent, and one of the smaller transformers necessary to increase the voltage.

The transformer and inverter locations would be spread out over the site with one transformer and one inverter grouped next to each other (called a Power Conversion Station (PCS)). The project also

4.8 NOISE

proposes an on-site substation, switchyard and O&M Building in the southern portion of the site west of Liebert Road north of the Westside Main Canal. **Figure 4.3-4** depicts the proposed substation, a typical inverter / transformer, and PV array. The electric power produced by the project would be conveyed to the existing system with the incorporation of a new 230-kV gen-tie transmission line extending from the site to the Imperial Valley Substation (refer to **Figure 2.0-4**, in Chapter 2.0). The proposed transmission lines may increase a phenomenon referred to as the “Corona Affect” along the new gen-tie route. The operational noise levels from the proposed on site small-scale inverter/transformer structures along with the substation equipment and the offsite Corona Affect are analyzed separately below.

Transformer/Inverter and Array Tracker Noise Levels

The project may use two different small-scaled transformers as part of the proposed inverter/transformer sites along with array tracker motors. The two smaller transformers consist of a 1 megavolt-amp (MVA) from 200 volt (V) to 12-kV and a 1-MVA from 12-V to 34.5-. A larger transformer is proposed as part of the project’s onsite substation. As identified in the *National Electric Manufactures Association (NEMA) Publication No. TR 1-1993*, the unshielded noise levels for these two small-scaled transformers and the larger transformer, respectively, are:

- 1 MVA from 200V to 12-kV - 58 dBA @ 5 feet
- 1 MVA from 12V to 34.5-kV - 58 dBA @ 5 feet
- 20 MVA from 34.5 to 69-kV - 71 dBA @ 5 feet

According to the *Satcon PowerGate Specifications* (2009), the proposed Satcon PowerGate Plus 1 MW Commercial Solar PV Inverter, or equivalent, has an unshielded noise rating of less than 65 dBA at 5 feet and the array tracker motor has a noise rating of 61 dBA at 5 feet (*Source: Satcon PowerGate Specifications, 2009*). (The NEMA test results for transformers and the proposed Satcon inverters, manufacturer’s specifications are provided **as Attachment A of the Noise Assessment**. This document is provided on the attached CD of Technical Appendices as **Appendix F** of this EIR).

The worst case property line noise levels would occur where a transformer/inverter and array tracker motor are located approximately 269-feet from the property (refer to **Figure 4.8-4**) along Liebert Road. Currently the adjacent properties are zoned for agricultural uses. To be conservative, the most restrictive residential nighttime property line standard of 45 dBA was used so that if a future residence or residential development are constructed the proposed Project will still be in compliance with the County standards. The noise levels of 58 dBA for the transformer, 65 dBA for the inverter and 61 dBA for the array tracker motor were combined and propagated out to the property line without any shielding. The results of the propagated noise levels are shown in **Table 4.8-9**.

**TABLE 4.8-9
TRANSFORMER/INVERTER AND TRACKER NOISE – NEAREST PROPERTY LINE**

Source	Noise Level @ 5-Foot (dBA) ¹	Distance to Nearest Property Line (Feet)	Noise Reduction due to distance (dBA)	Resultant Noise Level @ Property Line (dBA Leq)	Property Line Standard (dBA Leq)	Impact?
Transformer	58.0	75	-34.6	23.4	45	No
Inverter	65.0	75	-34.6	30.4	45	No
Array Tracker	61.0	75	-34.6	26.4	45	No
Cumulative Noise Level @ Property Line (dBA)				32.4	45	No

Source: Ldn, 2012b.

¹ Noise data provided as an attachment to this report.

The location and relationships of the on-site substation, transformer/inverter and the nearest property line for the project configuration are shown in **Figure 4.8-4**. To determine the noise levels at the property line, the noise levels of 58 dBA from the transformer, 65 dBA for the inverter, 61 dBA from the array tracker motor and 71 dBA for the larger transformer at the substation were all combined and propagated out to the nearest property line without any shielding from the proposed buildings. The results of the combined operational noise levels for are provided in **Table 4.8-10**.

**TABLE 4.8-10
COMBINED OPERATIONAL PROPERTY LINE NOISE LEVELS**

Source	Measurement Distance from Source (Feet)	Measured Noise Level (dBA)	Distance to Nearest Property Line (Feet)	Noise Reduction due to distance (dBA)	Resultant Noise Level @ Property Line (dBA Leq)	Property Line Standard (dBA Leq)	Impact?
Transformer	5	58.0	75	-34.6	23.4	45	No
Inverter	5	65.0	75	-34.6	30.4	45	No
Array Tracker	5	61.0	75	-34.6	26.4	45	No
Substation	5	71.0	300+	-35.6	35.4	45	No
Combined Noise Level @ Property Line (dBA)					37.2	45	No

Source: Ldn, 2012b.

¹ Noise data provided in Appendix F of this EIR.

As shown, the combined noise levels at the nearest property line were projected to be 37.2 dBA Leq and no noise impacts are anticipated from the on-site substation in the southern portion of the project site. The substation in combination with the pad mounted transformer/inverters and array tracker motors would comply with the County's most restrictive property line standard of 45 dBA Leq. No additional analysis is needed and no impacts are anticipated. Therefore, combined operational noise impacts resulting from on-site equipment would be less than significant.

Corona Noise

To determine the Corona Affect of the proposed gen-tie transmission line, noise measurements were previously taken along an existing SDG&E transmission line in the Borrego Springs area (refer to **Figure 4.8-2**). The measurements were taken for a different solar power project that is similar to the proposed project and can therefore be used to estimated Corona noise from the proposed project. The short-term measurements were conducted by Ldn Consulting December 4, 2009.

Due to ambient noise (airplanes, automobiles and birds) only one-minute measurements could be taken without the results being affected by factors other than the existing transmission lines. During the noise measurements, the crackling or hissing of the transmission lines was slightly audible and the weather conditions were dry and calm. The results of the measurements are provided in **Table 4.8-11**.

As can be seen in **Table 4.8-11**, during dry conditions, the noise levels from the Corona were very low (below 20 dBA). During moist or wet conditions the Corona noise can double. This would result in a noise level of 35 to 37 dBA which is consistent with previous studies and modeling efforts undertaken by the Electric Power Research Institute (EPRI) and CH₂M Hill for the Cross Valley Transmission Line project conducted for Southern California Edison 2008. The Corona is not limited to only project-related power transmission. Rather it is based on the transmission lines at full capacity and therefore represents Corna associated with the cumulative transmission of power through the line.

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**TABLE 4.8-11
MEASURED CORONA NOISE LEVELS - MEASURED DECEMBER 4, 2009**

Location	Time	One Hour Noise Levels (dBA)						Property Line Standard (dBA L _{eq})	Impact ?
		L _{eq}	L _{min}	L _{max}	L ₁₀	L ₅₀	L ₉₀		
Transmission Lines Borrego Springs	9:35–9:36 a.m.	17.6	16.7	22.7	18.7	17.0	16.8	45	No
Transmission Lines Borrego Springs	9:37–9:38 a.m.	18.3	17.4	27.2	19.3	18.1	17.7	45	No

Source: Ldn, 2012b.

Proposed Project Substation Noise Levels

The onsite substation is proposed in the southern portion of the site west of Liebert Road north of the Westside Main Canal (please refer to **Figure 4.8-4**). The substation is 300 feet or more from the nearest property line to the south. The transformer at the substation would have noise level of 71 dBA at a distance of 5 feet. The reduction in the noise level at a distance of 300 feet is -35.6 dBA resulting in a noise level below 36 dBA at the nearest property line from the substation. Thus, the proposed substation would comply with the County's most restrictive property line standard of 45 dBA Leq and no additional analysis is needed for the substation. Noise generated by the project substation would result in a less than significant impact.

Operational Traffic Noise Impacts

During operations and maintenance, the project will primarily operate during daylight hours and will require (on average) less than 10 full-time personnel for operations and maintenance. Operations personnel include employees running the facility, security, and any other work associated with the operations. Maintenance personnel include employees addressing maintenance on a daily basis. On average, the operations and maintenance trip generation is estimated at about 20 ADT with approximately 10 AM and 10 PM peak hour trips. Although panel washing is not anticipated to be necessary, for purposes of this analysis it is assumed that during a typical year, the project may require up to 10 daily water trucks for panel washing over approximately 15 business days, with the frequency of washing estimated from one to four times a year. During the washing period, the total project daily traffic may increase to 40 or 50 ADT over a 15 business day period.

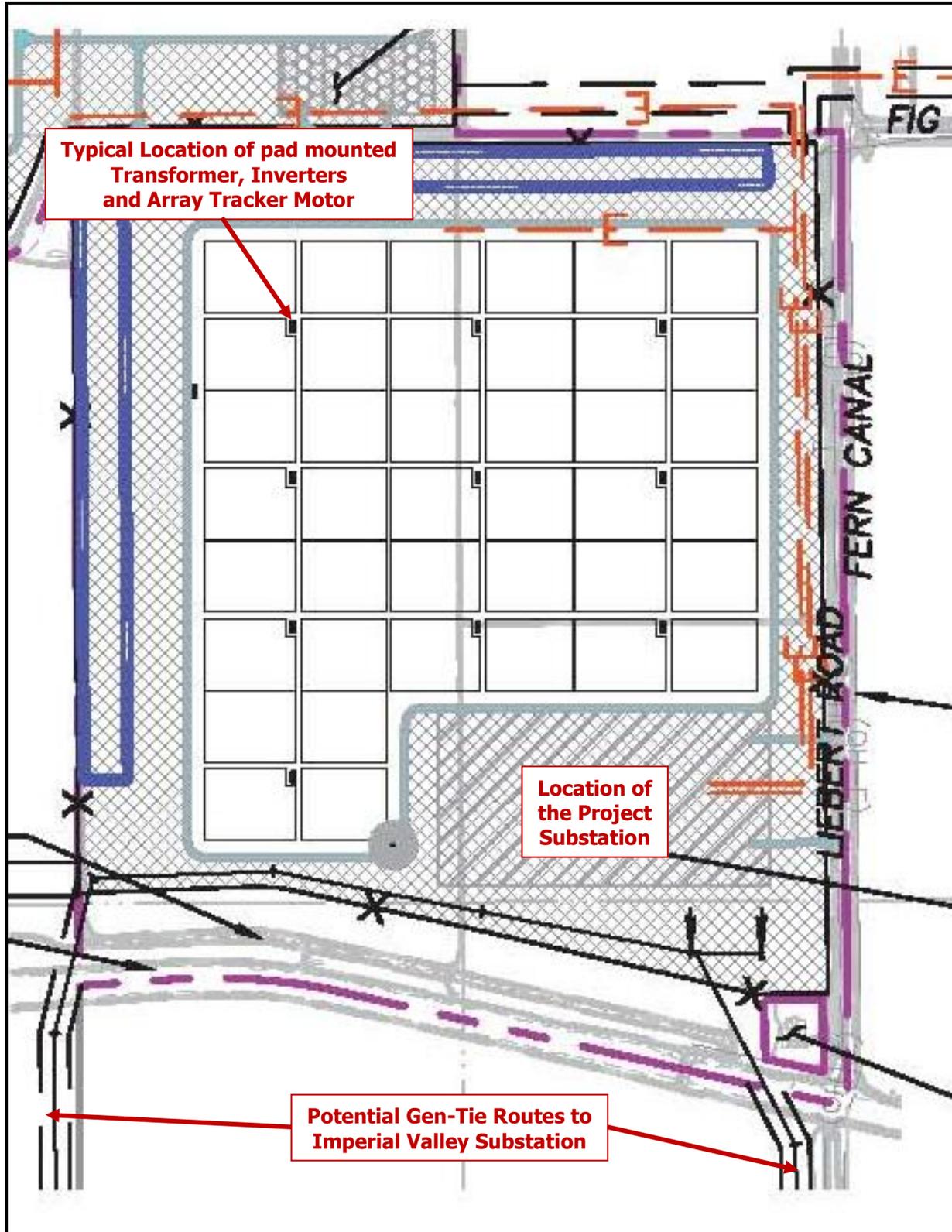
Operations and maintenance traffic generation is minimal compared to the existing traffic volumes. Therefore, the project's operational traffic would result in a less than significant noise impact at existing or future noise sensitive land.

Mitigation Measures

None required.

Significance After Mitigation

Not applicable.



Source: Ldn, 2012b.

**FIGURE 4.8-4
PROPOSED EQUIPMENT LOCATIONS**

4.8 NOISE

4.8.4 CUMULATIVE SETTING, IMPACTS AND MITIGATION MEASURES

A. CUMULATIVE SETTING

The geographic scope for cumulative noise impacts is based on the traffic analysis which examined a total of 11 intersections, 7 roadway segments and 2 freeway segments in the study area. The selected intersections, roadway segments and freeway segments were confirmed by County staff and are listed in Table 4.3-5, Table 4.3-6 and Table 4.3-7 in Section 4.3, Transportation and Circulation. The cumulative projects are identified Table 3.0-1 in Chapter 3.0, Introduction to the Environmental Analysis and Assumptions Used. Noise levels within the vicinity of the project site primarily consist of traffic along area roadways.

A. CUMULATIVE IMPACTS AND MITIGATION MEASURES

Cumulative Noise Increases

Impact 4.8.3 Construction and operation of the proposed project could incrementally contribute to the existing noise environment. This impact is considered **less than cumulatively considerable**.

Cumulative Construction Noise

To determine if cumulative off-site noise level increases associated with the peak construction of the proposed project and other planned or permitted projects in the vicinity would create noise impacts, the noise levels for the peak construction period of the project and other planned and permitted projects were compared with the existing opening year conditions. To be conservative, one month peak construction traffic volume was used. Noise contours were developed based on the Traffic Impact Assessment (LOS, 2012) for the following traffic scenarios:

- Existing Year 2011 Plus Project Plus Cumulative Projects: Current day noise conditions plus the peak construction period of the project and other permitted or planned projects.
- Existing Year 2011 vs. Existing Year 2011 Plus Project Plus Cumulative: Comparison of the existing noise levels and the related noise level increases from the combination of the proposed project peak construction traffic and all other planned or permitted projects in the vicinity of the site.

Noise levels for the Existing Year 2011 Scenario and the distances to the 60 dBA CNEL contours for the roadways in the vicinity of the project site were previously shown in **Table 4.8-6**. The cumulative noise conditions are provided in **Table 4.8-12**. No noise barriers or topography that could affect noise levels were incorporated in the calculations.

As shown in **Table 4.8-12**, the noise level at 50-feet would range from 58.8 to 69.8 dBA CNEL.

**TABLE 4.8-12
EXISTING PLUS PROJECT PLUS CUMULATIVE TRAFFIC NOISE LEVELS**

Roadway Segment	ADT ¹	Vehicle Speeds (MPH) ¹	Noise Level @ 50-Feet (dBA CNEL)	60 dBA CNEL Contour Distance (Feet)
Diehl Road				
Derrick Road to Drew Road	1,128	40	58.8	42
Drew Road				
Evan Hewes Highway to I-8	2,915	55	66.0	126
I-8 to Diehl Road	3,339	55	66.6	138
Diehl Road to SR-98	2,066	55	64.6	101
Evan Hewes Highway				
Derrick Road to Drew Road	3,529	40	63.8	89
Drew Road to Forrester Road	3,449	40	63.7	88
Forrester Road				
Evan Hewes Highway to I-8	6,996	55	69.8	227

SOURCE: LDN, 2012B.

¹Source: Campo Verde Solar Draft Traffic Impact Analysis prepared by LOS Engineering, Inc., 2012.

Table 4.8-13 presents the comparison of the Existing Year 2011 and the Existing Year 2011 plus Project and Cumulative noise levels. As shown the noise level would increase from 0.8 to 7.5 dBA CNEL. Traffic related short-term noise increases during the peak construction of the Project and Cumulative Projects has the potential to increase noise levels more than the acceptable limit on three roadway segments as can be seen in **bold** in the last column of **Table 4.8-13**.

**TABLE 4.8-13
EXISTING VS. EXISTING PLUS PROJECT PLUS CUMULATIVE TRAFFIC NOISE LEVELS**

Roadway Segment	Existing Noise Level @ 50-Feet (dBA CNEL)	Existing Plus Project Plus Cumulative Noise Level @ 50-Feet (dBA CNEL)	Cumulative Related Noise Level Increase (dBA CNEL)	County Noise Increase Threshold	Potential Impact?
Diehl Road					
Derrick Road to Drew Road	51.3	58.8	7.5	5	Yes
Drew Road					
Evan Hewes Highway to I-8	65.3	66.0	0.8	3	No
I-8 to Diehl Road	61.5	66.6	5.1	3	Yes
Diehl Road to SR-98	58.5	64.6	6.1	5	Yes
Evan Hewes Highway					
Derrick Road to Drew Road	63.0	63.8	0.8	3	No
Drew Road to Forrester Road	62.8	63.7	0.8	3	No
Forrester Road					
Evan Hewes Highway to I-8	68.8	69.8	1.0	3	No

SOURCE: LDN, 2012B.

Sound Levels provided are worst-case and do not take into account topography or shielding from barriers.

4.8 NOISE

However, the project would not be expected to incrementally add to the roadway traffic noise levels of any “reasonably foreseeable” projects as they are either: 1) not anticipated to coincide with the peak traffic period (first quarter of 2013 and only for a one month period) of the proposed project; or 2) the prescribed worst-case construction noise levels would be separated by enough distance and not cumulatively add to one another. Therefore, the project’s traffic noise contribution to cumulative traffic noise during construction is considered less than cumulatively considerable.

Cumulative Operational Traffic Noise

During operations and maintenance, the project would primarily operate during daylight hours and would require (on average) less than 10 full-time personnel for operations and maintenance. Operations personnel include employees running the facility, security, and any other work associated with the operations. Maintenance personnel include employees addressing maintenance on a daily basis. On average, the operations and maintenance trip generation is estimated at about 20 average daily trips (ADT) with approximately 10 a.m. and 10 p.m. peak hour trips. Although panel washing is not anticipated to be necessary, for purposes of this analysis it is assumed that during a typical year, the project may require up to 10 daily water trucks for panel washing over approximately 15 business days, with the frequency of washing estimated from one to four times a year. During the washing period, the total project daily traffic may increase to 40 or 50 ADT over a 15 business day period. Compared to the existing traffic volumes, operations and maintenance traffic generation is minimal. Furthermore, existing or future noise sensitive land uses would not be adversely affected by the increase in noise because the project’s operational traffic would result in a less than cumulatively considerable contribution to cumulative traffic noise. Therefore, cumulative operational noise would result in a **less than cumulatively considerable impact**.

Mitigation Measures

None required.

Significance After Mitigation

Not applicable.

Decommissioning Noise Impacts

It is reasonable to assume that noise impacts from decommissioning activity will be similar to construction of the project. Accordingly, the noise contribution of the project during decommissioning is expected to be **less than cumulatively considerable**.

SECTION 4.9

AGRICULTURAL RESOURCES

This section provides a background discussion of the regulatory framework and the affected environment. The regulatory framework discussion focuses on the federal, state, and local regulations. The affected environment discussion focuses on the existing activities, important farmlands categories, zoning, agricultural soil classifications, Imperial County agricultural conversion, on-site soils, and Williamson Act lands.

This section also discloses the potential impacts on agricultural resources associated with the implementation of the proposed project. Existing environmental conditions in the affected areas are addressed, environmental impacts are analyzed, and measures are recommended to reduce or avoid adverse impacts to agricultural resources.

This section is based on the following resources: Imperial County General Plan Agriculture Element; Imperial County General Plan Environmental Impact Report; soil classifications designated by the United States Department of Agriculture's (USDA) Natural Resources Conservation Service's (NRCS) Web Soil Survey (WSS); California Department of Conservation (DOC) Farmland Monitoring and Mapping Program (FMMP) data; the County's online GIS mapping to determine important farmlands and lands subject to Agricultural Land Conservation (i.e., Williamson Act) contracts; and aerial photography.

4.9.1 REGULATORY FRAMEWORK

A. FEDERAL

Farmland Protection Policy Act (FPPA)

The Farmland Protection Policy Act is intended to minimize the impact federal programs have on the unnecessary and irreversible conversion of farmland to nonagricultural uses. It assures that—to the extent possible—federal programs are administered to be compatible with state, local units of government, and private programs and policies to protect farmland. The FPPA is overseen by the U.S. Department of Agriculture's Natural Resources Conservation Service.

B. STATE

California Land Conservation Act

The Williamson Act (California Land Conservation Act, California Government Code, Section 51200 et. seq.) is a statewide mechanism for the preservation of agricultural land and open space land. The Act enables local governments to enter into contracts with private landowners for the purpose of restricting specific parcels of land to agricultural or related open space use. In return, landowners receive property tax assessments which are much lower than normal because they are based upon farming and open space uses as opposed to full market value. While there are parcels throughout the County, and adjacent to the project site that are under Williamson Act contracts, none are located on the project site.

C. LOCAL

County of Imperial General Plan

Agriculture has been the single most important economic activity throughout the history of Imperial County. The County of Imperial General Plan Agricultural Element demonstrates the long-term commitment by the County to the full promotion, management, use, and development and protection of agricultural production, while allowing logical, organized growth of urban areas (County of Imperial, 1996a). The Land Use Element of the General Plan designates the entire project site as Agriculture.

4.9 AGRICULTURAL RESOURCES

Chapter 4.2 discusses the project’s potential environmental effects associated with land use and planning issues.

The Imperial County General Plan Agricultural Element provides goals, objectives, and policies for conserving agricultural lands while minimizing or avoiding conflicts with urban and other land uses. **Table 4.9-1** provides a consistency analysis of Imperial County General Plan policies relating to agricultural resources applicable to the proposed project. While this EIR analyzes the project’s consistency with the General Plan pursuant to State CEQA Guidelines Section 15125(d), the Imperial County Board of Supervisors ultimately determines on balance whether the project is overall consistent with the County’s General Plan.

**TABLE 4.9-1
IMPERIAL COUNTY GENERAL PLAN CONSISTENCY ANALYSIS**

General Plan Policies	Consistent with General Plan?	Analysis
<p>Policy 1. Preservation of Important Farmland Policy</p> <p>The overall economy of Imperial County is expected to be dependent upon the agricultural industry for the foreseeable future. As such, all agricultural land in Imperial County is considered as Important Farmland, as defined by Federal And State agencies, and should be reserved for agricultural uses. Agricultural land may be converted to non-agricultural uses only where a clear and immediate need can be demonstrated, such as requirements for urban housing, commercial facilities, or employment opportunities. All existing agricultural land will be preserved for irrigation agriculture, livestock production, aquaculture, and other agriculture-related uses except for non-agricultural uses identified in this General Plan or in previously adopted City General Plans.</p>	<p align="center">Yes</p>	<p>The private lands on which the proposed project is planned are designated Agriculture under the General Plan and have corresponding zoning of A-2 - General Agriculture, A-2-R - General Agriculture, Rural Zone, and A-3 - Heavy Agriculture. Solar energy electrical generators, electrical power generating plants, substations, and facilities for the transmission of electrical energy are allowed as conditional uses in Agricultural zones. In complying with the zoning designations, the Applicant is seeking a Conditional Use Permit (CUP) for the project. The proposed project would not remove land from the Agricultural designation of the General Plan or seek a zoning change under the Zoning Ordinance. By allowing solar projects on land designated Agriculture in the General Plan with a CUP, the Board of Supervisors has determined, on a case-by-case basis, that solar projects are consistent with agriculture related zones. This policy allows agricultural land to be converted to a non-agricultural use where a clear and immediate need can be demonstrated. The impact analysis in this Section addresses the environmental effects of temporarily converting the project site</p>

**TABLE 4.9-1
IMPERIAL COUNTY GENERAL PLAN CONSISTENCY ANALYSIS**

General Plan Policies	Consistent with General Plan?	Analysis
		from agricultural production to a solar generation facility. The impact analysis in Chapter 4.2, Land Use, also discusses the project’s consistency with land use regulations. .
<p>2. Development Patterns and Locations on Agricultural Land "Leapfrogging" or "checkerboard" patterns of development have intensified recently and result in significant impacts to the efficient and economic production of adjacent agricultural land. It is a policy of the County that leapfrogging will not be allowed in the future. All new non-agricultural development will be confined to areas identified in this plan for such purposes or in Cities' adopted Spheres of Influence, where new development must adjoin existing urban uses.</p>	<p>Yes</p>	<p>The project would not involve construction of or extension of water, sewer, or transportation infrastructure that would accommodate or encourage urban development and, thus, would not be conducive to "leapfrogging" in the future. The impact discussion below addresses the environmental effect of temporarily converting the project site from active agricultural production to a solar generation facility, including the potential environmental effects on adjacent and nearby farmlands. The impact analysis demonstrates that there is no adverse impact on the ability of adjoining agricultural lands to continue to farm.</p>

Imperial County Zoning Ordinance

Imperial County’s Zoning Ordinance establishes land use zones and regulations for the use of land and buildings in the unincorporated areas of the County. The Zoning Ordinance is an implementation of the County's General Plan and provides more specific requirements than are provided in the General Plan. All of the parcels on the project site are zoned for Agriculture (A-2, A-2-R and A-3).

County of Imperial Right to Farm Ordinance No. 1031

The County of Imperial Right to Farm Ordinance (No. 1031) was approved by the County Board of Supervisors on August 7, 1990. The purpose and intent of the Ordinance is to reduce the loss to the County of its agricultural resources by clarifying the circumstances under which agricultural operations may be considered a nuisance. The Ordinance permits operation of properly conducted agricultural operations within the County. The Ordinance promotes a good neighbor policy by disclosing to purchasers and users of adjacent properties the potential problems and inconveniences associated with agricultural operations. The site and surrounding properties are currently used for agricultural operations.

4.9 AGRICULTURAL RESOURCES

County of Imperial Williamson Act Rules and Procedures

In 2000, the Imperial County Board of Supervisors adopted the Williamson Act and the provisions established by California Revenue and Taxation Code Section 423.3. The Board of Supervisors also adopted Resolution 200-084, which established the County of Imperial Rules of Procedure to Implement the California Land Conservation Act of 1965 (Rules). The Rules set forth eligibility criteria and standards for the establishment of an agricultural preserve, expansion of an agricultural preserve, and removal of land from an agricultural preserve. The Rules also establish requirements for Land Conservation Contracts and local monitoring requirements.

On February 23, 2010, the Imperial County Board of Supervisors voted to not accept any new Williamson Act contracts and not to renew existing contracts, due to the elimination of the subvention funding from the state budget. The County reaffirmed this decision in a vote on October 12, 2010, and notices of nonrenewal were sent to landowners with Williamson Act contracts following that vote. The applicable deadlines for challenging the County's actions have expired, and therefore all Williamson Act contracts in Imperial County will terminate on or before December 31, 2018.

4.9.2 ENVIRONMENTAL SETTING

A. REGIONAL SETTING

Imperial County covers an area of 4,597 square miles or 2,942,080 acres. Agricultural production has been the major economic industry in Imperial County since the 1900s. Several factors including climate, fertile soils, and the irrigation water have lead to Imperial County's agricultural productivity.

Approximately 20 percent of the County's land is irrigated for agricultural purposes. Three of the primary irrigated areas include the Imperial Valley (512,163 acres), Bard Valley (14,737 acres) in the southeast corner of the County, and Palo Verde Valley (7,428 acres) in the northeast corner (County of Imperial, 1996a). A diverse array of irrigated crops are cultivated in the County including lettuce, carrots, onions, tomatoes, cauliflower, and broccoli; alfalfa, Sudan grass, and other animal feed; sugar beets; wheat and other grains; melons; cotton; and various citrus, fruits, and nuts (County of Imperial, 1996a).

In recent years, several factors have significantly altered the agricultural conditions in the County. Expanded population has given rise to booming residential and commercial development, which in turn has substantially increased the value of land and the cost of water and labor necessary to sustain agricultural production. As urbanization expands throughout the County, there is a growing economic incentive for local farmers to sell agricultural lands or relocate. As a result, agricultural land within the County is gradually disappearing. However, during the recent housing slump and economic recession, the pace of agricultural conversion has slowed.

Important Farmlands

The DOC Farmland Mapping and Monitoring Program (FMMP) produces Important Farmland Maps which document resource quality and land use information. USDA Soil Survey information and the corresponding Important Farmland candidacy recommendations are used for assessing local land.

The FMMP is intended to assist decision-makers in assessing present status, reviewing trends, and planning for the future of California's agricultural land resources. According to the 2008 FMMP, the project site contains land designated as Prime Farmland and Farmland of Statewide Importance. The DOC definitions of each Important Farmland category are provided below.

Prime Farmland

Prime Farmland is defined by the DOC as: “land with the best combination of physical and chemical features able to sustain long term production of agricultural crops. This land has the soil quality, growing season, and moisture supply needed to produce sustained high yields. Land must have been used for production of irrigated crops at sometime during the [past four years.]” (DOC, 2012).

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. For Imperial County, Farmland of Local Importance is defined as Unirrigated and uncultivated lands with Prime and Statewide soils (DOC, 2012).

Farmland of Statewide Importance

Farmland of Statewide Importance is defined by the DOC as: “land similar to Prime Farmland that has a good combination of physical and chemical characteristics for the production of agricultural crops. This land has minor shortcomings, such as greater slopes or less ability to store soil moisture than Prime Farmland. Land must have been used for production of irrigated crops at sometime during the [past four years]” (DOC, 2012).

Unique Farmland

Unique Farmland is defined by the California Department of Conservation as: “lesser quality soils 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 used for production of irrigated crops at sometime during the [past four years]” (DOC, 2012).

Other Land

Other Land is defined by the California Department of Conservation as: “land not included in any other mapping category. Common examples include low density rural developments; brush, timber, wetland, and riparian areas not suitable for livestock grazing; confined livestock, poultry, or aquaculture facilities; strip mines, borrow pits; and, water bodies smaller than 40 acres. Vacant and nonagricultural land surrounded on all sides by urban development and greater than 40 acres is mapped as Other Land.” (DOC, 2012).

Urban and Built-up Land

Land occupied by structures with a building density of at least 1 unit to 1.5 acres, or approximately 6 structures to a 10-acre parcel. This land is used for residential, industrial, commercial, construction, institutional, public administration, railroad and other transportation yards, cemeteries, airports, golf courses, sanitary landfills, sewage treatment, water control structures, and other developed purposes. No urban or built-up land is located within the boundary of the project site (DOC, 2012).

Imperial County Important Farmlands and Conversion of Farmlands

Table 4.9-2 depicts the conversions of agricultural land to non-agricultural uses within Imperial County from 2006-2008. As depicted in this table, the 2008 inventory of important farmlands included 195,589 acres of Prime, 311,048 acres of Statewide Importance, 2,196 of Unique, and 32,109 acres of Farmland of Local Importance.

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**TABLE 4.9-2
IMPERIAL COUNTY CHANGE IN AGRICULTURAL LAND USE SUMMARY (2006 - 2008)**

Land Use Category	Total Acreage Inventoried		2006 - 2008 Acreage Conversion			
	2008	2006	Lost (-)	Gained (+)	Net Acreage Changed	2008 Adjustments
Prime Farmland	195,589	196,176	1,000	407	-593	6
Farmland of Statewide Importance	311,048	311,645	2,243	1,646	-597	0
Unique Farmland	2,196	2,281	120	35	-85	0
Farmland of Local Importance	32,109	33,036	2,444	1,517	-927	0
Important Farmland Subtotal	540,942	543,138	5,807	3,605	-2,202	6
Grazing Land	0	0	0	0	0	0
Agricultural Land Subtotal	540,942	543,138	5,807	3,605	-2,202	6
Urban and Built-Up Land	27,709	26,897	272	1,084	812	0
Other Land	458,829	457,510	890	2,273	1,383	-64
Water Area	1,029	1,022	0	7	7	0
Total Area Inventoried	1,028,509	1,028,567	6,969	6,969	0	-58

Source: DOC, 2011.

As shown in **Table 4.9-2**, there was a net loss of 2,202 acres of Important Farmlands in Imperial County from 2006-2008. Farmland conversions occurred for a variety of reasons, including fallowing of lands resulting in a conversion to a non-irrigated classification, and conversion to urban and other uses due to development of farmsteads, rural commercial facilities, low-density housing, mining facilities, and dairy expansions. The trend in the conversion of agricultural land is expected to continue due to development pressure and other factors.

B. SOLAR GENERATION FACILITY

Existing Activities

All of the parcels that comprise the solar generation facility site are agricultural lands. Of the project site's 1,990 acres, approximately 1,852 acres (predominantly used to grow alfalfa hay) would be temporarily converted to accommodate the proposed project. This includes agricultural fields within the solar generation facility site minus the acreage of roads and ditches currently on the site. The solar generation facility site also includes a series of soil and concrete lined irrigation canals.

Important Farmland Categories

Figure 4.9-1 depicts the Important Farmlands Classifications on the proposed project site; none of the BLM lands include classified farmlands. **Table 4.9-3** provides the approximate acreages associated with each of the Important Farmland Classifications on the project site.

As shown below, the majority of the project site is designated Farmland of Statewide Importance (1,191 acres) and a large portion is designated as Prime Farmland (701 acres). The rest of the project site is designated as Farmland of Local Importance (31 acres), Unique Farmland (24 acres), and Other Land (43 acres). Of the farmland on the project site, approximately 1,822 acres (660 acres of Prime Farmland, 1,111 acres of Farmland of Statewide Importance, 27 acres of Farmland of Local Importance, and 24

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acres of Unique Farmland) would be converted to the proposed solar generation facility with project implementation. The BLM land, which includes the majority of the right-of-way for the gen-tie alignment, is not classified.

**TABLE 4.9-3
IMPORTANT FARMLANDS ON-SITE**

Agriculture Classification	Approximate Acreage on Project Site	Acreage Converted with Project Implementation
Prime Farmland	701	660
Farmland of Local Importance	31	27
Farmland of State Importance	1,191	1,111
Unique Farmland	24	24
Subtotal Important Farmlands	1,947	1,822
Other Land	43	30
Total	1,990	1,852

Source: Ericsson-Grant, Inc, 2011.

Agricultural Soils Classifications

United States Department of Agriculture Soil Survey

The United States Department of Agriculture (USDA) conducted a Soil Survey for the Imperial Valley Area and published maps and guidelines to define the condition and location of various kinds of soils in the region (USDA, 1981). Soils were characterized according to their appearance, depth, consistency, slope, and erosion factors. The Soil Survey grouped soil types identified in the study into eight soil Capability Classes. The classes were determined according to any limiting characteristics that would prevent the soils from being used for agricultural purposes. These classes are identified in **Table 4.9-4**. Soils are graded from I through VIII, with I denoting the most suitable class for cultivation, and VIII denoting the least suitable for cultivation.

**TABLE 4.9-4
SOIL CAPABILITY CLASSES - CLASS DESCRIPTION**

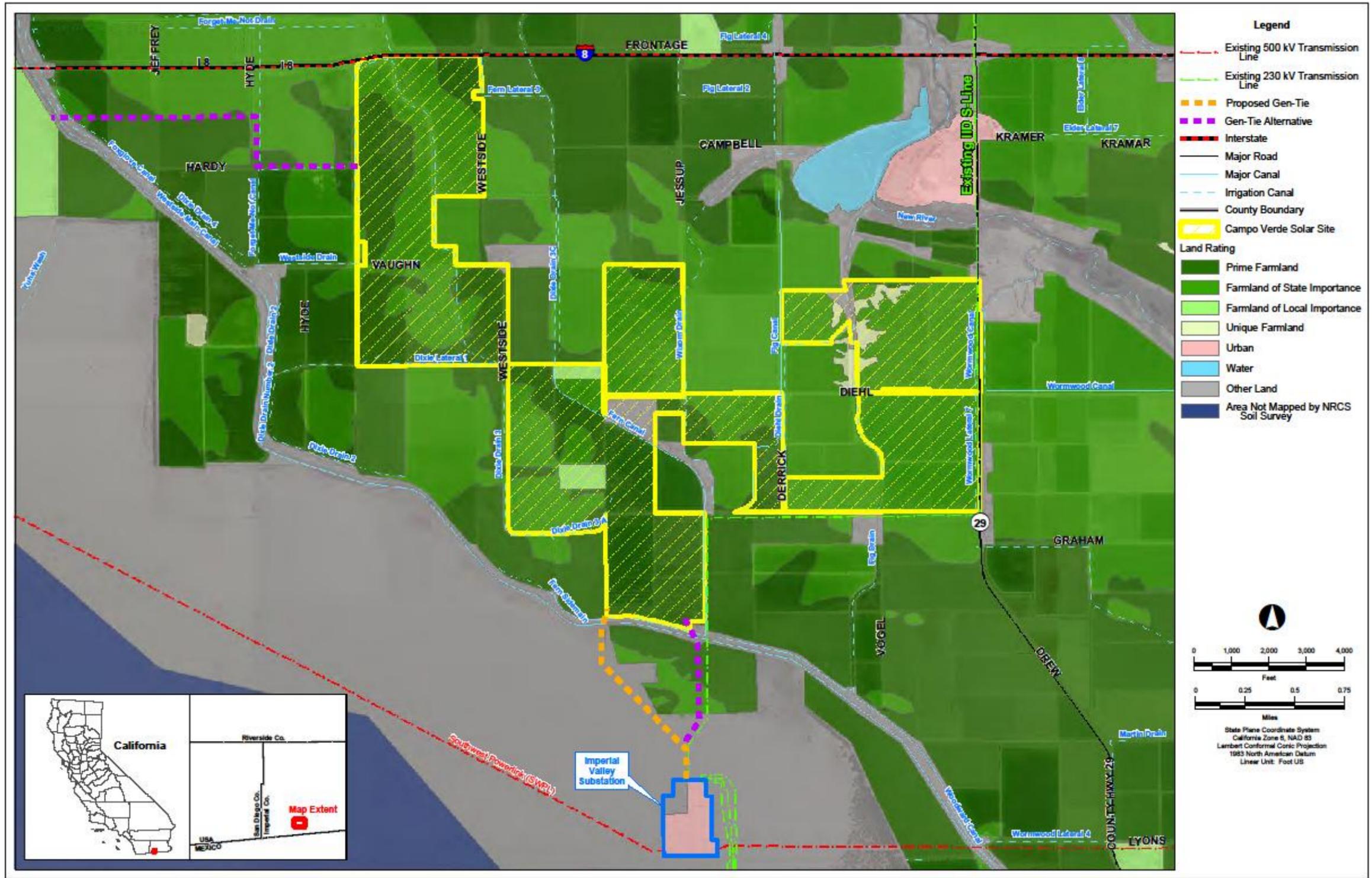
Class	Description
I	Soils have few limitations that restrict their use.
II	Soils have moderate limitations that reduce the choice of plants or that require moderate conservation practices.
III	Soils have severe limitations that reduce the choice of plants, require special conservation practices, or both.
IV	Soils have very severe limitations that reduce the choice of plants, require very careful management, or both.
V	Soils are not likely to erode but have other limitations, impractical to remove, that limit their use largely to pasture or range, woodland, or wildlife habitat.
VI	Soils have severe limitations that make them generally unsuited to cultivation and limit their use mainly to pasture, range, forestland, or wildlife food and cover.
VII	Soils have very severe limitations that make them unsuited to cultivation and that restrict their use mainly to grazing, forestland, or wildlife.
VIII	Soils and miscellaneous areas have limitations that preclude their use for commercial plant production and limit their use to recreation, wildlife, or water supply or for aesthetic purposes.

Source: USDA, 1981; USDA, 2011.

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Source: kp environmental, 2012.

FIGURE 4.9-1
 IMPORTANT FARMLANDS MAP

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Storie Index

The Storie Index provides another mechanism for rating soils. Under the Storie Index, a numerical system is used to convey the relative degree of suitability, or value of a soil for general intensive agriculture use. The index considers a soil's color and texture, the depth of nutrients, presence of stones, and slope. All of these characteristics directly relate to the adequacy of a soil type for use in crop cultivation. **Table 4.9-5** identifies the Storie Index classifications.

**TABLE 4.9-5
STORIE INDEX RATINGS - GRADE INDEX RATING DESCRIPTION**

Grade	Index Rating	Description
1	80 to 100	Few or no limitations that restrict use for crops. Excellent or well suited to general intensive farming.
2	60 to 80	Good or also well suited to general farming.
3	40 to 60	Fairly well suited to general farming.
4	20 to 40	Poorly suited to general farming.
5	10 to 20	Very poorly suited to general farming.
6	Less than 10	Not suitable for farming.

Source: USDA, 1981.

The Storie Index does not consider other factors, such as the availability of water for irrigation, climate, and the distance from markets. Values of the index range from 1 to 100 and are divided into six grades. An index of 100 and a grade of 1 is considered the most suitable farmland. Soils that have a Storie rank of 10 or below are considered to have a very low agricultural potential. Soils are considered to be prime for high quality agricultural production if their Storie Index Rating is 80 or greater. In the Imperial Valley region, the Storie Index ratings of soils range from 5 to 97.

On-Site Soils

Ten soil types are present on the project site based on the USDA survey maps. **Table 4.9-6** provides details on these soils, along with their Capability Class and Storie Index rating. Refer to Figure 4.6-2 in Section 4.6, Geology and Soils for a graphical depiction of these soil types on the project site.

**TABLE 4.9-6
SOIL SUITABILITY - MAP SYMBOL MAPPING UNIT CAPABILITY**

Map Symbol - Soil	Percent of Project Area	Capability Class	Storie Index
102 - Badland	1.66%	VIIIe	<10
110 - Holtville silty clay, wet	7.54%	IIw-5	30
114 - Imperial silty clay, wet	36.23%	IIIw-6	22
115 - Imperial-Glenbar silty clay loams, wet, 0 to 2% slopes	24.62%	IIIw-6	34
118 - Indio-Vint Complex	0.30%	IIw-1	60
122 - Meloland very fine sandy loam, wet	10.35%	IIIw-3	43
123 - Meloland and Holtville loam, wet	5.38%	IIIw-3	43
135 - Rositas sand, (0 to 2% slopes)	0.15%	IIIw-4	36
142 - Vint loamy very fine sand, wet	10.00%	IIw-4	57
144 - Vint-Indio very sandy loams, wet	3.77%	IIw-3	60
Totals	100%	--	--

Source: Ericsson-Grant, Inc. 2011.

Williamson Act Lands

The Williamson Act (California Land Conservation Act, California Government Code, Section 51200 et. seq.) is a statewide mechanism for the preservation of agricultural and open space land. The Act provides a comprehensive method for local governments to protect farmland and open space by allowing lands in agricultural use to be placed under contract (agricultural preserve) between a local government and a landowner. Amendments to the Budget Act of 2009 reduced the Williamson Act subvention payments budget to \$1,000, essentially suspending the subvention payments to the Counties.

As previously noted, the Imperial County Board of Supervisors voted to not accept any new Williamson Act contracts and not to renew existing contracts, due to the elimination of the subvention funding from the state budget. None of the parcels within the boundaries of the project site are under Williamson Act contract. However, four parcels adjacent to the project site (APN 051-300-005-000, 051-300-008-000, 051-300-009-000, and 051-310-026-000) are currently under Williamson Act contract. These parcels total approximately 276 acres.

A. GEN-TIE

The portion of the gen-tie to be located on lands under the jurisdiction of the BLM does not contain agricultural resources. This portion of the project is undergoing separate environmental analysis under NEPA.

4.9.3 IMPACTS AND MITIGATION MEASURES

A. STANDARDS OF SIGNIFICANCE

The impact analysis provided below is based on the thresholds identified in the State CEQA Guidelines, as listed in Appendix G. The project would result in a significant impact to agricultural resources if it would result in any of the following:

- a) 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?
- b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?
- c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 511 04(g))?
- d) Result in the loss of forest land or conversion of forest land to non-forest use?
- e) 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?

B. ISSUES SCOPED OUT AS PART OF THE INITIAL STUDY

Three CEQA significance criteria were scoped out as part of the Initial Study. Criterion “b” was eliminated from further analysis because the land encompassed by the project parcels is currently zoned A-2 (General Agriculture), A-2-R (General Agricultural Rural Zone) and A-3 (Heavy Agriculture) and

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designated by the General Plan as "Agriculture." Solar energy facilities are allowed uses within these zones subject to a Conditional Use Permit. The Applicant is not proposing a change in the Land Use Designation or of the zoning of the project parcels. Furthermore, the A-2 and A-3 zones allow for the development of solar energy farms and the Board of Supervisors has determined that solar projects are consistent with agriculture related zones by allowing this use with a CUP. Thus, the project does not conflict with existing zoning for agriculture.

The proposed project site does not contain any parcels subject to the Williamson Act. Additionally, although there are several Williamson Act contracts adjacent to the project boundaries, no conflicts with these lands and the project would occur because all Williamson Act contracts in Imperial County will terminate on or before December 31, 2018. No pressure for early termination or cancellation would occur in association with the proposed project adjacent to these lands. Therefore, conversion of land under Williamson Act contract is not an issue and will not be discussed in the analysis of impacts.

Criterion "c" was scoped out because mixed chaparral, pinyon-juniper habitats, and the montane hardwood-conifer forest are located in restricted areas of the County. Mixed chaparral and pinyon-juniper habitats are located in the extreme southwestern corner of Imperial County; montane hardwood-conifer forest is in the extreme northwestern corner of Imperial County. Thus, there are no existing forest lands, timberlands, or timberland zoned Timberland Production either on-site or in the immediate vicinity that would conflict with existing zoning or cause rezoning. Therefore, no impact is identified for this issue area.

Lastly, criterion "d" was scoped out because there are no existing forest lands either on-site or in the immediate vicinity of the project site. The proposed project would not result in the loss of forest land or conversion of forest land to non-forest use. Therefore, no impact is identified for this issue area.

C. METHODOLOGY

Baseline conditions described in subsection 4.9.2 have been evaluated with regard to their potential to be affected by project construction, operations, and maintenance activities. These activities were identified based on information provided by the Applicant and other supporting information provided to Imperial County. Impacts to agricultural resources have been identified based on the predicted interactions between construction, operation, and maintenance activities and the affected environment.

The following subsections discuss impacts and mitigation measures for the proposed project. Design features and Best Management Practices (BMPs) that may reduce or avoid environmental impacts have been incorporated into the project design by the Applicant and are summarized in Chapter 2.0.

The California Agricultural Land Evaluation and Site Assessment (LESA) Model was used to assess impacts on agriculture and farmland. The LESA Model is an approach for rating the relative quality of land resources that assigns points to six specific, measurable factors. The two Land Evaluation factors (Land Use Capability Classification and Storie Index) are based on measures of soil resource quality. The four site assessment factors address a given project's size, water resource availability, surrounding agricultural lands, and surrounding protected resource lands. The LESA Model was prepared for the proposed Campo Verde Solar Energy Project by Ericsson-Grant, Inc. in 2011 (The LESA Model is included in **Appendix G** of the Technical Appendices of this EIR on the attached CD).

D. PROJECT IMPACTS AND MITIGATION MEASURES

Conversion of Prime Farmland, Unique Farmland, or Farmland of Statewide Importance

Impact 4.9.1 The proposed project would temporarily convert Prime Farmland, Unique Farmland, Farmland of Statewide Importance, and Farmland of Local Importance to non-agricultural uses. This is considered a **potentially significant impact**.

Construction and operation of the proposed project would result in the direct conversion of approximately 1,822 acres of farmland, including approximately 1,111 acres of Farmland of Statewide Importance, 660 acres of Prime Farmland and 24 acres of Unique Farmland, as well as 27 acres of Farmland of Local Importance, to a non-agricultural use. The potential for impacts associated with indirect conversion of farmland is discussed under Impact 4.9.2. The impacts are considered temporary because the solar generation facility would be removed and the site returned to agricultural production at the end of the useful life of the project, expected to be up to 40 years. (Refer to MM 4.9.1b regarding the requirement for a Reclamation Plan).

The temporary removal of the project lands from important farmlands classifications for the construction and operation phases has been evaluated for significance under CEQA based on the LESA Model. Appendix G of the CEQA Guidelines identifies the California Agricultural LESA Model prepared by the California Department of Conservation as an optional model to use in assessing impacts on agriculture and farmland for CEQA purposes. As such, a LESA analysis was prepared for the proposed project (**Appendix G** of this EIR). **Table 4.9-7** presents a summary of the LESA analysis for the proposed project.

A final LESA score between 60 to 79 is considered potentially significant under CEQA unless either the Land Evaluation or the Site Assessment subscore is less than 20 points. As shown in **Table 4.9-7**, the Land Evaluation subscore is 24.89, while the Site Assessment subscore is 45.0. The final LESA score is 69.89. With both subscores (Land Evaluation and Site Assessment) above 20, implementation of the proposed project would result in a potentially significant impact for conversion of Prime Farmland, Unique Farmland, and Farmland of Statewide Importance under CEQA.

**TABLE 4.9-7
FINAL LESA SCORE SHEET SUMMARY**

	Factor Rating (0 – 100 Points)	Factor Weighting (Total = 100)	Weighted Factor Rating¹
Land Evaluation (LE)			
1. Land Capability Classification (LCC Rating)	63.50	0.25	15.88
2. Storie Index Rating	35.24	0.25	8.81
<i>Land Evaluation Subscore</i>			24.89
Site Assessment (SA)			
1. Project Size Rating	100	0.15	15
2. Water Resource Availability Rating	100	0.15	15
3. Surrounding Agricultural Land Rating	100	0.15	15
4. Surrounding Protected Resource Lands Rating	0	0.05	0
<i>Site Assessment Subscore</i>			45
TOTAL			69.89

Source: California Department of Conservation, 1997, page 31; Ericsson-Grant, Inc., 2011.

Notes: ¹Weighted Factor Rating calculated by multiplying Factoring Rating Points X Factory Weighting.

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Mitigation Measures

The following mitigation measures were formulated based on a Staff Memorandum (dated September 2, 2011). The memo was prepared by Planning and Development Services staff in response to concerns related to the temporary loss of agricultural land in association with development of solar facilities.

MM 4.9.1a Prior to the issuance of a grading permit or building permit (whichever is issued first) for the proposed project, the mitigation of temporary impacts to agricultural lands shall be accomplished via one of the following options:

Non-Prime Farmland

- **Option 1:** The Permittee shall procure Agricultural Conservation Easements on a 1 to 1 basis on land of equal size, of equal quality of farmland, outside the path of development. The Conservation Easement shall meet the State Department of Conservation's regulations and shall be recorded prior to issuance of any grading or building permits.
- **Option 2:** The Permittee shall pay an "Agricultural In-Lieu Mitigation Fee" in the amount of 20% of the fair market value per acre for the total acres of proposed site based on five comparable sales of land used for agricultural purposes as of the effective date of the permit, including program costs on a cost recovery/time and material basis. The Agricultural In-Lieu Mitigation Fee, will be placed in a trust account administered by the Imperial County Agricultural Commissioner's office and will be used for such purposes as the acquisition, stewardship, preservation and enhancement of agricultural lands within Imperial County.
- **Option 3:** If the Permittee and County voluntarily enter into a Public Benefit Agreement that includes an Agricultural Benefit Fee payment that is equal to or greater than the amount that would be due under option 2 of this mitigation measure and the public benefit agreement requires that the Agricultural Benefit Fee be used for such purposes as the acquisition, stewardship, preservation and enhancement of agricultural lands within Imperial County, then this mitigation measure may be satisfied by the payment of a voluntarily agreed amount to the Agricultural Benefit Fee.

Prime Farmland

- **Option 1:** Agricultural Conservation Easements on a "2 to 1" basis on land of equal size, of equal quality farmland, outside of the path of development. The Conservation Easement shall meet the State Department of Conservation's regulations and shall be recorded prior to issuance of any grading or building permits; or
- **Option 2:** The Permittee shall pay an "Agricultural In-Lieu Mitigation Fee" in the amount of 30% of the fair market value per acre for the total acres of the proposed site based on five comparable sales of land used for agricultural purposes as of the effective date of the permit, including program costs on a cost recovery/time and material basis. The Agricultural In-Lieu Mitigation Fee, will be placed in a trust account administered by the Imperial County Agricultural Commissioner's office and will be used for such purposes as the acquisition, stewardship, preservation and enhancement of agricultural lands within Imperial County.

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- **Option 3:** If the Permittee and County voluntarily enter into a Public Benefit Agreement that includes an Agricultural Benefit Fee payment that is equal to or greater than the amount that would be due under option 2 of this mitigation measure and the public benefit agreement requires that the Agricultural Benefit Fee be used for such purposes as the acquisition, stewardship, preservation and enhancement of agricultural lands within Imperial County, then this mitigation measure may be satisfied by the payment of a voluntarily agreed amount to the Agricultural Benefit Fee; or
- **Option 4:** The Permittee must revise their CUP Application/Site Plan to avoid Prime Farmland.

Timing/Implementation: Prior to the issuance of a grading permit or building permit (whichever is issued first).

Enforcement/Monitoring: Imperial County Planning and Development Services Department.

MM 4.9.1b In addition to Options 1, 2 or 3 identified in association with Prime Farmland and Non-Prime Farmland, the Applicant shall submit to Imperial County a Reclamation Plan to return the site to its current agricultural condition prior to the issuance of a certificate of occupancy for the Operations and Maintenance building. The Reclamation Plan shall include a site reclamation cost estimate prepared by a California-licensed general contractor or civil engineer. The Permittee shall provide a financial assurance/bonding in the amount equal to the site reclamation cost estimate to return the land to its current agricultural condition after the solar facilities ceases operations and closes.

Timing/Implementation: Prior to the issuance of a grading permit or building permit (whichever is issued first).

Enforcement/Monitoring: Imperial County Planning and Development Services Department.

Significance After Mitigation

Implementation of the proposed project will result in a potentially significant impact related to the temporary loss of prime and important farmland. Implementation of mitigation measures MM 4.9.1a and MM 4.9.1b would reduce the impact to farmlands by preserving comparable Prime Farmland and non-Prime Farmlands. This would be accomplished through the use of conservation easements or payment of in-lieu fees based on the formula in Option 2; by execution of the Public Benefits Agreement in Option 3; or, for prime farmlands only, through the modification of the project to exclude prime and non-prime farmlands. In addition, MM 4.9.1b requires preparation of a Reclamation Plan to return the site to its current agricultural condition which would reduce impacts to farmland to less than significant after the solar facilities are no longer operational. Implementation of any of the options under MM 4.9.1a, in combination with MM4.9.1b and of MM 4.9.2 would reduce the impacts associated with the temporary conversion of farmland, including Prime Farmland, Farmland of Statewide Importance, Farmland of Local Importance, and Unique Farmland to a **less than significant level**.

Indirect Environmental Effects of Conversion of Farmland

Impact 4.9.2 The proposed project would involve indirect changes to the existing environment that could temporarily affect farmlands. This is considered a **potentially significant impact**.

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Agricultural land currently surrounds the solar energy facility site, while native desert surrounds the portion on BLM land (see Figure 4.9-1). The proposed project would place a solar generation facility in an area currently used for agriculture. The project does not include the extension of utilities or infrastructure that would pressure nearby lands to urbanize with residential, commercial, or other urban levels of development. Moreover, the project is not anticipated to result in the indirect conversion of farmland on adjoining or nearby properties. However, the Silverleaf Solar project is proposed adjacent to the southern, western and eastern boundaries of the Campo Verde Solar Energy project. Thus, the potential exists for further conversion of agricultural land in the immediate and general vicinity of the project site, separate from the proposed project.

Nuisance issues typically associated with farming, such as noise, dust, odor, and pesticide application, are not expected to be a nuisance to the proposed project because the project does not include any receptors, such as residential uses, that are sensitive to these issues. Nevertheless, the provisions of the Imperial County Right-to-Farm Ordinance (No. 1031) and the State nuisance law (California Civil Code Sub-Section 3482) will be enforced. Therefore, the project would not introduce a non-agricultural use that is sensitive to or incompatible with agricultural operations that would occur nearby and thus would not result in a pressure for nearby agricultural activities to cease operation.

Development and operation of the solar generation facility site could result in an increase in pests and nuisance conditions, such as weeds and dust, to adjacent agricultural operations, depending on management and maintenance of the project site. Such conditions could adversely affect agricultural operations on adjacent lands and, if not mitigated, may pressure adjacent lands to convert to non-agricultural use which may constitute a potentially significant impact. However, the project will develop and implement the Weed Control Plan described in Chapter 2.0, which will mitigate this impact to **less than significant** levels.

Mitigation Measures

MM 4.9.2 Prior to the issuance of a grading permit or building permit (whichever occurs first), a Weed and Pest Control Plan shall be developed by the Project Applicant and approved by the County of Imperial Agricultural Commissioner. The Plan shall provide the following:

- 1) Monitoring, preventative, and management strategies for weed and pest control during construction activities at the CSE Facility and portions of the gen-tie line that are adjacent agricultural lands;
- 2) Control and management of weeds and pests in areas temporarily disturbed during construction where native seed will aid in site revegetation; and,
- 3) A long-term strategy for weed and pest control and management during the operation of the CSE Facility and portions of the gen-tie line that are adjacent agricultural lands. Such strategies may include, but are not limited to:
 - a. Use of specific types of ground cover and maintenance (mowing, replacement, etc.) of such ground cover;
 - b. Use of specific types of herbicides and pesticides on a scheduled basis; and
 - c. Maintenance and management of project site conditions to reduce the potential for a significant increase in pest-related nuisance conditions on adjacent agricultural lands.

Significance After Mitigation

Implementation of mitigation measure MM 4.9.2 would ensure that construction, operation, and maintenance activities of the proposed project would not result in pest or weed conditions that would have a significant adverse effect on nearby agricultural lands. Air quality mitigation measure MM 4.4.1a would ensure that construction, operation, and maintenance activities of the proposed project would not result in dust conditions that would have a significant adverse effect on nearby agricultural lands. The Imperial County Right-to-Farm Ordinance and State Nuisance law, along with the implementation of MM 4.9.2 would ensure that the project would not result in the conversion of farmlands other than conversion addressed under Impact 4.9.1 and that the impact would be **less than significant**.

4.9.4 CUMULATIVE SETTING, IMPACTS AND MITIGATION MEASURES

A. CUMULATIVE SETTING

The geographic scope for cumulative impacts to agricultural resources is the Imperial Valley located in Imperial County. The Imperial Valley Agricultural Complex consists of approximately 500,000 acres of more-or-less contiguous farm fields located in the Imperial Valley and surrounded by desert and mountain habitat. The Imperial Valley Agricultural Complex comprises approximately 17 percent of the county's 2,942,080 acres (County of Imperial, 1996). Approximately 540,942 acres of the County are designated as farmland under the FMMP (DOC, 2011, p. 32). County-wide, approximately 19,133.29 acres are currently proposed or in the process of being developed with solar facilities.

B. CUMULATIVE IMPACTS AND MITIGATION MEASURES

Cumulative Agricultural Resources Impacts

Impact 4.9.3 Implementation of the proposed project would incrementally add to the temporary conversion of agricultural land in Imperial County. Temporary impacts to agricultural resources are mitigated on a project-by-project basis through payment of in-lieu fees, conservation easements and/or execution of Public Benefit Agreements. Therefore, temporary impacts to agricultural resources are considered **less than cumulatively considerable**.

Cumulative impacts on agricultural resources take into account the proposed project's temporary impacts as well as those likely to occur as a result of other existing, proposed and reasonably foreseeable projects. To determine cumulative impacts on agricultural resources, an assessment is made of the temporal nature of the impacts on individual resources (e.g., temporary such as in solar projects versus permanent as in industrial or residential developments) as well as the inventory of agricultural resources within the cumulative setting.

Of the 1,990 acres that comprise the solar generation facility site, approximately 1,822 acres of agricultural land would be temporarily converted (i.e. agricultural fields within the solar generation facility site minus the acreage of roads and ditches currently on the site). Thus, the proposed project would incrementally add to the temporary conversion of agricultural land in Imperial County.

According to Table A-9 of the *California Farmland Conversion Report 2006-2008*, approximately half of the County (540,942 acres out of a total of 1,028,509 acres) is Important Farmland (DOC, 2011, p. 32). **Table 4.9-8** summarizes the percentage of each type of farmland in the County that would be converted by the proposed project.

4.9 AGRICULTURAL RESOURCES

**TABLE 4.9-8
PERCENTAGE CONVERSION OF FARMLAND BY THE PROPOSED PROJECT**

Agriculture Classification	Total Acreage in Imperial County	Approximate Acreage Converted on Project Site	Project Percent of County Acreages
Prime Farmland	195,589	660	0.34
Farmland of Local Importance	32,109	27	0.08
Farmland of Statewide Importance	311,048	1,111	0.36
Unique Farmland	2,196	24	1.09
Total	540,942	1,822	0.34

Source: Ericsson-Grant, Inc, 2011.

As shown in **Table 4.9-8**, the Prime Farmland and Farmland of Statewide Importance within the project site comprises approximately 0.70 percent (0.34 + 0.36) of the total Important Farmland in the County. Thus, the proposed project would temporarily convert a very small fraction of the total Important Farmlands in the County and have a minimal effect on agricultural land on a cumulative scale. Furthermore, the conversion would be temporary and last for the duration the solar generation facility's useful life which is expected to be up to 40 years.

Table A-9 of the *California Farmland Conversion Report 2006-2008* also identified a net loss of 2,202 acres of Important Farmland in Imperial County from 2006-2008 (DOC, 2011, page 32). Farmland conversions occurred for a variety of reasons, including following of lands resulting in a conversion to a non-irrigated classification, and conversion to urban and other non-energy related uses due to development of farmsteads, rural commercial facilities, low-density housing, mining facilities, and dairy expansions. The trend in the conversion of agricultural land is expected to continue due to development pressure, and other factors.

Table 3.0-1, Approved, Proposed and Reasonably Foreseeable Large-Scale Projects in the Vicinity of the Campo Verde Solar Project, (refer to Chapter 3.0) identifies 24 projects for consideration in the cumulative analysis. Most of these projects are renewable energy projects. Some are within close proximity (Silverleaf Solar, Imperial Solar Energy Center West) while others are as far as 32 miles north east of the project site (Sonora Solar). The majority of these projects are located on private lands, which are predominately agricultural, and would have agricultural impacts similar to the proposed project. The impacts of these individual projects include conversion of Important Farmland, and some include conflicts with Williamson Act Contracts. **Table 4.9-9** provides a summary of the cumulative projects that contain Important Farmland.

**TABLE 4.9-9
SUMMARY OF FARMLANDS BY TYPE FOR CUMULATIVE PROJECTS**

Project	Prime Farmland	Farmland of Statewide Importance	Farmland of Local Importance
Dixieland ¹	2.49*		
County Center II Expansion ¹		160	
Imperial Solar Energy Center West ¹			1,048.4
Imperial Solar Energy Center South ¹	478.9	341.8	
Mount Signal Solar Farm ²	88.7	1,339.4	

4.9 AGRICULTURAL RESOURCES

**TABLE 4.9-9
SUMMARY OF FARMLANDS BY TYPE FOR CUMULATIVE PROJECTS**

Project	Prime Farmland	Farmland of Statewide Importance	Farmland of Local Importance
Calexico I-A ²	130.0	588.7	
Calexico I-B ²	184.0	406.0	
Calexico II-A ²	0	937.8	
Calexico II-B ²	6.5	548.2	
Campo Verde Solar Project ³	660	1,110.0	27
Total	1,548.1	5431.9	1075.4

Sources: ¹County of Imperial, 2011; ²HDR, 2012; ³Ericsson-Grant, 2011.

*Unspecified. Assumed Prime Farmland for worst-case scenario

As illustrated in **Table 4.9-9** and discussed in impact 4.9.1, above, construction of the proposed project would temporarily convert 660 acres of Prime Farmland, 1,111 acres of Farmland of Statewide Importance, and 24 acres of Unique Farmland to a nonagricultural use over the operational life of the project. The total agricultural land converted by the proposed project would total 1,822 acres including 27 acres of Farmland of Local Importance (**Table 4.9-8**). Mitigation measures will be imposed on the project which would minimize the project's contribution to the cumulative impact. Mitigation measure MM 4.9.1a, Option 1 would require the Applicant to conserve Important Farmland through a conservation easement on a 2 to 1 basis on land of equal size, of equal quality farmland, outside the path of development; Option 2 would require the Applicant to pay an "Agricultural In-Lieu Fee"; and Option 3 would allow voluntary entering of the Permittee and the County into a Public Benefit Agreement. MM 4.9.1b would require the Applicant to submit to Imperial County a Reclamation Plan to return the site to its current agricultural condition at the end of the operational life of the project. The implementation of the Reclamation Plan would eventually return the project site to agricultural lands as well as make the project site eligible for reclassification to the original Important Farmland classifications. Therefore, the incremental impact of the loss of 1,822 acres of farmland would be mitigated to less than cumulatively considerable through mitigation measures MM 4.9.1a and MM 4.9.1b.

When the proposed project is combined with the cumulative projects identified in **Table 4.9-9**, the total agricultural land conversion is estimated to be 8,055.4 acres (including Farmland of Local Importance). The proposed project would contribute approximately 22.3 percent (1,797 acres ÷ 8,055.4 acres) of the total temporary agricultural land conversion by the cumulative projects. The cumulative projects combined would contribute to conversion of approximately 1.49 percent (8,055.4 acres ÷ 540,942 acres) of the farmland in Imperial County. With the implementation of mitigation measures 4.9.1a, Options 1, 2 or 3, and 4.9.1b, the project's contribution to this impact would be less than cumulatively considerable. Likewise, each individual cumulative project would be required to provide mitigation for any impacts to agricultural resources.

In order to address the increased demand for solar facilities, Imperial County has developed the following measures to apply to all new proposed solar projects, as described in the Staff Memorandum dated September 2, 2011:

4.9 AGRICULTURAL RESOURCES

- 1) Preservation of Comparable Agricultural Lands. Each solar project is required to procure agricultural conservation easements or pay an "Agricultural In-Lieu Mitigation Fee" that would result in the conservation of farmland of comparable quality and classification as would be temporarily removed from agricultural use by the solar facility. A solar project may satisfy the in-lieu fee requirement by executing a Public Benefit Agreement with the County.
- 2) Reclamation Plan. Each solar project is required to prepare a site reclamation plan that demonstrates that the project site will be returned to its current agricultural condition when the solar facility is decommissioned. The typical length of operation of the solar facilities is anticipated to range from 30 to 50 years. The project applicant must also provide financial assurances in the amount equal to the cost estimate for the reclamation in order to ensure that funds will be available to implement the reclamation plan.

Compliance with the requirements for each solar project to preserve comparable agricultural lands and to provide a detailed reclamation plan, including bonding or financial assurances, would reduce each project's contribution to cumulative agricultural impacts, including conversion of farmland, to less than considerable by ensuring that comparable farmland is preserved and/or that the land is returned to an agricultural condition when each project ceases to operate, approximately 40 years in the future.

Mitigation Measures

Mitigation measures will be imposed on the project which would minimize the project's contribution to the cumulative impact. Mitigation measure MM 4.9.1a would provide three options by which the Applicant may mitigate impacts resulting from the temporary conversion of agricultural land. MM 4.9.1a would: require the Applicant to conserve Important Farmland of like quantity and quality through a conservation easement (Option 1); or through an in-lieu fee payment based on a formula (Option 2); or by executing a Public Benefits Agreement (Option 3), as compensation for the temporary loss of the agricultural resources. MM 4.9.2 would require implementation of a reclamation plan, which would involve activities for returning the project site to a condition that supports agricultural production similar to the pre-project conditions, at the end of the operational life of the project. The implementation of the reclamation plan would eventually return the project site to agricultural lands as well as make the project site eligible for reclassification to the original Important Farmland classifications. Mitigation Measure MM 4.9.2 would ensure that the project manages potential weed and pest issues so that the project is not a nuisance to neighboring lands. Implementation of these mitigation measures would reduce the project's contribution to cumulative agricultural impacts to a less than considerable level.

Significance After Mitigation

Implementation of mitigation measures MM 4.9.1a, MM 4.9.1b and MM 4.9.2, would reduce the project's contribution to cumulative conversion of agricultural land to less than cumulatively considerable. Following implementation of these measures, the proposed project would not result in any residual impacts to agricultural resources that would otherwise be cumulatively considerable.

SECTION 4.10

HAZARDS AND HAZARDOUS MATERIALS

4.10 HAZARDS AND HAZARDOUS MATERIALS

This section describes federal, state and local regulations applicable to hazards and hazardous materials. It also describes the environmental setting with regard to potential hazards on the project site and potential hazards created as a result of implementing the proposed project. A Phase I Environmental Site Assessment was prepared for the solar generation facility site. However, the BLM has not identified any hazards or hazardous materials (nor provided any reports in this regard) on lands within the proposed right-of-way (ROW) for the Gen-tie Line alignment through BLM land.

This section describes potential exposure to hazardous materials and/or creation of hazards that could result from implementation of the proposed Campo Verde Solar Project. It focuses on hazardous materials and hazards requiring remediation or mechanisms to prevent accidental release. Measures are identified to reduce or avoid adverse impacts anticipated from construction, operation, and decommissioning of the proposed project. A discussion of cumulative impacts related to hazards and hazardous materials is also included in this section.

Various other hazards associated with the project, such as exposure to electromagnetic fields, interference with radio-frequency communications, hazardous shocks, fire hazards (non-wildland/operational), and valley fever are briefly discussed. These hazards are acknowledged as potential areas of concern, but no criteria are available for purposes of evaluation or comparison.

This analysis does not address the potential exposure of workers to hazardous materials used at the proposed project site. Employers must inform employees of hazards associated with their work and provide those employees with special protective equipment and training to reduce the potential for health impacts from the handling of hazardous materials. Health risks associated with exposure to diesel particulate matter are discussed in Section 4.4, Air Quality.

Seismic hazards, flood hazards and exposure to noise are discussed in Section 4.6, Geology and Soils, Section 4.8, Noise and Section 4.11, Hydrology and Water Quality.

4.10.1 REGULATORY FRAMEWORK

A. FEDERAL

Resource Conservation and Recovery Act of 1976 (42 USC 6901 et seq.)

The Resource Conservation and Recovery Act (RCRA) grants authority to the Environmental Protection Agency (EPA) to control hazardous waste from start to finish. This covers the production, transportation, treatment, storage, and disposal of hazardous waste. The RCRA also sets forth a framework for the management of non-hazardous solid waste. The 1986 amendments to the RCRA enabled the EPA to address environmental problems that could result from underground tanks storing petroleum and other hazardous substances. The project site currently contains a few items that are considered potentially hazardous. Small quantities of hazardous materials will be used and stored on-site during operations and maintenance of the project.

Federal Water Pollution Control Act (Clean Water Act)

The Federal Water Pollution Control Act, better known as the Clean Water Act, is a comprehensive statute focused on restoring and maintaining the chemical, physical and biological integrity of the nation's waters. Originally enacted in 1948, the Act was amended numerous times until it was reorganized and expanded in 1972. It continues to be amended almost on an annual basis.

Primary authority for the implementation and enforcement of the Clean Water Act rests with the U.S. Environmental Protection Agency (EPA). The Act authorizes water quality programs, requires federal

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effluent limitations and state water quality standards, requires permits for the discharge of pollutants into navigable waters, provides enforcement mechanisms, and authorizes funding for wastewater treatment works construction grants and state revolving loan programs, as well as funding to states and tribes for their water quality programs. Provisions have also been added to address water quality problems in specific regions and specific waterways. The project would be subject to the General Permit for Discharges of Storm Water Associated with Construction Activity (NPDES No. CAS000002) (Construction General Permit Order 2010-2014-DWQ, effective February 14, 2011 during construction. Operation of the project would be covered under Industrial Storm Water General Permit Order 97-03-DWQ (General Industrial Permit) - NPDES permit (No. CAS000001).

Occupational Safety and Health Act (OSHA)

Congress passed the Occupational Safety and Health Act (OSHA) to assure safe and healthful working conditions for working men and women. OSHA authorized enforcement of the standards developed under the Act and by assisted States in its efforts to assure safe and healthful working conditions. OSHA also provides for research, information, education, and training in the field of occupational safety and health. The project would be subject to OSHA requirements during construction, operations and maintenance and decommissioning.

Title 14, Part 77 of the Code of Federal Regulation, "Objects Affecting the Navigable Air Space"

Part 77 of the Code of Federal Regulation establishes standards and notification requirements for objects affecting navigable airspace. Part 77 describes the criteria used to determine the need for a Federal Aviation Administration (FAA) "Notice of Proposed Construction or Alteration" in cases of potential obstruction hazards. Notification allows the FAA to identify potential aeronautical hazards in advance, thus preventing or minimizing the adverse impacts to the safe and efficient use of navigable airspace. Any construction or alteration that is more than 200 feet above ground level (AGL) would be subject to review associated with Part 77. The proposed project includes towers to support the gen-tie Line which could exceed 120-feet, but would not exceed 145 feet in height. No structure (including gen-tie structures) between the solar generation facility site and the point of interconnection at Imperial Valley Substation would be more than 200 feet AGL.

FAA Advisory Circular No. 70/7460-1G

FAA Advisory Circular No. 70/7460-1G, "Proposed Construction and/or Alteration of Objects that May Affect the Navigation Space" addresses the need to file the "Notice of Proposed Construction or Alteration" form (Form 7640) with the FAA in cases of potential for an obstruction hazard. The proposed project includes towers to support the gen-tie Line which could exceed 120-feet, but would not exceed 145 feet in height.

The Applicant used the FAA Notice Criteria Tool (FAA Tool) to determine if it was necessary to notify the FAA regarding height of the proposed towers. The Tool indicated that notice is not required for the gen-tie structures. The results of the FAA Tool are provided on the attached CD of Technical Appendices as **Appendix H** of this EIR. The project will submit FAA Form 7460-1, "Notice of Proposed Construction or Alteration" for portions of the overhead collector and transmission system that would cross public roads and water ways.

The Department of Defense (DoD) Preliminary Screening Tool provides a preliminary review of potential impacts to Long-Range and Weather Radar(s), Military Training Route(s) and Special Airspace(s) prior to official Obstruction Evaluation / Airport Airspace Analysis filing. This tool produces a map relating the

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structure to the DoD/Department of Health Services (DHS) and National Oceanic and Atmospheric Administration (NOAA) resources. The use of this tool provides a first level of feedback and single points of contact within the DoD/DHS and NOAA to discuss impacts/mitigation efforts on the military training mission and NEXRAD Weather Radars. This tool was used to determine whether the proposed project would cause any potential impacts to military airspace.

The results from this screening tool show that the proposed gen-tie on BLM land would not have potential impacts to military airspace (ENValue, 2012, p. 4).

Title 47, CFR, section 15.2524, Federal Communications Commission (FCC)

Title 47, CFR, Section 15.2524, Federal Communications Commission (FCC) prohibits operation of devices that can interfere with radio-frequency communication. As part of the design and construction process for the project, the Applicant will limit the conductor surface electric gradient in accordance with the Institute of Electrical and Electronic Engineers Radio Noise Design Guide.

B. STATE

Title 22 of the California Code of Regulations

Hazardous Materials Defined

A material is considered hazardous if it appears on a list of hazardous materials prepared by a federal, state, or local agency, or if it has characteristics defined as hazardous by such an agency. According to Title 22, Section 66260.10, of the California Code of Regulations (CCR), a hazardous material is defined as:

...A substance or combination of substances which because of its quantity, concentration, or physical, chemical or infectious characteristics, may either (1) cause, or significantly contribute to an increase in mortality or an increase in serious irreversible, or incapacitating reversible, illness; or, (2) pose a substantial present or potential hazard to human health or environment when improperly treated, stored, transported or disposed of or otherwise managed.

Chemical and physical properties that cause a substance to be considered hazardous include the properties of toxicity, ignitability, corrosivity, and reactivity (Title 22, Sections 66261.20 through 66261.24). Factors that influence the health effects of exposure to hazardous materials include dosage, frequency, the exposure pathway, and individual susceptibility. The proposed project would require use of small amounts of hazardous materials (such as diesel fuel, oil and grease for heavy equipment) during construction, operation and maintenance and decommissioning.

California Environmental Protection Agency

The California Environmental Protection Agency (Cal EPA) and the State Water Resources Control Board establish rules governing the use of hazardous materials and the management of hazardous waste. Applicable state and local laws include the following:

- Public Safety/Fire Regulations/Building Codes
- Hazardous Waste Control Law
- Hazardous Substances Information and Training Act
- Air Toxics Hot Spots and Emissions Inventory Law

4.10 HAZARDS AND HAZARDOUS MATERIALS

- Underground Storage of Hazardous Substances Act
- Porter-Cologne Water Quality Control Act

Small quantities of hazardous materials will be used and stored on-site for miscellaneous, general maintenance activities that would be subject to state and local laws.

Department of Toxic Substances Control

The Department of Toxic Substances Control (DTSC) has primary regulatory responsibility for the management of hazardous materials and the generation, transport, and disposal of hazardous waste under the authority of the Hazardous Waste Control Law (HWCL). Enforcement is delegated to local jurisdictions that enter into agreements with DTSC.

California's Secretary of Environmental Protection established a unified hazardous waste and hazardous materials management regulatory program as required by Health and Safety Code Chapter 6.11. The unified program consolidates, coordinates, and makes consistent portions of the following six existing programs:

- Hazardous Waste Generations and Hazardous Waste On-site Treatment
- Underground Storage Tanks
- Hazardous Material Release Response Plans and Inventories
- California Accidental Release Prevention Program
- Aboveground Storage Tanks (spill control and countermeasure plan only)
- Uniform Fire Code Hazardous Material Management Plans and Inventories

The statute requires all counties to apply to the Cal EPA Secretary for the certification of a local unified program agency. Qualified cities are also permitted to apply for certification. The local Certified Unified Program Agency (CUPA) is required to consolidate, coordinate, and make consistent the administrative requirements, permits, fee structures, and inspection and enforcement activities for these six program elements within the county. Most CUPAs have been established as a function of a local environmental health or fire department.

The Office of the State Fire Marshal participates in all levels of the CUPA program including regulatory oversight, CUPA certifications, evaluations of the approved CUPAs, training, and education. The DTSC serves as the CUPA in Imperial County.

Small quantities of hazardous materials will be transported to and from the project site and used and stored on-site for miscellaneous, general operations and maintenance activities.

California Public Utilities Commission (CPUC), General Order 95 (GO-95), "Rules for Overhead Electric Line Construction"

GO-95 governs clearance requirements to prevent hazardous shocks, grounding techniques to minimize nuisance shocks, and maintenance and inspection requirements. These standards ensure that the appropriate clearances would be reliably maintained between the gen-tie and crossings existing electric line installations. The proposed project will be designed to National Electric Safety Code (NESC) standards. However if the project were to cross GO-95 jurisdictional facilities, then GO95 would apply. A Report of Facility Information (RFI) has been submitted to IID requesting clearances.

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California Public Utilities Commission, General Order 52 (GO-52)

GO-52 governs the construction and operation of power and communications lines to prevent or mitigate interference resulting from such lines.

California Public Utilities Commission, General Order 131-D, “Rules for Planning and Construction of Electric Generation Line and Substation Facilities in California”

GO-131-D specifies application and noticing requirements for new line construction including electromagnetic field (EMF) reduction. The proposed project would be subject to this order.

Title 8, California Code of Regulations (CCR) section 2700 et seq. “High Voltage Safety Orders”

Title 8 of the California Code of Regulations specifies requirements and minimum standards for safety when installing, operating, working around, and maintaining electrical installations and equipment. The proposed project would be subject to Title 8.

National Electrical Safety Code

The National Electrical Safety Code specifies grounding procedures to limit nuisance shocks and specifies minimum conductor ground clearances. The proposed project would be subject to this code and would be designed with a grounding system providing an adequate path-to-ground to permit the dissipation of current created by lightning and ground faults.

14 California Code of Regulations (CCR), Sections 1250 – 1258, “Fire Prevention Standards for Electric Utilities”

14 CCR provides specific exemptions from electric pole and tower firebreak. 14 CCR also provides conductor clearance standards and specifies when and where standards apply. These standards address hazards that could be caused by sparks from conductors of overhead lines, or that could result from direct contact between the line and combustible objects. The proposed project would be subject to these standards.

C. LOCAL

County of Imperial General Plan

Both natural and man-made hazards are addressed in the County of Imperial General Plan. The Seismic and Public Safety Element also contains a set of goals and objectives for land use planning and safety, emergency preparedness, and the control of hazardous materials. The goals and objectives, together with the implementation programs and policies provide direction for development.

Table 4.10-1 analyzes the consistency of the project with the applicable goal and objectives relating to public safety in the County of Imperial General Plan. While this EIR analyzes the project’s consistency with the General Plan pursuant to CEQA Guidelines Section 151250, the Imperial County Board of Supervisors ultimately determines consistency with the General Plan.

4.10 HAZARDS AND HAZARDOUS MATERIALS

TABLE 4.10-1
IMPERIAL COUNTY GENERAL PLAN CONSISTENCY ANALYSIS

General Plan Policies	Consistent with General Plan?	Analysis
Public Safety Policies		
Control Hazardous Materials		
<p>Goal 3: Protect the public from exposure to hazardous materials and wastes.</p>	Yes	<p>The County has adopted an Emergency Operations Plan and a Fire Prevention and Explosives Ordinance to protect the public from exposure to hazardous materials wastes. The proposed project does not involve exposure of the public to hazardous materials and wastes. Prior to using or storing hazardous materials on the project site, the Applicant will prepare a Hazardous Material Management Plan or other similar plans, as applicable. Thus, the proposed project is consistent with this goal.</p>
<p>Objective 3.1 Discourage the transporting of hazardous materials/waste near or through residential areas and critical facilities.</p>	Yes	<p>The proposed project site does not contain any residential uses or critical facilities such as a hospital or fire station. However, the Westside Elementary School is located at 2294 West Vaughn Road, and a residential complex is east of the Westside School. Large quantities of hazardous materials are not required as part of construction, operations and maintenance, or decommissioning of the proposed project. Therefore, the proposed project is consistent with this objective.</p>
<p>Objective 3.2 Minimize the possibility of hazardous materials/waste spills.</p>	Yes	<p>As noted under the analysis for Goal 3, prior to using or storing hazardous materials on the project site, the Applicant will prepare a Hazardous Material Management Plan or other similar plans, as applicable for the proposed project. In addition, special precautions would be implemented to avoid accidental spills during refueling of equipment at the time of construction (refer to Table 2.0-4 and Table 2.0-5, in Chapter 2.0). Therefore, the proposed project is consistent with this objective.</p>
<p>Objective 3.3 Discourage incompatible development adjacent to sites and facilities for the</p>	Yes	<p>The project site is surrounded by agricultural and desert lands. The proposed project is compatible with surrounding uses and the</p>

4.10 HAZARDS AND HAZARDOUS MATERIALS

**TABLE 4.10-1
IMPERIAL COUNTY GENERAL PLAN CONSISTENCY ANALYSIS**

General Plan Policies	Consistent with General Plan?	Analysis
production, storage, disposal, and transport of hazardous materials/waste as identified in the County General Plan and other regulations.		project site is not adjacent to any hazardous facilities. Therefore, the proposed project is consistent with this objective.

Imperial County Airport Land Use Compatibility Plan

The Imperial County Airport Land Use Compatibility Plan (ALUCP) sets forth the criteria and policies which the Imperial County Airport Land Use Commission (ALUC) uses assessing the compatibility between the principal airports in Imperial County and proposed land use development in the areas surrounding them. The Plan primarily deals with review of local general plans, specific plans, zoning ordinances and other land use documents covering broad geographic areas. Certain individual land use development proposals also may be reviewed by the Commission as provided in the policies identified in the Plan. The ALUC does not have authority over existing incompatible land uses or the operation of any airport. The project is subject to review by the ALUC to determine compatibility of the project with the ALUCP.

Imperial County Office of Emergency Services – Emergency Operations Plan

The Imperial County Fire Department (ICFD) is the local Office of Emergency Services in Imperial County. The County Fire Chief is the OES Coordinator. An Assistant OES Coordinator maintains the OES program for the County of Imperial. ICFD acts as the lead agency for the Imperial County Operational Area (OA) and provides leadership in all phases of developing the emergency management organization, including public education, training, EOC operations, interagency coordination, and plan development (Imperial County OES, 2007).

The Imperial County Operational Area Emergency Operations Plan (EOP) provides a comprehensive, single source of guidance and procedures for the County to prepare for and respond to significant or catastrophic natural, environmental, or conflict-related risks that produce situations requiring coordinated response. It further provides guidance regarding management concepts relating to response and abatement of various emergency situations, identifies organizational structures and relationships, and describes responsibilities and functions necessary to protect life and property. The EOP is consistent with the requirements of the Standardized Emergency Management System (SEMS) as defined in Government Code Section 8607(a) and the U.S. Department of Homeland Security National Incident Management System (NIMS) for managing response to multi-agency and multi-jurisdictional emergencies. SEMS/NIMS incorporates the use of the Incident Command System (ICS), mutual aid, the operational area concept, and multi/interagency coordination (Imperial County OES, 2007). The project site is in Zone 1-B of Fire/Emergency Management/Staging and Shelter Zones in the EOP (Imperial County OES, 2007, p. 73).

4.10 HAZARDS AND HAZARDOUS MATERIALS

County of Imperial Fire Prevention and Explosives Ordinance

The County of Imperial Fire Prevention and Explosives Ordinance, Section 53101-53300, contains provisions for the purpose of prescribing regulations governing conditions hazardous to life and property from fire or explosion. Such measures in this Ordinance include the following:

- Storage of flammable materials
- Storage of radioactive materials
- Permit required for sale and use of fireworks
- Abatement of weeds and other vegetation

Weed and vegetation control would be enforced as part of operations and maintenance of the proposed project.

4.10.2 ENVIRONMENTAL SETTING

A. SOLAR GENERATION FACILITY

The solar generation facility site of the proposed project is located on approximately 1,990 gross acres of privately-owned, undeveloped and agricultural lands in Imperial County. The proposed project site is approximately 7 miles southwest of the community of El Centro, California. The project site is located generally south of Interstate I-8 (I-8), west of Drew Road, and north and east of the Westside Main Canal (refer to Figure 2.0-1 and Figure 2.0-2 in Chapter 2.0).

Phase I Environmental Site Assessment

Information contained in this section is summarized from the *Phase I Environmental Site Assessment for the First Solar Project Sagebrush Site, Imperial County, California* (ESA) (URS, 2011) and a letter regarding “URS Responses to Ericsson-Grant, Inc. Comments on the First Solar Phase I ESA for the Sagebrush Project Site in Imperial County, CA” (Ray, 2011). These documents are provided on the attached CD of Technical Appendices as **Appendix H** of this EIR.

The purpose of the Phase I ESA is to determine if any recognized or potential environmental conditions are present on the solar generation facility site. The American Society for Testing and Materials (ASTM) defines “recognized environmental conditions” as “any hazardous substance or petroleum product under conditions that indicate an existing, past, or material threat of release into the structures, ground, groundwater, or surface water at the subject site.”

The Phase I ESA included results of a site reconnaissance to identify current conditions of the solar generation facility site and adjoining properties, a review of various readily available federal, state, and local government agency records, and review of available historical site and site vicinity information.

Background Review

Reviews of historic topographic maps (1947-1979), historic aerial photographs (1954-2009), and previous environmental investigations were performed to evaluate potentially adverse environmental conditions resulting from prior ownership and uses of the parcels. All historic maps and photographs indicate that the site was undeveloped agriculture with varying degrees of canals, laterals and drainages over the years (URS, 2011, p. 2-9 and 2-10).

4.10 HAZARDS AND HAZARDOUS MATERIALS

Additionally, state and federal regulatory lists containing information regarding hazardous materials on or within a 1-mile radius of the project site were reviewed. Results from the background review conducted by Environmental Data Resources, Inc. (EDR) are presented in the Phase I ESA prepared by URS (**Appendix H** of this EIR).

No reported environmental liens or activity and use limitations were found associated with the property (URS, 2011, p. 2-11).

Site Reconnaissance

On June 23, 2011, URS conducted a reconnaissance of the solar generation facility site. The reconnaissance consisted of the observation and documentation of existing site conditions and the nature of the neighboring property development within approximately 0.5 mile of the solar generation facility.

The property was accessed by public roads and farm roads around the perimeter and bisecting the property. The residences and properties adjacent to the site that are not part of the project were not included in the site reconnaissance and entry of these structures was not completed. Additionally, the properties consisting of active irrigation canals owned by the Imperial Irrigation District (IID) are not part of the property and were not included in the site reconnaissance.

Site Conditions

The property consists of 28 parcels of land owned by 6 property owners (**Table 4.10-2**). At the time of the site reconnaissance, the property was observed to be approximately 1,990 acres of primarily undeveloped agricultural land. The majority of the site is irrigated by a series of soil and concrete lined canals. These irrigation canals are owned and maintained by the IID include the Westside Main Canal, a northwest-southeast oriented feature along the southern side of the solar generation facility site. The Westside Main Canal serves the minor Fern Canal, the Fig Canal, and the Wormwood Canal. Smaller laterals and irrigation ditches are used to deliver irrigation water to the crop fields. A series of gravity flow drainage canals also exist within the site to collect drainage from the agriculture land. The irrigation and drainage canals, allowed through property easements and are maintained by the IID, are not included in the acreage of project site. These features would remain in place and continue to function after the solar generation facility is developed.

**TABLE 4.10-2
SUMMARY OF POTENTIAL ENVIRONMENTAL HAZARDS**

APN	Conditions
<p>Imperial Property</p> <p>APNs 051-300-25, 051-300-29, 051-300-30, 051-270-27, 051-290-38, 051-270-47, 051-270-37, 051-330-05, 051-350-05, 051-330-15, 051-330-20, 051-360-03, 051-360-01, 051-360-02, and 051-360-18</p>	<p>The Imperial property was observed to be primarily agricultural land located along the west, south, and central portions of the overall project site. No structures were observed within these parcels. One well owned by Chevron was identified on the southwest corner of APN 051-350-05. A borrow area was observed on the northern edge of APN 051-330-15. One Aboveground Storage Tank (AST) was observed at the southeast corner of APN 051-360-03. One 500-gallon plastic AST containing sulfuric acid was observed on the southeast corner of APN 051-360-02.</p>

4.10 HAZARDS AND HAZARDOUS MATERIALS

**TABLE 4.10-2
SUMMARY OF POTENTIAL ENVIRONMENTAL HAZARDS**

APN	Conditions
<p>Fitzurka Property APNs 051-310-49, 051-310-50, 051-310-56, 051-310-57, 051-310-59, 051-360-04, and 051-310-40</p>	<p>The Fitzurka Property was observed to be primarily agricultural land along the northeast and southeast portions of the overall project site. No structures were observed within these parcels. 500-gallon plastic ASTs containing sulfuric were observed at the following locations: the southwest corner of APN 51-310-50; the southern edge of APN 051-360-04; the southeast corner of 051-310-40; on northwest side of APN 051-310-40; at the northeast corner of APN 051-310-40; and on the northeast side of APN 051-310-40. Two approximately 1,000-gallon plastic trailer-mounted ASTs containing ammonium nitrate solution were observed on northeast corner of APN 051-310-40. Evidence of an apparent grass fire was observed in the northeast corner of APN 051-310-56. A memorial was observed on the northwestern edge of APN 051-310-40.</p>
<p>McVey Property APN 051-360-32</p>	<p>The McVey Property was observed to be primarily agricultural land in the southeast portion of the overall project site. No structures were observed within this parcel. 500-gallon plastic ASTs containing sulfuric acid were observed on the east central side of APN 051-360-32. Four approximately 1,000-gallon steel trailer-mounted ASTs containing anhydrous ammonia were observed on the east-central side of APN 051-360-32.</p>
<p>Tierra Property APNs 051-330-19</p>	<p>The Tierra Property was observed to be primarily agricultural land along the southern portion of the overall project site. A borrow area was observed on the northern edge of APNs 051-330-19.</p>
<p>Kuhn Property APN 051-310-27</p>	<p>The Kuhn Property was observed to be primarily agricultural land located in the central portion of the overall project site. No structures were observed within this parcel.</p>
<p>IID Property APNs 051-310-58 and 051-310-60</p>	<p>The IID Property was observed to be primarily agricultural irrigation canals along the northwest portions of the overall project site. No structures were observed within these parcels.</p>

Source: URS, 2011.

Hazardous Substances

Various features on the project site have potential to contain hazardous substances or potential contamination. Each is briefly described below based on details provided in the ESA (URS, 2011).

4.10 HAZARDS AND HAZARDOUS MATERIALS

Storage Tanks

Several ASTs were observed on the property for storage of agricultural-related chemicals. These ASTs were located adjacent to irrigation canals and appear to be used to add agriculture fertilizers directly into the irrigation canals for eventual soil treatment during irrigation/flooding of fields.

Eight approximately 500-gallon plastic ASTs containing sulfuric acid were observed throughout the project site at the following locations:

- 1 AST on east central side of APN 051-360-32
- 1 AST on northwest side of APN 051-310-40
- 1 AST at southeast corner of APN 051-310-40
- 1 AST at northeast corner of APN 051-310-40
- 1 AST on northeast side of APN 051-310-40
- 1 AST on southern edge of APN 051-360-04
- 1 AST on at southwest corner of APN 051-310-50

Two approximately 1,000-gallon plastic trailer-mounted ASTs containing ammonium nitrate solution were observed at the northeast corner of APN 051-310-40.

Eight approximately 1,000-gallon steel trailer-mounted ASTs containing anhydrous ammonia were observed at the following locations:

- 4 ASTs on east-central side of APN 051-360-32
- 1 AST at southeast corner of APN 051-360-03
- 1 AST at southeast corner of APN 051-360-02

Polychlorinated Biphenyls, Lubrication Oil, and Mercury

Electrical transformers, hydraulic equipment, capacitors, and similar equipment may contain polychlorinated biphenyls (PCBs) as operating or dielectric insulating fluids within the units. The Federal Toxic Substances Control Act generally prohibited the domestic manufacture of PCB after 1976; therefore, there is a potential for the dielectric fluid in electrical and hydraulic equipment manufactured prior to that date to contain PCBs.

Electricity transmission lines and three electrical transformers were observed on the property along the improved roads. Leaks or stains were not observed beneath the transformers.

Other equipment, such as capacitors, that may contain PCBs, were not observed on the property during the site reconnaissance. Two electric motors were located adjacent to IID canal associated with apparent pumps for water piping distribution. Motors contain hydraulic oil or other fluids. Leaks or stains were not observed beneath the motors.

Mercury was used in the mining industry to separate precious metals from crushed ore. In addition, mercury is used in analog timers and data loggers that are common in oil field production and other industrial operations. Based on the site reconnaissance, conditions for the use of mercury were not evident.

4.10 HAZARDS AND HAZARDOUS MATERIALS

Waste Disposal

No waste disposal activities were observed on the property during the site reconnaissance.

Dumping

Three empty bags of Trigluralin 10G Herbicide were observed on the property. There was no apparent powder or chemical observed beneath or adjacent to the bags.

Pits, Ponds, Lagoons, Septic Systems, Cisterns, Sumps, Drains, and Clarifiers

Irrigation of the solar generation facility site is provided by irrigation canals operated by the IID. The larger canals (e.g. Westside Main Canal) serve smaller canals managed through flood gate systems to deliver irrigation water to the crop fields. A series of gravity flow drainage canals also exist within the site to collect drainage from agriculture land.

A portion of Fig Lagoon is on the northern portion of APN 051-300-05. No evidence of pits, ponds, septic systems, cisterns, sumps, drains, and/or clarifiers was observed at the property during the reconnaissance.

Pesticide Use

The California Department of Pesticide Regulation (DPR) Licensing and Certification Program database was reviewed for licenses and/or certificates for pesticide applicators that use or supervise the use of restricted pesticides. The property owner was not listed in the DPR database.

Plastic ASTs containing agricultural chemicals were observed on the property. Based on the historical agricultural use of the property, chemical retention in surface and subsurface soils could be of concern. Most agricultural chemicals degrade rapidly in the presence of ultraviolet light from the sun and most newer-formulated chemicals have lower retention time especially at the lower application concentrations directed by regulatory agencies. Based on the historical agricultural use of the property, there is the potential for residual pesticide concentrations in the surface and subsurface soils (URS, 2011, p. 2-5).

Staining and Discolored Soil

Stained soil was observed adjacent the ASTs in two locations:

- 1 AST on the southern edge of APN 051-360-04
- 4 ASTs on the east central side of APN 051-360-32.

Wood treatment appeared to be dripping from the base of two utility poles at the northeast corner of APN 051-360-02 causing soil staining at the base of these poles. No other staining or discolored soil was observed during the site reconnaissance.

Stressed Vegetation

Evidence of an apparent grass fire was observed in an area approximately 30 feet long and 5 feet wide on the top of an existing canal in the northeast corner of APN 051-310-56. No debris was observed and there was no indication of burning to dispose of material. Fire extinguishing material or chemicals were not apparent. No additional stressed vegetation was observed during the site reconnaissance.

4.10 HAZARDS AND HAZARDOUS MATERIALS

On-site Wells

Monitoring wells, water wells, or oil wells were not observed on the property. The California Division of Oil, Gas, and Geothermal Resources (DOGGR) database was reviewed to evaluate oil and gas exploration in the vicinity of the property. One abandoned geothermal temperature observation well was identified on the DOGGR database. Chevron U.S.A., Inc. Well C-283 (API 02590354) is on the southwest corner of the property on APN 051-350-05. The well was reported to have been drilled in 1980 and abandoned in 1981. The well was 6-inches in diameter and 487-feet deep and was used to insert temperature instrumentation for logging temperatures to determine geothermal gradient. Approval for the well was granted by DOGGR on November 28, 1980 and well abandonment was approved on February 24, 1982. The well was reported to have been abandoned with a cement surface plug within the upper 10 feet below the ground surface.

Asbestos

The use of asbestos was primarily discontinued after the late 1970s. No structures that would contain asbestos were observed during the site reconnaissance.

Lead-based Paint

Concern for lead-based paint (LBP) is primarily related to older structures. No structures were identified that would contain LBP, however, equipment and canal lift gates observed on the property may contain LBP. Additionally, three wood framed shade structures were identified in the ESA. These structures appeared unpainted, but might have historically contained paint that had deteriorated or peeled. Only one of the three structures was located on a parcel within the project site:

- 1 horse shade structure at southwest corner of APN 051-310-26

Radon

A USEPA survey by state and county of indoor radon concentrations indicated the radon zone level for Imperial County is 3. Zone 3 areas are predicted to have an indoor radon screening potential of less than 2.0 picocuries per liter of air (pCi/l). The USEPA action level for radon is 4.0 pCi/l. Further assessment for radon appears unwarranted based on regional background levels.

Other Concerns

A borrow area was observed on the northern edge of APNs 051-330-19 and 051-330-15. This area appeared to have been cut down approximately 4 to 5 feet from adjacent grades. This borrow area was likely the source for the canal berm just north of the parcels. The history or methods of grading are not known.

A memorial consisting of a headstone, concrete footing, wooden cross, and other memorial material was observed onsite on the northwestern edge of APN 051-310-40. It is not known if there is anything buried associated with this memorial.

Other concerns such as unusual odors or chemical containers and drums (aside from the AST's discussed above) were not identified during the site reconnaissance.

Airport Land Use Compatibility Plan/Military Airspace

Following construction, the presence of a transmission line could affect air traffic and present safety hazards at nearby airports. The proposed gen-tie and is not located within the airport compatibility zones associated with any of the public airports in Imperial County. The closest public airport is the U.S.

4.10 HAZARDS AND HAZARDOUS MATERIALS

Naval Air Facility at El Centro (NAF/EC) military airport located approximately 5.5 to 6.5 miles north of the gen-tie. The project is over 10.5 miles west of the Calexico International Airport. Therefore, no impact to aviation safety would occur.

Emergency Plans

The County of Imperial has adopted the “Imperial County Operational Area - Emergency Operations Plan,” which addresses the County’s planned response to extraordinary emergency situations associated with natural disasters, technological incidents, and nuclear defense operations. The plan identifies certain open space areas and public buildings to serve as emergency shelters when residents must be relocated. No portion of the proposed project site is designated as an emergency shelter area on the Fire/Emergency Management/Staging and Shelter Zone Map (Imperial County Office of Emergency Services, 2007).

Fire Hazard / Smoke

The potential for a major fire in the unincorporated areas of the County is generally low. According to the Imperial County Natural Hazard Disclosure (Fire) Map prepared by the California Department of Forestry and Fire Protection (CDF, 2000), the project site is not located in an area characterized as either: (1) a wildland area that may contain substantial forest fire risk and hazard; or (2) very high fire hazard severity zone. The closest wildland area prone to forest fire is located is approximately 20 miles west of the project site.

Valley Fever

Valley Fever is an illness caused by a fungus (*Coccidioides immitis* and *C. posadasii*) that grows in soils under certain conditions. Favorable conditions for the Valley Fever fungus include low rainfall, high summer temperatures, and moderate winter temperatures. Soils within the Imperial Valley, including the project site, fit the profile to harbor Valley Fever spores. When soils are disturbed by the wind or other activities such as construction and farming, Valley Fever fungal spores become airborne. The spores present a potential health hazard when inhaled. Individuals in occupations such as construction, agriculture, and archaeology have a higher risk of exposure due to working in areas of disturbed soils which may have the Valley Fever fungus. Infection risk is highest in California during a six month period from June to November. Animals are also susceptible to the disease. In extreme cases, the disease can be fatal, though the majority of Valley Fever cases are very mild with over 60 percent or more of infected people having no symptoms or flu-like symptoms (BLM, 2010a). Imperial County has a relatively low Valley Fever incidence rate of 0.1 to 5 cases for every 100,000 people (CDPH, 2009).

B. GEN-TIE

The ESA (URS, 2011) did not include the portion of the gen-tie to be located on lands under the jurisdiction of the BLM. This portion of the project is undergoing separate environmental analysis under NEPA. Construction of the proposed gen-tie would occur over a 2 to 6 month period. During the construction phase, small amounts of hazardous materials such as fuels and lubricants would be used on the ROW. To ensure worker health and safety and avoid impacts to the environment, storage of hazardous materials will be allowed on the ROW and fueling or maintenance of construction equipment will not be conducted on the ROW unless emergency repair is necessary. The HMMP and Emergency Evacuation and Response Plan developed for the project would include directions for workers responding during an emergency on the ROW.

4.10 HAZARDS AND HAZARDOUS MATERIALS

4.10.3 IMPACTS AND MITIGATION MEASURES

A. STANDARDS OF SIGNIFICANCE

The impact analysis provided below is based on the following State CEQA Guidelines, as listed in Appendix G. The project would result in a significant impact to hazards and hazardous materials if it would result in any of the following:

- a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?
- b) 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?
- c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?
- d) 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, would it create a significant hazard to the public or the environment?
- e) 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?
- f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?
- g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?
- h) 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?

B. ISSUES SCOPED OUT AS PART OF THE INITIAL STUDY

Several criteria were eliminated from further evaluation as part of the Initial Study. Criterion “d” was eliminated because the project site is not listed as a hazardous materials site pursuant to Government Code, Section 65962.5. Therefore, this issue is not discussed further.

Criteria “e” and “f” were eliminated because the project site is not located within two miles of a public airport or a private airstrip. Therefore, this issue is not discussed further.

As identified in the Seismic and Public Safety Element of the County of Imperial General Plan, the "Imperial County Emergency Plan" addressed Imperial County's planned response to extraordinary emergency situations associated with natural disasters, technological incidents, and nuclear defense operations. The proposed circulation plan for the project site will be required to provide emergency access points and safe vehicular travel. In addition, local building codes would be followed to minimize flood, seismic, and fire hazard. Thus, the proposed project would not impair the implementation or physically interfere with any adopted emergency response plans or emergency evacuation plans. No impact is identified for this issue area and Criterion “g” is eliminated from further discussion.

4.10 HAZARDS AND HAZARDOUS MATERIALS

Criterion “h” was eliminated because the project site is not characterized as an area of urban/wildland interface. According to the Imperial County Natural Hazard Disclosure (Fire) Map prepared by the California Department of Forestry and Fire Protection (2000) the project site does not fall into an area characterized as either: (1) a wildland area that may contain substantial forest fire risk and hazard; or (2) very high fire hazard severity zone. Thus, the project site would not expose people or structures to significant risk of loss injury or death involving wildland fire. No impact is identified for this issue area and it is not discussed further.

C. ISSUES OF CONCERN WITH NO APPLICABLE CRITERIA

Several hazards of potential concern to the public with no corresponding criteria are briefly discussed below. These hazards are acknowledged and discussed to the extent that they would result from the proposed project.

Electromagnetic Fields

Potential impacts from the proposed project to public health for residents of Imperial County with respect to electromagnetic fields are briefly acknowledged here. Both electric and magnetic fields occur together whenever electricity flows (BLM/CEC, 2010). Electric voltage (electric field) and electric current (magnetic field) from the proposed gen-tie would create the potential for electromagnetic field (EMF) exposure. The available evidence as evaluated by the California Public Utilities Commission and other regulatory agencies has not established that such fields pose a significant health hazard to exposed humans (BLM/CEC, 2010). To date, there are no health-based federal regulations or industry codes specifying environmental limits on the strengths of fields from power lines. Likewise, the State has not adopted any specific limits or regulation on EMF levels related to electric power facilities (BLM/CEC, 2010).

The potential for the gen-tie on BLM land to impact human health is minimal because it would be located within Utility Corridor N of the California Desert Conservation Plan. Currently, there are three high voltage transmission lines located in Utility Corridor N (Sempra, Intergen, and SDG&E). No residential uses are allowed within this corridor. In addition to the 230-kV gen-tie, the project also includes a 1,000 Volt (V) Direct Current (DC) collection system comprised of underground cabling and combiner boxes. Based on the undeveloped and unpopulated nature of the setting for the project overall (gen-tie and solar energy site), long-term exposure to EMFs generated by the gen-tie are not expected and no impact would occur.

When the gen-tie is brought on-line and starts to transmit electricity, EMFs would be generated in proximity to the line. Currently, there is no agreement among scientists regarding the potential health risk related to EMFs. However, in response to a situation of scientific uncertainty and possible public concerns regarding EMF, an EMF Management Plan would be developed that specifies, where needed and feasible, measures to reduce exposure from the gen-tie. The EMF Management Plan will be prepared when the final gen-tie line design is completed. The BLM is responsible for review and approval of the EMF Management Plan.

Interference with Radio-Frequency Communications

Gen-tie related radio-frequency interference is one of the indirect effects of project operation. Interference may be produced by the physical interactions of line electric fields. Such interference is due to the radio noise produced by the action of the electric fields on the surface of the energized conductor. The process involved is known as “corona discharge” (also discussed in Section 4.8, Noise), but is referred to as “spark gap electric discharge” when it occurs within gaps between the conductor

4.10 HAZARDS AND HAZARDOUS MATERIALS

and insulators or metal fittings (BLM/CEC, 2010). When generated, spark gap electric discharge manifests itself as perceivable interference with radio or television signal reception or interference with other forms of radio communication. The level of interference depends on factors such as line voltage, distance from the line to the receiving device, orientation of the antenna, signal level, line configuration and weather conditions. As a result, maximum interference levels are not specified as design criteria for modern transmission lines. The level of any such interference usually depends on the magnitude of the electric fields involved and the distance from the line. The potential for such impacts is minimized by reducing the line electric fields and locating the line away from inhabited areas. The proposed gen-tie is proposed within CDCA Corridor N in an unpopulated portion of the county.

The proposed gen-tie would be built and maintained in keeping with all applicable standards and regulations, including those prescribed by the California Public Utilities Commission (CPUC) and State of California Rules for Overhead Electric Line Construction, General Order No. 95 (GO-95). The potential for spark gap electric discharge interference is usually of concern for lines 345-kV or above, not for 230-kV lines. Since the proposed gen-tie would be located in rural and uninhabited desert open space, no impacts to radio-frequency interference would occur.

Hazardous Shocks

Hazardous shocks are those that could result from direct or indirect contact between an individual and an energized line. No design-specific federal regulations have been established to prevent hazardous shocks from overhead power lines (BLM/CEC, 2010). Safety is assured within the industry from compliance with the requirements specifying the minimum national safe operating clearances applicable in areas where the line might be accessible to the public. The proposed gen-tie would be located in rural and uninhabited desert open space making it highly unlikely that the public would come in contact with the line. Moreover, the Gen-tie Line would be located in a designated utility corridor (Corridor N) within the California Desert Conservation Area (CDCA). The Applicant has indicated that the project would be designed, constructed, and operated to exceed the requirements of GO-95.

Lightning protection at the substation will be designed in accordance with the requirements of American National Standards Institute (ANSI)/Institute of Electrical and Electronics Engineers (IEEE) 998 using a combination of lightning masts and static wire. The lightning shielding system will include self-supporting galvanized steel masts strategically located in the substation connected by overhead shield wire. Station lightning protection will use overhead transmission shield wire. For ground faults, the substation grounding system will be designed according to ANSI/IEEE Standard 80 and National Electrical Safety Code (NESC) C2 Section 9.

The PV solar energy field would have a ground system connecting all components. The transformer arrester would be connected to Power Conversion Station (PCS) ground grid loop with 4/0 conductor and four grounding copper rods 10' x ¾". The PCS Inverters would also be connected to the same ground grid loop. A medium voltage step-up transformer would be mounted on the PCS metal framed skid connected to ground. The PCS enclosure/shelter would have a ground resistance of less than 5 ohms. Each transformer has distribution class surge arresters (Metal Oxide Arrester [MOV] type) for each primary phase which are connected to the same ground as the skid. Grounding protection for overhead collection systems would be provided at the first pole of PVCS's as well as shield wires. Each DC power combiner box has a surge protective device installed to protect against lightning surges on the DC arrays. Therefore, no impacts associated with hazardous shocks are anticipated to occur.

4.10 HAZARDS AND HAZARDOUS MATERIALS

Fire Hazard (Non-Wildland/Operational)

Standard fire prevention and suppression measures would be implemented for the proposed project. Fire suppression for the approximately 3,000 square foot O&M building will be provided via a 10,000 gallon fire water tank installed in a location near the building that meets ICFD spacing requirements. The Applicant will prepare a Fire Management Plan with details regarding placement of hydrants, fire extinguishers, etc. which will be prepared in accordance with ICFD and submitted prior to construction. The O&M Building does not require fire sprinklers based on its size and use (Cable, 2012).

Valley Fever

Construction of the proposed project would occur in an area favorable to the growth of Valley Fever, a fungus (*Coccidioides immitis*) that grows in soils in areas of low rainfall, high summer temperatures, and moderate winter temperatures. Project construction would disturb the soil and cause the fungal spores to become airborne, potentially putting construction personnel and wildlife at risk of contracting Valley Fever. However, Imperial County is not considered to have a high incidence of Valley Fever (BLM, 2011). While the potential exposure of workers to Valley Fever spores could occur during construction, implementation of MM 4.4.1a, MM 4.4.1b, and MM 4.4.1c identified to reduce PM₁₀ in Section 4.4, Air Quality would be effective in reducing airborne dust. Implementation of these mitigation measures, as well as a dust control plan as required by the Imperial County Air Pollution Control District, would minimize the spread of fungal spores thereby reducing potential for contracting Valley Fever during construction. No impacts associated with exposure to Valley Fever would occur during operations and maintenance as the applicant intends to apply a dust palliative to suppress fugitive dust during the operational phase of the project.

D. METHODOLOGY

The analysis of hazardous materials is twofold: those potentially existing on the site and those that would be used as part of project construction, operations and maintenance, and decommissioning.

Potential existing hazards were assessed based on information contained in the *Phase I Environmental Site Assessment for the First Solar Project Sagebrush Site, Imperial County, California* (ESA) (URS, 2011) and a letter regarding "URS Responses to Ericsson-Grant, Inc. Comments on the First Solar Phase I ESA for the Sagebrush Project Site in Imperial County, CA" (Ray, 2011). These documents are provided on the attached CD of Technical Appendices as **Appendix H** of this EIR.

Some hazardous materials would be used on a short-term basis during construction and decommissioning. Others would be stored on-site for use during operations and maintenance. Therefore, this analysis was conducted by examining the choice and amount of chemicals to be used, the manner in which the Applicant would use the chemicals, the manner by which they would be transported to the facility, and the way in which the Applicant plans to store the materials on site.

E. PROJECT IMPACTS AND MITIGATION MEASURES

Hazardous Materials Transport, Use, Disposal and Accidental Release

Impact 4.10.1 The proposed project could create a significant hazard to the public or the environment through the transport, use, or disposal of hazardous materials. This is considered a **less than significant impact**.

4.10 HAZARDS AND HAZARDOUS MATERIALS

Transport

Some hazardous materials would be required during construction, operations and maintenance, and decommissioning of the proposed project. These include diesel fuel, oil and grease for heavy equipment as well as paints and solvents. Large quantities of these materials are not anticipated to be necessary but would require transport to the project site. All hazardous materials (such as diesel fuel, oil and grease for heavy equipment) transported to the site during construction would occur in compliance with Department of Toxic Substances Control (DTSC) regulations. Therefore, likelihood of an accidental release during transport or residual contamination following accidental release is not anticipated and impacts are considered **less than significant**.

Likewise, all hazardous materials (such as diesel fuel, oil and grease for heavy equipment) used on and transported to the gen-tie right-of-way during construction would occur in compliance with applicable regulations. Thus, less than significant impacts are anticipated in association with use, transport, and disposal of hazardous materials during construction of the proposed project.

Use and Storage

A variety of hazardous materials would be used during construction of the proposed project. However, no acutely toxic hazardous materials would be used and none of the materials are anticipated to pose a significant potential for off-site impacts such as contamination through a large release of chemicals. The Applicant has identified mitigation measures that address handling of hazardous materials in a manner which would avoid potential for spills (refer to Table 2.0-4 in Chapter 2.0). Therefore, potential for accident conditions involving the release of hazardous materials used or stored during construction is considered a **less than significant**.

The solar generation facility would require use of some hazardous materials during construction, operations and maintenance, and decommissioning. Limited quantities of hazardous materials would be stored or used on site. These include diesel, gasoline, motor oil and hydraulic fluids and lube oils for vehicles and equipment, and mineral oil for the substation transformers and PCS switchgear. Spill containment and clean-up kits will be kept on site during construction and maintained during the operation of the project. The project will also be required to comply with State laws and County Ordinance restrictions, which regulate and control hazardous materials handled on-site.

Disposal

During construction, typical construction wastes such as wood, concrete, and miscellaneous packaging materials as well as some broken PV modules would be generated. Construction wastes will be disposed of in accordance with local, State and federal regulations, and recycling will be used to the greatest extent possible. Left-over or spent materials such as used oil filters, used batteries, used hydraulic fluid, oils, and grease would be generated during project construction. Any spent or surplus hazardous wastes would be transported off-site for disposal according to applicable State and County restrictions and laws governing the disposal of hazardous waste. Detailed information about the use, storage and disposal of hazardous materials would be provided in the Health and Safety Plan that would be developed by the construction contractor (refer to Table 2.0-4 in Chapter 2.0).

Any PV modules damaged or broken during construction will be returned to First Solar's manufacturing facility in Ohio where they would be recycled into new modules or for use in other new products. At end-of-life, First Solar PV modules would be classified as California-only hazardous waste but can still be collected and recycled under First Solar's Module Collection and Recycling Program, which implements applicable California and Federal hazardous waste requirements.

4.10 HAZARDS AND HAZARDOUS MATERIALS

Mitigation Measures

None required.

Significance After Mitigation

Not applicable.

Hazard Through Upset/Release of Hazardous Materials

Impact 4.10.2 The proposed project site contained some residual hazardous materials, pesticide residue and several other features that could be considered hazardous. Therefore, this impact is considered **potentially significant**.

Herbicides/Pesticides

The project site has historically been farmed and is currently in agricultural production. The ESA noted three empty bags of Trigluralin 10G Herbicide on the solar generation facility site. While these were not identified as Recognized Environmental Conditions (RECs) in the ESA (URS, 2011, p. 5-1), proper removal would be required prior to commencing construction.

Likewise, the ESA did not identify the use of pesticides as an REC as no mixing or storage of large quantities of pesticides was identified during the site reconnaissance or during the review of historical data and/or regulatory databases (Ray, 2011). Based on the historical agricultural use of the property, the ESA acknowledged that there is the potential for residual pesticide concentrations in the surface and subsurface soils (URS, 2011, p. 2-5). However, the ESA did not recognize this as a REC. While chemical retention in surface and subsurface soils could be of concern, the majority of agricultural chemicals degrade rapidly in the presence of ultraviolet light from the sun. Further, most newer-formulated chemicals have lower retention time especially at the lower application concentrations directed by regulatory agencies. No soil remediation was recommended.

The application of herbicides and pesticides of the site would have been controlled by the applicators as directed by the Federal Insecticide, Fungicide, and Rodenticide Act ("FIFRA") in accordance with manufacturer prescribed and labeled instructions. Therefore, the potential presence of low concentrations of agricultural chemicals on the project site is not anticipated to be at hazardous levels. Also, the proposed project would not contain a residential or commercial component that would result in long term exposure people to potential pesticides/herbicides. Therefore, no direct impact (exposure during construction) or indirect impact (exposure following construction during operations and maintenance) would occur relative to pesticide residue in association with construction of the proposed project.

The potential for air dispersion of pesticide residues in dust during grading activities would be minimized by the fugitive dust control plan implemented by the Applicant in accordance with Imperial County Air Pollution Control District (ICAPCD) requirements. The mitigation measures taken to minimize dust would also reduce any associated air dispersal of pesticide residues (refer to mitigation measure Air Quality sections). This would result in much less dust than typical agricultural operations where dust is not controlled. Therefore, impacts associated with exposure to pesticide residue during construction are considered **less than significant**.

ASTs

The ESA identified multiple ASTs containing agricultural chemicals (sulfuric acid, ammonium nitrate solution, and anhydrous ammonia) located throughout the solar generation facility site. While none of

4.10 HAZARDS AND HAZARDOUS MATERIALS

the ASTs were identified as Recognized Environmental Conditions (RECs) in the ESA (URS, 2011, p. 5-1), proper removal would be required prior to commencing construction.

Polychlorinated Biphenyls

Electricity transmission lines and three electrical transformers observed on the property could potentially contain PCBs in dielectric fluid if manufactured prior to 1976. The date of this equipment is unknown.

Stained Soil

Stained soil was observed adjacent to one AST located on the southern edge of APN 051-360-04 and four ASTs located on the east central side of APN 051-360-32.

Minor staining associated with dripped wood treatment was observed at the base of two utility poles at the northeast corner of APN 051-360-02. The dripped material appeared tar like (i.e., limited mobility), and was limited to the base of the poles. The ESA did not identify the soils staining as an REC requiring further assessment or remediation. However, this soil will require removal prior to commencing construction.

Lead-Based Paint

Three wood framed shade structures appeared unpainted, but might have historically contained paint that had deteriorated or peeled. The potential presence of lead-based paint on these structures was identified as an REC. Nevertheless, suspect lead-based paint should be evaluated if structures are to be removed.

Geothermal Well

Chevron U.S.A., Inc. Well C-283 (API 02590354) is on the southwest corner of the property on APN 051-350-05. The well was reported to have been drilled in 1980 and abandoned in 1981. The well was 6-inches in diameter and 487-feet deep and was used to insert temperature instrumentation for logging temperatures to determine geothermal gradient. Approval for the well was granted by DOGGR on November 28, 1980 and well abandonment was approved on February 24, 1982. The well was reported to have been abandoned with a cement surface plug within the upper 10 feet below the ground surface (URS, 2011, p. 2-6).

Mitigation Measures

MM 4.10.2a Empty herbicide bags and any trash or debris shall be removed from the property according to applicable regulations prior to commencing earthmoving activities.

Timing/Implementation: Prior to issuance of a grading permit.

Enforcement/Monitoring: Imperial County Agricultural Commissioner; Imperial County Health Department, Environmental Health and Consumer Protection Services; CUPA County of Imperial.

MM 4.10.2b ASTs containing sulfuric acid, ammonium nitrate solution, and anhydrous ammonia shall be removed from the following locations and wherever else present on the project site prior to commencing earth moving activities: east central side of APN 051-360-32; northwest and northeast side, southeast corner and northeast corner of APN 051-310-40; southern edge of APN 051-360-04; southwest corner of APN 051-310-50; northeast

4.10 HAZARDS AND HAZARDOUS MATERIALS

corner of APN 051-310-40; east-central side of APN 051-360-32; southeast corner of APN 051-360-03; and the southeast corner of APN 051-360-02.

Timing/Implementation: Prior to issuance of a grading permit.

Enforcement/Monitoring: Imperial County Agricultural Commissioner; Imperial County Health Department, Environmental Health and Consumer Protection Services; CUPA County of Imperial.

MM 4.10.2c If on-site the transformers are found to contain PCBs, the owner and responsible party for the transformers shall be required to handle and dispose of the waste dielectric fluid according to applicable regulations.

Timing/Implementation: Prior to issuance of a grading permit.

Enforcement/Monitoring: Imperial Irrigation District; Imperial County Health Department, Environmental Health and Consumer Protection Services; CUPA County of Imperial.

MM 4.10.2d Utility poles, associated base and stained soil adjacent to ASTs shall be removed and disposed of in an approved manner by the owner/utility prior to commencing earthmoving activities. The locations include material located in the northeast corner of APN 051-360-02, stained soil on the southern edge of APN 051-360-04 and the east central side of APN 051-360-32.

Timing/Implementation: Prior to issuance of a grading permit.

Enforcement/Monitoring: Imperial Irrigation District; Imperial County Health Department, Environmental Health and Consumer Protection Services; CUPA County of Imperial.

MM 4.10.2e Suspect LBP shall be evaluated by a California Certified Lead Inspector/Assessor prior if structures are to be removed. As applicable, confirmed LBP shall be handled by a licensed LBP contractor and disposed of according to appropriate regulations.

Timing/Implementation: Prior to issuance of a grading permit.

Enforcement/Monitoring: Imperial County Health Department, Environmental Health and Consumer Protection Services; CUPA County of Imperial.

Significance After Mitigation

Implementation of MM 4.10.2a and MM 4.10.2b would reduce residual hazards on the project site from prior agricultural activities. MM 4.10.2c, MM 4.10.2d, and MM 4.10.2e would address and remove potential hazards associated with potential presence of PCBs, stained soil and lead-based paint. Following the implementation of these mitigation measures, all potential upsets or release of hazardous materials would be reduced to **less than significant**.

Emit Hazardous Emissions

Impact 4.10.3 The proposed project is located within a quarter mile of an existing school. The project would use limited amounts of hazardous materials on occasion that would be handled in accordance with all applicable regulations and standards. Therefore, impacts associated with emitting hazardous materials within one-quarter mile of a school are considered **less than significant**.

4.10 HAZARDS AND HAZARDOUS MATERIALS

The proposed project site is located within one-quarter mile of Westside Elementary School. However, the only hazardous materials that would be used by the project within one-quarter mile of the school would be the fuels used by equipment during construction and herbicides for weed control during both construction and operation. In both cases, the level of hazard exposure at the school would be similar to what is currently occurring in association with farming operations currently conducted on the same lands. No acutely hazardous materials would be used as part of construction or operation of the proposed project.

As previously mentioned, fuels would be transported to the site in compliance with Department of Toxic Substances Control (DTSC) regulations. All herbicides use would be in accordance with all recommended application procedures as identified on product labels as well as in cooperation with the County Agricultural Commissioner for application on County lands. Therefore, impacts associated with exposure to hazardous emissions within a quarter mile of a school are considered **less than significant**.

Mitigation Measures

None required.

Significance After Mitigation

Not applicable.

4.10.4 CUMULATIVE SETTING, IMPACTS AND MITIGATION MEASURES

A. CUMULATIVE SETTING

The geographic scope of the cumulative setting for hazards and hazardous materials is a one-mile radius around the project site. One mile is the standard American Society of Testing and Materials (ASTM) standard search distance for hazardous materials. This geographic scope encompasses an area larger than the project site and provides a reasonable context wherein cumulative projects in the vicinity of the proposed project could affect hazards and hazardous materials. Based on Table 3.0-1 (Approved, Proposed and Reasonably Foreseeable Large-Scale Projects in the Vicinity of the Campo Verde Solar Project) in Chapter 3.0, Introduction to the Analysis and Assumptions Used, there is one other project from the list of cumulative projects within the geographic scope.

B. CUMULATIVE IMPACTS AND MITIGATION MEASURES

Cumulative Hazards and Hazardous Materials Impact

Impact 4.10.4 The proposed project, in combination with other reasonably foreseeable projects in the vicinity of the project site, would increase the density of development in the area, thus potentially increasing the potential for the presence hazards and use of hazardous materials. However, this is considered to be a **less than cumulatively considerable impact**.

There are 23 cumulative projects that are not within a one-mile radius of the project site and are considered outside of the geographic scope for the consideration of cumulative effects from hazardous materials sites. The proposed project and one other cumulative project, Silverleaf Solar, could contribute to cumulative adverse effects from hazards and hazardous materials. Therefore, the potential exists for additional hazardous materials to be transported, used and generated in association with increased development in the vicinity of the proposed project site. Both the proposed project and the Silverleaf Solar project would both involve the storage, use, disposal, and transport of hazardous materials to varying degrees during construction and operation. Accidental release of hazardous

4.10 HAZARDS AND HAZARDOUS MATERIALS

materials can be mitigated to less than significant levels through compliance with various Federal, state, and local laws, regulations, and policies regarding transport and use of hazardous materials. It is reasonable to expect that the proposed project and the Silverleaf Solar project would implement and comply with these existing hazardous materials laws, regulations, and policies. Additionally, the proposed project includes measures to avoid spills. Based on the nature of the proposed project as a solar generation facility, it would not result in the generation or transport of substantial quantities of hazardous materials or present the potential for release of hazardous materials. Therefore, these two projects would not cause a cumulative impact, and the projects would result in a less than cumulatively considerable contribution to a cumulative impact related to use or routine transport of hazardous materials.

Existing on-site hazards are localized and site specific. Potential impacts are not expected to combine with similar impacts of past, present, or reasonably foreseeable projects. Mitigation measures have been developed to minimize the impacts of the proposed action and one cumulative project during construction, operations and maintenance, and decommissioning to the extent feasible. Project-specific mitigation measures have been developed for the proposed project based on the Phase I ESA (MM 4.10.2a and MM 4.10.2b would reduce residual hazards on the project site from prior agricultural activities; MM 4.10.2c, MM 4.10.2d, and MM 4.10.2e would address and remove potential hazards associated with potential presence of PCBs, stained soil and lead-based paint). It is anticipated that the Silverleaf Solar project will be required to implement similar mitigation measures. Following implementation of these measures, project impacts to hazards and hazardous materials would be less than significant. Therefore, the project's contribution to cumulative hazardous materials impacts is **considered less than cumulatively considerable**.

Mitigation Measures

None required.

Significance After Mitigation

Not applicable.

SECTION 4.11

HYDROLOGY AND WATER QUALITY

4.11 HYDROLOGY AND WATER QUALITY

This section describes federal, state and local regulations applicable to hydrology and water quality. It also describes the regional hydrologic setting, existing hydrology/drainage (on-site and off-site), and existing flood hazards in the vicinity of the project site. Water quality is also described in terms of groundwater beneath the project site and surface waters in the region and the Imperial Valley.

This section also describes effects on hydrology and water quality that would be caused by implementation of the proposed project based on the *Campo Verde Solar Conceptual Drainage Study and Storm Water Quality Analysis* prepared by Fuscoe Engineering (Fuscoe, 2012). This document is provided on the attached CD of Technical Appendices as **Appendix I** of this EIR.

4.11.1 REGULATORY FRAMEWORK

A. FEDERAL

Federal Emergency Management Agency

Imperial County is a participant in the National Flood Insurance Program (NFIP), a federal program administered by the Federal Emergency Management Agency (FEMA). Participants in the NFIP must satisfy certain mandated floodplain management criteria. The National Flood Insurance Act of 1968 has adopted, as a desired level of protection, an expectation that developments should be protected from floodwater damage of the Intermediate Regional Flood (IRF). The IRF is defined as a flood that has an average frequency of occurrence on the order of one in 100 years, although such a flood may occur in any given year. Imperial County is occasionally audited by the Department of Water Resources (DWR) to ensure the proper implementation of FEMA floodplain management regulations. The project site is located on Flood Insurance Rate Map (FIRM) community-panel number 06025C2050C and 06025C1700C, dated effective September 26, 2008.

B. STATE

The Porter-Cologne Water Quality Control Act

California established its regulations to comply with the Clean Water Act under the Porter-Cologne Water Quality Control Act of 1967. The Porter-Cologne Act grants the State Water Resources Control Board (SWRCB) and the nine Regional Water Quality Control Board's (RWQCB) power to protect water quality and to adopt water quality criteria to protect Waters of the State. Such waters are defined in Section 13050 of the Porter-Cologne Water Quality Control Act as "any surface water or groundwater, including saline waters, within the boundaries of the state." Water quality criteria include the identification of beneficial uses, narrative and numerical water quality standards, and implementation procedures. Reporting requirements for waste discharge to waters of the State are set forth in Section 13260. The RWQCBs are authorized to issue Waste Discharge Requirements specifying conditions for protection of water quality in Section 13263. Section 13181 of the Act requires the SWRCB to develop water quality reports and lists required under Section 303(d) of the Federal Clean Water Act.

State Water Resources Control Board Construction General Permit Order No. 2010-0014-DWQ

The SWRCB regulates stormwater discharges from projects during construction in accordance with the National Pollutant Discharge Elimination System (NPDES) General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities (NPDES No. CAS000002). Dischargers whose projects disturb one or more acres of soil or whose projects disturb less than one acre but are part of a larger common plan of development that in total disturbs one or more acres, are required to obtain coverage under the General Permit for Discharges of Storm Water Associated with Construction

4.11 HYDROLOGY AND WATER QUALITY

Activity (Construction General Permit Order 2010-2014-DWQ, effective February 14, 2011) (SWRCB, 2011a).

Construction activity subject to a Construction General Permit includes clearing, grading and disturbances to the ground such as stockpiling, or excavation, but does not include regular maintenance activities performed to restore the original line, grade, or capacity of the facility. The Construction General Permit requires the development and implementation of a Stormwater Pollution Prevention Program (SWPPP). The SWPPP should contain a site map(s) showing the construction site perimeter, existing and proposed buildings, lots, roadways, storm water collection and discharge points, general topography both before and after construction, and drainage patterns across the proposed project. The SWPPP must list Best Management Practices (BMPs) the discharger will use to protect storm water runoff and the placement of those BMPs. Additionally, the SWPPP must contain a visual monitoring program; a chemical monitoring program for "non-visible" pollutants to be implemented if there is a failure of BMPs; and a sediment monitoring plan if the site discharges directly to a water body listed on the 303(d) list for sediment (SWRCB, 2011a).

Water Quality Control Plan Colorado River – Region 7

The Water Quality Control Plan (also known as the Basin Plan) establishes beneficial uses in the Colorado River Basin. The Basin Plan also identifies water quality objectives that protect the beneficial uses of surface water and groundwater; describes an implementation plan for water quality management in the Colorado River Region; and describes measures designed to ensure compliance with statewide plans and policies. Overall, the Basin Plan provides comprehensive water quality planning in Region 7 which encompasses all of Imperial County as well as portions of San Bernardino, Riverside and San Diego Counties.

C. LOCAL

Imperial County General Plan

The Water Element and the Conservation and Open Space Element of the Imperial County General Plan contain policies and programs, created to ensure water resources are preserved and protected. **Table 4.11-1** identifies General Plan policies and programs for water quality and flood hazards that are relevant to the project and summarizes the project's consistency with the General Plan. While this report analyzes the project's consistency with the General Plan pursuant to State CEQA Guidelines Section 15125(d), the Imperial County Board of Supervisors ultimately determines consistency with the General Plan.

4.11 HYDROLOGY AND WATER QUALITY

**TABLE 4.11-1
IMPERIAL COUNTY GENERAL PLAN CONSISTENCY ANALYSIS**

General Plan Policies	Consistent with General Plan?	Analysis
Conservation And Open Space Element		
Preservation of Visual Resources		
<p>Objective 8.4 Ensure the use and protection of the rivers and other waterways in the County. Ensure proper drainage and provide accommodation for storm runoff from urban and other developed areas in manners compatible with requirements to provide necessary agricultural drainage.</p>	Yes	<p>To ensure proper drainage and accommodate stormwater runoff, the proposed project would rely on existing drainage patterns coupled with proposed detention basins located outside of the solar arrays and shallow ponded basins under the arrays. The Conceptual Drainage Study and Storm Water Quality Analysis (Fusco, 2012) confirmed the adequacy of drainage for the proposed project. Final limits of the detention basins and shallow ponding will be determined at the time of final design approval to satisfy County requirements. Therefore, the proposed project is consistent with this objective.</p>
<p>Objective 8.5 Protect and improve water quality and quantity for all water bodies in Imperial County.</p>	Yes	<p>The proposed project would protect water quality during construction through compliance with NPDES General Construction Permit, SWPPP, and BMPs. Design features and BMPs have also been identified to address water quality for the project. Water quantity would be maintained for the proposed project by retaining the majority of the project site with pervious surfaces. Although the proposed project may not improve water quality and quantity, it would protect existing conditions and satisfy County requirements. Therefore, the proposed project is consistent with this objective.</p>
<p>Program: Structural development normally shall be prohibited in the designated floodways. Only structures which comply with specific development standards should be permitted in the floodplain.</p>	Yes	<p>The proposed project site is located in Flood Zone "X" (Refer to Figure 4.11-2, FEMA Flood Zone Map). Zone "X" is defined by the FEMA as: areas determined to be outside of the 0.2 percent annual chance floodplain. Therefore, the proposed project is consistent with this Program (FEMA, 2008).</p>

4.11 HYDROLOGY AND WATER QUALITY

**TABLE 4.11-1
IMPERIAL COUNTY GENERAL PLAN CONSISTENCY ANALYSIS**

General Plan Policies	Consistent with General Plan?	Analysis
Water Element		
Protection of Water Resources from Hazardous Materials		
<p>Program: The County of Imperial shall make every reasonable effort to limit or preclude the contamination or degradation of all groundwater and surface water resources in the County.</p>	<p align="center">Yes</p>	<p>A Conceptual Drainage Study and Storm Water Quality Analysis has been prepared for the proposed project. As noted under Objective 8.5, the project includes design features and BMPs in addition to required compliance with a general NPDES permit and SWPPP during construction and with BMPs during operation. Therefore, the proposed project would not significantly contaminate ground or surface waters. However, conversion of the site from agricultural uses to a solar generation facility may improve runoff quality by eliminating use of fertilizers and pesticides on the project site. Therefore, the proposed project is consistent with this program.</p>
<p>Program: All development proposals brought before the County of Imperial shall be reviewed for potential adverse effects on water quality and quantity, and shall be required to implement appropriate mitigation measures for any significant impacts.</p>	<p align="center">Yes</p>	<p>No adverse effects on water quality are anticipated in association with implementation of the proposed project. Therefore, the proposed project is consistent with this program. Refer to analysis for Objective 8.5.</p>

County of Imperial Land Use Ordinance, Title 9

Division 16 of the Land Use Ordinance addresses Flood Damage Prevention Regulation. The purpose of this division is to promote the public health, safety, and general welfare, and to minimize public and private losses due to flood conditions in specific areas by provision of design to protect human life and minimize damage. Division 16 of the Land Use Ordinance restricts floodplain uses; requires that floodplain uses be protected against flood damage; controls alteration of floodplains and stream channels; controls filling and grading in floodplains; and prevents diversion of flood flows where these would increase flood hazards in other areas.

Division 22 of the Land Use Ordinance addresses groundwater. The focus of this division is to preserve, protect and manage the groundwater within the County.

4.11 HYDROLOGY AND WATER QUALITY

County of Imperial Engineering Design Guidelines Manual for the Preparation and Checking of Street Improvements, Drainage and Grading Plans within Imperial County

The *County of Imperial Engineering Design Guidelines Manual for the Preparation and Checking of Street Improvements, Drainage and Grading Plans within Imperial County, Adopted December 9, 2008 and Revised September 15, 2008* provides drainage design standards for development throughout the County. Specific standards applicable to the project include:

- Retention volume of 3 inches of rainfall with no assumed infiltration or evaporation for development impervious areas. Retention basins are to empty within 72 hours after receiving water.
- Finished pad elevations for buildings shall be at or above the 100-year flood elevation. Finished floors shall be 6 inches above the 100-year flood.
- Drainage report required for all developments.

Imperial Irrigation District

IID's Water Department has been serving the Imperial Valley's water needs for 100 years. The district provides raw Colorado River water for irrigation and also for non-potable residential and industrial use. IID receives an average of 3.1 million acre-feet of water each year from the Colorado River. The Imperial Dam, located north of Yuma, Arizona, serves as a diversion structure for water deliveries throughout southeastern California, Arizona and Mexico. The operations of IID's River Division Office at Imperial Dam, as well as system wide water distribution, all fall under the direction of the United States Bureau of Reclamation (IID, 2011).

Water diverted at Imperial Dam for use in the Imperial Valley first passes through one of three de-silting basins, used to remove silt and clarify the water. From the de-silting basins, water is then delivered to the Imperial Valley through the 80-mile long All-American Canal. To facilitate its delivery, IID operates more than 230 miles of main canals, 1,438 miles of canals and laterals, and 1,406 miles of drainage ditches in the Imperial Valley. IID also maintains approximately 1,456 miles of drainage ditches used to collect surface runoff and subsurface drainage from the 32,227 miles of tile drains underlying 426,202 acres of farmland. Most of these drainage ditches ultimately discharge water into either the Alamo River or the New River (IID, 2011).

Three main canals, East Highline, Central Main and Westside Main, receive water from the All-American Canal and are used to deliver water to many canals that exist throughout Imperial Valley. Farmers then divert water directly from these canals to irrigate approximately 479,000 acres of farmland within IID's boundaries. Another important component of IID's distribution system is the seven regulating reservoirs and three interceptor reservoirs that have a total storage capacity of more than 3,300 acre-feet of water (IID, 2011).

As a part of its operating system, IID maintains an extensive gravity flow drainage system. The lateral drain system is laid out to provide a drainage outlet for each governmental subdivision of approximately 160 acres and, as such, the drains usually parallel the canals. There are over 1,456 miles of surface drains that can be divided into three main areas: Alamo River System, New River System and drains that flow directly into the Salton Sea. Approximately 430 control structures are installed along the drainage system. The district is obligated to provide its drains at sufficient depth (generally 6 to 10 feet deep) to accept tile drain discharge. Where the drain cannot be maintained at sufficient depth, a sump and pump are provided and maintained by IID. These drains are used to collect excess surface flow (tailwater) from agricultural fields, subsurface tile discharges and operational discharge from canals and laterals.

4.11 HYDROLOGY AND WATER QUALITY

The project site is crossed or bordered by several IID features including the Diehl Drain, Dixie Drain 3, Dixie-Drain 3-A, Dixie-Drain 3-C, Dixie Lateral 1, Fern Canal, Fern Lateral 3, Fern Sidemain, Fig Canal, Fig Drain, Forget-Me-Not Lateral 1, Westside Drain, Westside Main Canal, Wixom Drain, Wormwood Canal, Wormwood Drain, and Wormwood Lateral 7. In addition, the project site is near several IID trust lands.

Any proposed improvements or alterations to IID infrastructure will require coordination with IID. The Applicant will require encroachment permits from IID to construct across IID canals. Likewise, the project will require an industrial service water agreement with the IID to receive industrial supply water and also a separate agreement to provide construction water.

4.11.2 ENVIRONMENTAL SETTING

Information contained in this section is summarized from the *Conceptual Drainage Study and Storm Water Quality Analysis* prepared by Fuscoe Engineering (Fuscoe, 2012).

A. SOLAR GENERATION FACILITY

Hydrologic Setting

The project site is located within the Imperial Hydrologic Unit of the Salton Sea watershed in the Colorado River region. The hydrologic unit code is 18100200 of the USDA National Resources Conservation Services (NRCS). The Salton Sea Watershed encompasses an area of approximately 8,000 square miles that extends from San Bernardino County in the north to the Valley of Mexicali (Republic of Mexico) in the south (**Figure 4.11-1**). The Salton Sea lies at the lowest point in the watershed (approximately 270 feet below mean sea level) and collects runoff and agricultural drainage from most of Imperial County, a considerable portion of Riverside County, small portions of San Bernardino and San Diego Counties, as well as the northern portion of the Valley of Mexicali. The principal sources of inflow to the Salton Sea include: the Alamo River, New River, Whitewater River/Coachella Valley Storm Channel, direct drainage from Imperial and Coachella Valleys, subsurface inflow from groundwater, San Felipe Creek, Salt Creek, other smaller local drainages, and direct precipitation.

Existing Hydrology/Drainage

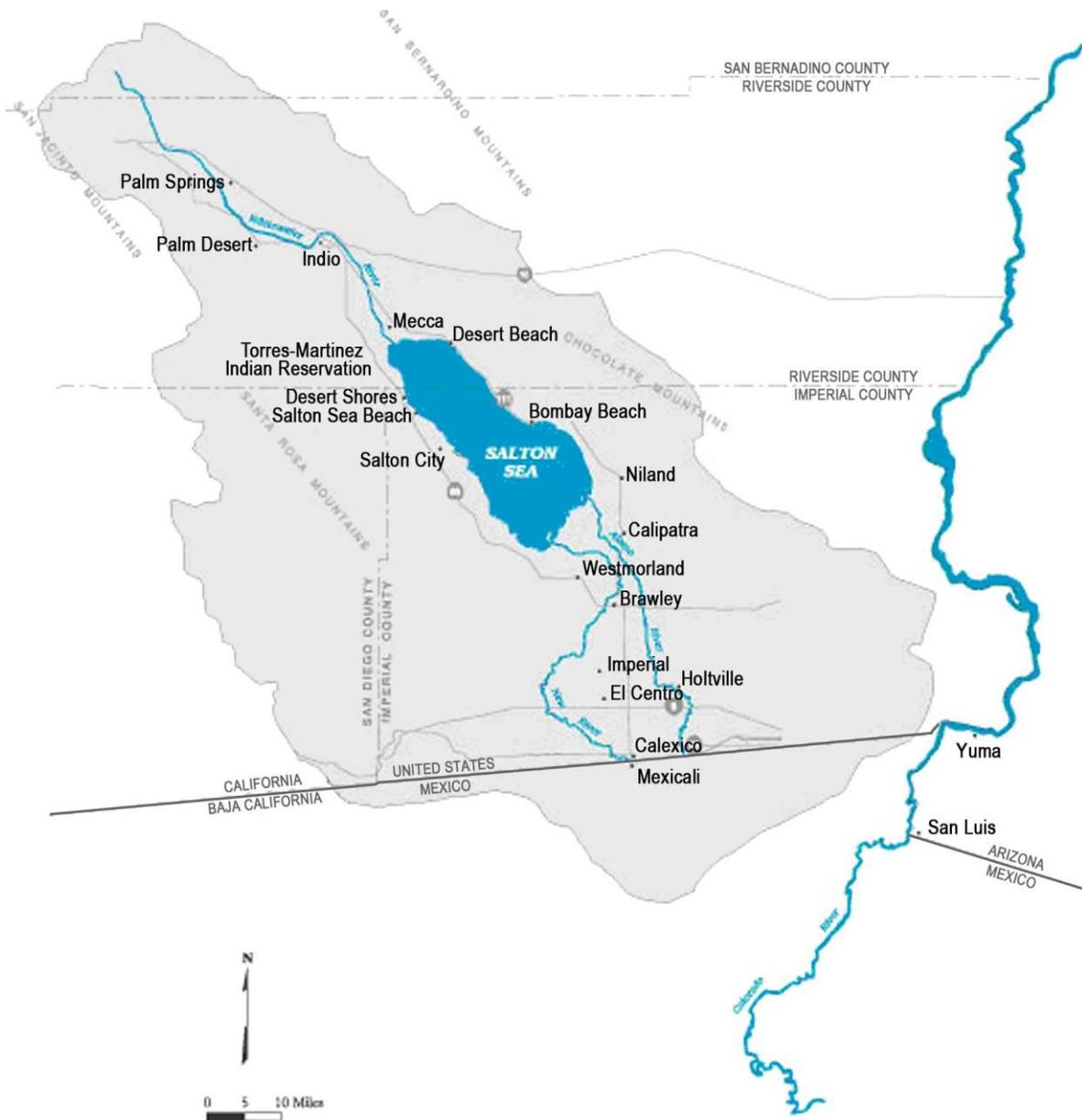
The project site is comprised of approximately 1,990 acres of land, approximately 1,822 acres are important farmland cultivated as part of the ongoing active agricultural production. The project site is divided in fields that currently serve, and will continue to serve, as detention basin areas. The project site is comprised of 25 drainage basins associated with the individual project parcels (Fuscoe, 2012).

On-Site Drainage

The project site is currently agricultural land. As a result, it is undeveloped, unpaved and highly pervious. Based on these characteristics, the majority of rainfall is usually absorbed by the soil, intercepted by subsurface tile drains, or percolates into the groundwater table. Current drainage patterns on the project site generally direct storm water runoff through the agricultural fields and convey all tributary storm water runoff via existing outlet structures to IID drains located throughout the project site. IID facilities that accept flow from the project lands include the Dixie Drain #3, Dixie Drain #3A, Wixom Drain, Diehl Drain, and Fig Drain.

Under existing conditions, two types of flow, agricultural and storm water, is discharged to the IID drains. During the life of the proposed project, agricultural runoff from the parcels that comprise the solar generation facility to the drains will cease and the drains will only receive storm water runoff.

4.11 HYDROLOGY AND WATER QUALITY



Source: DWR, 2011.

**FIGURE 4.11-1
SALTON SEA WATERSHED MAP**

4.11 HYDROLOGY AND WATER QUALITY

Flow discharged to the IID Drain system is conveyed from the project parcels through three drains, the Dixie Drain #3, Wixom Drain, and the Fig Drain. Dixie Drain #3 discharges to the Salt Creek approximately 1.2 miles north of the project. Flow is conveyed in Salt Creek approximately 6.25 miles before ultimately discharging to the New River. The Wixom and Fig drains discharge to the Fig Evaporation Pond immediately north and east of the project site, which then discharges to the New River approximately 5,800 feet from the site.

The IID Drain system was not designed to convey runoff from large storm events. Rather, the historical purpose of the drains is to convey agricultural runoff. The drains typically have the capacity to convey flow from the 5-year to 10-year storm event. Runoff from larger storm events (for example the 100-year event) is detained within low lying areas of the fields until the peak of the storm has passed, after which the detained runoff is slowly discharged to the drains via pipe connections that are typically 12 inches in diameter or less (Fusco, 2012).

Off-site Drainage

Surrounding roads, canals, and drains isolate the project site from runoff generated from offsite properties. Therefore offsite runoff does not affect the site.

Existing Flooding

According to FEMA FIRM (community-panel number 06025C2050C and 06025C1700C, September 26, 2008), project site is located in Flood Zone X (**Figure 4.11-2**). Zone X is defined by FEMA as areas determined to be outside of the 0.2 percent annual chance floodplain (FEMA, 2008).

Groundwater

The project site is within the Imperial Groundwater Basin. This basin is bounded on the east by the Sand Hills and on the west by the impermeable rocks of the Fish Creek and Coyote Mountains. To the north, the basin is bounded by the Salton Sea, which is the discharge point for groundwater in the basin. Major hydrologic features include the Alamo and New Rivers, which flow north towards the Salton Sea (Fusco, 2012).

Per Table 2-5 of the Colorado River Basin Water Quality Control Plan (WQCP), beneficial uses of groundwater within the Imperial Hydrologic Unit include: MUN – Municipal and Domestic Supply and IND – Industrial Service Supply (Fusco, 2012). The MUN beneficial use for groundwater within the Imperial Hydrologic Unit is limited to only a small portion of the ground water unit. Within the project area, groundwater is not used for municipal uses. Rather, all municipal and domestic water supply is obtained from the canal system stemming from the Colorado River. Wells do not exist in the area surrounding project site. Per Table 2-1 of the WQCP, IND is defined as a use of water for industrial activities that do not depend on water quality (Fusco, 2012).

Groundwater was encountered at depths ranging from 10 feet to 15 feet below ground surface based on 25 soil borings conducted as part of the *Preliminary Geotechnical Investigation: Proposed Mount Signal Solar Farm and Associated Structures West of Drew Road and South of Interstate 8 Imperial County, California* prepared by EGA Consultants conducted for the project site (EGA, 2011).

Existing Water Quality

Surface Water Quality

The following description of surface water quality was taken from the Imperial County General Plan Water Element (Imperial County, 1993a). While surface waters are not anticipated to be impacted by the project or used as a water supply source, the discussion of surface water quality provides context on the condition of surface waters in the region and the Imperial Valley.

Three general categories describe the surface water in Imperial County: freshwater, brackish water, and saline water. Freshwater (with total dissolved solids [TDS] generally less than 1,000 parts per million [ppm]) include the All-American Canal and other canals and laterals which deliver irrigation water to the agricultural fields within the County. The brackish waters (with TDS in the range of 2,000 to 4,000 ppm) include the Alamo River, New River and the agricultural drains that flow into these rivers or directly into the Salton Sea. The saline water category is represented by the Salton Sea. Salinity concentrations are currently slightly higher than those of ocean water (the Salton Sea's current TDS is approximately 44,000 ppm) (Imperial County, 1993a, p. 9).

Colorado River

The surface waters of the Imperial Valley depend primarily on the inflow of irrigation water from the Colorado River via the All-American Canal. Excessive salinity concentrations have long been one of the major water quality problems of the Colorado River, a municipal and industrial water source to millions of people, and a source of irrigation water for approximately 700,000 acres of farmland (Imperial County, 1993a, p. 39). The heavy salt load in the Colorado River results from both natural and human activities.

In 1975, the seven Colorado River Basin States (California, Arizona, Nevada, Utah, Wyoming, Colorado and New Mexico), with the Environmental Protection Agency's approval, adopted water quality standards for river salinity. Although Lower Colorado River water still has a relatively high total of dissolved solids when compared to its headwaters, the water quality of the water supplied to the Imperial Valley is fairly good (Imperial County, 1993a, p. 39).

Salt buildup also occurs as the water flows through the Colorado River system for agricultural and other beneficial uses. Erosion of the banks of the Colorado River and its tributaries has also resulted in a large sediment load.

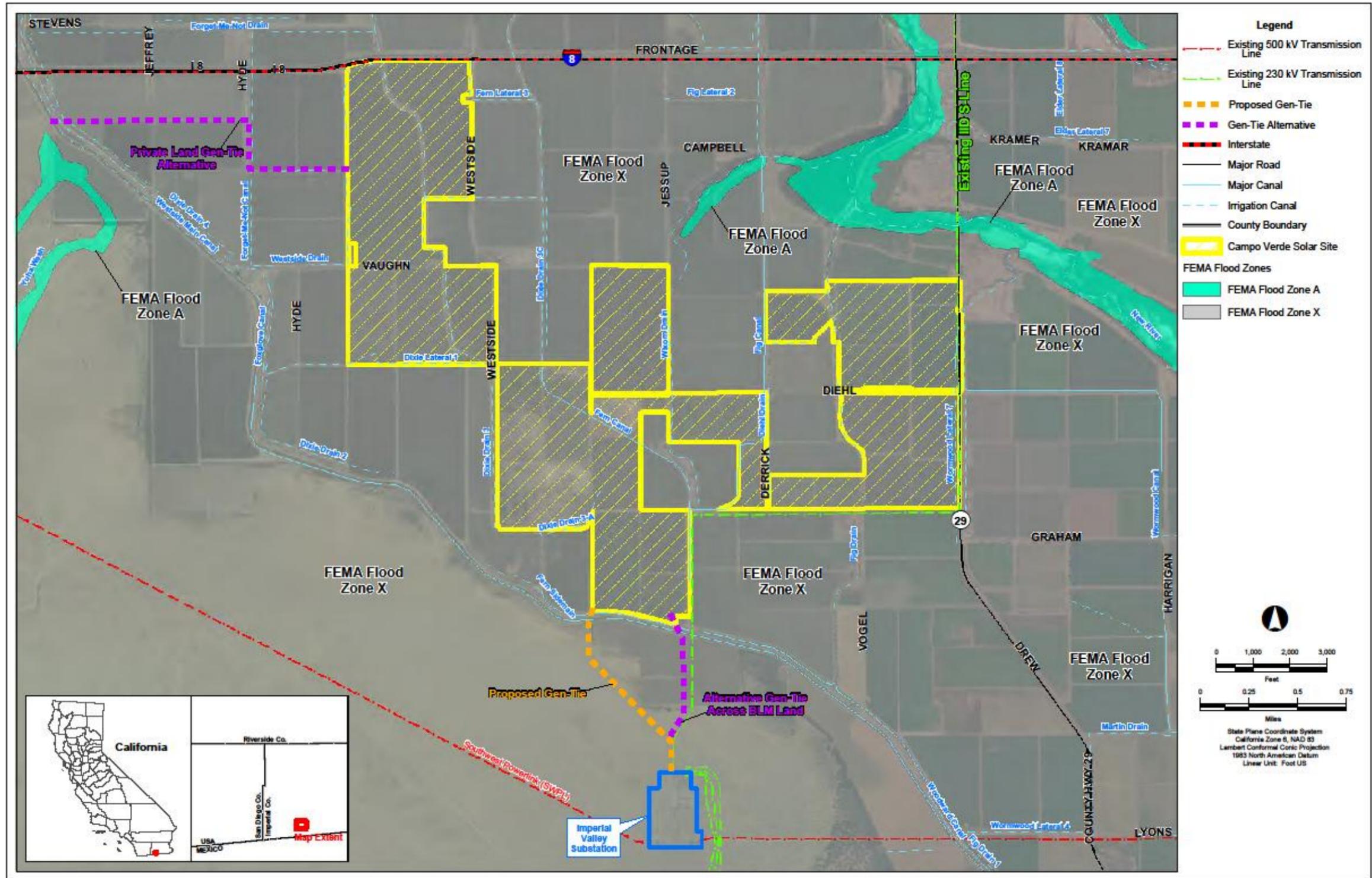
All American Canal

At the Imperial Dam, water is diverted west to the All-American Canal, which conveys water to the Bard Valley in California, and to the agricultural areas of the Imperial and Coachella Valleys. The salinity of the water in the All-American Canal fluctuates from a low of 737 ppm (1.00 ton per acre-foot of water) to a high of 958 ppm (1.30 tons per acre-foot of water) (Imperial County, 1993a, p. 43). Without salinity control projects in the Colorado River basin, the salt concentration of this water would increase.

However, water quality data for the All-American Canal indicate water suitable for continued agricultural use. All-American Canal flows are considered freshwater.

Alamo River

The Alamo River flows into Imperial County from Mexico carrying brackish water with TDS in the range of 2,000 to 4,000 ppm. Field erosion and dredging activities contribute to siltation in the Alamo River and ultimately, the Salton Sea. Presently, the Alamo River is very small as it crosses into the United



Source: kp environmental, 2012.

FIGURE 4.11-2
FEMA FLOOD ZONE MAP

4.11 HYDROLOGY AND WATER QUALITY

States and carries agricultural water coming from agricultural fields in Mexico (Imperial County, 1993a, p. 14). The main pollutants in the water are pesticides which get drained into the Alamo River during irrigation. However, the potential for polluting the Alamo River could increase not only from the pesticides contained in the water but from potential development at or near the Alamo River at the International Boundary.

New River

The New River flows into the Imperial Valley from Mexico with a significantly high waste load. Seasonal variations in contaminant loads correspond to a late winter planting and irrigation, and a fallow fall season. The contaminant load indicates the intensive use of this water for irrigation in Mexico and the presence of municipal wastewater from Mexicali (Imperial County, 1993a, p. 43). As this drainage flows through the County, the flow increases dramatically as a result of drainage from the agricultural lands in the Imperial Valley. New River water is considered brackish.

Salton Sea

The historic data on the Salton Sea shows a gradual increase in the concentration of dissolved salts. This increase has resulted from the high evaporation rates and continual inflow of drainage waters with high salt loads from canals and laterals in Imperial Valley and from agricultural activity in Mexico. The Salton Sea has no outlet, occurring in a fault-controlled sub-sea level basin. Waters in the Salton Sea are considered saline.

At present, the primary water quality problem facing the Salton Sea continues to be increasing salinity and associated selenium buildup. Approximately five million tons of salt per year are carried into the Salton Sea. Selenium entering the Salton Sea originates from the Colorado River which contains approximately one to two part per billion (ppb) of selenium (Imperial County, 1993a, p. 56). As the Colorado River water is brought into Imperial Valley by various canals, the selenium becomes concentrated due to the evaporation and evapotranspiration that occurs during farming of agricultural fields. The agricultural drains then carry this selenium enriched water into the Salton Sea. The New and Alamo Rivers contain approximately seven to eight parts per billion of selenium (ppb) when they reach the Sea. The selenium is taken up and concentrated by small organisms (e.g. fish), which in turn, are eaten by larger organisms (e.g. birds).

Groundwater Quality

The following description of groundwater quality was taken from Bulletin 118, California's Groundwater, Imperial Valley Groundwater Basin (Bulletin 118, 2004). While groundwater is not anticipated to be impacted by the project or used as a water supply source, the discussion of groundwater quality provides context on the condition of groundwater in the region and the Imperial Valley.

Characterization

Water quality varies extensively throughout the basin. Total Dissolved Solids (TDS) content ranges from 498 to 7,280 mg/L in the basin (Bulletin 118, 2004). Department of Health Services data from five public supply wells show an average TDS concentration of 712 mg/L and a range from 662 to 817 mg/L.

Impairments

In general, groundwater beneath the basin is unusable for domestic and irrigation purposes without treatment. TDS values typically exceeding 2,000 mg/L are reported from a limited number of test wells

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drilled in the western part of the basin. Groundwater in areas of the basin has higher than recommended levels of fluoride and boron (Bulletin 118, 2004).

Approximately 7,000 acre-feet per year of groundwater is estimated to recharge the basin from the New River which drains the Mexicali Valley (Bulletin 118, 2004). This groundwater is related to surface flow from the highly polluted New River and negatively affects groundwater quality in the basin (Bulletin 118, 2004).

B. GEN-TIE

The portion of the gen-tie to be located on lands under the jurisdiction of the BLM is undergoing separate environmental analysis under NEPA. However, the following details are provided based on available information for the region and the project area.

The proposed gen-tie is located within the same watershed and hydrologic unit as the project site (Imperial Hydrologic Unit of the Salton Sea watershed in the Colorado River region). The proposed gen-tie would cross the Westside Main Canal and would cross approximately 0.9 miles of BLM land to its termination at the Imperial Valley Substation.

The proposed gen-tie route is located entirely within a BLM-designated utility corridor and is primarily undeveloped desert land. Portions of this land have been previously disturbed by roads and berms. This land is generally flat and there are no significant surface water drainages. It is assumed the majority of stormwater that falls on this area is absorbed by the soil or percolates into the groundwater table.

Like the solar generation facility site, the proposed gen-tie alignment is located in Flood Zone X, defined by FEMA as areas determined to be outside of the 0.2 percent annual chance floodplain (FEMA, 2008).

Depth to groundwater along the gen-tie alignment is most likely deeper than the 10 to 15 feet encountered at the project site. This is because the groundwater level on the undeveloped desert land crossed by this route is not influenced by the ongoing application of irrigation water on the agricultural lands making up the site.

4.11.3 IMPACTS AND MITIGATION MEASURES

A. STANDARDS OF SIGNIFICANCE

The impact analysis provided below is based on the following State CEQA Guidelines, as listed in Appendix G. The project would result in a significant impact to hydrology and water quality if it would result in any of the following:

- a) Violate any water quality standards or waste discharge requirements?
- b) Substantially 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 *level* (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits *have* been granted)?
- c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?

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- d) Substantially alter the existing drainage patterns of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite?
- e) 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?
- f) Otherwise substantially degrade water quality?
- g) Place housing within a 100-year flood hazard area as mapped on a Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?
- h) Place within a 100-year flood hazard area structures which would impede or redirect the flood flows?
- i) Expose people or structures to a significant risk of loss injury or death *involving* flooding, including flooding as a result of the failure of a *levee* or dam?
- j) Inundation by seiche, tsunami, or mudflow?

B. ISSUES SCOPED OUT AS PART OF THE INITIAL STUDY

Several criteria were scoped out as part of the Initial Study. Criterion “b” was scoped out because the proposed project does not intend to use groundwater. Following implementation of the proposed project, water will continue to percolate through the ground as a majority of the surfaces on the project site will remain pervious. No impact is identified for this issue area and it will not be discussed further in this section.

Criterion “g” and “h” both deal with development within the 100-year floodplain. According to the FEMA FIRM, all of the project site is in Zone X, which is an area determined to be outside of the 0.2 percent annual chance of a flood. Thus, no impact is identified for these issue areas and they are not discussed further in this section.

Criterion “i” was scoped out because no levees or dams are in the vicinity of the project site which would present a significant risk of flooding.

Lastly, criterion “j” was scoped out because no bays or lakes are within a two-mile radius of the project site and the project site is over 100 miles from the Pacific Ocean. Therefore, there is no potential for the project site to be inundated by seiches or tsunamis. In addition, the project site is relatively flat and level eliminating the potential for exposure to mudflows. Thus, no impact is identified for these issues and they are not discussed further in this section.

C. METHODOLOGY

The analysis of impacts to hydrology and water quality were based on the results from the *Campo Verde Solar Conceptual Drainage Study and Storm Water Quality Analysis* (Fusco, 2012) and the physical characteristics of the Salton Sea and its watershed. Comparisons and analysis were made between the amount of runoff generated from the 100-year storm event for the solar generation facility site and the percent contribution to the Salton Sea. Groundwater impacts were assessed based on the geotechnical report (EGA, 2011) and reported excavation depths.

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D. PROJECT IMPACTS AND MITIGATION MEASURES

Violate Water Quality Standards or Waste Discharge Requirements

Impact 4.11.1 Implementation of the proposed project would generate small amounts of runoff during construction, and operation and maintenance. This impact is considered **less than significant**.

Construction

The project site is relatively flat and requires minimal grading to accommodate construction of the project (the PV fields and foundations for equipment and buildings). The Applicant has also identified BMPs to reduce potential for fuel spills and transport of polluted runoff as described in **Table 2.0-5** in Section 2.0, Project Description.

The project will excavate a series of foundations for the gen-tie pole structures to depths that vary from 15 to 45 feet deep. Current geotechnical data indicates groundwater depths vary from 10 to 15 feet deep. There is the potential need to pump groundwater out of the excavations during construction of the foundations. If this is required the amount of water removed via pumping will be minimal and is anticipated to be retained on-site. Groundwater depths are anticipated to be deeper than those reported in the geotechnical report (Fusco, 2012) because data for the report were collected during the irrigation season. The current agricultural practice applies irrigation water to the crops. The application of irrigation waters tends to artificially elevate local groundwater levels. Since no irrigation waters will be applied throughout the course of the proposed project's operational life, groundwater levels are expected to drop. Actual groundwater levels will be based on a future, site-specific, geotechnical study to be completed prior to the beginning of construction activities. Any groundwater that is encountered will be pumped to the surface and discharged onto the existing soil surface. It is anticipated that all groundwater discharges can be fully contained within the project boundaries either through infiltration at the soil surface or retained in the on-site retention basins. Therefore, **less than significant** impacts would occur relative to violating water quality standards and degrading water quality during construction of the project.

As a result of the recommended site design and source control measures, and the construction of the required detention basins, water quality exceedences are not anticipated and pollutants are not expected within project runoff that would adversely affect beneficial uses in downstream receiving waters. Although specific Imperial County regulations regarding storm water NPDES and new development do not exist, the project plans to institute controls designed to limit discharges to the appropriate standard. The project would comply with the requirements of the State Regional Water Quality Control Board concerning coverage under the General Construction Permit. Therefore, the project would result in a **less than significant** impact to water quality.

Operations

The Applicant does not anticipate washing the solar panels associated with the project. It is expected that rainfall will likely be enough to keep the panels sufficiently clean. However, the Applicant is permitting for 20 acre-feet of water per year from IID to wash the panels one to two times per year, if necessary.

Panel washing activities (if they occur) are not anticipated to generate runoff or contain pollutants (e.g. grease, heavy metals) other than dust and perhaps trace amounts of pesticide drift that may have accumulated on the panels. Any runoff from panel washing would evaporate or percolate through the

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ground, as a majority of the surfaces in the solar field will remain pervious. Therefore, **less than significant** impacts would occur relative to violating water quality standards and degrading water quality during operations and maintenance of the project.

Although no significant impacts with regard to water quality would occur, the project owner will be responsible for operation and maintenance of site design, source control, and treatment control Best Management Practices (BMPs). The owner will also be responsible for long-term funding for BMP maintenance. In addition, the County of Imperial will be granted access to the property for inspection through a formal agreement to ensure that the owner is properly carrying out the BMPs over the life of the project.

Mitigation Measures

None required.

Significance after Mitigation

No significant impacts to water quality are expected due to increased runoff or dewatering as a result of foundation excavation during the construction phase. Likewise, no substantial water impairments are anticipated with development of the project SWPPP and adherence to site design, source control, and treatment control BMPs during operation and maintenance.

Result in Substantial Erosion or Siltation On- or Off-site

Impact 4.11.2 Implementation of the proposed project could generate erosion during construction. Compliance with the provisions of the Construction General Stormwater Permit and Stormwater Pollution Prevention Plan would address erosion or siltation on or off-site. Therefore, this impact is considered **less than significant**.

Construction

Because the site would require minimal earthwork associated with site preparation and installation of PV structures, the potential for erosion and sediment is limited. Soil erosion, sedimentation and pollutants in runoff (e.g. grease, oils, sediment, and heavy metals) would be controlled during construction in accordance with the Construction General Stormwater Permit, which regulates storm water discharges from construction sites that disturb one or more acres of land. The Construction General Permit would also cover stormwater discharges associated with construction of IID crossings. A Stormwater Pollution Prevention Plan (SWPPP) would also be required. The SWPPP would be prepared by a Qualified SWPPP Developer (QSD) and implemented by a Qualified SWPPP Practitioner (QSP). Soil erosion and sedimentation during construction would be controlled. The SWPPP must be designed to ensure that the following requirements are met:

- All pollutants and their sources, including sources of sediment associated with construction, construction site erosion and all other activities associated with construction activity are controlled;
- Where not otherwise required to be under a Regional Water Quality Control Board permit, all non-storm water discharges are identified and either eliminated, controlled, or treated;
- Site Best Management Practices (BMPs) are effective and result in the reduction or elimination of pollutants in storm water discharges from construction activity;

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- Calculations and design details as well as BMP controls for site run-on are complete and correct, and;
- Stabilization BMPs installed to reduce or eliminate pollutants after construction is completed

Typical soil erosion and sedimentation BMPs expected to be employed in the SWPPP include, but are not limited to, straw wattles, check dams, fabric blankets, and silt fencing. BMPs proposed by the Applicant include allowing only trained personnel to refuel vehicles in designated areas and properly maintaining vehicles to minimize potential for leaks. These practices would help reduce likelihood for pollutants entering storm water runoff. Based on implementation of the requirements summarized above, construction of the proposed project would result in no impacts with regard to soil erosion, sedimentation or runoff pollutants.

Additionally, measures are proposed that include the application of advanced, environmentally safe, polymer emulsion dust control palliatives that produce highly effective dust control, erosion control and soil stabilization. These measures will reduce airborne dust and the mobilization of soil particles by water. The effect these materials would have on site hydrology would depend on the amount and method of application. It is expected that they would be applied in a manner where the site would maintain its permeability and infiltration so moisture from storm events would infiltrate into the soil. However, to ensure that even if the application of dust and erosion control products did result in zero permeability or infiltration into the soil, the hydrology study analyzed the worst-case scenario of 100% runoff because Imperial County requires 100% retention of the runoff associated with the site assuming zero percolation into the ground. The on-site retention basins are sized to capture the stormwater as if none of it would penetrate into the ground. Consequently, any erosion associated with stormwater runoff would be captured in the on-site retention basins. Therefore, **less than significant** impacts under CEQA would occur relative to erosion and siltation during construction of the project.

Operation

The existing site grade and drainage will be retained or improved as part of the project. Erosion and soil runoff would be controlled by limiting drainage to detention basins and existing IID drains. Because of the flat topography of the project site, erosion is a concern only where runoff flow enters detention basins. On-site detention basins would be constructed with 8:1 side slopes. Stabilization would be evaluated at final engineering (see Preliminary Infiltrations Tests prepared by Landmark included as Appendix A of **Appendix I** of this EIR).

Mitigation Measures

None required.

Significance After Mitigation

Not applicable.

Result in Substantial Flooding On- Or Off-Site/Create or Contribute Runoff Exceeding Capacity

Impact 4.11.3 Implementation of the proposed project would generate on-site runoff. Existing drainage patterns would be maintained and the site would remain pervious. Sufficient capacity is available in receiving IID drains. Therefore, impacts associated with flooding or exceedance of existing drainage capacity are considered **less than significant**.

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Construction

The project site is made up of flat, flood-irrigated agricultural fields. Based on the site's topography, minimal grading would be necessary during construction of the project site to support the PV solar fields, internal roads, and foundations for equipment and buildings. Any remaining crop residues, weedy growth or miscellaneous vegetation requiring removal will be removed if necessary. Excavation would be required to install underground wiring and cables, electric poles, equipment pads, and common service area facilities (O&M building, septic system, etc). No excavation will be needed to accommodate PV structures as driven piles will be used. Depth for piles would vary from 6 to 11 feet. The existing topography would generally be maintained and the site would remain largely pervious (e.g. no major paved surfaces or structures). Therefore, **less than significant** impacts to on- and off-site drainage and flooding would occur during construction of the project.

Operations and Maintenance

The existing drainage pattern on each project parcel would be maintained following construction. No new access roads are proposed as part of the project. Existing dirt roads throughout the project site would be used for transportation during construction and operation of the project.

The project site has been delineated into tributary drainage basins for the existing and proposed conditions (see Appendix E of the *Campo Verde Solar Conceptual Drainage Study and Storm Water Quality Analysis* for Basin Maps). Ultimate points of discharge for the existing and proposed conditions are the same. However, some of the smaller existing drainage sub-basins would be combined into larger drainage basins where appropriate.

The project site will be divided into three watersheds that are tributary to four distinct IID drains: the Dixie Drain #3 (for which basins are noted with a "D"); the Wixom Drain (for which basins are noted with a "W"); the Diehl Drain (for which basins are noted with a "L"); and the Fig Drain (for which basins are noted with a "F").

Table 6 of the *Campo Verde Solar Conceptual Drainage Study and Storm Water Quality Analysis* provides a summary of the drainage basin and sub-basin areas for the existing and proposed conditions. Note that flow from the Diehl Drain is discharged to the Fig Drain within the project limits. As such, the drains conveying flow from the project to ultimate receiving waters are the Dixie Drain #3, Wixom Drain, and the Fig Drain. Table 6 also assumes that flow is detained and discharged into receiving drains. As discussed in Section 2.3.2.b of the *Campo Verde Solar Conceptual Drainage Study and Storm Water Quality Analysis*, preliminary infiltration tests show that the site has the potential to infiltrate runoff, thus limiting discharge to the drain system.

As proposed, some of the drainage sub-basins will be combined into larger drainage basins. In three instances flows would be routed from one IID Drain tributary basin to another IID Drain tributary area:

- Flow from Basin W2 will be routed/combined with flow from Basin D7
- Flow from Basin L1 will be routed/combined with flow from Basin W3
- Flow from Basin L2 will be routed/combined with flow from Basin F1

Although there is a rerouting of flow from one IID Drain to another, because the project proposes to infiltrate runoff, there will not be an impact to the receiving drain. In addition, the routing of flow described above would result in a net decrease in area potentially contributing flows to the Fig Drain, Diehl Drain, and the Wixom Drain when compared to the existing condition. This is because the flows

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would be retained in areas where soils have high rates of infiltration. As a result, flow stored in the detention basin would be able to percolate in less than 6 hours.

To determine capacity of the basins, a series of hydrologic calculations were conducted to determine the levels of inundation for each detention basin based on a 100-year storm event as a minimum. The existing and proposed conditions for storm water runoff at each of the basins are presented in Tables 7 and 8 of the *Campo Verde Solar Conceptual Drainage Study and Storm Water Quality Analysis*. The calculations demonstrate that each individual basin is designed with the capacity to detain a 100-year storm event.

The project also proposes to detain the estimated runoff from the 100-year storm event in 3-foot deep detention basins located on-site but outside the footprint of the PV solar arrays. Additional detention of runoff necessary to comply with the County standard to store 3 inches of runoff would occur under the arrays as necessary to a depth less than 12 inches. Locations of proposed detention basins are provided for reference on the Proposed Conditions Basin Map of the *Campo Verde Solar Conceptual Drainage Study and Storm Water Quality Analysis* (see **Figure 4.11-3**). The final location/sizes of detention basins will be determined during final design as part of the final hydrology study.

Based on the proposed drainage design described above, the project would not have a substantial impact on the hydrology of the surrounding area or of the IID Drain system. Peak flow runoff from the project would be infiltrated in designated detention basins and there is no potential for increased flooding potential onsite or in offsite IID drains. The County requirement to provide 3 inches of detention per tributary acre would be met and detained runoff would be infiltrated into the underlying soil. Therefore, on- and off-site flooding impacts would be **less than significant**.

Mitigation Measures

None required.

Significance after Mitigation

Not applicable.

4.11.4 CUMULATIVE SETTING, IMPACTS AND MITIGATION MEASURES

A. CUMULATIVE SETTING

The cumulative setting for hydrologic resources is within the Imperial Hydrologic Unit of the Salton Sea watershed in the Colorado River region. The hydrologic unit code is 18100200 of the USDA National Resources Conservation Services (NRCS). The Salton Sea Watershed encompasses an area of approximately 8,000 square miles that extends from San Bernardino County in the north to the Valley of Mexicali (Republic of Mexico) in the south (see **Figure 4.11-1**). The Salton Sea lies at the lowest point in the watershed (approximately 270 feet below mean sea level) and collects runoff and agricultural drainage from most of Imperial County, a considerable portion of Riverside County, small portions of San Bernardino and San Diego Counties, as well as the northern portion of the Valley of Mexicali. The principal sources of inflow to the Salton Sea include: the Alamo River, New River, Whitewater River/Coachella Valley Storm Channel, direct drainage from Imperial and Coachella Valleys, subsurface inflow from groundwater, San Felipe Creek, Salt Creek, other smaller local drainages, and direct precipitation. One third of the water delivered to agricultural users in the Imperial Valley is discharged into the IID's drainage system. Based on a review of the cumulative projects listed in Table 3.0-1 in Chapter 3.0, Introduction to the Environmental Analysis and Assumptions Used, 15 projects including

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the proposed project would result in the conversion of agricultural lands to other non-water intensive uses thus contributing to reductions in the amount of agricultural runoff inflows to the Salton Sea. The projects and their acreages are summarized in **Table 4.11-2**. The projects would result in the conversion of a total of 12,343 acres of agricultural lands to other uses. The proposed project represents 1,852 acres or 15 percent of the total.

**TABLE 4.11-2
CONVERSION OF AGRICULTURAL LANDS REDUCING RUNOFF TO THE SALTON SEA**

Projects	Acreage
Linda Vista Tentative Subdivision Map	6
County Center II Expansion	240
Imperial Solar Energy Center South	950
Mount Signal Solar Farm	1,375
Centinela Solar Energy	2,067
Mayflower Solar Farm Project	482
Arkansas Solar Farm	481
Sonora Solar Farm	488
Alhambra Solar Farm	482
Calexico 1A	693
Calexico IB	666
Calexico IIA	733
IIB	732
Silverleaf Solar Energy	1,096
Campo Verde Solar Project	1,852
TOTAL	12,343

Source: Table 3.0-1 in Chapter 3.0, Introduction to the Environmental Analysis and Assumptions Use.

Projects listed above are based on the cumulative projects listed in Table 3.0-1 in Chapter 3.0, Introduction to the Environmental Analysis and Assumptions Used, and involve conversion of agricultural lands to other non- water intensive uses.

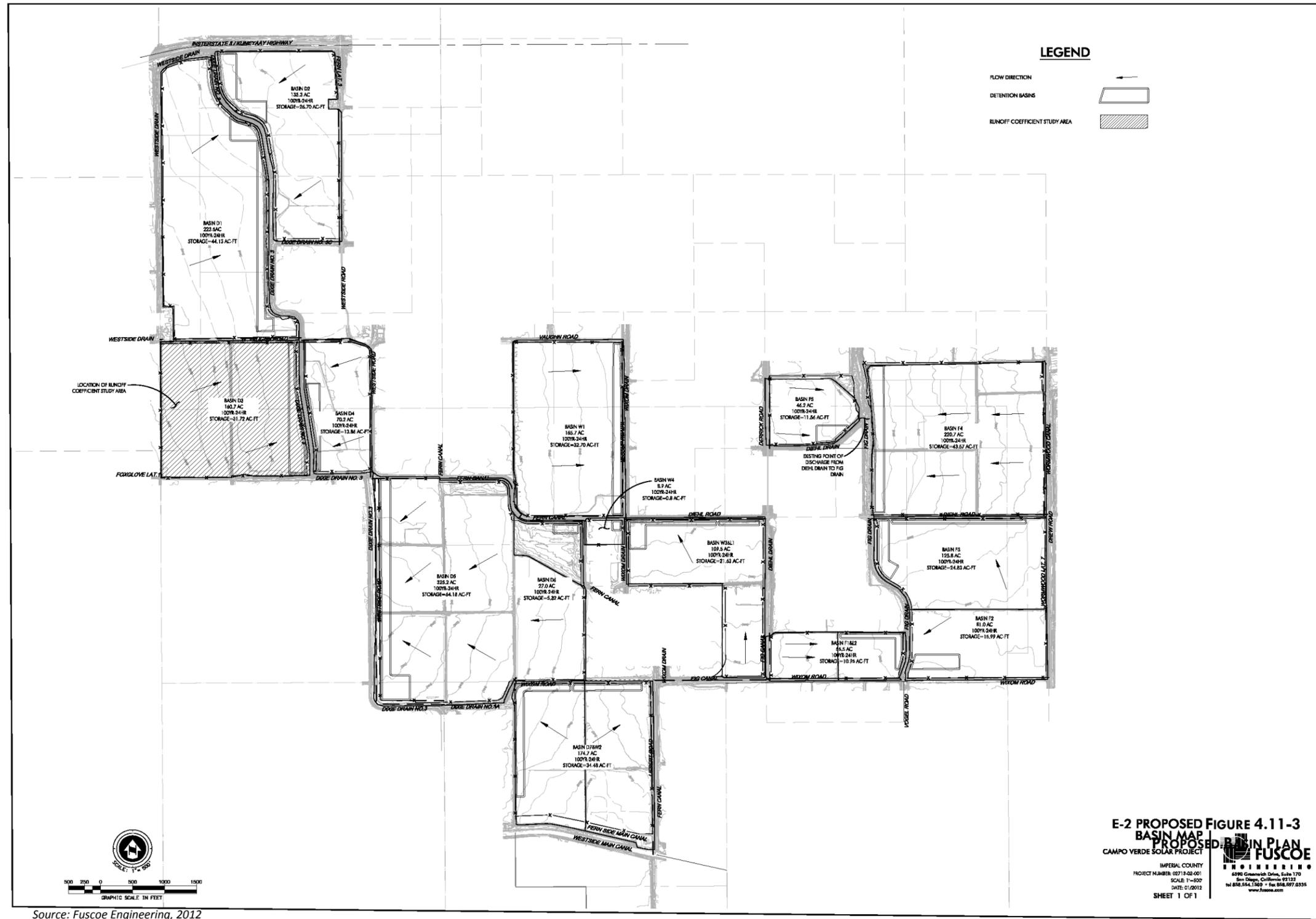
B. CUMULATIVE IMPACTS AND MITIGATION MEASURES

Cumulative Impact to Hydrology and Water Quality

Impact 4.11.4 The proposed project, in combination with approved, proposed and other reasonably foreseeable projects in the Salton Sea watershed would contribute to the cumulative effects of degradation of water quality and changes in runoff patterns ultimately discharging to the Salton Sea. This impact is considered **less than cumulatively considerable**.

One third of the water delivered to agricultural users in the Imperial Valley is discharged into the IID's drainage system. Reduction in field drainage due to land use conversion has an incremental effect on both drain water quality and the volume of runoff in impacted drains and the subsequent drainage path to the Salton Sea.

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Reduction in Water Quantity and Quality

As described above, surface waters in the Imperial Valley ultimately drain into the Salton Sea via the New and Alamo rivers as well as via irrigation drains and canals. Until recently, the amount of water entering the Salton Sea was roughly balanced by the amount of water evaporating from its surface. However, due to increased demand for water supplies in the region and recent IID water transfer agreements increasing amounts of water are being consumed in Imperial Valley as well as transferred out of the valley to population centers such as San Diego County, thus reducing inflows to the Salton Sea. Implementation of the proposed project and the projects listed in **Table 4.11-2** would contribute to this cumulative diversion of water from the Salton Sea. This would occur through the conversion of irrigated agricultural land that previously drained to the sea (PMC, 2011).

Agricultural runoff contributes significantly to total inflows to the Salton Sea. As irrigated agricultural land is converted to nonagricultural use, the associated runoff ceases to drain into the New and Alamo rivers, ultimately reducing the sea's total inflows. As described above, the proposed project will convert approximately 1,852 acres of active farmland. The projects listed in **Table 4.11-2** contain a total of approximately 12,343 acres of irrigated agricultural land. The average annual water consumption per-acre within the Imperial Irrigation District is 4.63 acre-feet, per acre, per year (IID, 2011). For the project site, total water consumption based on the average annual usage is 8,575 acre-feet of water. One third of the applied irrigation water (2,830 acre-feet) is returned to the drainage system and ultimately the Salton Sea. The total drainage area for the Salton Sea is 8,360 square miles. The Sea has a total volume of approximately 7,500,000 acre-feet and a surface area of 240,639 acres. Under average irrigation practices the removal of the Campo Verde project area from agricultural production represents a reduction of less than one-tenth of one percent (0.04%) in the amount of water reaching the Salton Sea. Under normal precipitation conditions the reduction is 0.0001%. Neither reduction would be noticeable.

Based on the assumption that an average acre of agricultural land uses 4.63 acre-feet per year and assuming a worst-case scenario in which implementation of all the projects listed in **Table 4.11-2** results in the conversion of the entire 12,343 acres, under average irrigation practices this represents a total water consumption of 57,148 acre-feet of water. Again, one third of this (18,859 acre-feet) is returned to the drainage system and ultimately the Salton Sea. The removal of these 12,343 acres of agricultural land would result in a reduction of less than three-tenths of one percent (0.25%) in the amount of water reaching the Salton Sea. This estimate is considered conservative because the estimate assumed all project acreage was in agricultural production. Small percentages of each project contain land that is not in agricultural production. Therefore, the cumulative water quantity and quality impacts to the Salton Sea are considered **less than significant**, and the project's contribution to these impacts is considered to be less than cumulatively considerable. It should be noted that the reduction in agricultural runoff would result in an incremental improvement in water quality due to the reduced amount of agriculture related pollutants.

Mitigation Measures

None required.

Significance After Mitigation

Not applicable.

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SECTION 4.12

BIOLOGICAL RESOURCES

4.12 BIOLOGICAL RESOURCES

This section provides a background discussion of the regulatory framework and the affected environment. The regulatory framework discussion focuses on the federal, state, and local regulations that apply to plants, animals and sensitive habitats. The affected environment discussion focuses on the topography and soils, general vegetation, general wildlife, sensitive biological resources, riparian habitat and sensitive natural communities, jurisdictional waters, habitat connectivity and wildlife corridors. Information contained in this section is summarized from the *Biological Technical Report for the Campo Verde Solar Energy Project* prepared by Heritage Environmental Consultants, Inc., (Heritage, 2012). The Biological Technical Report (BTR) includes various attachments (Vegetation Mapbook, ACOE/CDFG Potentially Jurisdictional Waters Mapbook) and two appendices (Burrowing Owl Survey Report and Jurisdictional Waters). The Biological Technical Report and its attachments and appendices are provided on the attached CD of Technical Appendices as **Appendix J** of this EIR.

4.12.1 REGULATORY FRAMEWORK

A. FEDERAL

Endangered Species Act

Endangered Species Act of 1973 (16 United States Code [USC] 1531–1544), as amended (ESA), protects federally listed threatened and endangered species from unlawful take. “Take” under ESA includes activities such as “harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct.” The United States Fish and Wildlife Service (USFWS) regulations define harm to include some type of “significant habitat modification or degradation.”

Section 7 of the ESA requires the BLM, as a federal agency, to ensure that any action authorized, funded, or carried out by the BLM is not likely to jeopardize the continued existence of listed species or modify their critical habitat. The BLM will engage the USFWS in the Section 7 consultation process as part of NEPA review in preparation of the Environmental Assessment (EA).

Migratory Bird Treaty Act

The Migratory Bird Treaty Act of 1918 (MBTA; 16 USC 703 et seq.) is a federal statute that implements treaties with several countries on the conservation and protection of migratory birds. The number of bird species covered by the MBTA is extensive and listed at 50 Code of Federal Regulations (CFR) 10.13. The regulatory definition of “migratory bird” is broad, and includes any mutation or hybrid of a listed species and any part, egg, or nest of such birds (50 CFR 10.12). Migratory birds are not necessarily federally listed endangered or threatened species under the ESA. The MBTA, which is enforced by USFWS, makes it unlawful “by any means or in any manner, to pursue, hunt, take, capture, [or] kill” any migratory bird, or attempt such actions, except as permitted by regulation. The applicable regulations prohibit the take, possession, import, export, transport, sale, purchase, barter, or offering of these activities, except under a valid permit or as permitted in the implementing regulations (50 CFR 21.11).

Bald and Golden Eagle Protection Act

The Bald and Golden Eagle Protection Act (16 USC 668-668c), enacted in 1940 and as amended, prohibits anyone, without a permit issued by the USFWS, from “taking” bald and golden eagles, including their parts, nests, or eggs. The Act defines “take” as “pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest or disturb.” For purposes of these guidelines, “disturb” means: “to agitate or bother a bald or golden eagle to a degree that causes, or is likely to cause, based on the best scientific information available, 1) injury to an eagle, 2) a decrease in its productivity, by substantially

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interfering with normal breeding, feeding, or sheltering behavior, or 3) nest abandonment, by substantially interfering with normal breeding, feeding, or sheltering behavior."

Federal Water Pollution Control Act (Clean Water Act)

The Clean Water Act (CWA; 33 USC 1251 et seq.), as amended, provides a structure for regulating discharges into the waters of the U.S. Through this Act, the Environmental Protection Agency is given the authority to implement pollution control programs. These include setting wastewater standards for industry and water quality standards for contaminants in surface waters. The discharge of any pollutant from a point source into navigable waters is illegal unless a permit under its provisions is acquired. In California, the State Water Resources Control Board (SWRCB) and the nine Regional Water Quality Control Boards (RWQCBs) are responsible for implementing the CWA. Section 404 of the CWA regulates the discharge of dredged, excavated or fill material in wetlands, streams, rivers, and other waters of the U.S. The U.S. Army Corps of Engineers (ACOE) is the federal agency authorized to issue Section 404 Permits for certain activities conducted in wetlands or other waters of the U.S. Section 401 of the CWA grants each state the right to ensure that the State's interests are protected on any federally permitted activity occurring in or adjacent to Waters of the State. In California, the RWQCBs are the agencies mandated to ensure protection of the State's waters. For a proposed project that requires an ACOE CWA Section 404 permit and has the potential to impact Waters of the State, the RWQCB will regulate the project and associated activities through a Water Quality Certification determination (Section 401).

B. STATE

California Endangered Species Act

The California Endangered Species Act of 1984 (CESA) provides a framework for the listing and protection of wildlife species determined to be threatened or endangered in California.

California Fish and Game Code 3503.5

Raptors (birds of prey) and active raptor nests are protected by the California Fish and Game Code 3503.5, which states that it is "unlawful to take, possess, or destroy any birds of prey or to take, possess, or destroy the nest or eggs of any such bird" unless authorized.

California Fish and Game Code 3503

Bird nests and eggs are protected by the California Fish and Game Code 3503, which states "it is unlawful to take, possess, or needlessly destroy the nest or eggs of any bird, except as otherwise provided by this code or any regulation made pursuant thereto."

California Fish and Game Code 3513

Protects California's migratory birds by making it unlawful to take or possess any migratory nongame bird as designated in the Migratory Bird Treaty Act or any part of such migratory nongame birds.

State of California Fully Protected Species

The classification of Fully Protected was the State's initial effort in the 1960's to identify and provide additional protection to those animals that were rare or faced possible extinction. Lists were created for fish, mammals, amphibians and reptiles, birds, and mammals. Most fully protected species have also been listed as threatened or endangered species under ESA and/or California Endangered Species Act (CESA). Fully Protected species may not be taken or possessed at any time and no licenses or permits

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may be issued for their take except for collecting these species for necessary scientific research and relocation of the bird species for the protection of livestock.

California Fish and Game Code, Section 1600, as amended

Under Section 1602 of the Fish and Game Code, CDFG regulates activities that would divert or obstruct the natural flow or substantially change the bed, channel, or bank of any river, stream, or lake that supports fish or wildlife. CDFG has jurisdiction over riparian habitats (e.g., southern willow scrub) associated with watercourses. Jurisdictional waters are delineated by the outer edge of riparian vegetation or at the top of the bank of streams or lakes, whichever is wider. CDFG jurisdiction does not include tidal areas or isolated resources. Section 1602 of the Fish and Game Code requires any person who proposes a project that will substantially divert or obstruct the natural flow or substantially change the bed, channel, or bank of any river, stream, or lake or use materials from a streambed to notify the CDFG before beginning the project. If the CDFG determines that the project may adversely affect existing fish and wildlife resources within a CDFG-jurisdictional water, a Lake or Streambed Alteration Agreement is required.

Native Plant Protection Act

The Native Plant Protection Act (California Fish and Game Code Section. 1900-1913; NPPA) prohibits the taking, possessing, or sale within the state of any plant listed by CDFG as rare, threatened, or endangered. An exception to this prohibition in the Act allows landowners, under specified circumstances, to take listed plant species, provided that the owners first notify CDFG at least 10 days prior to the initiation of activities that would destroy them. The NPPA exempts from “take” prohibition “the removal of endangered or rare native plants from a canal, lateral ditch, building site, or road, or other right of way.”

Porter-Cologne Water Quality Control Act, as amended

The Porter-Cologne Act grants the State Water Resource Control Board (SWRCB) and the RWQCBs power to protect water quality and is the primary vehicle for implementation of California’s responsibilities under the federal Clean Water Act. Any person proposing to discharge waste into a water of the State must file a report of waste discharge with the appropriate regional board.

C. LOCAL

Imperial County General Plan

Table 4.12-1 analyzes the consistency of the proposed project with the applicable policies relating to biological resources from the Imperial County General Plan. While this EIR analyzes the project’s consistency with the General Plan pursuant to State CEQA Guidelines Section 15125(d), the Imperial County Board of Supervisors ultimately determines consistency with the General Plan.

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**TABLE 4.12-1
IMPERIAL COUNTY GENERAL PLAN CONSISTENCY ANALYSIS**

General Plan Policies	Consistent with General Plan?	Analysis
<p>Open Space Conservation Policy: The County shall participate in conducting detailed investigations into the significance, location, extent, and condition of natural resources in the County.</p> <p>Program: Notify any agency responsible for protecting plant and wildlife before approving a project which would impact a rare, sensitive, or unique plant or wildlife habitat.</p>	<p align="center">Yes</p>	<p>A biological technical study was prepared for the Project. The <i>Biological Technical Report for the Campo Verde Solar Energy Project</i> (Heritage, 2012) is a composite of several different surveys and studies that were performed in the project area in an effort to identify biological resources that are present and could be affected by the Project. Applicable agencies responsible for protecting plants and wildlife will be notified of the proposed project and provided an opportunity to comment on this EIR prior to the County's consideration of any project's approvals.</p>
<p>Land Use Element Policy: The General Plan covers the unincorporated area of the County and is not site specific, however, a majority of the privately owned land is located in the area identified by the General Plan as "Agriculture," which is also classified as important burrowing owl habitat, typically in the berms and banks of agricultural fields.</p> <p>Program: Prior to approval of development of existing agricultural land either in form of one parcel or a numerous adjoining parcels equally a size of 10 acres or more shall prepare a Biological survey and mitigate the potential impacts. The survey must be prepared in accordance with the United States Fish and Wildlife and California Department of Fish and Game regulations, or as amended.</p>	<p align="center">Yes</p>	<p>A biological technical study was prepared for the Project. The <i>Biological Technical Report for the Campo Verde Solar Energy Project</i> (Heritage, 2012) is a composite of several different surveys and studies, including a burrowing owl survey that was performed in the project area in an effort to identify biological resources that are present and could be affected by the Project. Applicable agencies responsible for protecting plants and wildlife will be notified of the proposed project and provided an opportunity to comment on this EIR prior to the County's consideration of any project's approvals.</p>

4.12.2 ENVIRONMENTAL SETTING

A. SOLAR GENERATION FACILITY

The survey area includes the solar generation facility site and a 1,000-foot buffer; the proposed gen-tie encompassing a 160-foot right-of-way (ROW) corridor on BLM land (**Figure 4.12-1**). In addition the survey area included the Alternative Gen-Tie across BLM land encompassing a 160-foot gen-tie right-of-way (ROW) corridor on BLM land, and the Private Land Gen-Tie Alternative encompassing a 200-foot buffer on both sides of the ROW. Alternatives are discussed in Section 6.0 of this EIR.

The survey area for most species/resources is defined as the project area plus a 1,000-foot buffer area. The survey area is 4,288 acres in size. Some species required different survey areas which are described on a case-by-case basis.

The following sections describe the existing conditions on lands associated with the solar generation facility (1,990 acres) and associated buffer areas on private lands.

Topography, Soils, Drainage

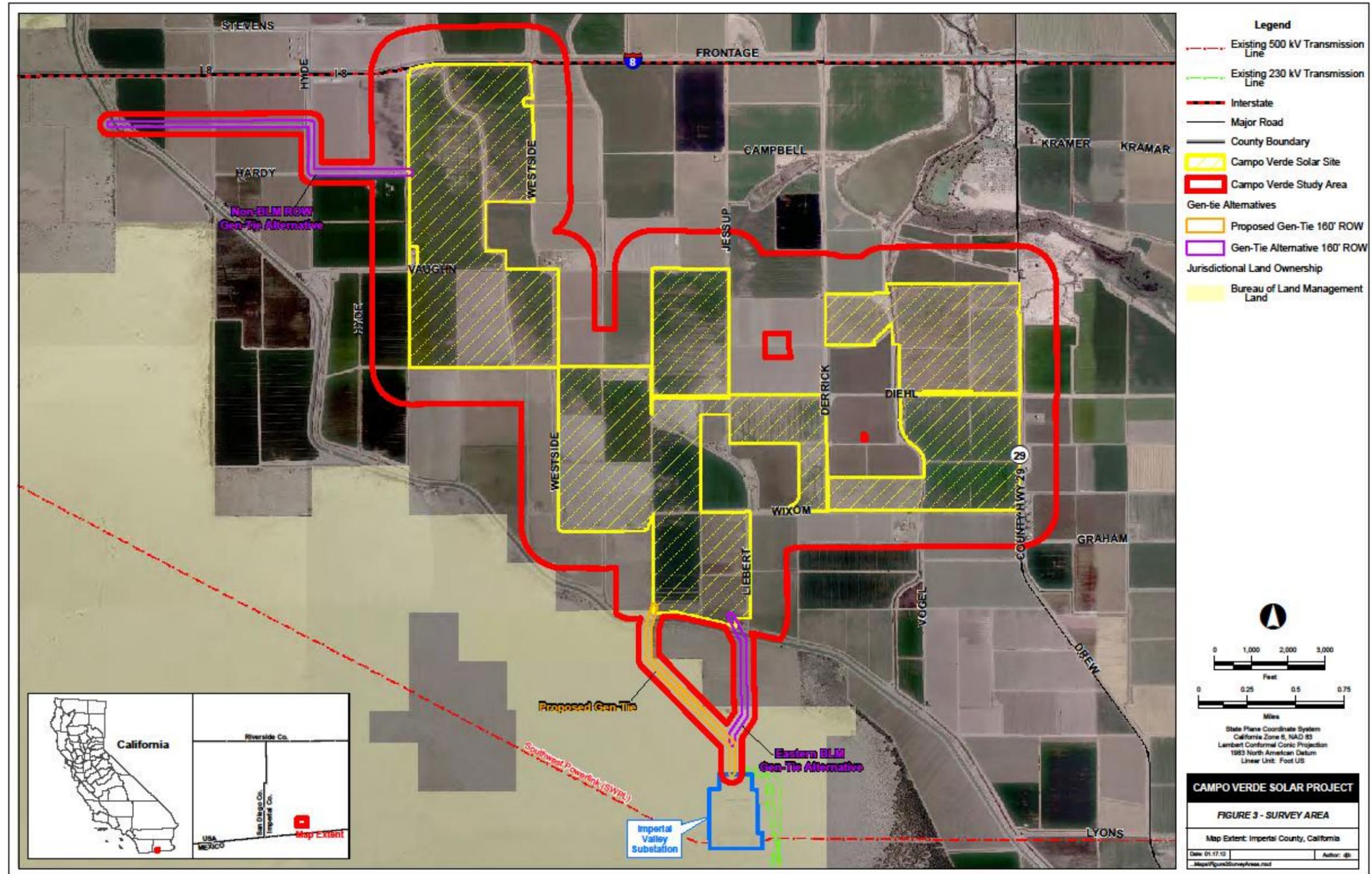
The survey area is located in the Yuha Basin of the Colorado Desert between agricultural lands to the north, east and west, and native desert to the south. The uplands are relatively flat, with sparse vegetation and sand that ranges from soft and rolling to flat and compact. Elevation of the survey area ranges from sea level to 46 feet below mean sea level.

There are ten major soil types found within the survey area, including Badland, Glenbar, Holtville, Imperial-Glenbar, Indio-Vint, Meloland-Holtville, Indio, Vint, Meloland, Rositas soils. These soils are primarily found on flat basin floors and are formed from clay, silt, and sandy alluvium materials.

The solar generation facility site is currently used for growing crops such as wheat, alfalfa, and Bermuda grass. Irrigation water is supplied by a complex, engineered system of concrete-lined canals or lateral canals operated and maintained by the Imperial Irrigation District (IID). The concrete-lined canals and lateral canals are used to deliver water to multiple farm fields and typically contain water at all times except during maintenance periods.

The farm fields are large (typically 80 acres) flat fields graded for flood irrigation. When a field is irrigated, an allocated quantity of water is allowed to flow from the IID delivery canal to a smaller ditch (locally referred to as a “head ditch”), which distributes the water evenly across the field. The head ditches are either earthen or concrete-lined. Another ditch (locally referred to as a “tail ditch”) is located at the opposite, lower elevation side of the field. The tail ditch collects any excess irrigation water and directs it to an IID-operated and maintained drain. The tail ditches on the solar generation facility site are all earthen and are frequently rebuilt when the fields are plowed and disked. Water generally flows from south to north through the solar generation facility site; the IID drains flow to the New River which flows to the Salton Sea.

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Source: Heritage, 2012.

FIGURE 4.12-1
BIOLOGICAL RESOURCES SURVEY AREA

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General Vegetation

The solar generation facility site is comprised of active agricultural lands growing crops such as wheat, oats, alfalfa, and Bermuda grass. Native species of vegetation on the site are absent, with a few exceptions; no undisturbed native habitats are present on the site. Areas of native plants and disturbed vegetation communities occur in scattered areas including fallow fields, along “hedge rows,” or along irrigation drains and canals. The fields on the site are bordered by a series of earthen and concrete canals and drains that provide irrigation to the fields. Sporadic riparian and wetland vegetation occur along portions of some of the earthen canals and berms. This vegetation is a mixture of native and non-native species such as arrow weed (*Pluchea serricea*) and cattails (*Typha* sp.), two native species, and tamarisk (*Tamarix ramosissima*), bitter dock (*Rumex obtusifolius*), and sprangletop (*Leptochloa* sp.).

Routine maintenance of these drains and canals involves the periodic vegetation removal. Vegetation provides resistance to hydrologic flow. Thus, vegetation removal allows increased flow through reduced resistance. Because vegetation clearing is a routine activity, the wetland vegetation is mostly sparse and not well developed. The wetland vegetation along these canals and drains varies due to the periodic vegetation clearing activities.

The southwestern portion of the solar generation facility site contains several parcels that are fallow agriculture. Some native vegetation is beginning to recolonize fallow areas but does not represent native habitat. However, if not actively farmed, native species could eventually fully recolonize these areas. Vegetation was mapped on fallow parcels see Vegetation Mapbook, Attachment 1, Figure 6 of the BTR included as **Appendix J** of this EIR) but a rare plant survey was not conducted. Given the absence of fall-blooming species in undisturbed native habitats on BLM lands, the decision was made not to conduct rare plant surveys. The field assessment consisted of spot-checking areas within these fields for evidence of fall germination. These areas will be surveyed during the spring of 2012.

Vegetation communities were mapped within the survey area on a one-inch-equals-400-foot color aerial photograph (see Vegetation Mapbook, Attachment 1, Figure 6 of the BTR included as **Appendix J** of this EIR). A total of 33 plant species, representing 17 plant families, were identified within the survey area during fall surveys. **Table 4.12-2** provides a complete list of plant species observed in the project area.

**TABLE 4.12-2
PLANT SPECIES OBSERVED IN STUDY AREA**

Family/Scientific Name	Common Name	Habitat	Observed in Campo Verde Project Area (BLM Lands)*
Ephedraceae			
<i>Ephedra trifurca</i>	Three-fork ephedra	DS	Yes
Agavaceae			
<i>Hesperocallis undulata</i>	Desert lily	DS	Yes
Poaceae			
<i>Cynodon dactylon</i>	Bermuda grass	AD	Yes
<i>Distichlis spicata</i>	Salt grass	Canals	No
<i>Phragmites australis</i>	Common reed	Canals	No
<i>Schismus arabicus</i>	Arabian schismus	DS	Yes
Typhaceae			
<i>Typha latifolia</i>	Cattails	Canals	No

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**TABLE 4.12-2
PLANT SPECIES OBSERVED IN STUDY AREA**

Family/Scientific Name	Common Name	Habitat	Observed in Campo Verde Project Area (BLM Lands)*
Amaranthaceae (inc. Chenopodiaceae)			
<i>Atriplex canescens</i>	Shadscale	DS	Yes
<i>Atriplex lentiformis</i>	Big saltbush	DS	Yes
<i>Bassia hyssopifolia</i>	Five-hook bassia	AD	No
Asteraceae			
<i>Ambrosia dumosa</i>	White Bursage	DS	Yes
<i>Isocoma acradenia</i>	Goldenbush	DS	Yes
<i>Palafoxia arida</i> var. <i>arida</i>	Spanish needles	DS	Yes
<i>Pluchea odorata</i>	Salt marsh fleabane	Canals	No
<i>Pluchea serricea</i>	Arrow-weed	Canal Banks	No
Boraginaceae			
<i>Cryptantha angustifolia</i>	Narrow-leaf cryptantha	DS	Yes
<i>Cryptantha maritima</i>	White-hair cryptantha	DS	Yes
Brassicaceae			
<i>Brassica tournefortii</i>	Sahara mustard	DS	Yes
Ehretiaceae			
<i>Tiquilia palmeri</i>	Palmer's coldenia	DS	Yes
<i>Tiquilia plicata</i>	Plicate coldenia	DS	Yes
Fabaceae			
<i>Dallea mollissima</i>	Soft prairie clover	DS	Yes
<i>Prosopis glandulosa</i> var. <i>torreyana</i>	Honey mesquite	Wash	Yes
<i>Prosopis pubescens</i>	Screw bean mesquite	Wash	No
Onagraceae			
<i>Camissonia brevipes</i>	Sun cup	DS	Yes
<i>Oenothera deltoides</i>	Basket evening-primrose	DS	Yes
Plantaginaceae			
<i>Plantago ovata</i>	Woolly plantain	DS	Yes
<i>Plantago patagonica</i>	Desert plantain	DS	Yes
Polygonaceae			
<i>Eriogonum thomasii</i>	Buckwheat	DS	Yes
Resedaceae			
<i>Oligomeris linifolia</i>	Narrow-leaf oligomeris	DS	Yes
Solanaceae			
<i>Lycium</i> sp.	Desert thorn	DS	Yes
Tamaricaceae			
<i>Tamarix ramosissima</i>	Tamarisk	Ditch, Canal	Yes
<i>Tamarix aphylla</i>	Athel	DS	Yes
Zygophyllaceae			
<i>Larrea tridentata</i>	Creosote bush	DS	Yes

Source: Heritage, 2012. Note: Yes = Observed on BLM land, No = Observed only on Private Lands

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No sensitive species were observed in the project area. Fifteen vegetation communities were mapped within the private land survey area (i.e. the solar generation facility site and associated buffers on private land) (Table 4.12-3). Vegetation community classifications in the BTR follow A Manual of California Vegetation and Preliminary Descriptions of the Terrestrial Natural Communities of California. Communities that are similar in composition were lumped together in the discussion following Table 4.12-3.

**TABLE 4.12-3
VEGETATION COMMUNITIES/LAND COVER TYPES WITHIN THE SURVEY AREA**

Vegetation Community	Acres
Active Agriculture (AG-A)	3,780.3
Fallow Agriculture (AG-F)	134.8
Arrow Weed Thicket (AS)	9.3
Arrow Weed Thicket - Disturbed (AS-D)	11.3
Athel Tamarisk Type Woodland (AW)	1.5
Cattail Marsh (CM)	2.8
Cattail Marsh - Disturbed (CM-D)	0.6
Common Reed Marsh (CRM)	5.0
Common Reed Marsh - Disturbed (CRM-D)	9.6
Developed (DEV)	121.5
Disturbed Wetland (DW)	16.6
Open Water with Arrow Weed Thicket (OW)	1.3
Quailbush Scrub (BSS)	38.8
Quailbush Scrub - Disturbed (BSS-D)	27.9
Tamarisk Thicket (TS)	5.9
Total (Private Lands)	4,167.5

Source: Heritage, 2012.

Agriculture (Ag)/Fallow Agriculture (AG-F)

Active agricultural fields encompass 3,780.3 acres of the survey area (approximately 91 percent of the private land survey area). The vast majority of the proposed solar generation facility site occurs in this habitat type. Wheat, oats, alfalfa, and Bermuda grass are currently the primary crops within the fields. Agricultural weeds such as five-hook bassia are present along the edge of the fields.

Fallow agricultural areas are not currently under cultivation and are being invaded by non-native weeds such as five-hook bassia, tamarisk, Saharan mustard (*Brassica tournefortii*), and the native shrub quailbush. Though quailbush and tamarisk are facultative (i.e. species that usually occur in wetlands, but occasionally are found in nonwetlands) wetland species, there are no wetland areas in the fallow agricultural habitats. Areas qualifying as tamarisk thickets (and potential wetland areas) are addressed under "Cattail Marsh (CM and CM-D)," below. Fallow agricultural fields encompass 193.6 acres of the survey area (approximately 5 percent of the private land survey area).

Arrow Weed Thicket (AS and AS-D)

Arrow weed thicket is a shrub community dominated or co-dominated by arrow weed (*Pluchea serricea*). The canopy is intermittent to continuous with the shrub canopy usually less than 5 meters (or approximately 16 feet) in height. The herbaceous layer in these communities is generally sparse. This

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community occurs around springs, seeps, irrigation ditches, canyon bottoms, stream borders, and seasonally flooded washes in desert. The USFWS Wetland Inventory recognizes this as a facultative wetland species. The community occurs throughout the Mojave, Colorado and Sonoran deserts of California. Within the survey area, this community occurs along irrigation drains and canals or other areas with a high water table. Tamarisk (*Tamarix ramosissima*), cattails (*Typha* sp.), and common reed (*Phragmites australis*) are major associates or co-dominants in some areas. Salt grass (*Distichlis spicata*), salt marsh fleabane (*Pluchea odorata*) and goldenbush (*Isocoma acradenia*) are sporadic minor associates. In many instances these earthen irrigation canals and drains are routinely cleared of vegetation to facilitate hydrologic flow. Areas where the vegetation has not fully recovered from the previous clearing are classified as disturbed arrow weed thicket.

Approximately 20.6 acres of arrow weed thicket (including the disturbed component) is present along the IID-managed canals (0.5 percent of the private land survey area). Most of these areas are regularly cleared of this vegetation and they are constantly changing.

Tamarisk Woodland (AW) and Tamarisk Thicket (TS)

Individuals of athel (*Tamarix aphylla*) have been planted in large numbers as a windscreen along the edges of agricultural fields. This semi-evergreen or evergreen tree reaches a height of 12 meters (or approximately 39 feet). The herbaceous layer in these communities is generally sparse. Approximately 1.5 acres (< 0.1 percent of the private land survey area) is of tamarisk woodland.

Tamarisk thicket is a shrub community dominated or co-dominated by tamarisk (*Tamarix ramosissima*). This non-native species has invaded many areas of native riparian vegetation where they develop dense, monospecific stands across floodplains, wetlands, and lake margins. The USFWS Wetland Inventory recognizes this as a facultative species. The canopy is continuous to open with the shrub canopy usually less than 8 meters (approximately 26 feet) in height. The herbaceous layer in these communities is generally sparse. This community occurs throughout watercourses in the Mojave, Colorado and Sonoran deserts. Within the survey area, this community occurs within irrigation drains and canals, generally along the channel bottoms and lower slopes or within fallow fields with a high water table. Arrow weed (*Pluchea serricea*), cattails (*Typha* sp.), and common reed (*Phragmites australis*) are major associates to co-dominants in some areas. Approximately 5.9 acres (0.1 percent of the private land survey area) of tamarisk thicket are present.

Quailbush Scrub (BSS and BSS-D)

Quailbush scrub encompasses 66.7 acres of the survey area (approximately 1.5 percent of the private land survey area). Quailbush scrub is a shrub community with quailbush (*Atriplex lentiformis* ssp. *lentiformis*), the sole dominant in this community. The canopy is less than 5 meters (or approximately 16 feet) in height and open to dense with a variable herbaceous layer. This community occurs in alkali sinks, flats, washes, wetlands and gentle to steep slopes, usually on saline or alkaline clays. This species is recognized as a USFWS Wetland Inventory facultative species. Fluvial disturbances and groundwater availability are primarily responsible for this species occurrence. Within the project area this community occurs in very dense stands along the borders of agriculture fields and in fallow agriculture fields. Though quailbush is a native shrub, it readily colonizes fallow fields; these patches still support a very high number and density of non-native invasive species, especially five-hook bassia (*Bassia hyssopifolia*). Native plant species diversity is low in this community.

Cattail Marsh (CM and CM-D)

Cattail marsh encompasses 3.4 acres of the survey area (< 0.1 percent of the private land survey area). These are semi-permanently flooded freshwater or brackish marshes that are dominated or co-dominated by cattails (*Typha latifolia*) throughout the state. Within the survey area, this community occurs along the channel bottoms of the earthen canals and drains where there is relatively permanent water source. Tamarisk (*Tamarix ramosissima*), arrow weed (*Pluchea serricea*) and common reed (*Phragmites australis*) are co-dominants or major associates in some areas. In many instances these earthen irrigation canals and drains are routinely cleared of vegetation to facilitate hydrologic flow. Areas where the vegetation has not fully recovered from the previous clearing are classified as disturbed cattail marsh.

Common Reed Marsh (CRM and CRM-D)

Common reed marsh encompasses 14.6 acres of the survey area (approximately 0.3 percent of the private land survey area). These are semi-permanently flooded and slightly brackish marshes, ditches and impoundments that are dominated or co-dominated by common reed (*Phragmites australis*). Native stands occur in wetlands throughout the Mojave, Colorado and Sonoran deserts. The USFSW Wetland Inventory recognizes common reed as a facultative wetland species. Within the survey area, these marshes occur along the channel bottoms of the canals and drains with a more permanent water source. Cattails (*Typha latifolia*), tamarisk (*Tamarix ramosissima*), and arrow weed (*Pluchea serricea*) are co-dominants or major associates. In many instances these earthen irrigation canals and drains are routinely cleared of vegetation to facilitate hydrologic flow. Areas where the vegetation has not fully recovered from the previous clearing are classified as disturbed common reed marsh.

Disturbed Wetland (DW)

Disturbed wetland encompasses 16.6 acres of the survey area (approximately 0.4 percent of the private land survey area). Earthen canals and drains that are regularly cleared of vegetation usually support herbaceous non-native species; these areas have been mapped as disturbed wetlands. Most of the species in the disturbed wetlands are non-native grasses and forbs; with the exception of salt grass, they were not identifiable at the time of the fall survey. Other species expected to occur in these drainages include sprangletop (*Leptochloa* spp.), umbrella sedge (*Cyperus* spp.) and dock (*Rumex* spp.).

Developed (DEV)

Approximately 121.5 acres of developed land occurs within the survey area (approximately 3 percent of the private land survey area). These areas contain little to no vegetation. Developed areas consist of residential dwellings, agricultural buildings, and storage areas.

Open Water with Arrow Weed Thicket (OW)

This habitat is restricted to the Westside Main Canal. Arrow weed thicket is restricted to a narrow band along the banks of this canal. Arrow weed is the dominant species and in many areas the only species along the banks of this canal. Approximately 20.6 acres (0.5 percent of the survey area) occur in this cover type.

D. GENERAL WILDLIFE

The wildlife species observed in and around the solar generation facility site survey area were typical of the disturbed and agricultural habitats, which provide cover, foraging, and breeding habitat for a

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variety of wildlife species. **Table 4.12-4** provides a list of all wildlife species observed in the survey area and some of the primary species are described below.

**TABLE 4.12-4
WILDLIFE SPECIES OBSERVED/DETECTED IN SURVEY AREA**

Common Name	Scientific Name
Birds	
American Coot	<i>Fulica americana</i>
American Kestrel	<i>Falco sparverius</i>
Barn Swallow	<i>Hirundo rustica</i>
Black Phoebe	<i>Sayornis nigricans</i>
Blue-gray Gnatcatcher	<i>Poliopitila caerulea</i>
Burrowing Owl	<i>Athene cunicularia</i>
California Gull	<i>Larus californicus</i>
Cattle Egret	<i>Bubulcus ibis</i>
Cliff Swallow	<i>Petrochelidon pyrrhonota</i>
Common Ground Dove	<i>Columbia passerina</i>
Common Raven	<i>Corvus corax</i>
European Starling	<i>Sturnus vulgaris</i>
Gambel's Quail	<i>Callipepla gambelii</i>
Great-tailed Grackle	<i>Quiscalus mexicanus</i>
Greater Roadrunner	<i>Geococcyx californianus</i>
Horned Lark	<i>Eremophila alpestris</i>
Killdeer	<i>Charadrius vociferus</i>
Loggerhead Shrike	<i>Lanius ludovicianus</i>
Long-billed Curlew	<i>Numenius americanus</i>
Mourning Dove	<i>Zenaida macroura</i>
Northern Harrier	<i>Circus cyaneus</i>
Northern Mockingbird	<i>Mimus polyglottos</i>
Prairie Falcon	<i>Falco mexicanus</i>
Red-tailed Hawk	<i>Buteo jamaicensis</i>
Red-winged Blackbird	<i>Agelaius phoeniceus</i>
Rock Dove	<i>Columbia livia</i>
Rufous-crowned Sparrow	<i>Aimophila ruficeps</i>
Savannah Sparrow	<i>Passerculus sandwichensis</i>
Say's Phoebe	<i>Sayornis saya</i>
Snowy Egret	<i>Egretta thula</i>
Song Sparrow	<i>Melospiza melodia</i>
Turkey Vulture	<i>Cathartes aura</i>
Western Kingbird	<i>Tyrannus verticalis</i>

**TABLE 4.12-4
WILDLIFE SPECIES OBSERVED/DETECTED IN SURVEY AREA**

Common Name	Scientific Name
Western Meadowlark	<i>Sturnella neglecta</i>
White-crowned Sparrow	<i>Zonotrichia leucophrys</i>
White-faced Ibis	<i>Plegadis chihi</i>
White-winged Dove	<i>Zenaida asiatica</i>
Yellow-rumped Warbler (Audubon's)	<i>Dendroica coronata auduboni</i>
Mammals	
Bobcat	<i>Lynx rufus</i>
Coyote	<i>Canis latrans</i>
Desert cottontail	<i>Sylvilagus audubonii</i>
Kangaroo rat	<i>Dipodomys</i> sp.
Round-tailed Ground Squirrel	<i>Xerospermophilus tereticaudus</i>
Reptiles	
Desert Iguana	<i>Dipsosaurus dorsalis</i>
Flat-tailed Horned Lizard	<i>Phrynosoma mcallii</i>
Gecko	<i>Coleonix</i> sp.
Western whiptail	<i>Cnemidophorus tigris</i>

Source: Heritage, 2012.

Invertebrates

The survey area contains suitable habitat for a wide variety of invertebrates. Within the agricultural fields that comprise the solar generation facility site and along portions of the gen-tie, harvester ants (*Pogonomyrmex spp.*), grasshoppers (*Orthoptera spp.*) and flies (*Diptera spp.*) were observed regularly. Cabbage white (*Pieris rapae*) and other butterflies and moths (*Lepidoptera spp.*) were also regularly observed in all portions of the survey area.

Amphibians

Most amphibians require moisture for at least a portion of their life cycle, with many requiring a permanent water source for habitat and reproduction. Terrestrial amphibians have adapted to more arid conditions and are not completely dependent on a perennial or standing source of water. These species avoid dehydration by burrowing beneath the soil or leaf litter during the day and during the dry season.

No amphibians were observed within the survey area. American Bullfrog (*Rana catasbeiana*) was observed in close vicinity to the survey area. Bullfrogs typically occupy the large drains that carry water relatively permanently.

Reptiles

The diversity and abundance of reptile species varies with habitat type. Many reptiles are restricted to certain plant communities and soil types, although some of these species would also forage in adjacent communities. Other species are more ubiquitous, using a variety of vegetation types for

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foraging and shelter. A diverse list of species of lizards and snakes could be expected to inhabit both agricultural and/or desert habitats.

No reptile species were observed in the survey area.

Birds

The diversity of bird species varies with respect to the character, quality, and diversity of vegetation communities. Due to the homogeneity of much of the habitat within the private land portions of the survey area, bird diversity was relatively low, but did increase in and around the larger drains.

During winter avian use surveys previously conducted in the area, Western Meadowlark (*Sturnella neglecta*) was the most frequently detected species as well as the most widespread. Other frequently detected species include Horned Lark (*Eremophila alpestris*), Black Phoebe (*Sayornis nigricans*), Long-billed Curlew (*Numenius americanus*), and Song Sparrow (*Melospiza melodia*). Other widespread species include Horned Lark, Black Phoebe, and Mourning Dove (*Zenaida macroura*). Horned Larks were by far the most numerous species during the survey. Long-billed Curlews were the second most numerous species. The most commonly observed species were birds typically found in agricultural areas.

During spring avian use surveys in the area, Red-winged Blackbird was the most frequently detected species. Other frequently detected species include Western Meadowlark (*Sturnella neglecta*), Long-billed Curlew (*Numenius americanus*), Mourning Dove (*Zenaida macroura*), Horned Lark (*Eremophila alpestris*) and Cliff Swallow (*Petrochelidon pyrrhonota*). Western Meadowlark was the most widespread species. Other widespread species includes Red-winged Blackbird, Horned Lark, Mourning Dove, Cliff Swallow, and Long-billed Curlew (*Numenius americanus*). Red-winged Blackbirds were the most numerous species during the survey. Other numerous species included Cattle Egrets (*Bubulcus ibis*) and Long-billed Curlews. As was observed in the winter surveys, the most common species were birds typically found in agricultural areas.

The only trees present in the area are associated with residences or other buildings. These trees are limited in number and distribution but could represent potentially suitable nesting substrate for several species of raptors. Possible nesting species include red-tailed hawk (*Buteo jamaicensis*) and great-horned owl (*Bubo virginianus*). No raptor nests were observed during any of the site visits. Other common raptors included American Kestrel, Prairie Falcon, Burrowing Owl, and Barn Owl.

Mammals

Suitable mammal habitat is limited in the agricultural lands within the survey area. Desert black-tailed jackrabbit (*Lepus californicus deserticola*), desert cottontail (*Sylvilagus audubonii*), round-tailed ground squirrel (*Spermophilus tereticaudus*), desert kangaroo rat (*Dipodomys deserti deserti*), and coyote (*Canis latrans*) were detected often within all project component survey areas through direct observation as well as burrows, tracks, and scat, though not as frequently as in native habitats. A bobcat (*Lynx rufus*) was also observed.

Sensitive Biological Resources

Special Status Plant Species

No sensitive plant species were observed on the solar generation facility site, private land portions of the gen-tie or associated buffers, and none are expected to occur given the limited amount of suitable native habitat and the ongoing disturbances related to the agricultural activities.

Federally Listed Species

Based on the literature review, no federally-listed threatened or endangered plant species were identified as having the potential to occur within the survey area. No federally-listed threatened or endangered species were observed during focused rare plant surveys.

State-listed Species

Based on the literature review, no state-listed plant species were identified as having the potential to occur within the survey area. No state-listed species were observed on-site during focused rare plant surveys.

BLM Sensitive Species

BLM sensitive species include all species currently on CNPS List 1B, as well as others that are designated by the California BLM State Director. No BLM sensitive species were identified as having the potential to occur within the survey area. No BLM sensitive species were observed during focused rare plant surveys.

Priority Plant Species

Priority plant species are rare, unusual, or key species that are not sensitive by BLM or listed as threatened and endangered. Priority plant species are specifically plants that are included on the CNPS Lists 2–4.

One priority plant species was identified as having the potential to occur within the survey area: California satintail (*Imperata brevifoila*). This species is discussed below.

California satintail (Imperata brevifoila)

California satintail has been reported southeast of the Imperial Valley Substation, approximately 3 miles from the solar generation facility site. This species occurs in desert wash and riparian scrub habitats. Few desert wash habitats occur in the survey area and none on the solar generation facility site. California satintail has a low to moderate potential to occur within the tributary of the New River northeast of the site. This species is not expected to occur within the drains and canals on the solar generation facility site. The riparian habitat along the larger canals and drains on the solar generation facility site support non-native (e.g., tamarisk) or native species that grow in very dense stands (cattails and arrow weed). Due to the density of riparian vegetation, growth of other species is restricted. Furthermore, vegetation along canals is periodically removed. Therefore, California satintail is not anticipated to occur within drains and canals on the solar generation facility site.

Special Status Wildlife Species

Fourteen special status wildlife species were determined to have the potential to occur within the survey area. Species whose occurrence is most pertinent to the private land portions of the survey area are discussed in detail below. This includes federally listed species, state listed species, and BLM sensitive species that are known to occur in the Imperial Valley, as well as CDFG species of special concern that were observed during surveys.

Federally Listed Species

The following federally listed species are discussed in this section because their habitat requirements and/or potential for occurrence are most pertinent to the private land portion of the survey area. However, the following discussions evaluate the potential for occurrence in both the private land

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portion of the survey area as well as the BLM survey area. Peninsular bighorn sheep (*O. c. nelsoni*; endangered) is discussed under the Environmental Setting for the gen-tie, below.

Southwestern Willow Flycatcher

Species Profile. Southwestern Willow Flycatcher (SWFL) is federally listed as endangered. All willow flycatchers in California, including the southwestern and two other subspecies (*E. t. brewsteri* and *E. t. adastus*) are state-listed as endangered. Willow Flycatchers are in the Tyrannidae family and are one of ten species of Empidonax flycatchers in the United States. Empidonax flycatchers are difficult to distinguish visually but have distinctive songs. SWFL is generally paler than other willow flycatcher subspecies and differs in morphology (i.e. shape, form, size). SWFLs are migrants, arriving on their breeding grounds in mid-May to early June. SWFL migrates south from its breeding range in August or September. Several subspecies of Willow Flycatcher are known to migrate through southern California, with the most common migrant being *E. t. brewsteri*. It is virtually impossible to differentiate between subspecies of Willow Flycatcher during migration. SWFL requires riparian habitat with willow (*Salix* spp.) thickets for breeding. Understory species include mule fat (*Baccharis* sp.) and arrow weed (*Pluchea* sp.). SWFLs also nest in areas with tamarisk (*Tamarix* spp.) and Russian olive (*Eleagnus angustifolia*) where these species have replaced the native willow. Surface water is required at nesting sites. Estimated nesting habitat patch size varies from 0.2 to 1.5 acres. Nests are constructed in densely vegetated thickets with trees between 13 and 23 feet in height.

Threats in the United States include loss of riparian habitat due to water diversion, flood control, urbanization, grazing, and invasion of non-native species. Parasitism by brown-headed cowbirds (*Molothrus ater*) has been a significant factor in the decline of this species in California, Arizona and elsewhere.

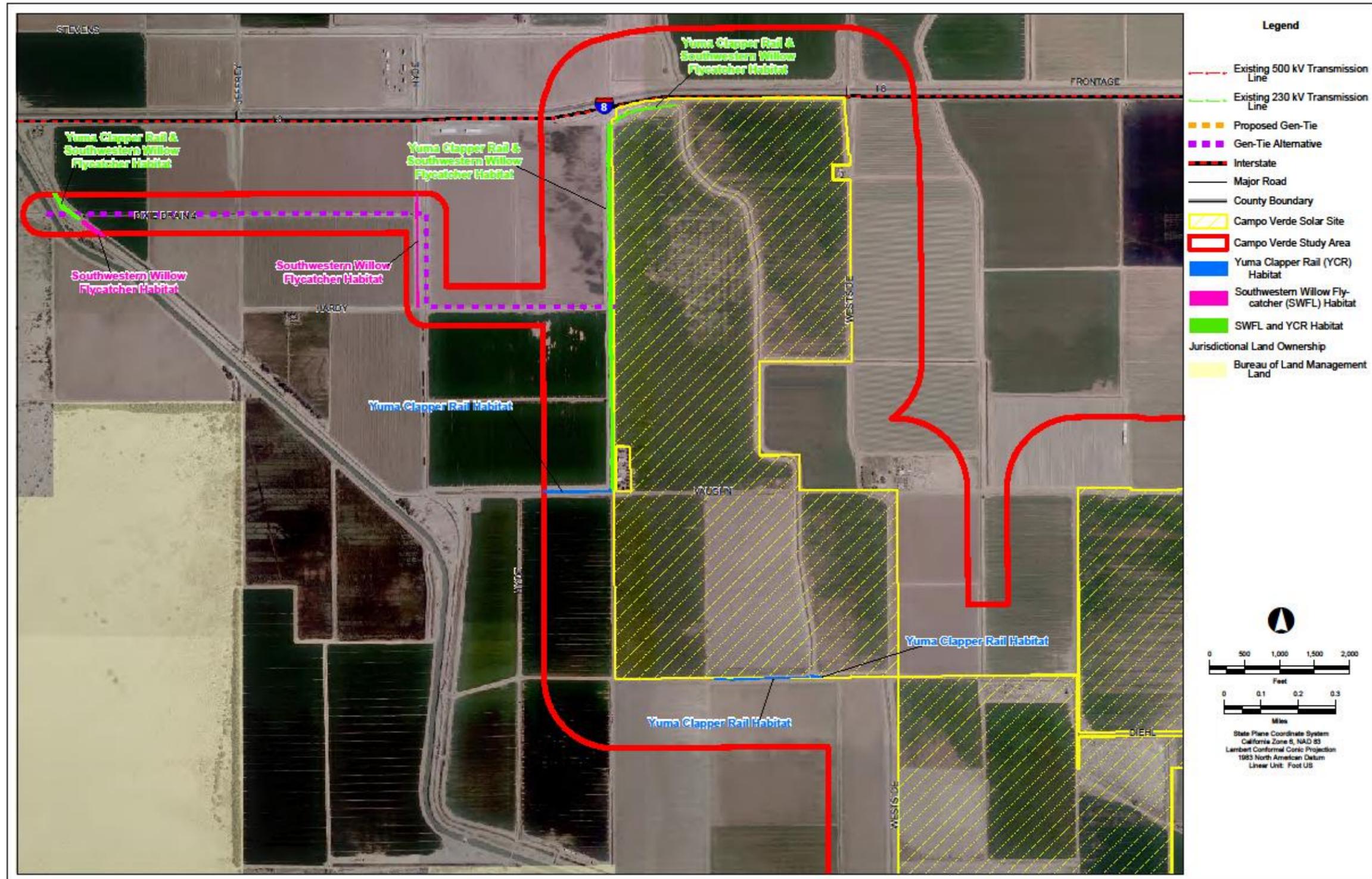
SWFL breeds in southern California, Arizona, New Mexico, southern Nevada, southern Utah, western Texas, northwestern Mexico, and possibly southwestern Colorado. It winters in Mexico, Central America, and possibly northern South America. Historically common in all the lower-elevation riparian areas of southern California, the SWFL was found in the Los Angeles Basin, San Bernardino/Riverside County area, and San Diego County. SWFL persists in the Colorado, Owens, Kern, Mojave, Santa Ana, Santa Margarita, San Luis Rey, Santa Clara, Santa Ynez, Sweetwater, and San Dieguito river systems and in San Timeteo, Pilgrim, and Temecula Creeks.

Critical Habitat. Critical habitat was designated for the SWFL on October 19, 2005 in San Diego County, California and in Arizona. No critical habitat was designated within Imperial County, California.

Occurrence. SWFLs are not likely to nest within the survey area, but may migrate through the project area and possibly forage during migration within the arrow weed scrub and tamarisk scrub habitats associated with portions or all of Fig Drain, Diehl Drain, Wixom Drain, Dixie 3A Drain, Westside Drain, and Wormwood 7 Drain (**Figure 4.12-2A**, **Figure 4.12-2B** and **Figure 4.12-2C**). Flycatcher vocalizations have been heard during recent biological surveys (including protocol-level SWFL surveys) near the project area along the Westside Main Canal.

Two Willow Flycatcher subspecies are known to migrate through the Imperial Valley and in the vicinity of the Campo Verde Solar Project: SWFL (*Empidonax trailii extimus*) and Northwestern Willow Flycatcher (*Empidonax trailii brewsteri*). These two subspecies are nearly identical in appearance, have nearly identical vocalizations, and are, thus, nearly impossible to distinguish in the field.

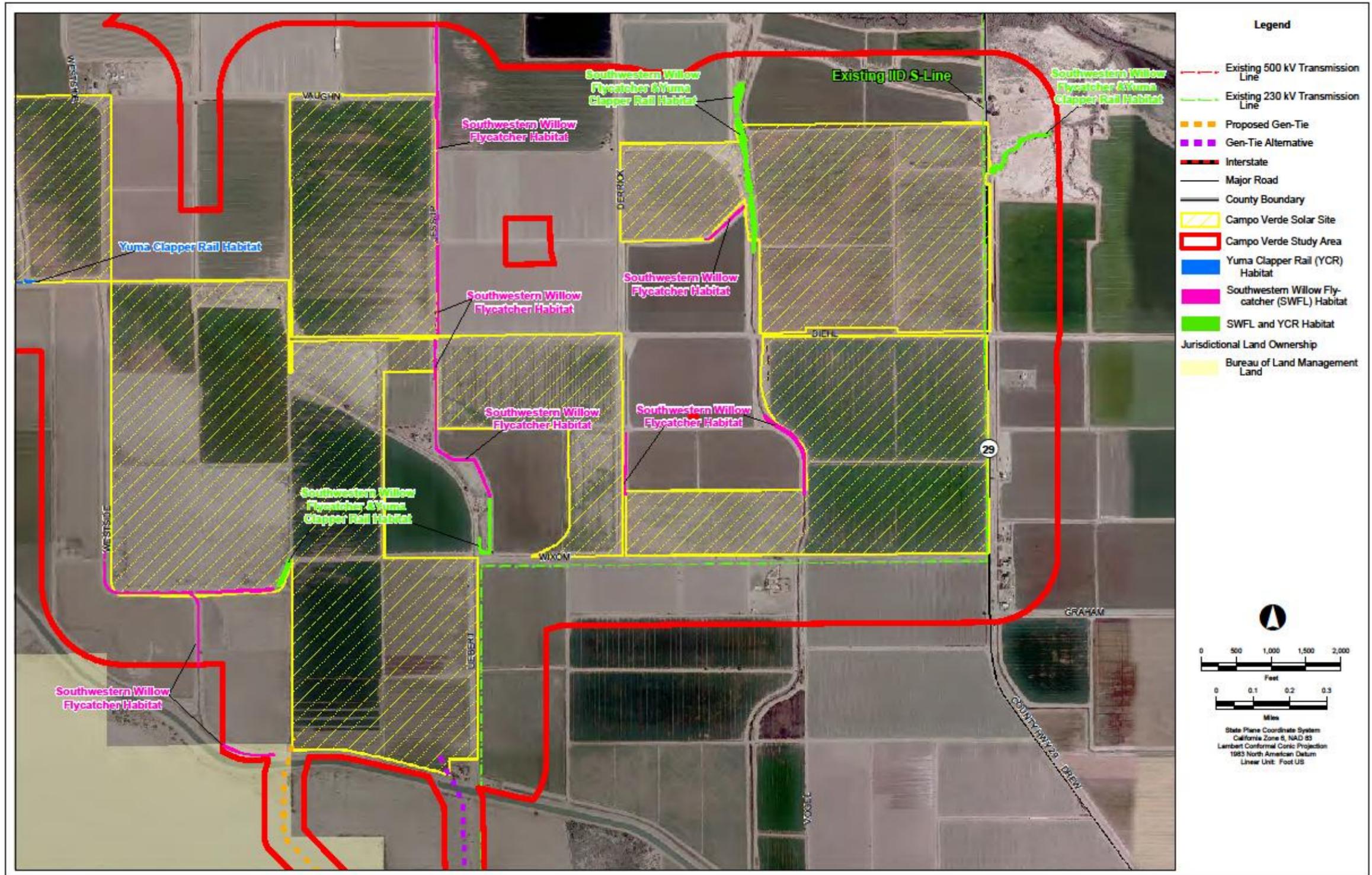
Willow Flycatchers were detected during surveys conducted for other solar projects in the area. Protocol-level surveys were conducted to determine their subspecies and migration status. Based on



Source: Heritage 2012.

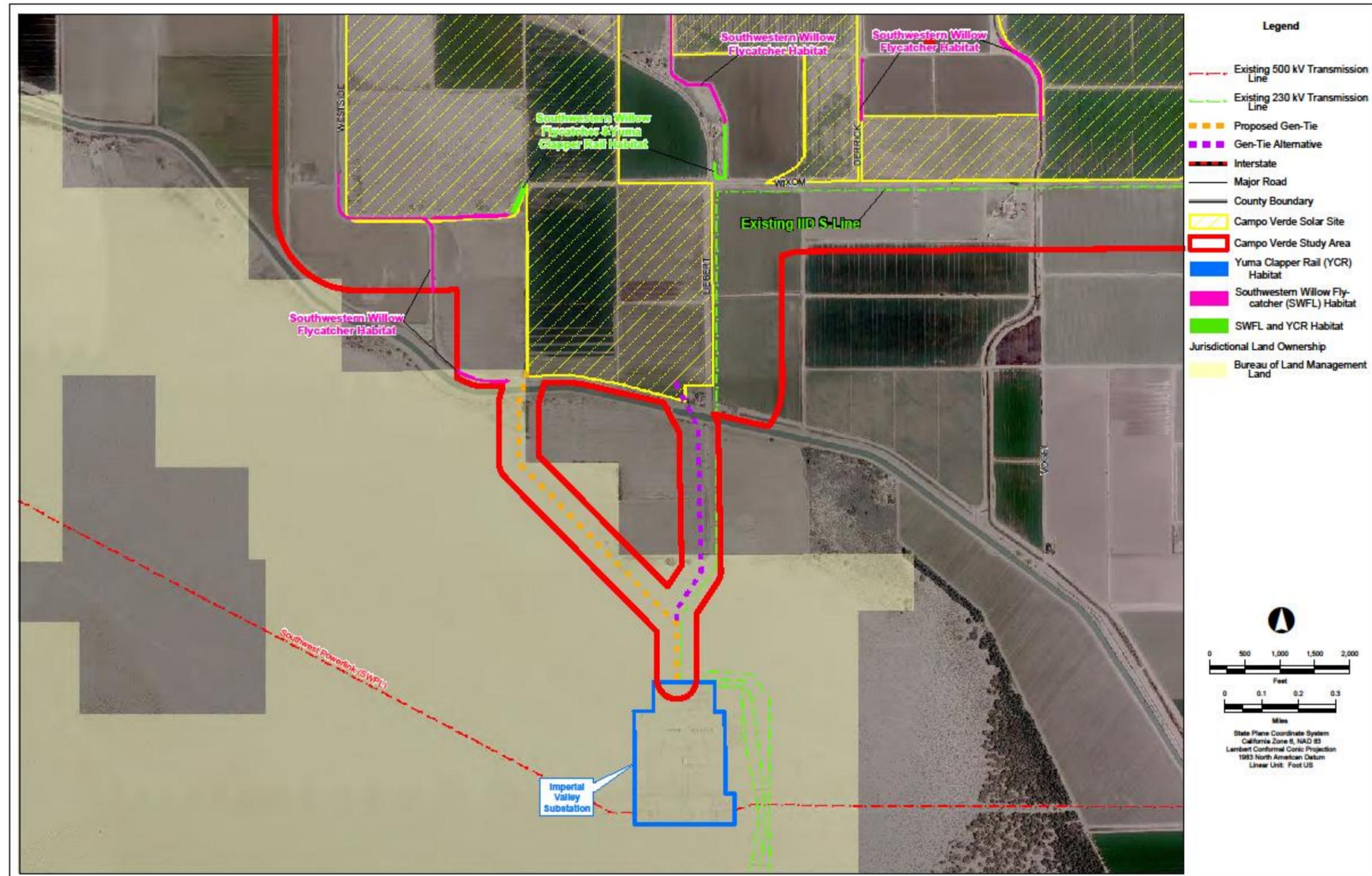
FIGURE 4.12-2A
SOUTHWESTERN WILLOW FLYCATCHER AND YUMA CLAPPER RAIL HABITAT

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Source: Heritage 2012.

FIGURE 4.12-2B
SOUTHWESTERN WILLOW FLYCATCHER AND YUMA CLAPPER RAIL HABITAT



Source: Heritage 2012.

FIGURE 4.12-2C
SOUTHWESTERN WILLOW FLYCATCHER AND YUMA CLAPPER RAIL HABITAT

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the results, it was concluded that the Willow Flycatchers detected were migrants. No resident or nesting SWFLs were detected.

Breeding SWFLs are riparian obligates, typically nesting in relatively dense riparian vegetation where surface water is present or soil moisture is high enough to maintain the appropriate vegetation characteristics. While some of the vegetation communities within the solar generation facility site survey area include some species associated with riparian areas, and some of the canals and drains have surface water and high soil moisture, none of the areas support vegetation that is tall or dense enough for nesting. There is no Willow Flycatcher breeding habitat in the survey area. Additionally, species occurrence records from the California Natural Diversity Database do not indicate the presence of Willow Flycatchers in the vicinity of the survey area. Therefore, the available data, combined with the field surveys, indicate that there is no known suitable nesting habitat for SWFLs in or around the survey area. Furthermore, SWFLs would be expected to be present in the solar generation facility site survey area only as migrants in the vicinity of portions or all of Fig Drain, Diehl Drain, Wixom Drain, Dixie 3 Drain, Dixie 3A Drain, Dixie 3B Drain, Dixie 4 Drain, Westside Drain, Forget-Me-Not Drain 1, and Wormwood 7 Drain. These data indicate that Willow Flycatchers (*E.t. extimus*, *E.t. brewsteri* or both) migrate through the Westside Main Canal corridor and may forage in the tamarisk and arrow weed vegetation during migration. However, in order to provide the most conservative assessment, this analysis will assume they are the southwestern subspecies. Potential SWFL migration habitat in the project area is shown in **Figure 4.12-2A**, **Figure 4.12-2B** and **Figure 4.12-2C**.

Yuma Clapper Rail

Species Profile. The Yuma Clapper Rail (YCR) was federally listed as endangered March 11, 1967, under the Endangered Species Preservation Act of October 15, 1966, and state-listed as threatened February 22, 1978. The YCR is also protected under the Migratory Bird Treaty Act and similar State laws.

This bird breeds in freshwater marshes along the Colorado River from Needles, California, to the Colorado River delta and at the Salton Sea. The YCR breeds in freshwater marshes and brackish waters and nests on firm, elevated ground, often under small bushes. It typically occupies emergent marsh vegetation, such as pickleweed and cordgrass, as well as mature stands of bulrush and cattail around the Salton Sea. High water levels may force them into willow and tamarisk stands. Tamarisk is also used after breeding and in winter at some sites. Nests are built between March and late July in clumps of living emergent vegetation over shallow water. Typical home ranges exceed 17 acres, increasing after the breeding season.

Crayfish dominates the diet of YCR, though small fish, tadpoles, clams, and other aquatic invertebrates are also consumed. The seasonal availability of crayfish in different habitat locations corresponds to shifts in habitat use by YCRs.

YCRs are mostly active during daylight hours, with little to no activity after dark. Daily movement is lowest during the late breeding period (May-July) and highest during the late winter (January–February). Juvenile dispersal, movements by unpaired males during the breeding season and by both sexes post-breeding, and relocations in response to changing water levels are also documented. Studies to determine migratory patterns showed a difficulty in locating the YCR during winter months without telemetry. While the YCR was previously thought to be migratory, experts have determined that they are year-round residents, albeit discreet during winter months, of the lower Colorado River and Salton Sea.

Habitat destruction and depredation by mammals and raptors have caused population declines. It is also possible that increased selenium concentrations from agricultural runoff are affecting reproduction.

Critical Habitat. No critical habitat has been designated for YCR, and none is proposed.

Occurrence. This species is not likely to nest within the survey area. There are seven narrow patches of typha and typha/phragmites habitat in the project area associated with Fig Drain, Wixom Drain, Dixie 3A Drain, an unnamed wetland adjacent to Dixie 3A Drain, Dixie 4 Drain, Westside Drain and Wormwood 7 Drain (**Figure 4.12-2A**, **Figure 4.12-2B** and **Figure 4.12-2C**). These areas exhibit steep shelving to the water level, creating water depths deeper than those preferred by YCR. They are also narrow and linear in nature. The sides of the channels are steep and would inhibit nesting, and vehicles travel the elevated hard-packed dirt roads on either side of the channels regularly. Given the lack of suitable breeding habitat within the channels and the high level of human disturbance adjacent to the channels, this species is not likely to nest within this cattail marsh vegetation.

There is a low potential for YCR to forage in the cattail marsh vegetation or winter in the tamarisk thickets associated with Fig Drain, Wixom Drain, Dixie 3A Drain, an unnamed wetland adjacent to Dixie 3A Drain, Dixie 4 Drain, Westside Drain and Wormwood 7 Drain (**Figure 4.12-2A**, **Figure 4.12-2B** and **Figure 4.12-2C**). The active agricultural fields immediately adjacent to the cattail marshes provide a constant source of human disturbance in the area, and where these areas are located along the outside boundary of the project area, these practices will continue to occur after construction is completed. The nearest known location for this species is within Wixom Drain near Fig Lagoon, approximately 0.5 miles north of the project area. The New River is approximately 0.3 miles north and east of the project area and may provide the nearest suitable nesting habitat for this species. Given the distance from suitable and potential nesting habitat and level of existing human disturbance due to agricultural practices, there is a very low potential for YCR to forage within the isolated cattail marsh habitats or to winter in the tamarisk vegetation within the survey area. In addition, this species was not incidentally observed during numerous biological surveys conducted in and near these habitats for the other solar projects in the area.

State Listed Species

Four state-listed wildlife species were evaluated based on their known occurrences in Imperial County: greater Sandhill Crane (*Grus canadensis tabida*), YCR, barefoot banded gecko (*Coleonyx switaki*), and Peninsular bighorn sheep. Of these species, the YCR and Peninsular bighorn sheep are federally listed species. YCR is discussed above under “Federally Listed Species”; Peninsular bighorn sheep are discussed under “Federally Listed Species” in the Environmental Setting for the gen-tie later in this section. The greater Sandhill Crane and barefoot banded gecko species are discussed below.

Greater Sandhill Crane (*Grus canadensis tabida*)

Species. The Greater Sandhill Crane is state-listed as threatened and is protected under the federal MBTA and similar State legal protections. This species is known to winter in Imperial County California.

Habitat. Both Greater (*Grus canadensis tabida*) and Lesser (*G. c. canadensis*) Sandhill Cranes occur in California. Historically, *G. c. tabida* was a fairly common breeder on the northeastern plateau. It is now reduced greatly in numbers, and breeds only in Siskiyou, Modoc, Lassen, Sierra Valley, Plumas and Sierra counties. In summer, this subspecies occurs in and near wet meadows as well as shallow lacustrine, and freshwater emergent wetland habitats. It winters primarily in the Sacramento and San Joaquin valleys from Tehama County south to Kings County, where it frequents annual and perennial grassland habitats, moist croplands with rice or corn stubble, and open, emergent wetlands. It prefers relatively treeless plains. The migratory subspecies *G. c. canadensis* winters in similar habitats in the San Joaquin and Imperial valleys, and to a lesser extent in the Sacramento Valley. In southern

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California, it concentrates on the Carrizo Plain, San Luis Obispo County, with smaller flocks near Brawley, Imperial County, and Blythe, Riverside County. The latter two flocks may be partly, or largely, *G. c. tabida*, which formerly wintered more commonly in southern California, but which has declined greatly there and throughout its range. Outside of known wintering grounds, *G. c. tabida* is extremely rare except that it migrates over much of interior California. A few coastal sightings of Greater Sandhill Crane exist from Marin County southward, but there are no records from offshore islands. When foraging, the Greater Sandhill Crane prefers open shortgrass plains, grain fields, and open wetlands, but it may also feed on dry plains far from water. The Greater Sandhill crane feeds on grasses, forbs, especially cereal crops (newly planted or harvested); and also uses its long bill to probe in soil for roots, tubers, seeds, grains, earthworms, and insects. It will also feed on larger prey, such as mice, small birds, snakes, frogs, and crayfish.

Occurrence. The greater sandhill crane is likely to forage within the agricultural fields within the private lands portion of the survey area at times during winter, but this species is not expected to breed in the survey area. This species was not observed during field surveys.

Barefoot Banded Gecko (*Coleonyx switaki*)

Species. The barefoot banded gecko is state-listed as threatened. Its known range occurs along the eastern face of the Peninsular Ranges in San Diego and Imperial Counties, and little information is known about its extended range or abundance.

Habitat. Habitat for the barefoot banded gecko is found in arid rocky areas on flatlands, canyons, and thornscrub, especially where there are large boulders and rock outcrops, and where vegetation is sparse. In California, this species inhabits the arid desert slopes of the eastern side of the Peninsular Ranges from Borrego Springs south to the Baja California border, and may occur at elevations from near sea level to over 2,000 feet (700 meters). An isolated population is known to occur in the Coyote Mountains of Imperial County. It ranges farther south in Baja California along the eastern edge of the mountains to near Santa Rosalia.

The barefoot banded gecko eats insects. Most likely, the breeding season lasts from spring to summer, May to July. Females lay one or two eggs, roughly 3 weeks after mating, and may lay eggs several times each season. Eggs hatch after around 2 months, in late summer to early fall (Murphy 1974).

Occurrence. No barefoot banded geckos are expected to occur within the survey area based on a lack of suitable habitat in the form of large boulders and rocky outcrops. This species was not observed during field surveys.

BLM Sensitive Wildlife

Seven BLM sensitive wildlife species were evaluated based on their presence on the BLM sensitive list within the El Centro Field Office's jurisdiction: Colorado Desert fringe-toed lizard (*Uma notata notata*), flat-tailed horned lizard, barefoot banded gecko, Western Burrowing Owl, Mountain Plover, California leaf-nosed bat (*Macrotus californicus*), and pallid bat (*Antrozous pallidus*). The barefoot banded gecko is also a state-listed species. Refer to discussion of this species above.

The following BLM sensitive species are discussed in this section because their habitat requirements and/or potential for occurrence are most pertinent to the private land portion of the survey area, though the following discussions evaluate the potential for occurrence in both the private land portion of the survey area as well as the gen-tie survey area. Colorado Desert fringe-toed lizard and flat-tailed horned lizard are discussed later in this section.

Burrowing Owl (*Athene cunicularia*)

Species. The Burrowing Owl is a California Species of Special Concern and a BLM sensitive species. It is protected by the MBTA and California Fish & Game Code Sections 3503, 3503.5, 3513. Nesting occurs from March through August. Burrowing Owls typically form a pair-bond for more than 1 year and exhibit high site fidelity, reusing the same burrow year after year. The female remains inside the burrow during most of the egg laying and incubation period and is fed by the male throughout brooding. Burrowing Owls are opportunistic feeders, consuming a diet that includes arthropods, small mammals, and birds, and occasionally amphibians and reptiles. Urbanization has greatly reduced the amount of suitable habitat for this species. Other contributions to the decline of this species include the poisoning of squirrels and prairie dogs, and collisions with automobiles. A survey effort carried out between 1991 and 1993 indicated that major population densities remain in the Central and Imperial valleys, where this species is a year-round resident in Imperial County.

Habitat. The Burrowing Owl is primarily restricted to the western United States and Mexico. Habitat for the Burrowing Owl includes dry, open, short-grass areas often associated with burrowing mammals. In Imperial County it can be found in desert scrub, grassland, and agricultural areas, where it digs its own or occupies existing burrows.

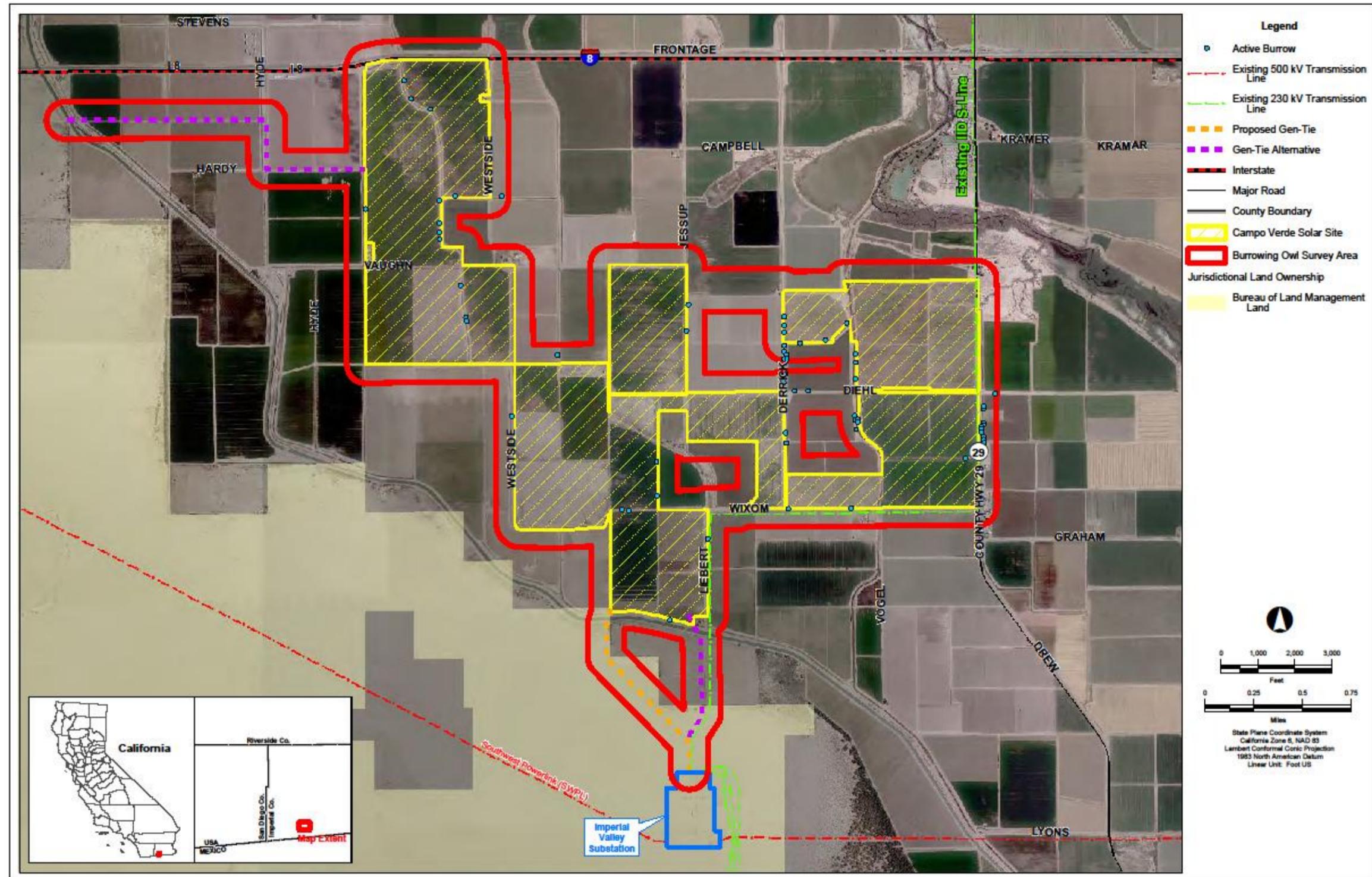
Occurrence. During focused burrowing owl surveys several active Burrowing Owl burrows were observed within the survey area, primarily associated with berms and ditches lining the active agricultural fields. These surveys identified 65 active burrows within the survey area and 76 inactive burrows. **Figure 4.12-3** shows the location of active burrows in and around the project area.

Mountain Plover

Species Profile. On June 29, 2010, USFWS announced the proposed listing of the Mountain Plover as threatened under the Endangered Species Act (ESA) of 1973, as amended. The proposed rule to list the Mountain Plover as a threatened species was withdrawn by Federal Register dated May 12, 2011, Therefore, ESA Section 7 consultation is no longer required. The Mountain Plover (family Charadriidae) is a small terrestrial shorebird, which averages 8 inches in length. Mountain Plovers are light brown above and white below, and are distinguished from other plovers by the lack of a contrasting dark breast band. Mountain Plovers are migratory, wintering in California, southern Arizona, Texas, and Mexico, and breeding primarily in Colorado and Montana from April through June. Breeding also occurs in Arizona, Utah, Wyoming, Nebraska, Kansas, Oklahoma, Texas, and New Mexico. The Sacramento, San Joaquin, and Imperial valleys of California are thought to support the greatest number of wintering Mountain Plovers.

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Source: Heritage 2012.

**FIGURE 4.12-3
 BURROWING OWL OCCURRENCES**

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Throughout their range, Mountain Plovers are found within sparsely vegetated areas such as xeric (i.e. dry, with little moisture) shrublands, shortgrass prairie, and barren agricultural fields, but rarely near water. They are a diurnal species, foraging during daylight hours for ants, beetles, and crickets, and grasshoppers with a series of short runs and stops.

Mountain Plovers nest in areas with short vegetation and bare ground, including near livestock watering tanks. Nests are constructed as a depression in the ground and lined with organic debris in areas with at least 30-percent bare ground and with nearby conspicuous objects such as rocks or forb clumps. Vegetation at nest sites is typically less than 4 inches in height and slope is less than 5 percent. Nest sites are typically dominated by needle-and-thread (*Stipa comata*), blue grama (*Bouteloua gracilis*), buffalo grass (*Buchloe dactyloides*), plains prickly pear cactus (*Opuntia polyacantha*), June grass (*Koeleria cristata*), and sagebrush (*Artemisia* sp.). Mountain Plovers have historically nested on black-tailed prairie dog (*Cynomys ludovicianus*) towns. Clutch size ranges from 1 to 4 eggs.

Mountain Plovers use non-breeding (wintering) habitats that are similar to those they use on breeding grounds: heavily grazed pastures, burned fields, fallow fields, and tilled fields. Mountain Plovers were historically associated with kangaroo rat (*Dipodomys*) precincts and California ground squirrel (*Spermophilus beecheyi*) colonies within the Central Valley of California. In California's Imperial Valley, they preferentially use alfalfa fields that have been harvested and grazed by domestic sheep, as well as Bermuda grass fields that have been burned post-harvest.

Mountain Plovers are considered to have been historically common in western and central Kansas; between Fort Supply, Oklahoma, and Dodge City, Kansas; western South Dakota; and they may have bred in northern Mexico. Information from the Breeding Bird Survey and Christmas Bird Count data shows a decline in the Mountain Plover at a rate of 2.7 to 2.8 percent per year from 1966 to 2007, although the data are characterized as having deficiencies.

Threats to the Mountain Plover include loss of habitat due to conversion of grasslands to urban and active agricultural uses in their breeding grounds, prairie dog control, domestic livestock management; human disturbance during the nesting season; grasshopper control measures; use of pesticides; and other land uses throughout their range. Specific conservation issues for the Mountain Plover in the Imperial Valley include the variable nature of agricultural crops; although cultivated fields are abundant in the Central and Imperial Valleys, varying proportions may be suitable in any given year. Economic forces in any given year dictate crop selection and livestock operations, which can positively or negatively affect Mountain Plover habitat.

Because Mountain Plovers are relatively tolerant of disturbance, human intrusion and disturbance have not been identified as major winter conservation threats, although response varies for individual birds. Mountain Plovers have been described as extremely tolerant of machinery, including off-road vehicles, tractors, and military aircraft. Plovers will quickly leave roost areas when approached by walking humans.

Critical Habitat. No critical habitat has been designated for the Mountain Plover, and none is proposed.

Occurrence. Mountain Plovers are known to over-winter in the Imperial Valley, foraging within the large agricultural complex that surrounds El Centro and spans from Mexico to the Salton Sea. In 2009, the Imperial County Agricultural Crop and Livestock Report identified approximately 353,128 acres of field crops to be grown within this large agricultural complex, including primarily alfalfa hay, Bermuda grass hay, Kleingrass hay, pastured crops, Sudan grass hay, and wheat. An additional 62,237 acres of primarily alfalfa and Bermuda grass were grown as seed crops, totaling over 415,365 acres of alfalfa and grass crops. Additional grass crop fields are present south of the border in Mexico. As discussed previously, Mountain Plovers forage in the fields at various stages of the crop rotation, including when soils are

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freshly tilled prior to planting; when the crops are young and vegetative growth is still under 25 centimeters in height; after the crops have been harvested, and short stubble is present; and after the fields have been burned to prepare them for the next crop.

A survey conducted in 1999 by the Point Reyes Bird Observatory catalogued the avifauna (i.e. birds of a particular region or habitat) using the Salton Sea and surrounding agricultural complex. The survey counted approximately 2,486 Mountain Plovers in February, 2,790 in November, and 3,758 in December in the Imperial Valley in 1999. The mean number for these three surveys represents about 30 to 38 percent of the species' estimated population of 8,000 to 10,000 individuals. On prior surveys across the California wintering range, 2,072 Mountain Plovers were recorded in the Imperial Valley in 1994, and 755 Mountain Plovers were recorded in 1998. This represented 61 and 35 percent of the totals of 3,390 and 2,179 individuals found statewide, respectively.

The higher totals in the Imperial Valley in 1999 are thought to reflect an increase in observer coverage over prior years rather than a population increase. Plovers were distributed widely over the Imperial Valley with no consistent areas of concentration in 1999, presumably reflecting the shifting availability of suitable fields with the temporal and spatial variation in cultivation practices. Concentrations of Mountain Plovers in relatively few sites in February 1999 appeared to reflect a preference by plovers for burned fields during that season. The survey shows flocks foraging throughout the agricultural complex during the winter, including several flocks approximately within the study area ranging in size from 1 to 250 individuals.

A more recent survey, coordinated by the Natural History Museum of Los Angeles County (NHMLAC), was conducted throughout the Imperial Valley on January 21 to 23, 2011. This survey recorded 877 Mountain Plovers within approximately 20 percent of the 23 search areas; no Mountain Plovers were detected south of Interstate 8. This survey shows a marked decline in population numbers from previous surveys coordinated by the NHMLAC in 2007 (which yielded 4,687 birds within 86 percent of areas surveyed), and 2008 (which yielded 2,955 birds within 74 percent of the search areas).

This decline in population numbers does not appear to relate directly to the amount of foraging habitat available in the Imperial Valley. The acreage of agricultural fields fluctuated by tens of thousands of acres between 2005 and 2009, but the fluctuations in acreage remained within ± 15 percent of the average acreage every year (Table 4.12-5). The population numbers of Mountain Plover decreased from 2007 to 2008, while the acreage of field crops (foraging habitat) increased from 2007 to 2008.

**TABLE 4.12-5
AGRICULTURAL CROP HISTORY FOR 2005-2009 IN THE IMPERIAL VALLEY**

Year	Field Crop (acres)	Seed Crop (acres)	Total (Acres)	Estimated Habitat During Winter Months (50% of Total)	Variation From Prior Year	Variation From Average
2009	353,128	62,237	415,365	207,683	(30,759)	7,279
2008	412,335	64,547	476,882	238,441	31,583	23,480
2007	352,156	61,561	413,717	206,859	(11,179)	8,103
2006	361,383	74,691	436,074	218,037	14,249	3,076
2005	351,174	55,711	407,577	203,789	---	11,173
Average	366,174	63,749	429,923	214,962	---	10,622

Source: Imperial County (2006-2010) in *Heritage*, 2012.

Notes: Variation in acres of estimated foraging habitat varies year to year by 10,000 to 30,000 acres.

Total estimated foraging habitat has been relatively stable or increasing from 2005-2010.

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As the crops and rotation schedules on any given field often differ from year to year, the amount of foraging habitat available to Mountain Plovers also differs from year to year and throughout the year. Given the constraints of available crop rotation history, information provided by landowners, and examination of the current conditions of the fields, a conservative approach was taken to estimating potential available habitat within the proposed solar generation facility site. Assuming that any given crop/field is suitable as foraging habitat for 50 percent of the wintering months of November through February (either providing habitat after being planted until it grows over 9.84 inches, or after the crops have been harvested and/or burned mid-winter in preparation for a spring crop) it is estimated that approximately 3,807 of the 4,268 acres would be available as moderate to highly suitable foraging habitat within the proposed survey area at any given time during winter. This assumes the current crop types (alfalfa, wheat, and Bermuda grass).

On January 18, 2011, USFWS provided the Interim-Survey Guidance for Wintering Mountain Plover (*Charadrius montanus*) in the Imperial Valley. This document provides guidance on conducting presence/absence surveys and determining winter population numbers for Mountain Plover. Surveys were conducted at two nearby solar projects: Centinela Solar Energy Project (located approximately 3.2 miles to the southeast) and the ISEC South project (located approximately 5.3 miles to the southeast). No Mountain Plovers were detected during surveys of these nearby projects. Surveys of the project site were conducted in February, 2012. Mountain plovers were observed on multiple occasions during field surveys for the proposed project.

California Leaf-nosed Bat (*Macrotus californicus*)

Species. The California leaf-nosed bat is a Species of Special Concern and a BLM sensitive species. This bat is found primarily in desert areas of the southwestern United States, and ranges through Imperial County and the eastern parts of Riverside and San Diego Counties in California.

Habitat. The California leaf-nosed bat is commonly found in desert habitats that include riparian, wash, scrub, succulent scrub, alkali scrub, and palm oasis. The species is non-migratory and active year-round, requiring rocky, rugged terrain, caves, or mine shafts for roosting. These gregarious bats have been observed in groups of up to 500, with both sexes roosting together during the non-breeding season and separately during spring and summer. It forages over flats and washes within one mile of its roost, and is a "gleaning" insectivore which captures prey such as crickets, grasshoppers, beetles, and sphinx moths straight from the ground or foliage rather than in flight. It typically hunts within a few feet of the ground using its superior eyesight to search for insects. Population declines are generally attributable to loss of roost sites resulting from human intrusion and physical alteration.

Occurrence. The thickets, agricultural fields and irrigation channels within the survey area offer foraging opportunities for this species. The nearest reported location for the California leaf-nosed bat is approximately 22 miles northwest of the proposed project. No known roosts occur in the survey area, and there is no suitable roosting habitat within or near the survey area.

Pallid Bat (*Antrozous pallidus*)

Species. The Pallid bat is a Species of Special Concern and a BLM sensitive species. It is a locally common yearlong resident of low elevations throughout most of California.

Habitat. This bat occupies a variety of habitats including grasslands, shrublands, woodlands, and forests at elevations ranging from sea level up through mixed conifer forests. The species occurs most commonly in open, dry habitats and prefers rocky areas for roosting. Pallid bats are social, commonly roosting in multi-species groups of 20 or more. The day roosts, such as caves, crevices, and mines, must

protect the bats from high temperatures. The bats forage low over open ground, and consume large, hard-shelled prey items such as beetles, grasshoppers, cicadas, spiders, scorpions, and Jerusalem crickets. Pallid bats are very sensitive to disturbance at the roosting sites as these roosts are crucial for metabolic economy and juvenile development. Population declines are generally attributable to loss of roost sites resulting from human intrusion and physical alteration.

Occurrence. The entire survey area offers foraging opportunities for this species. The nearest reported location for the pallid bat is approximately 22 miles west of the proposed project. Roosts are not known to occur in the survey area, and there is no suitable roosting habitat within or near the survey area.

California Species of Special Concern and Fully Protected Species

Three species that are classified as CDFG Species of Special Concern were observed within the survey area or were observed during surveys for nearby projects; Loggerhead Shrike, Crissal Thrasher (*Toxostoma crissale*), and LeConte's Thrasher (*T. lecontei lecontei*). Golden Eagle (*Aquila chrysaetos*), a CDFG Fully Protected Species, and protected under the Bald and Golden Eagle Protection Act, MBTA, and Fish & Game Code Sections 3503, 3503.5, and 3513, was also observed near the project area. The following discussions evaluate the potential for occurrence of California Species of Special Concern and Fully Protected Species in both the private land portion of the survey area as well as the gen-tie survey area.

Loggerhead Shrike (*Lanius ludovicianus*)

Species. The Loggerhead Shrike is a CDFG Species of Special Concern and is a year-round resident in Imperial County.

Habitat. The Loggerhead Shrike inhabits most of the continental United States and Mexico and is a year-round resident of southern California. The Loggerhead Shrike prefers open habitat with perches for hunting and fairly dense shrubs for nesting. In southern California, Loggerhead Shrikes inhabit grasslands, agricultural fields, chaparral, and desert scrub. Their breeding season is from March to August. Loggerhead Shrikes are highly territorial and usually live in pairs in permanent territories. Loggerhead Shrikes feed on small reptiles, mammals, amphibians, and insects that they often impale on sticks or thorns before eating. Loggerhead Shrike populations are declining, likely due to urbanization and loss of habitat and, to a lesser degree, pesticide use.

Occurrence. Loggerhead Shrikes were observed regularly within the private land portions of the survey area. The agricultural habitats associated with the solar generation facility site provide suitable foraging habitat for this species. No Loggerhead Shrike nests were identified, though the species may nest in mesquite or tamarisk habitats in the vicinity of the private land portions of the survey area.

Crissal Thrasher (*Toxostoma crissale*)

Species. The Crissal Thrasher is a CDFG Species of Special Concern and is a year-round resident in Imperial County.

Habitat. A resident of southeastern California deserts, it is still fairly common in Colorado River Valley but local and uncommon elsewhere. This species occupies dense thickets of shrubs or low trees in desert riparian and desert wash habitats. In eastern Mojave Desert of San Bernardino and southeastern Inyo counties, it also occurs in dense sagebrush and other shrubs in washes within juniper and pinyon-juniper habitats, up to 1,800 meters (5,900 feet). It is also a resident in the Imperial, Coachella, and Borrego valleys, but numbers have declined markedly in recent decades.

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This species forages mostly on the ground, especially between and under shrubs. It uses its bill to dig in friable soil and to probe in litter. Its diet is poorly known, but includes insects, other invertebrates, berries, and other small fruits, seeds, and occasionally small lizards. Breeding season for the Crissal Thrasher lasts from February into June with a peak in March and April.

The Crissal Thrasher's numbers have been reduced greatly by removal of mesquite brushland for agricultural development and by introduction of tamarisk. Off-road vehicle activity also may also degrade habitat and disturb thrashers.

Occurrence. This species has been observed within mesquite thickets associated with nearby projects. The active agricultural areas within the private land portions of the survey area do not support suitable nesting or foraging habitat for this species due to the lack of suitable vegetation and the lack of loose, friable soils for foraging. Crissal Thrashers were not observed within the survey area.

Le Conte's Thrasher (*Toxostoma lecontei lecontei*)

Species. The Le Conte's Thrasher is a CDFG Species of Special Concern and a year-round resident in Imperial County.

Habitat. Le Conte's Thrasher is an uncommon to rare, local resident in southern California deserts from southern Mono County south to the Mexican border, and in western and southern San Joaquin Valley. It occurs primarily in open desert wash, desert scrub, alkali desert scrub, and desert succulent shrub habitats. Le Conte's Thrasher may also occur in Joshua tree woodlands with scattered shrubs.

This species feeds on a variety of insects and other terrestrial arthropods; occasionally on seeds, small lizards, and other small vertebrates. It primarily forages on ground by probing and digging in soil and litter with its bill. The Le Conte's Thrasher is a year-round, non-migratory species that breeds from late January into early June, with a peak from mid-March to mid-April.

Occurrence. This species was observed within desert wash vegetation associated with a nearby project. The active agricultural areas within the private land portions of the survey area do not support suitable nesting or foraging habitat for this species due to the lack of suitable vegetation and the lack of loose, friable soils for foraging. Le Conte's Thrashers were not observed within the survey area.

Golden Eagle (*Aquila chrysaetos*)

Species. This eagle occurs throughout the United States and is a rare resident in San Diego County and Imperial Counties.

Habitat. Golden Eagles nest on cliffs of all heights and in large trees in open areas, rugged, open habitats with canyons and escarpments are used most frequently for nesting. Alternative nest sites are maintained, and old nests are reused. Golden Eagles build large platform nests, often 3 meters (approximately 10 feet) across and 1 meter (approximately 3 feet) high, of sticks, twigs, and greenery.

This species forages over large areas of grassland, desert, and open chaparral or sage scrub where they primarily prey upon rabbits, ground squirrels and prairie dogs. Golden Eagles forage close to and far from their nests, i.e. < 6 kilometers from the center of their territories, but have been observed to move 9 kilometers (approximately 5.5 miles) from the center of their territories in favorable habitat. These distances may be greater in xeric habitats.

Occurrence. In San Diego County, Golden Eagles have been documented to be on the decline, which may represent regional trends. Golden Eagles are infrequently sited foraging over agricultural lands in the Imperial Valley in Imperial County. A Golden Eagle was observed foraging over the Mount Signal

Drain and adjacent agricultural fields during surveys associated with a nearby project, approximately 4.5 miles southeast of the Imperial Valley Substation. No previous records of this species were identified within the project vicinity. There is natural and manmade nesting habitat for Golden Eagle in the regional vicinity (mountains to the northwest and south in Mexico). The solar generation facility site itself provides low quality foraging habitat for the species.

Formal eagle surveys were not identified by the agencies as necessary for this project. Instead, for the purposes of this and other analyses, occasional eagle foraging activities are assumed to occur within and around the project area. No suitable nesting habitat is present within the survey area or the immediate vicinity. Therefore, Golden Eagles are not expected to nest within the survey area.

The nearest known Golden Eagle population is approximately 10 miles northwest of the survey area, in the Coyote Mountains. The In-Ko-Pah and Jacumba mountains, approximately 10 miles west of the proposed project, also provide suitable habitat for this species. Due to the distance from known territories, Golden Eagles are not expected to forage within or adjacent to the survey area. Mt. Signal, approximately 5.5 miles south of the project area, across the U.S.-Mexico border, may support suitable nesting habitat, although data for this area were not identified during the literature search. Individuals nesting in or around Mt. Signal could potentially use the survey area and surrounding vicinity for foraging activities.

Riparian Habitat or Sensitive Natural Communities

Special status natural communities are those communities “that are of limited distribution statewide or within a county or region and are often vulnerable to environmental effects of projects.” There are approximately 20.6 acres of arrow weed thicket (approximately 11.3 acres of which are disturbed) and approximately 1.3 acres of open water with arrow weed thicket within the survey area (refer to **Table 4.12-3**).

There are several riparian habitats associated with the large irrigation drains present throughout the survey area. These communities include common reed marsh, cattail marsh, tamarisk thicket, and disturbed wetland. None of these communities are considered to be special status communities. There are no other special status communities present within the survey area.

Jurisdictional Waters

A jurisdictional delineation was conducted to determine the extent of ACOE, CDFG, and RWQCB resources within the survey area. The private land survey area for potential jurisdictional waters was comprised of the solar generation facility site. A 200-foot buffer area was surveyed and analyzed for this resource. The delineation results for these surveys are included in Appendix 2 of **Appendix J** of this EIR. The jurisdictional delineation reports were submitted to the ACOE and CDFG in February 2012 for a determination of potential jurisdictional waters by the respective agencies, but no response has been received to date. Therefore, the following discussion of jurisdictional waters may change pending ongoing consultation with ACOE and CDFG. The potentially jurisdictional ACOE and CDFG waters are shown in Attachment 1 [Figure 7] of **Appendix J** of this EIR.

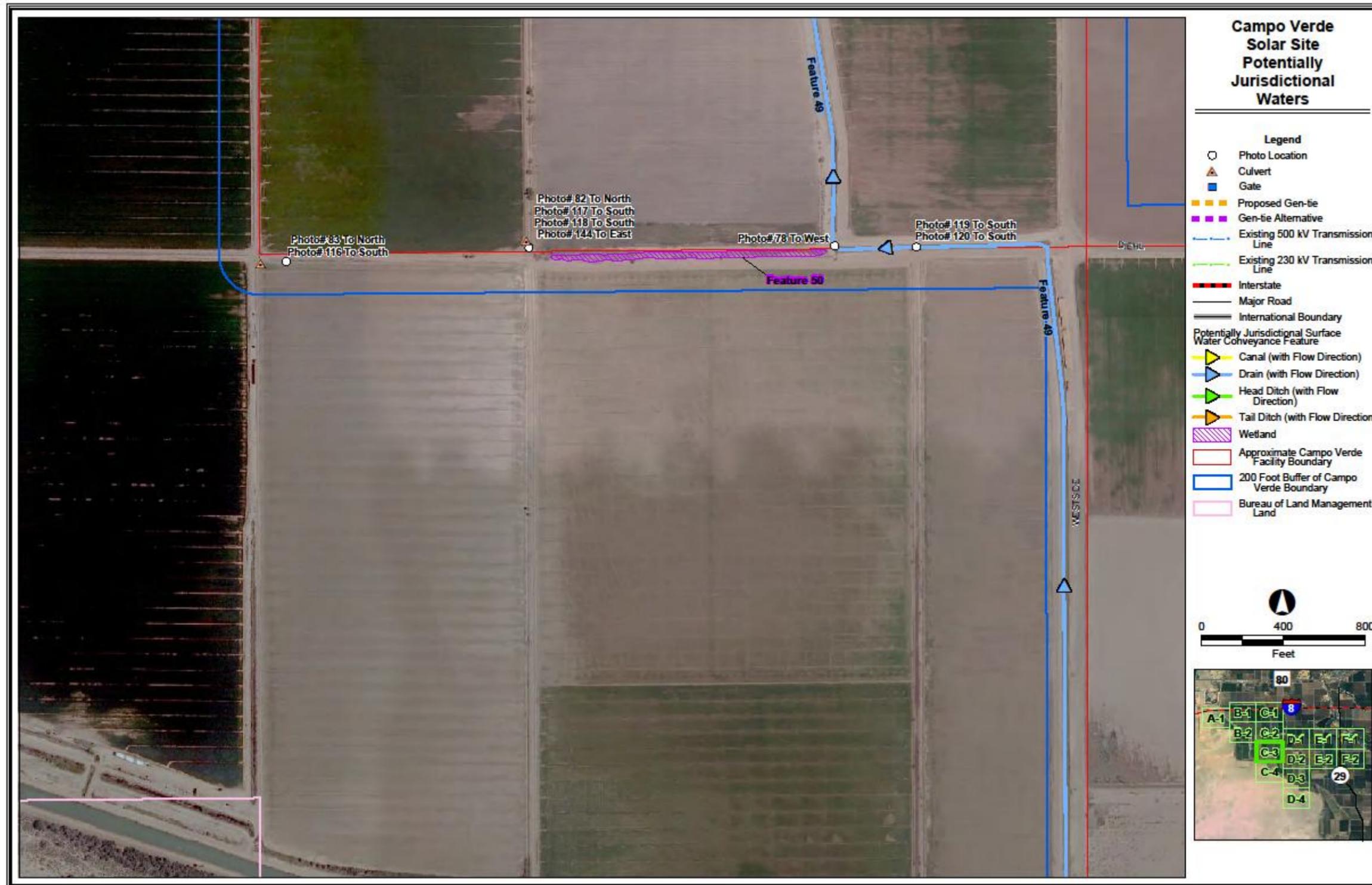
ACOE Jurisdictional Waters

Wetlands

Two ACOE wetland areas were identified within the private land portions of the survey area. The first (Feature 50) is immediately south and outside of the project area boundary, along Diehl Road (**Figure 4.12-4A**). This area is a defunct irrigation drain that receives water from an adjacent drain. The

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Source: Heritage 2012.

FIGURE 4.12-4A
POTENTIAL JURISDICTIONAL WATERS

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Source: Heritage 2012.

FIGURE 4.12-4B
POTENTIAL JURISDICTIONAL WATERS

second (Feature 11A) is located just west of Drew Road in the northeast corner of the project area (**Figure 4.12-4B**). Formal wetland delineations were not performed in these areas. However, based on wetland vegetation (cattail, phragmites, etc.) and wetland hydrology (inundation), the features are assumed to be jurisdictional wetlands. All other ACOE jurisdictional areas delineated are preliminarily considered non-wetland waters of the U.S. comprised of irrigation canals and drains.

Non-wetland Waters of the U.S.

Non-wetland waters within the private land portion of the survey area are primarily associated with the larger irrigation canals and drains. A total of 18 features were identified as potentially federally jurisdictional (Attachment 1 [Figure 7] of **Appendix J** of this EIR), while 98 features were identified as not federally jurisdictional. All of the features on the solar generation facility site are man-made features constructed wholly within uplands. These features are used for agricultural irrigation (supply and drainage). Typically the head ditches used to irrigate individual fields, as well as the tail ditches used to drain individual fields, convey water during periodic and infrequent irrigation events. Head ditches are typically dry and would not meet the definition of a Relatively Permanent Water (RPW) and, thus, would not be jurisdictional. The larger, IID-maintained, concrete-lined canals and lateral canals convey water for most of the year and would likely be considered federally jurisdictional. Similarly, the larger IID-maintained drains that collect tail water from multiple fields convey water at all times of the year and would likely be considered federally jurisdictional. More detailed information including location, name of the feature, width of the ordinary high water mark, and a detailed mapbook is included in Appendix 2 – Jurisdictional Waters Report of **Appendix J** of this EIR.

CDFG Jurisdictional Waters

CDFG generally takes jurisdiction of all stream features including drains and canals. The CDFG jurisdiction extends from the top of bank to the opposite top of bank on these features or the limits of riparian vegetation if this vegetation extends beyond the top of the banks. Wetlands need to only fulfill one of the three aforementioned ACOE (hydrology, hydric soils, wetland vegetation) criteria to be considered CDFG jurisdictional wetlands.

Under Section 1600 of the CDFG Code, CDFG jurisdiction includes "...bed, channel or bank of any river, stream or lake designated by the department in which there is at any time an existing fish or wildlife resource or from which these resources derive benefit..." Canals, aqueducts, irrigation ditches, and other means of water conveyance can also be considered streams if they support aquatic life, riparian vegetation or stream dependent terrestrial benefit.

Generally speaking, most canals, head and tail ditches do not support riparian habitat. Larger drains, however, typically do support some riparian habitat and are often considered state jurisdictional. Drainage features were considered potentially jurisdictional if they exhibited naturally occurring bed and bank, riparian vegetation potentially providing wildlife habitat, and/or evidence of regular flow. A total of 23 features were identified as potentially state jurisdictional (Attachment 1 [Figure 7] of **Appendix J** of this EIR). Features occurring within the solar generation facility site that did not satisfy these criteria were very small tail ditches and concrete lined head ditches. The tail ditches were frequently isolated within individual fields, did not support distinct bed and bank, riparian vegetation or evidence of regular flow, or are plowed under and re-created each time the field is replanted. The head ditches convey water during periodic and infrequent irrigation events and are typically dry. The larger, IID-maintained, concrete-lined canals and lateral canals used to convey water to multiple fields convey water for most of the year, sometimes support riparian vegetation and/or fisheries, and would likely be considered CDFG

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jurisdictional. Similarly, the larger IID-maintained drains that collect tail water from multiple fields convey water for most of the year and would likely be considered CDFG jurisdictional.

More detailed information including location, name of the feature, width of bank to bank, and a detailed mapbook is included in Appendix 2 – Jurisdictional Waters Report of **Appendix J** of this EIR.

Habitat Connectivity and Wildlife Corridors

Wildlife movement corridors and habitat linkages are areas that connect suitable wildlife habitat areas in a region otherwise fragmented by rugged terrain, changes in vegetation, or human disturbance. Corridors are generally local pathways connecting short distances usually covering one or two main types of vegetation communities. Linkages are landscape level connections between very large core areas and generally span several thousand feet and cover multiple habitat types. Natural features such as canyon drainages, ridgelines, or areas with vegetation cover provide corridors and linkages for wildlife travel. The habitat connectivity provided by corridors and linkages is important in providing access to mates, food, and water, allowing the dispersal of individuals away from high-density areas, and facilitating the exchange of genetic traits between populations.

Both avian and terrestrial wildlife species are able to move freely throughout the survey area and are not restricted to a specific corridor or linkage.

B. GEN-TIE

The following sections describe the existing conditions on lands associated with the proposed gen-tie and associated buffer areas. This area is referred to as the “gen-tie survey area”.

Soils and Topography

The gen-tie survey area is located in the Yuha Basin of the Colorado Desert between agricultural lands to the north and east and native desert to the south and west. No alluvial fans or small washes are present in the gen-tie corridor. The area is relatively flat, with sparse vegetation and sand that ranges from soft and rolling to flat and compact. The gen-tie survey area (including the survey areas for the Gen-Tie Alternatives discussed in Section 6.0) is comprised of native desert, active agricultural fields, and fallow agricultural fields.

There are ten major soil types found within the survey area, including Badland, Glenbar, Holtville, Imperial-Glenbar, Indio-Vint, Meloland-Holtville, Indio, Vint, Meloland, Rositas soils. These soils are primarily found on flat basin floors and are formed from clay, silt, and sandy alluvium materials.

The elevation trends downward from the south to the north. Soils are very permeable and there are no drainages or washes present in the gen-tie corridor on BLM lands. Presumably, most surface water is absorbed into the ground or sheet flows to the Westside Main Canal just north of the BLM lands.

General Vegetation

Thirteen vegetation communities were mapped within the gen-tie survey area. The following sections describe existing vegetation in the gen-tie survey area. Communities that are similar in composition were lumped together in the discussion.

Table 4.12-6 shows the ten vegetation communities that occur within the survey area for the proposed gen-tie. The vegetation communities are mapped in Attachment 1 [Figure 6] of **Appendix J** of this EIR.

**TABLE 4.12-6
VEGETATION COMMUNITIES/LAND COVER TYPES
PROPOSED GEN-TIE**

Vegetation Community	BLM Land (Acres)	Private Land (Acres)
Active Agriculture (AG-A)	1.49	2.22
Fallow Agriculture (AG-F)	0.79	0.96
Arrow Weed Thicket (AS)	0.41	0.44
Arrow Weed Thicket - Disturbed (AS-D)	0.21	0.50
Athel Tamarisk Type Woodland (AW)	0.42	0.52
Creosote Bush - White Bursage Scrub (CBS)	35.14	0.00
Creosote Bush - White Bursage Scrub - Disturbed (CBS-D)	1.82	2.33
Developed (DEV)	2.19	0.00
Open Water with Arrow Weed Thicket (OW)	0.71	0.44
Stabilized Desert Dunes - Disturbed (SDD-D)	22.28	0.00
Total	65.46	7.41

Source: Heritage, 2012.

Creosote Bush-White Bursage Scrub (CBS and CBS-D)

Creosote bush–white bursage scrub (including the disturbed component) is the major component of the survey area. This community is dominated by creosote bush (*Larrea tridentata*) and white bursage (*Ambrosia dumosa*) with relatively sparse vegetative cover and flat topography. Four-wing saltbush (*Atriplex canescens*) and plicate tiquilia (*Tiquilia palmeri*) are present as sporadic minor associates. This community occurs in minor washes and rills, alluvial fans, bajadas, upland slopes, usually on well-drained alluvial, colluvial and sandy soils. It covers approximately 67% of the central Mojave Desert and 70% of the Colorado and Sonoran deserts in California. Plantain (*Plantago* sp.), narrow-leaf cryptantha (*Cryptantha angustifolia*), basket evening-primrose (*Oenothera deltoides*) and narrow-leaf oligomeris (*Oligomeris linifolia*) are very common in the herbaceous layer. Other ephemeral species expected to occur within this community include: short-ray desert marigold (*Baileya pauciradiata*), desert dandelion (*Malacothrix glabrata*), spectacle-pod (*Dithyrea californica*), onyx flower (*Achyronychia cooperi*) and bajada lupine (*Lupinus cocinnus*). Areas of high human disturbance are classified as disturbed creosote bush-white bursage scrub.

Agriculture (Ag) and Fallow Agriculture (AG-F)

Active agricultural fields primarily consist of alfalfa and Bermuda grass Agricultural weeds such as five-hook bassia are present along the edge of the fields.

Fallow agricultural fields are being invaded by non-native weeds such as five-hook bassia, tamarisk, Saharan mustard (*Brassica tournefortii*), and the native shrub quailbush.

Arrow Weed Thicket (AS and AS-D)

This species has been previously described under subsection 4.12.2 Environmental Setting, “A. Solar Generation Facility Site.” Refer to this discussion for additional details on Arrow Weed Thicket. Within the gen-tie survey area, this community occurs along irrigation drains and canals. Areas where the vegetation has not fully recovered from the previous clearing are classified as disturbed arrow weed thicket. Most of these areas are regularly cleared of this vegetation and they are constantly changing.

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Stabilized Desert Dunes – Disturbed (SDD-D)

Stabilized desert dunes in the survey area are the result of several types of windbreaks that have been created to prevent sand from blowing into the agricultural fields. These windbreaks include plantings of athel (*Tamarix aphylla*), soil berms and hay bale/soil berms. These berms have created stabilized sand dunes primarily on the windward sides of these features. The vegetation in these areas is dominated by creosote bush, four-wing saltbush and three-fork ephedra (*Ephedra trifurca*). Ephemeral species expected to occur here are the same as those described previously for the creosote bush scrub, especially basket evening-primrose (*Oenothera deltoides*), dicoria (*Dicoria canescens*) and parch locoweed (*Astragalus aridus*) and desert locoweed (*Astragalus didymocarpus*). Because these dunes are an artifact of human creation and the foreign materials that are a part of this dune system, these have been classified as disturbed dunes.

Athel Tamarisk Type Woodland (AW)

Individuals of athel (*Tamarix aphylla*) have been planted as a windscreen along the edges of agricultural fields. This semi-evergreen or evergreen tree reaches a height of 12 meters (approximately 39 feet). The herbaceous layer in these communities is generally sparse.

Tamarisk Thicket (TS)

This species has been previously described under subsection 4.12.2 Environmental Setting, “A. Solar Generation Facility Site.” Refer to this discussion for additional details on Tamarisk Thicket. Within the survey area, this community occurs within irrigation drains and canals, generally along the channel bottoms and lower slopes or within fallow fields with a high water table. Arrow weed (*Pluchea serricea*), cattails (*Typha* sp.), and common reed (*Phragmites australis*) are major associates to co-dominants in some areas.

Developed/Disturbed (DEV/DH)

Developed/disturbed land occurs within the survey area. These areas contain little to no vegetation. Disturbed areas include areas adjacent to the Imperial Valley Substation on BLM land and one residence on private land within the buffer. These areas are usually kept bare of vegetation by constant vehicle traffic but may support non-native weed species.

Open Water with Arrow Weed Thicket (OW)

This habitat is restricted to the Westside Main Canal. Arrow weed thicket is restricted to a narrow band along the banks of this canal. Arrow weed is the dominant species and in many areas the only species along the banks of this canal.

Common Reed Marsh – Disturbed (CRM-D)

This species has been previously described under subsection 4.12.2 Environmental Setting, “A. Solar Generation Facility Site.” Refer to this discussion for additional details on Common-Reed Marsh - Disturbed. Within the gen-tie survey area, these marshes occur along the channel bottoms of the canals and drains with a more permanent water source. Cattails (*Typha latifolia*), tamarisk (*Tamarix ramosissima*), and arrow weed (*Pluchea serricea*) are co-dominants or major associates. In many instances these earthen irrigation canals and drains are routinely cleared of vegetation to facilitate hydrologic flow. Areas where the vegetation has not fully recovered from the previous clearing are classified as disturbed common reed marsh.

Disturbed Wetland (DW)

This species has been previously described under subsection 4.12.2 Environmental Setting, “A. Solar Generation Facility Site.” Refer to this discussion for additional details on Disturbed Wetland. Disturbed wetland included earthen canals and drains that are regularly cleared of vegetation usually support herbaceous non-native species; these areas have been mapped as disturbed wetlands.

Special Status Plant Species

Fall Blooming and/or Woody Perennial Special Status Plants

Most of the Special Status Species that are known from the vicinity of the project area are either not expected to occur or would have a low potential to occur within the BLM lands. The majority of the species are not expected to occur because of lack of appropriate habitat, or lack of known or historical populations from the vicinity. Species with a low potential for occurrence have suitable habitat present within the survey areas on BLM lands, but due to the relatively small amount of habitat, the proximity to agricultural fields, the Imperial Valley substation, and several existing transmission lines, their potential for occurrence is much less likely.

Table 4.12-7 lists all the fall blooming Special Status Plants that are known in the vicinity of the project area or the Imperial Valley. No Special Status Plants were observed during this survey. This area of Imperial County experienced very little summer/fall rainfall. As a result, there was no evidence that any fall blooming, ephemeral species germinated during the fall 2011. Because of the low amount of rainfall, fall blooming Special Status Plants that could be present onsite may not have been observable.

Approximately one-half of the gen-tie survey area on BLM lands was surveyed in November 2010 by Heritage Environmental Consultants, Inc., for the Centinela Solar Energy Project. No Special Status Species were observed in this area during the survey even though fall blooming species were present in this area in 2010.

A total of 8 fall-blooming Special Status Species were assessed for their potential for occurrence in the gen-tie survey area (**Table 4.12-7**) including: Abram’s spurge (*Chamaesyce abramsiana*) (Priority Plant Species), California ditaxis (*Ditaxis serrata* var. *californica*) (Priority Plant Species), glandular ditaxis (*Ditaxis claryana*) (Priority Plant Species), Algodones Dunes sunflower (*Helianthus niveus* ss. *tephrodes*) (State Endangered), pink velvet mallow (*Horsfordia alata*) (Priority Plant Species), Newberry’s velvet mallow (*Horsfordia newberryi*) (Priority Plant Species), California satintail (*Imperata brevifolia*) (Priority Plant Species) and dwarf germander (*Teucrium cubense* ssp. *depressum*) (Priority Plant Species). These species are discussed in detail following **Table 4.12-7**.

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**TABLE 4.12-7
SPECIAL STATUS PLANT SPECIES POTENTIALLY OCCURRING IN THE GEN-TIE SURVEY AREA**

Special Status Plant Species that were Focus of Fall Survey		
Species Name	Sensitivity Status	Potential for Occurrence
Little-leaf elephant (<i>Bursera microphylla</i>)	CDFG: Special Plant CNPS Rare Plant Rank: 2.3	Occurs in alluvial fan scrub and rocky areas in Sonoran Desert scrub. Deciduous tree; blooms June-July. Not observed within project area during survey. Distinctive tree species would have been observed during surveys if present. Nearest location in In-Ko-Pah Gorge, Sweeney Pass and Arroyo Tapiado quads. Alluvial fan scrub habitat and rocky scrub absent in the project area. Closest sites are in rocky desert foothills to west of site. Species is not expected to occur within project area.
Fairy duster (<i>Calliandra eriophylla</i>)	CDFG: Special Plant CNPS Rare Plant Rank 2.3	Occurs in Sonoran Desert scrub primarily on rocky hillsides and bajadas. Deciduous shrub; blooms January – March. Not observed during survey but would have been observable if present. Not expected to occur due to absence of suitable habitat in the project area. One CNDDDB occurrence south of the project area which is also likely the Yuha Basin Quad location reported by CNPS. Most occurrences of this species in East Mesa of Imperial County.
Crucifixion thorn (<i>Castela emoryi</i>)	CDFG: Special Plant CNPS Rare Plant Rank 2.3	Occurs in playas and gravelly areas in Sonoran Desert scrub. Deciduous shrub; blooms April – July. Not observed during survey. Distinctive shrub species would have been observed if present. Not expected to occur. Suitable habitat (i.e., playas and gravelly areas) absent in project area. Known from Yuha Basin and Coyote Wells quads.
Abram's spurge (<i>Chamaesyce abramsiana</i>)	CDFG: Special Plant CNPS Rare Plant Rank 2.2	Occurs in sandy Sonoran Desert scrub. Annual; blooms September – November. Suitable habitat present in project area. Historical collections known from Calexico, Heber and Brawley quads. Not observed during focused survey for this species in October 2011 which was conducted during this species' traditional flowering period. However, late summer and fall rains may have been insufficient for seeds to germinate this year. Low potential to occur in native desert scrub habitats in project area.
Wiggins croton (<i>Croton wigginsii</i>)	BLM: Sensitive CDFG Rare CNPS Rare Plant Rank 2.2	Occurs in desert dunes and Sonoran Desert scrub. Shrub; blooms March – May. CNPS reports species restricted to Algodones Dunes and all CNPS locations are on the East Mesa. Known from near Plaster City between S-80 and I-80. Not observed and not expected to occur in the project area. Marginal suitable habitat present (i.e. desert dunes), but dunes are result of human creation and site and is outside of species range.

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**TABLE 4.12-7
SPECIAL STATUS PLANT SPECIES POTENTIALLY OCCURRING IN THE GEN-TIE SURVEY AREA**

Special Status Plant Species that were Focus of Fall Survey		
Species Name	Sensitivity Status	Potential for Occurrence
Wolf's cholla (<i>Cylindropuntia wolfii</i>)	BLM: Sensitive CDFG: Special Plant CNPS Rare Plant Rank 4.3	Occurs in Sonoran Desert scrub, usually on alluvial fans or rocky slopes. Stem succulent that blooms from March-May. Known from San Diego and Imperial counties and Baja, California. Known from Pinto Wash south of the Imperial Valley Substation. No individuals of this genus observed within project area. Species not expected to occur within project area.
Glandular ditaxis (<i>Ditaxis claryana</i>)	CDFG: Special Plant CNPS Rare Plant Rank 2.2	Occurs in sandy Sonoran Desert scrub. Herbaceous perennial; blooms October – March. Known from Algodones Dunes. Ogliby and Iris quads are closest reported populations. Not observed during survey. October 2011 survey conducted during this species traditional blooming period. However, late summer and fall rains may have been insufficient for this year. Despite this, the species is not expected to occur, as project area is outside of known range.
California ditaxis (<i>Ditaxis serrata</i> var. <i>californica</i>)	CDFG: Special Plant CNPS Rare Plant Rank 3.2	Occurs in Sonoran Desert scrub. Herbaceous perennial, blooms March-December. Nearest known occurrence Clark Lake Quad in northern Anza Borrego State Park. Most other reported locations along the I-10 corridor between Indio and Blythe. Not observed during survey. October 2001 survey conducted during this species traditional blooming period. However, late summer and fall rains may have been insufficient this year. Despite this, the species is not expected to occur, as project area is well south of reported range of this species in California.
Algodones Dunes sunflower (<i>Helianthus niveus</i> ssp. <i>tephrodes</i>)	CDFG: Endangered CNPS Rare Plant Rank 1B.2	Occurs in desert dunes and is restricted to the Algodones Dunes of East Mesa. This herbaceous perennial blooms from September-May. Not observed during October 2011 survey nor expected to occur in project area. However, late summer and fall rains may have been insufficient for species to grow this year. Marginal suitable habitat present (i.e. desert dunes), but dunes are result of human creation and site and is outside of species range.
Pink velvet mallow (<i>Horsfordia alata</i>)	CDFG: Special Plant CNPS Rare Plant Rank 4.3	Occurs in rocky Sonoran Desert scrub. This perennial shrub blooms almost year round from February-December. This species is reported from Imperial County but no quad data is available. Suitable habitat (rocky desert scrub) is absent from project area. As a shrub, this species is not expected to occur in the project area because it would have been observable during October 2011 survey if present.

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**TABLE 4.12-7
SPECIAL STATUS PLANT SPECIES POTENTIALLY OCCURRING IN THE GEN-TIE SURVEY AREA**

Special Status Plant Species that were Focus of Fall Survey		
Species Name	Sensitivity Status	Potential for Occurrence
Newberry's velvet mallow (<i>Horsfordia newberryi</i>)	DFG: Special Plant CNPS Rare Plant Rank 4.3	Occurs in rocky Sonoran Desert scrub. This perennial shrub blooms almost year round from February-December. This species is reported from the Carrizo Mountain Quad. Suitable habitat i.e. rocky areas, is absent in the project area. As a shrub, this species is not expected to occur in the project area because it would have been observable during October 2011 survey if present.
California satintail (<i>Imperata brevifolia</i>)	CDFG: Special Plant CNPS Rare Plant Rank 2.1	Riparian scrub; desert scrub. Herbaceous perennial; blooms September – May. CNDDDB occurrence immediately east of project area between Greeson Wash and New River. Not observed during October 2011 survey. Not expected to occur in the BLM lands project area due to the lack of suitable habitat. This species is not expected to occur in the project area but has a low to moderate potential for occurrence in a side tributary of the New River on the private lands immediately along the northeastern boundary of the solar site within the project's buffer area. This species was not observed along that tributary though a focused survey was not conducted due to health hazards posed by pollutants in the New River.
Thurber's pilostyles (<i>Pilostyles thurberi</i>)	CDFG: Special Plant CNPS Rare Plant Rank: 4.3	Herbaceous perennial parasitic on <i>Psorothamnus</i> spp.; blooms January. Known from Plaster City and Mount Signal. Known from southwest of Plaster City between S-80 and I-80. Known from Pinto Wash south of the Imperial Valley Substation. Not expected to occur in project area due to the absence of this species host plants in the project area.
Dwarf germander (<i>Teucrium cubense</i> ssp. <i>depressum</i>)	CDFG: Special Plant CNPS Rare Plant Rank: 2.2	Occurs in sandy washes, streams and wet soils, Sonoran Desert scrub. Annual; blooms March – May (September-November if fall rains occur). Known from Coyote Wells quad. Not observed or expected in project area. Suitable habitat (i.e., sandy washes) absent. Not observed during survey. October 2001 survey conducted during this species traditional blooming period. However, late summer and fall rains may have been insufficient for seeds to germinate this year.
Spring Blooming Special Status Plant Species		
Chaparral sand verbena (<i>Abronia villosa</i> var. <i>aurita</i>)	BLM: Sensitive CDFG: Special Plant CNPS Rare Plant Rank 1B.1	Occurs in sandy floodplains or flats in generally, inland arid areas of sage scrub and open chaparral and desert dunes. Annual; blooms January – September. Known from Calexico, Seeley, and Superstition Mountains quads. Marginal dune habitat present within native habitats in

4.12 BIOLOGICAL RESOURCES

**TABLE 4.12-7
SPECIAL STATUS PLANT SPECIES POTENTIALLY OCCURRING IN THE GEN-TIE SURVEY AREA**

Special Status Plant Species that were Focus of Fall Survey		
Species Name	Sensitivity Status	Potential for Occurrence
		project area. Low to moderate potential for occurrence. Surveys for this species will be conducted in appropriate habitat within its blooming season in 2012.
Watson's amaranth (<i>Amaranthus watsonii</i>)	CDFG: Special Plant CNPS Rare Plant Rank 4.3	Occurs in Sonoran Desert Scrub. Annual; blooms August – September. Not observed but survey occurred outside of traditional blooming period. Suitable habitat present within native desert scrub in project area. Known from Calexico and Heber quads. Low to moderate potential for occurrence within desert scrub habitats. Surveys for this species will be conducted in appropriate habitat within its blooming season in 2012.
Salton milk vetch (<i>Astragalus crotalariae</i>)	CDFG: Special Plant CNPS Rare Plant Rank 4.3	Occurs in sandy or gravelly Sonoran Desert scrub habitat and is known from the Superstition Mountains quad. This herbaceous perennial blooms from January to April. Potential habitat present within project area. Low to moderate potential for occurrence within desert scrub habitats. Surveys for this species will be conducted in appropriate habitat within its blooming season in 2012.
Harwood's milk vetch (<i>Astragalus insularis</i> var. <i>harwoodii</i>)	CDFG: Special Plant CNPS Rare Plant Rank: 2.2	Occurs in Sonoran Desert scrub with gravelly, sandy washes or dunes. Annual; blooms January-May. Known from southwest of Plaster City between S-80 and I-80. Also known from In-Ko-Pah Gorge and Coyote Wells quads. Habitat (sandy dunes) present within native desert scrub in survey. Known from Coyote Wells quad. Low to moderate potential for occurrence within desert scrub habitats. Surveys for this species will be conducted in appropriate habitat within its blooming season in 2012.
Borrego milk vetch (<i>Astragalus lentiginosus</i> var. <i>borreganus</i>)	CDFG: Special Plant CNPS Rare Plant Rank 4.3	Occurs in sandy Sonoran Desert scrub habitat and is known from the Shell Reef quad in upper Borrego Valley and from the Algodones Dunes on East Mesa. This herbaceous perennial blooms from February to May. Potential habitat present. Low potential for occurrence within project area. Surveys for this species will be conducted in appropriate habitat within its blooming season in 2012.
Peirson's milk vetch (<i>Astragalus magdalenae</i> var. <i>peirsonii</i>)	USFWS: Threatened CDFG: Endangered BLM: Sensitive CNPS Rare Plant Rank 1B.2	Occurs in desert dunes habitat, this species is known from fewer than 10 occurrences. Known from Algodones Dunes on East Mesa and upper Borrego Valley. A herbaceous perennial that blooms from December to April. Marginal dune habitat present. Low potential for occurrence within the project area. Surveys for this species will be conducted in appropriate habitat within its blooming season in 2012.

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**TABLE 4.12-7
SPECIAL STATUS PLANT SPECIES POTENTIALLY OCCURRING IN THE GEN-TIE SURVEY AREA**

Special Status Plant Species that were Focus of Fall Survey		
Species Name	Sensitivity Status	Potential for Occurrence
Desert ayenia (<i>Ayenia compacta</i>)	CDFG: Special Plant CNPS Rare Plant Rank: 2.3	Occurs in rocky Sonoran Desert scrub. A herbaceous perennial that blooms from March to April. Closest reported populations include Jacumba and Sweeney Pass. This species not expected to occur in the project area due to the lack of suitable habitat, i.e., rocky areas. Known populations are well west of the corridor in the rocky mountains above the Yuha Basin. Surveys for this species will be conducted in appropriate habitat within its blooming season in 2012.
Sand evening primrose (<i>Camissonia arenaria</i>)	CDFG: Special Plant CNPS Rare Plant Rank 2.2	Occurs in sandy or rocky Sonoran Desert scrub. This annual/herbaceous perennial blooms from November–May and is reported from the Quartz Peak quad in the Chocolate Mountains. Though suitable habitat is present the reported occurrences of this species are distant from the project area. Low potential for occurrence. Surveys for this species will be conducted in appropriate habitat within its blooming season in 2012.
Peirson’s pincushion (<i>Chaenactis carphoclinia</i> var. <i>peirsonii</i>)	BLM: Sensitive CDFG: Special Plant CNPS Rare Plant Rank 1B.3	Occurs in sandy Sonoran Desert scrub. Annual; blooms March-April. Known only from the eastern Santa Rosa Mountains with closest reported location from the Borrego Mountain SE quad. Suitable habitat present in project area. However, species not expected to occur within project area due to its present known range. Surveys for this species will be conducted in appropriate habitat within its blooming season in 2012.
Arizona spurge (<i>Chamaesyce arizonica</i>)	CDFG: Special Plant CNPS Rare Plant Rank 2.3	Occurs in sandy Sonoran Desert scrub. Known from the In-Ko-Pah Gorge Quad, this species is undocumented in Imperial County. This herbaceous perennial blooms from March to April. Not expected to occur within project area. Though suitable habitat is present, project area is outside of this species current known range. Surveys for this species will be conducted in appropriate habitat within its blooming season in 2012.
Flat-seeded spurge (<i>Chamaesyce platysperma</i>)	BLM: Sensitive CDFG: Special Plant CNPS Rare Plant Rank 1B.2	Occurs in desert dunes and sandy Sonoran Desert scrub. Known in California from only four herbarium collections and one collection from Imperial County in 1987. Annual; blooms February – September. Known from Superstition Mountain and Kane Springs quads in Imperial County. Not expected to occur within project area. Though marginal suitable habitat for this species exists, species is very rare in Imperial County. Surveys for this species will be conducted in appropriate habitat within its blooming season in 2012.

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**TABLE 4.12-7
SPECIAL STATUS PLANT SPECIES POTENTIALLY OCCURRING IN THE GEN-TIE SURVEY AREA**

Special Status Plant Species that were Focus of Fall Survey		
Species Name	Sensitivity Status	Potential for Occurrence
Las Animas colubrina (<i>Colubrina californica</i>)	CNPS Rare Plant Rank 2.3	Occurs in Sonoran Desert scrub often localized around springs and mesic rocky canyon bottoms. This deciduous shrub blooms from April-June and is reported from Picacho Peak and Quartz Peak in the Chocolate Mountains. Suitable habitat lacking and site is outside known current distribution. Not expected to occur within project area. Surveys for this species will be conducted in appropriate habitat within its blooming season in 2012.
Spiny abrojo (<i>Condalia globosa</i> var. <i>pubescens</i>)	CDFG: Special Plant CNPS Rare Plant Rank 4.2	Occurs in Sonoran Desert scrub. This deciduous shrub blooms from March-May. This species is reported from Imperial County but no quad data is available. Suitable habitat is present in the project area. Low potential for occurrence. Surveys for this species will be conducted in appropriate habitat within its blooming season in 2012.
Ribbed cryptantha (<i>Cryptantha costata</i>)	CDFG: Special Plant CNPS Rare Plant Rank: 4.3	Occurs in desert sand dunes and sandy desert scrub. Annual; blooms February – May. Marginal suitable habitat within project area. Low potential for occurrence. Surveys for this species will be conducted in appropriate habitat within its blooming season in 2012.
Rock nettle (<i>Eucnide rupestris</i>)	CDFG: Special Plant CNPS Rare Plant Rank 2.2	Occurs in Sonoran Desert scrub. Annual; blooms December – April. Known from Mount Signal and Coyote Wells quads. CNDDDB occurrence in Yuha Basin (likely CNPS Coyote Wells quad location). Suitable habitat present in the project area. Low to moderate potential for occurrence. Surveys for this species will be conducted in appropriate habitat within its blooming season in 2012.
Utah vine milkweed (<i>Funastrum (=Cynachum) utahense</i>)	CDFG: Special Plant CNPS Rare Plant Rank: 4.2	Occurs in sandy or gravelly Sonoran Desert Scrub. Herbaceous, perennial growing on desert shrubs; blooms April – June. Known from southwest of Plaster City between S-80 and I-80. Suitable habitat present in project area. Known from Yuha Basin south of S-80. Low to moderate potential for occurrence. Surveys for this species will be conducted in appropriate habitat within its blooming season in 2012.
Curly herissantia (<i>Herissantia crispa</i>)	CDFG: Special Plant CNPS Rare Plant Rank 2.3	Occurs in Sonoran Desert scrub. Annual-herbaceous perennial; Blooms August – September. Only known from two locations in California, both in San Diego County (Pinto Wash and Mountain Springs Grade). Not known from Imperial County. Suitable habitat present in project area. However, site is well below reported lower elevational range (700 meters or approximately 2,296 feet). Not expected to occur due to species known range. Surveys for this species will be conducted in appropriate habitat

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**TABLE 4.12-7
SPECIAL STATUS PLANT SPECIES POTENTIALLY OCCURRING IN THE GEN-TIE SURVEY AREA**

Special Status Plant Species that were Focus of Fall Survey		
Species Name	Sensitivity Status	Potential for Occurrence
		within its blooming season in 2012.
Baja California ipomopsis (<i>Ipomopsis effusa</i>)	CDFG: Special Plant CNPS Rare Plant Rank 2.1	Occurs in washes in Sonoran desert scrub. Annual; blooms April – June. Only known location in California from Pinto Wash west of the site. Considered a waif in California, more common in Baja, California. Suitable habitat present in the project area. Not expected in the project area due to known range and rarity in California. Surveys for this species will be conducted in appropriate habitat within its blooming season in 2012.
Slender-leaved ipomopsis (<i>Ipomopsis tenuifolia</i>)	CDFG: Special Plant CNPS Rare Plant Rank 2.3	Occurs in rocky/gravelly Sonoran Desert scrub. Herbaceous perennial; blooms March – May. Known from In-Ko-Pah Gorge and Jacumba quads. Suitable habitat, (i.e., rocky/gravelly desert scrub) absent. Site outside of known current range of species. Not expected to occur within the project area.
Pygmy lotus (<i>Lotus haydonii</i>)	CNPS Rare Plant Rank 1B.3	Occurs in rocky Sonoran Desert scrub. Herbaceous perennial; blooms January – June. Known from In-Ko-Pah Gorge quad. Suitable habitat (i.e., rocky/gravelly desert scrub) absent. Site outside of current known range of species and well below reported lower elevational range (520 meters or approximately 1,706 feet). Not expected to occur within project area. Surveys for this species will be conducted in appropriate habitat within its blooming season in 2012.
Mountain Springs bush lupine (<i>Lupinus excubitus</i> var. <i>medius</i>)	BLM: Sensitive CDFG: Special Plant CNPS Rare Plant Rank 1B.3	Occurs in Sonoran Desert scrub. Perennial shrub; blooms March – May. Known from In-Ko-Pah Gorge and surrounding quads of desert transition areas. Marginal habitat (species range is more in desert transition habitats). Site outside of current species known range and well below reported lower elevational range (425 meters or approximately 1,394). Not expected to occur within project area. Surveys for this species will be conducted in appropriate habitat within its blooming season in 2012.
Parish’s desert-thorn (<i>Lycium parishii</i>)	CDFG: Special Plant CNPS Rare Plant Rank: 2.3	Occurs in Sonoran Desert scrub with sandy plains and washes. Shrub; blooms March – April. Known from In-Ko-Pah Gorge and Carrizo Mountain quads. Reported south of Highway 98. Suitable habitat present. Low to moderate potential for occurrence within project area. Surveys for this species will be conducted in appropriate habitat within its blooming season in 2012.
Coulter’s lyrepod (<i>Lyrocarpa coulteri</i> var. <i>palmeri</i>)	CDFG: Special Plant CNPS Rare Plant	Occurs in rocky or gravelly Sonoran Desert scrub. This herbaceous perennial; blooms January – June. Suitable habitat (i.e., rocky/boulders) absent. Not expected to

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**TABLE 4.12-7
SPECIAL STATUS PLANT SPECIES POTENTIALLY OCCURRING IN THE GEN-TIE SURVEY AREA**

Special Status Plant Species that were Focus of Fall Survey		
Species Name	Sensitivity Status	Potential for Occurrence
	Rank 4.3	occur within project area. Surveys for this species will be conducted in appropriate habitat within its blooming season in 2012.
Brown turbans (<i>Malperia tenuis</i>)	CDFG: Special Plant CNPS Rare Plant Rank: 2.3	Occurs in sandy, Sonoran Desert scrub. Annual, blooms March – April. Several CNDDDB locations in Yuha Basin which correspond to CNPS locations for the Mount Signal, Painted Gorge and Yuha Basin quads. Suitable habitat present. Low to moderate potential for occurrence within project area. Surveys for this species will be conducted in appropriate habitat within its blooming season in 2012.
Hairy stickleaf (<i>Mentzelia hirsutissima</i>)	CDFG: Special Plant CNPS Rare Plant Rank: 2.3	Occurs in Sonoran Desert Scrub on rocky hillsides and desert mesas. Annual; blooms March – May. Known from Mount Signal quad. Rocky hillsides absent but desert mesas present. Most of this species' localities in the desert transition areas to the east of the site including localities from In-Ko-Pah Gorge and Sweeny Pass quads. Low to moderate potential for occurrence within project area. Surveys for this species will be conducted in appropriate habitat within its blooming season in 2012.
Creamy blazing star (<i>Mentzelia tridentata</i>)	CDFG: Special Plant CNPS Rare Plant Rank 1B.3	Occurs in rocky, gravelly and sandy desert scrub. Annual; blooms March – May. Known from In-Ko-Pah Gorge quad. Suitable sandy scrub habitat present in project area. However, site outside of known range in California and well below lower elevational limit (700 meters or approximately 1,394 feet) reported for this species. Not expected to occur within project area. Surveys for this species will be conducted in appropriate habitat within its blooming season in 2012.
Slender-lobed four o'clock (<i>Mirabilis tenuiloba</i>)	CDFG: Special Plant CNPS Rare Plant Rank: 4.3	Occurs in Sonoran Desert Scrub. A herbaceous perennial that blooms March – May. This species is reported from the 17 Palms Quad. Suitable desert scrub habitat present in project area. Low to moderate potential for occurrence. Surveys for this species will be conducted in appropriate habitat within its blooming season in 2012.
Slender wooly-heads (<i>Nemacaulis denudata</i> var. <i>gracilis</i>)	CDFG: Special Plant CNPS Rare Plant Rank: 2.2	Occurs in desert dunes and Sonoran Desert scrub. Annual; blooms March – May. Known from Coyote Wells quad. Most of locations for this species are in Algodones Dunes of East Mesa. Marginal dune habitat present. Low to moderate potential for occurrence within project area. Surveys for this species will be conducted in appropriate habitat within its blooming season in 2012.

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**TABLE 4.12-7
SPECIAL STATUS PLANT SPECIES POTENTIALLY OCCURRING IN THE GEN-TIE SURVEY AREA**

Special Status Plant Species that were Focus of Fall Survey		
Species Name	Sensitivity Status	Potential for Occurrence
Giant Spanish-needle (<i>Palafoxia arida</i> var. <i>gigantea</i>)	BLM: Sensitive CDFG: Special Plant CNPS Rare Plant Rank 1B.3	Occurs in desert dunes. Annual-herbaceous perennial; blooms March – May. Known from Algodones Dunes on the East Mesa. Marginal desert dune habitat present. Site is well west of reported range of species. Not expected to occur within project area. Surveys for this species will be conducted in appropriate habitat within its blooming season in 2012.
Sand food (<i>Pholisma sonorae</i>)	BLM: Sensitive CDFG: Special Plant CNPS Rare Plant Rank 1B.2	Occurs in desert dunes and sandy Sonoran Desert scrub. This herbaceous perennial is parasitic on native desert shrubs and blooms from March – May. This species is known from the Holtville West Quad just east of the corridors and most of the locations are in the Algodones Dunes of the East Mesa. This species would have a low to moderate potential for occurrence in the project area. Suitable habitat (sandy areas and dunes) is marginal. Surveys for this species will be conducted in appropriate habitat within its blooming season in 2012.
Desert unicorn-plant (<i>Proboscidea althaeifolia</i>)	CDFG: Special Plant CNPS Rare Plant Rank 4.3	Occurs in sandy, Sonoran Desert scrub. Herbaceous perennial; blooms May – August. There are no CNPS or CNDDDB locations for this species in the vicinity of the project. Suitable habitat present, low to moderate potential for occurrence within the project area. Surveys for this species will be conducted in appropriate habitat within its blooming season in 2012.
Desert spike-moss (<i>Selaginella eremophila</i>)	CDFG: Special Plant CNPS Rare Plant Rank: 2.2	Occurs in rocky or gravelly terrain in Sonoran Desert scrub. Herbaceous perennial is most conspicuous in May-July. Closest reported populations in rocky desert scrub of In-Ko-Pah and Sweeney Pass quads. Not expected to occur within the project area due to the lack of suitable habitat. Surveys for this species will be conducted in appropriate habitat within its blooming season in 2012.
Mecca aster (<i>Xylorhiza cognata</i>)	CDFG: Special Plant CNPS Rare Plant Rank 1B.2	Occurs in Sonoran Desert scrub. This species is known from 17 Palms Quad. This herbaceous perennial blooms from January-June. Most of the reported occurrences are in the Indio and Mecca Hills surrounding Palm Springs and Indio. Suitable habitat present, but site may also be at limits of known species range. Not expected to occur within the project area. Surveys for this species will be conducted in appropriate habitat within its blooming season in 2012.

**TABLE 4.12-7
SPECIAL STATUS PLANT SPECIES POTENTIALLY OCCURRING IN THE GEN-TIE SURVEY AREA**

Special Status Plant Species that were Focus of Fall Survey		
Species Name	Sensitivity Status	Potential for Occurrence
Orcutt’s woody-aster (<i>Xylorhiza orcuttii</i>)	BLM: Sensitive CDFG: Special Plant CNPS Rare Plant Rank: 1B.2	Occurs in Sonoran Desert scrub in rocky canyons and sandy washes. Herbaceous perennial; blooms March – April. Closest reported localities are Carrizo and Borrego Mountain quads, areas of rocky terrain. Suitable habitat absent. Not expected to occur within the project area. Surveys for this species will be conducted in appropriate habitat within its blooming season in 2012.

Source: Heritage, 2012.

Notes to Table 4.12-7

Sensitivity Status Codes used in this table:

USFWS: Endangered- Plant taxa that are listed as threatened under the Federal Endangered Species Act

CDFG: Endangered- Plant taxa that are listed as endangered with extinction under the California Endangered Species Act

Special Plant: Plant taxa that are inventoried by the CNDDB

BLM: Sensitive- Plants that are designated by the State Director for special management consideration.

CNPS: Rare Plant Rank 1: Rare, Threatened or Endangered in California and elsewhere

Rare Plant Rank 2: Rare, Threatened or Endangered in California, more common elsewhere

Rare Plant Rank 3: Plants for which more information is needed

Rare Plant Rank 4: Plants of Limited Distribution

Threat extension: 1- Seriously endangered in California

2- Fairly endangered in California

3- Not very endangered in California

In addition to the 8 fall blooming species, six other perennial species would have been observable (or their host would have been observable in the case of the parasitic plants) if present, because of their life-forms, (e.g. shrubs, stem succulents or parasitic plants) even though they would not have been blooming at the time of the survey. These species include: Wolf’s cholla (*Cylindropuntia wolfii*) (BLM Sensitive), little-leaf elephant tree (*Bursera microphylla*) (Priority Plant Species), fairy duster (*Calliandra eriophylla*) (Priority Plant Species), crucifixion thorn tree (*Castela emoryi*) (Priority Plant Species), Wiggins croton (*Croton wigginsii*) (BLM Sensitive), and Thurber’s pilostyles (*Pilostyles thurberi*) (Priority Plant Species). These species are discussed below.

Spring-blooming Special Status Plants

Some species with the potential to occur in the project area are spring ephemerals (Table 4.12-7). Many of these species have a low potential for occurrence because they occur in specialized habitats (e.g., rocky desert scrub) that are absent from this portion of the Yuha Basin, or they are species that do not have reported populations or suitable habitats near the project site.

Surveys during the traditional blooming period of these spring ephemeral species will be conducted during the spring 2012. However, based on literature review of biological technical reports and personal observations, populations of brown turbans (*Malperia tenuis*) (Priority Plant Species), Parish’s desert-thorn (*Lycium parishii*) (Priority Plant Species), Utah vine milkweed (*Funastrum utahense*) (Priority Plant Species), hairy stickleaf (*Mentzelia hirsutissima*) (Priority Plant Species) and rock nettle (*Eucnide rupestris*) (Priority Plant Species) are known to occur the vicinity of the gen-tie. Furthermore, habitats for these species are present within the gen-tie survey area.

Refer to Table 4.12-7 provides a detailed analysis of all special status plant species evaluated for the gen-tie survey area.

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Federally-listed Species

Based on the literature review and field surveys, no federally listed threatened or endangered plant species were identified as having the potential to occur within the gen-tie survey area. No federally listed threatened or endangered species were observed during focused rare plant surveys.

State-listed Species

Algodones Dunes sunflower is a California state listed endangered species and a California Native Plant Society's (CNPS) Rare Plant Rank 1.2 (Rare, Threatened or Endangered in California, and elsewhere/fairly endangered in California) species. This species was not observed during the survey which coincided with its blooming period (September – May). There is very marginal suitable habitat (desert dunes) within the project area on BLM lands. These dunes are the result of human created windbreaks. This species is also only known from the Algodones Dunes. The project site is well outside of the known range of this species. Despite the lack of sufficient rainfall that might have made detection of this species inconclusive, this is not expected to occur within the project area on the BLM or private lands.

No state-listed species were observed on-site during focused rare plant surveys.

BLM Sensitive Species

BLM sensitive species include all species currently on CNPS List 1B, as well as others that are designated by the California BLM State Director. Based on the literature review, three BLM sensitive plant species have the potential to occur within the gen-tie survey area: Algodones Dunes sunflower, Wiggins' croton and Wolf's cholla. Algodones Dunes sunflower was discussed above under "State-listed Species." Wiggins' croton and Wolf's cholla are discussed below.

Wiggins' croton is a California state listed rare species and a BLM sensitive species that was historically considered restricted to the Algodones Dunes on East Mesa, though this species has recently been reported near Plaster City. Individuals of croton previously observed around the Imperial Valley Substation adjacent to the gen-tie survey area are California croton (*Croton californicus*). No individuals in the genus *Croton* were observed within the gen-tie survey area during the survey. Wiggins' croton is not expected to occur within the gen-tie survey area.

Wolf's cholla is a BLM Sensitive Species, a CNPS Rare Plant Rank 4.3 species (Plants of limited distribution/ not endangered in California), and a CNDDDB special plant. Wolf's cholla is a small, multi-branched cactus with cylindrical stem segments. This species is known from Pinto Wash south of the project area. Though the survey did not coincide with its flowering period, no cactus species were observed within the gen-tie survey area. As such this species is not expected to occur within the gen-tie survey area.

No other BLM Sensitive Species are expected to occur within the gen-tie survey area.

Priority Plant Species

Priority plant species are rare, unusual, or key species that are not sensitive by BLM or listed as threatened and endangered. Priority plant species are specifically plants that are included on the CNPS Lists 2–4. Several priority plant species were identified as having the potential to occur within the survey area. **Table 4.12-7** provides additional detail about the potential for priority plant species to occur within the survey area.

California satintail is a CNPS Rare Plant Rank 2.1 species (Rare, Threatened or Endangered in California, more common elsewhere/seriously endangered in California) and a CNDDDB special plant. This tall

4.12 BIOLOGICAL RESOURCES

perennial grass occurs in riparian scrub and mesic (i.e. characterized by, or adapted to a moderately moist) habitats, which are not present along the gen-tie corridors (of the proposed gen-tie and alternative gen-tie alignments discussed in Section 6.0) on the BLM lands. This species was not observed during the fall survey, which coincided with this species blooming period (September-May) and is not expected to occur on BLM lands.

Abram's spurge is known from several historical locations from the vicinity of the project area. Abram's spurge is a CNPS 2.2 species (Rare, Threatened or Endangered in California, more common elsewhere/fairly endangered in California) and a CNDDDB special plant that is a fall/winter blooming species (September – November). This species was not observed during the fall survey, which may be inconclusive due to the lack of summer/fall precipitation in the project area. Despite this, Abram's spurge would have a low potential for occurrence within the BLM lands because much of the suitable habitat is adjacent to agricultural activities, a substation and transmission line corridors.

Glandular ditaxis (*Ditaxis claryana*) is a CNPS Rare Plant Rank 2.2 species (Rare, Threatened or Endangered in California, more common elsewhere/fairly endangered in California) and a CNDDDB special plant. The fall survey coincided with this herbaceous perennial blooming period (October through March). This species was not observed during the fall survey, which may be inconclusive due to the lack of summer/fall precipitation in the project area. Despite this, glandular ditaxis would have a low potential for occurrence within the BLM lands because much of the suitable habitat is adjacent to agricultural activities, a substation and transmission line corridors. There are also no known reported populations within the vicinity of the project area.

Dwarf germander (*Teucrium cubense* ssp. *depressum*) is a CNPS Rare Plant Rank 2.2 species (Rare, Threatened or Endangered in California, more common elsewhere/fairly endangered in California) and a CNDDDB special plant that blooms March – May and September- November (if fall rains occur). There is no suitable habitat for this species (sandy washes and wet soils) within the survey area. Though summer and fall rains may not have been sufficient for seed germination, this species is not expected to occur within the survey area due to the lack of suitable habitat.

California ditaxis (*Ditaxis serrata* var. *californica*) is a CNPS Rare Plant Rank 3.2 species (Plants for which more information is needed/fairly endangered in California) and a CNDDDB special plant. The fall survey coincided with this herbaceous perennial blooming period from March through December. This species was not observed during the fall survey, which may be inconclusive due to the lack of summer/fall precipitation in the project area. Despite this, California ditaxis would have a low potential for occurrence within the BLM lands because much of the suitable habitat is adjacent to agricultural activities, a substation and transmission line corridors. There are also no known reported populations within the vicinity of the project area.

Pink velvet mallow and Newberry's velvet mallow are both CNPS Rare Plant Rank 4.3 species (Plants of limited distribution/not very endangered in California) and CNDDDB special plants. These species are both sub-shrubs that bloom throughout the year (February – December), including the time of the survey. These species are members of the Malvaceae Family, which have distinctive leaf features that also aid with their identification. No members of this family were observed during the time of the survey. In addition, rocky desert scrub is absent from the survey area so these species are not expected to occur.

Thurber's pilostyles is a CNPS Rare Plant Rank 4.3 species (Plants of limited distribution/not very endangered in California) and a CNDDDB special plant. Thurber's pilostyles is a parasitic plant of the genus *Psorothamnus*. This species is known from Pinto Wash south of the Project area. Though this

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species would not have been observable at the time of the survey, its host plant would have been observable if present. No individuals of the genus *Psoralea* were observed during the survey. As such Thurber's pilostyles is not expected to occur within the survey area. Thurber's pilostyles, a parasitic species, would not have been observable at the time of the survey, as it blooms in January but its host plant, woody shrubs or trees in the genus *Psoralea*, would have been observable.

Little-leaf elephant tree, fairy duster, and crucifixion thorn tree are all CNPS Rare Plant Rank 2.3 species (Rare, Threatened or Endangered in California, more common elsewhere/not very endangered in California) and CNDDDB special plants. All are perennial trees or shrubs and would have been observable during the time of the survey. In addition, preferred habitats for these species are typically more rocky or gravelly bajadas or playas that are not present within the project area. As such these species are not expected to occur within the survey area.

Rock nettle is a CNPS Rare Plant Rank 2.2 species (Rare, Threatened or Endangered in California, more common elsewhere/fairly endangered in California) and a CNDDDB special plant. Brown turbans, Parish's desert-thorn and hairy stickleaf are all CNPS Rare Plant Rank 2.3 species (Rare, Threatened or Endangered in California, more common elsewhere/not very endangered in California) and CNDDDB special plants. Utah vine milkweed is a CNPS Rare Plant Rank 4.2 species (Plants of limited distribution/fairly endangered in California). These species have a low to moderate potential for occurrence within the BLM lands associated with the gen-tie. Though suitable habitat is present, it is adjacent to agricultural activities, a substation and transmission line corridors.

The remainder of the plants on List 2 either has a very low potential for occurrence or are not expected to occur within the BLM lands associated with the gen-tie because of the absence of suitable habitat of the site is outside of the known range of these species. Spring rare plant surveys will be conducted in the spring of 2012 (March, April and possibly May depending on conditions and guidance from the BLM).

Special Status Wildlife Species

Fifteen special status wildlife species were determined to have the potential to occur within survey area and those whose potential occurrence is most pertinent to the gen-tie survey area are discussed in detail below. These species include federally listed species, state listed species, and BLM sensitive species that are known to occur in the Imperial Valley, as well as CDFG species of special concern that were observed during surveys.

Federally-listed Species

Peninsular Bighorn Sheep

Species Profile. Peninsular bighorn sheep, formerly known as *O. c. cremnobates*, was federally listed endangered on March 18, 1998, and state-listed threatened on June 27, 1971. Previously, *O. c. cremnobates* was considered to be distinct from the other subspecies of *Ovis canadensis*. However, new deoxyribonucleic acid (DNA) analysis has concluded that *O. c. cremnobates* are genetically indistinct from Nelson's bighorn sheep (*Ovis canadensis nelsoni*); *O. c. cremnobates* was taxonomically reclassified as *O. c. nelsoni* and designed as a "distinct vertebrate population segment." The Peninsular DPS occurs within the Peninsular Ranges and was listed as federally endangered. Critical habitat was designated in 2009 and includes portions of western Imperial County, approximately 12 miles west of the project area. A recovery plan was also prepared for the bighorn sheep in the Peninsular Ranges in 2000.

Peninsular bighorn sheep prefer steep, open slopes, canyons, and washes in hot and dry desert regions where the land is rough, rocky, and sparsely vegetated. Open terrain with good visibility is critical,

because bighorn sheep primarily rely on their sense of sight to detect predators. Most Peninsular bighorn sheep live between 300 and 4,000 feet in elevation, where average annual precipitation is less than four inches and daily high temperatures average 104 degrees Fahrenheit (°F) in the summer. Caves and other forms of shelter (e.g., rock outcrops) are used during inclement weather and for shade during hotter months. In the Peninsular Ranges, bighorn sheep browse on a wide variety of plants, including shrubs, forbs, cacti, and grasses. Although steep escape route terrain is closely associated with bighorn sheep, low rolling and flat terrain including foothills and washes provide an alternative source of high quality browse forage during times when resources become limited. Lambing areas are associated with ridge benches or canyon rims adjacent to steep slopes or escarpments. Alluvial fans (sloping deposits of gravel, sand, clay, and other sediments that spread fanlike at the base of canyons and washes) are also used for breeding, feeding, and movement.

Peninsular bighorn sheep are closely associated with mountainous habitat and often are hesitant to venture far from escape terrain. Although they have been documented to move great distances from escape terrain on rare occasions, it is common to observe animals moving a short distance from escape terrain in search of forage or water sources, or moving between neighboring mountains. Researchers have documented animals ranging at a variety of distances from mountainous terrain (greater than 20 percent slope), from 0.5 to 1.6 miles, but Peninsular bighorn sheep were most frequently found within 0.5 miles of the mountainous terrain.

Historically, bighorn sheep have been documented in the Peninsular Ranges since early explorers such as Anza observed them in the 1700s. The distribution of Peninsular bighorn sheep has become more fragmented in the recent past, possibly due to the construction of roads that bisect ancestral bighorn trails and restrict bighorn movement. Bighorn sheep exhibit a naturally patchy distribution as a result of natural breaks in mountainous habitat. Currently, the Peninsular bighorn is distributed in fragmented populations from the Jacumba Mountains in San Diego County near the U.S./Mexico border to the San Jacinto Mountains in Riverside County.

Critical Habitat. Critical habitat for Peninsular bighorn sheep was designated in 2009 and includes portions of western Imperial County. The closest DCH is approximately 12 miles west of the project area in the Jacumba Mountains.

Occurrence. The nearest recorded location for this species was approximately 16 miles west of the survey area, in the rocky hills southwest of Ocotillo, California. The survey area does not contain the steep, rocky terrain that typically provides cover and habitat for the Peninsular bighorn sheep. The Coyote, In-Ko-Pah, and Jacumba mountains that provide suitable year-round habitat for this species are located 11 to 14 miles from the survey area. The project is situated in the large agricultural complex that surrounds El Centro on the eastern edge of the Yuha Desert, and does not function as a movement corridor for Peninsular bighorn sheep between the Peninsular mountain ranges in western Imperial Valley. In addition, the site is too far from the Peninsular ranges and the corridors between the ranges to serve as a source habitat for foraging or water. The location of the survey area within predominantly agricultural lands also reduces the likelihood of use by Peninsular bighorn sheep, which are sensitive to human activity and disturbance.

Peninsular bighorn sheep were not detected in the survey area during numerous biological surveys. Given the distance from suitable rocky terrain; agricultural lands within the survey area; distance of suitable foraging habitat from the Jacumba Mountains; lack of detection within the survey area; and the unlikelihood of the survey area to function as a movement corridor for this species, Peninsular bighorn sheep are not expected to occur within the survey area or the vicinity.

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State-listed Species

State listed species with the potential to occur within the gen-tie survey area include: greater Sandhill Crane (*Grus canadensis tabida*), barefoot-banded gecko (*Coleonyx switaki*), and Peninsular bighorn sheep. Sandhill crane and barefoot-banded gecko were previously discussed under “State-Listed Species” listed for the Solar Generation Facility Site, above. Peninsular bighorn sheep are discussed in above, under “Federally Listed Species.”

BLM Sensitive Species

Colorado Desert fringe-toed lizard (*Uma notata notata*)

Species. The Colorado Desert fringe-toed lizard is a CDFG Species of Special Concern and a BLM sensitive species. This species is primarily insectivorous, but will also feed on plant material. This species’ diet consists of ants, beetles, antlion larvae, hemipterans, grasshoppers, and caterpillars. Plant foods include buds, flowers, leaves, and seeds. Conspecifics and other lizards are also eaten occasionally. Sight is most frequently used to find food on the surface of sand. Buried fringe-toed lizards also use hearing to detect prey on the sand surface, or to find buried prey when above ground.

Fringe-toed lizards usually seek refuge from enemies by burrowing in the sand ("sand swimming") within 5 to 6 centimeters (2 to 2.4 inches) of the surface. They are usually buried on the lee sides of dunes and hummocks to prevent excavation by wind. Rodent burrows and the bases of shrubs are also used for cover and thermoregulation. Lizards usually hibernate in sand 30 centimeters (12 inches) deep, but juveniles and subadults may be found closer to the surface.

Habitat. The Colorado Desert fringe-toed lizard is found in the Colorado desert, south of the Salton Sea in Imperial and San Diego Counties. Its elevational range extends from sea level up to 180 meters (590 feet). The Colorado Desert fringe-toed lizard is restricted to fine, loose, wind-blown sand dunes, dry lakebeds, sandy beaches or riverbanks, desert washes, and sparse desert scrub.

Occurrence. This species has a moderate potential to occur within Creosote Bush – White Bursage Scrub and Stabilized Sand Dune habitats present in the survey area, but none were observed during surveys. This species is known to occur approximately three miles south of the survey area. Some of the area within the Creosote Bush – White Bursage Scrub habitat represents potentially suitable habitat although loose sandy areas are limited in depth and extent and are not highly suitable. The Stabilized Sand Dune habitat represents higher quality habitat for this species due the greater depth and extend of loose sandy areas.

Flat-tailed Horned Lizard (*Phrynosoma mcallii*)

Species. In California, the flat-tailed horned lizard (FTHL) was designated a sensitive species by the BLM in 1980. In 1988, a petition was submitted to the California Fish and Game Commission (CFGC) to list the species as endangered. In 1989, the commission voted against the proposed listing. In 1993, the USFWS published a proposed rule to list the FTHL as a threatened species. In 2006, the USFWS withdrew its proposal. On March 2, 2010, USFWS re-instated the 1993 proposed listing of the FTHL as federally threatened. The Ninth Circuit Court of Appeals ordered the USFWS to make a final listing determination by November 3, 2010. On March 15, 2011, the USFWS again withdrew its proposal to list the FTHL under the Endangered Species Act.

FTHL has the typical flattened body shape of horned lizards. It is distinguished from other species in its genus by its dark dorsal stripe, lack of external openings, broad flat tail, and comparatively long spines on the head. The FTHL has two rows of fringed scales on each side of its body. The species has

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cryptic coloring, ranging from pale gray to light rust brown dorsally and white or cream ventrally with a prominent umbilical scar. The only apparent external difference between males and females is the presence of enlarged postanal scales in males. Maximum snout-vent length for the species is 3.3 inches.

FTHLs escape extreme temperatures by digging shallow burrows in the loose sand. Adults are primarily inactive from mid-November to mid-February. Juvenile seasonal activity is often dependent on temperature fluctuations. Breeding activity takes place in the spring with young hatching in late July and September. The diet of horned lizards typically consists of greater than 95 percent native ant species, mostly large harvester ants (*Pogonomyrmex* spp.).

Habitat. The FTHL is found in the low deserts of southwestern Arizona, southeastern California, and adjacent portions of northwestern Sonora and northern Baja California, Mexico. In California, the FTHL is restricted to desert washes and desert flats in central Riverside, eastern San Diego, and Imperial counties. The majority of the habitat for the species is in Imperial County.

The lizard is known to inhabit sand dunes, sheets, and hummocks, as well as gravelly washes. The species is thought to be most abundant in creosote bush scrub vegetation communities. However, this species may also be found in desert scrub, desert wash, succulent shrub, alkali scrub, and sparsely vegetated sandy flats. It is typically found in dry, hot areas of low elevation (less than 800 feet).

Occurrence. The BLM gen-tie survey area is located with the Yuha Desert Management Area (MA). The Creosote Bush – White Bursage Scrub and, especially, Stabilized Sand Dune habitats associated with the BLM gen-tie survey area have the potential to support FTHL. Furthermore, FTHL are known to occur in this area.

Focused surveys for FTHL were performed as part of a nearby project immediately south of the gen-tie survey area. A total of 14 observations of potential FTHL sign were recorded during those surveys. FTHL sign was not limited to the sandiest portions of the survey area, and FTHL sign was found in disturbed areas in several instances (e.g. on an existing road), often times in areas with compacted and/or gravelly soils.

Flat-tailed horned lizard density in the survey area appears to be low. FTHL are apparently not limited to the most highly suitable habitats, and have been observed in disturbed habitats. Thus, the entire BLM gen-tie survey area can be considered occupied, although at low densities compared to areas with greater expanses of higher-quality habitat in other portions of the MA. The Stabilized Sand Dune habitats likely represent the highest quality habitat for this species, based on the depth and extent of loose sandy area associated with this habitat type.

California Species of Special Concern and Fully Protected Species

Three species that are classified as CDFG Species of Special Concern were observed within the survey area or were observed during surveys for nearby projects: Loggerhead Shrike, Crissal Thrasher (*Toxostoma crissale*), and LeConte's thrasher (*T. lecontei lecontei*). Golden eagle (*Aquila chrysaetos*), a CDFG Fully Protected Species, and protected under the Bald and Golden Eagle Protection Act, MBTA, and Fish & Game Code Sections 3503, 3503.5, and 3513, has also been observed near the survey area. Each of these species were previously discussed as part of the Environmental Setting for the Solar Generation Facility Site. Refer to descriptions under "California Species of Special Concern and Fully Protected Species."

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Riparian Habitat or Sensitive Natural Communities

As described as part of the Environmental Setting for the SolarGeneration Facility Site, special status natural communities are those communities “that are of limited distribution statewide or within a county or region and are often vulnerable to environmental effects of projects.” The arrow weed thicket associated with the Westside Main Canal near the north end of the proposed gen-tie is considered a special status natural community. There are approximately 0.6 acres of arrow weed thicket (0.12 acres of which are disturbed) and 2.1 acres of open water with arrow weed thicket (none of which are disturbed) present within the gen-tie survey area. There are no other special status natural communities or other riparian habitats within the survey area.

The arrow weed thicket associated with the Westside Main Canal near the north end of the proposed gen-tie is considered a special status natural community. There are approximately 1.6 acres of arrow weed thicket and 1.2 acres of open water with arrow weed thicket present within the proposed gen-tie survey area.

Jurisdictional Waters

The gen-tie survey area for potential jurisdictional waters was comprised of the BLM ROW and a 200-foot buffer area. (The delineation results for these surveys are included in Appendix 2 of the BTR which is included as **Appendix J** of this EIR.) The jurisdictional delineation reports were submitted to the ACOE or CDFG in February 2012 for a determination of potential jurisdictional waters by the respective agencies. Therefore, the following discussion of jurisdictional waters may change pending ongoing consultation with ACOE and CDFG. The **Vegetation Mapbook** included as Attachment 1 to **Appendix J** shows the potentially jurisdictional ACOE and CDFG waters.

ACOE Jurisdictional Waters

No ACOE wetlands were identified within the proposed gen-tie survey area. The Westside Main Canal was the only jurisdictional water of the U.S. (non-wetland) identified within the gen-tie ROW survey area. This feature crosses a small portion of BLM-managed lands near the northern terminus of the proposed gen-tie.

CDFG Jurisdictional Waters

CDFG jurisdictional waters were described as part of the Environmental Setting for the Solar Generation Facility Site. Please refer to this discussion as it is also applicable to the gen-tie. The Westside Main Canal represents the only potentially state jurisdictional feature within the gen-tie survey area. The Westside Main Canal would be spanned by the gen-tie.

Habitat Connectivity and Wildlife Corridors

Habitat Connectivity and Wildlife Corridors were described as part of the Environmental Setting for the Solar Generation Facility Site. Please refer to this discussion as it is also applicable to the gen-tie. As with the solar generation facility site, both avian and terrestrial wildlife species are able to move freely throughout the gen-tie survey area and are not restricted to a specific corridor or linkage.

California Desert Conservation Area

The proposed gen-tie survey area lies within the California Desert Conservation Area (CDCA). This area is within a designated utility corridor (Utility Corridor N) and within the Yuha Basin Area of Critical Environmental Concern (ACEC) as designated by the CDCA.

4.12.3 IMPACTS AND MITIGATION MEASURES

A. STANDARDS OF SIGNIFICANCE

The impact analysis provided below is based on the following State CEQA Guidelines, as listed in Appendix G. The project would result in a significant impact to biological resources if it would result in any of the following:

- a) 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 Game or U.S. Fish and Wildlife Service?
- b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?
- c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?
- d) Interfere substantially with the movement of any 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?
- e) Conflict with any local policies or ordinances protecting biological resource, such as a tree preservation policy or ordinance?
- f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?

B. METHODOLOGY

Field Surveys

The 4,288-acre survey area encompasses the entire Campo Verde Solar Project (solar generation facility site, proposed gen-tie and gen-tie alternatives discussed in Section 6.0), the 160-foot-wide ROWs along the proposed gen-tie route, and buffer areas that varied for several surveys based on the target species and include 4,201 acres of private land and 87 acres of BLM-administered land.

General Biological Survey

Habitat assessments and general biological surveys of the proposed solar generation facility site were conducted on May 5 and September 30, 2010, March 28 through April 5, 2011, and October 23 through 27, 2011. The associated gen-tie facilities surveys were conducted from October 23 through 27, 2011. The focus of these surveys was twofold: 1) to document the botanical resources and potentially jurisdictional state and federal waters and wetlands, and 2) to document suitable threatened, endangered, and sensitive wildlife species habitats on the proposed solar generation facility site and along the proposed and alternative gen-tie corridors. The field surveys were conducted by surveying naturally vegetated areas with public access on foot and surveying the remainder of the area from public roads. The earthen drains and canals on the solar generation facility site were surveyed for indications of wetland vegetation and wildlife use. High quality aerial photography was used to map

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habitats and other features in areas that couldn't be accessed from public roads. These areas were examined with binoculars and vegetation communities were interpreted and mapped on the aerials.

Focused Rare Plant Survey

Fall rare plant surveys were performed on October 23 and 24, 2011 in accordance with Survey Protocols Required for NEPA/ESA Compliance for BLM Special Status Plant Species and the Protocols for Surveying and Evaluating Impacts to Special Status native Plant Populations and Natural Communities. The survey was conducted during the traditional blooming periods of several fall-blooming, sensitive species known from the vicinity of the project. Spring rare plant surveys were conducted for several nearby projects in the same corridor and those data were available and used for this analysis. Surveys for spring ephemeral species will be conducted during traditional blooming periods of species known or potentially occurring within the survey area (March to May, 2012).

The entire rare plant survey area on BLM lands was examined on foot using transects. Approximate 30-meter transects were walked within the survey area that encompassed the various gen-tie alignments.

Private lands were evaluated for suitability to support rare plants; it was determined that the private lands have been intensively cultivated for decades, which has resulted in a change to the natural soil profile and limited potential for growth of native plants. As such, it has been determined that the private lands do not support suitable habitat for rare plants. The natural vegetation along the Westside Main Canal and the adjacent canals and drains was also surveyed to assess potential to support rare plants.

Rare plant surveys of the fallow agricultural areas were not conducted because these areas were determined to have no potential to support sensitive rare plants at the time of fall survey. Fall-germinating and blooming ephemeral plant species were absent from the undisturbed native habitats (e.g. public lands between the Imperial Valley Substation and the Westside Main Canal) due to the lack of sufficient summer and early fall rains for seed germination. Spot field checks of the disturbed native habitats in the private agricultural lands north of the Westside Main Canal also revealed the absence of fall germinating and blooming ephemeral plant species. The absence of these species in higher quality native habitats led to the conclusion that these species were also absent from the previously cultivated habitats because fall germinating species did not sprout in this portion of the Yuha Desert in the fall of 2011. These low quality habitats will be surveyed in the spring of 2012.

A database search using the California Natural Diversity Database (CNDDDB) RareFind indicated that five rare plant species are known from the project vicinity: brown turbans (*Malperia tenuis*) a CNPS List 2.3 species, hairy stickleaf (*Mentzelia hirsutissima*) a CNPS List 2.3 species, fairy duster (*Calliandra eriophylla*) a CNPS List 2.3 species, rock nettle (*Eucnide rupestris*) a CNPS List 2.2 species and Thurber's pilostyles (*Pilostyles thurberi*) a CNPS List 4.3 species. In addition, other sensitive species are known to potentially occur within the survey area and were included in the survey.

Phenology of common species at the time of the survey was used to verify that the survey was conducted within the period when rare plants would be observable. Shape files depicting survey area boundaries were uploaded onto GPS units. Transect locations were determined using UTM's. Track logs depicting transects were recorded on the GPS units.

Focused Burrowing Owl Surveys

Burrowing Owl surveys were conducted following California Burrowing Owl Consortium *Burrowing Owl Survey Protocol and Mitigation Guidelines* and CDFG's *Staff Report on Burrowing Owl Mitigation* (CDFG 1995).

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Phase I and Phase II surveys of the solar generation facility site were conducted simultaneously by qualified biologists during the 2011 breeding season (March-April). Phase I and II surveys of the gen-tie corridors for the proposed project and alternative gen-tie alignments were conducted simultaneously during the fall of 2011 (October). The Phase I habitat assessments determined that most of the study area contains suitable Burrowing Owl habitat, and Phase II burrow surveys were conducted.

Phase II surveys covered the entire study area and potentially suitable burrows were recorded. Transects at 10-meter spacing were walked within the gen-tie corridor (including a 500-foot buffer around the project area) to ensure that all suitable burrows were identified. Within agricultural lands, a combination of vehicular and pedestrian surveys was conducted along roads and irrigation infrastructure.

Burrows that had the potential to be used by Burrowing Owls were marked using a handheld global positioning system (GPS) unit. Photos were taken of representative potential burrows and owl observations were noted. "Burrow Clusters" were recorded in areas that supported high densities of burrow entrances that were either: 1) multiple entrances associated with a single burrow; or 2) separate burrows that were located too close together to support more than one breeding pair of owls (burrows within 5 meters [or approximately 16 feet] of each other).

The Burrowing Owl nesting season begins as early as February 1 and continues through August 31. The timing of nesting activities varies with latitude and climatic conditions. Phase III surveys were conducted on the solar generation facility site during the breeding season, beginning March 1 and ending August 31. All Burrowing Owl sightings were recorded (including occupied burrows and burrows with sign) and mapped. Numbers of adults and juveniles were recorded, as well as behavior such as courtship and copulation. Territory boundaries and foraging areas were not mapped, mainly because of the difficulty posed by the active nests being so close together where home-ranges potentially overlap.

Surveys were conducted in the morning and evening (one-half hour before to two hours after sunrise and two hours before to one-half hour after sunset). Burrows were examined for owl sign during the first observation of suitable burrows (typically during Phase II surveys). Subsequent observations were conducted from fixed points that provided visual coverage of the burrows using spotting scopes or binoculars. When possible, observers remained in vehicles to minimize disturbance to the birds as much as possible.

Surveys were conducted at each burrow on four separate days in order to minimize the likelihood of false-negative results. Phase III surveys were not conducted along the proposed gen-tie corridor in 2011 though they will be conducted during the spring of 2012 in accordance with the protocol.

Winter resident surveys are being conducted during December 2011 and January 2012. Winter survey methodologies will follow Phase III protocol and were conducted on four separate days during the 2011/2012 Winter Season. This survey was completed at the end of January 2012. Breeding season surveys will be conducted for the second time on the solar generation facility site and along the proposed gen-tie and alternative routes from March 5 through April 6, 2012.

Avian Use Surveys

Winter avian use surveys were completed in December 2011 and January 2012. Spring avian use surveys will begin March 5 and end April 6, 2012. They are all being performed by qualified biologists experienced in the identification of North American birds by sight and sound, and in accordance with *BLM's Solar Facility Point Count Protocol*. Point-count stations were located along 4 transects placed throughout the proposed project area (solar generation facility and gen-tie). Transect locations were designed to sample all habitat types present within the project area with a focus on areas most likely to

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contain a high abundance and/or diversity of birds, while maintaining adequate spatial coverage of the entire solar generation facility site and proposed gen-tie corridor. Each transect was approximately 1,250-meters in length with point-count locations spaced every 250-meters along transects. A total of 24 point-count stations were sampled during each survey event, with a total of four survey events during the winter survey season (December 2011 to January 2012) and four survey events during the spring season (March-April 2012).

At each point count station, biologists recorded all birds seen or heard within a 100-meter radius over a 10-minute sampling period. Pairs or groups of birds were recorded as single detections to avoid issues resulting from statistical dependence. Birds seen or heard outside of the 100-meter radius were recorded as incidental observations and contributed to the overall project species list, but were excluded from analyses aimed at quantifying avian abundance. Birds that were seen or heard along transects, but between point-count stations, were also recorded as incidental observations. Point counts were generally performed no earlier than 30-minutes prior to sunrise and ended within four hours of sunrise. Surveys were not performed during inclement weather conditions (e.g. more than light or intermittent rain, winds greater than 15 miles-per-hour).

Jurisdictional Delineation

The project area (solar generation facility site and gen-tie) was evaluated for drainage features during field visits performed on April 4 - 5, 2011, October 25 - 27, 2011 and December 19 - 20, 2011. Additional information was gathered using a Geographic Information System (GIS) and aerial imagery. Determinations regarding the potential jurisdictional status of the various features located within the project area are based on the applicable regulations and associated guidance documents as well as on personal communications with Lanika Cervantes, Project Manager in the Regulatory Division of the US Army Corps of Engineers (ACOE) and Magdalena Rodriguez, Wildlife Biologist, from the California Department of Fish and Game (CDFG). The Applicant submitted a report for a Preliminary Jurisdictional Determination to the ACOE and a determination of the extent of potential CDFG-jurisdictional waters during the first quarter of 2012. The Applicant will follow-up with any required permit as identified by either agency. .

Literature Review

Determination of the potential occurrence for listed, sensitive, or noteworthy species is based upon known ranges and habitat preferences for the species, species occurrence records from the California Natural Diversity Database (CNDDDB), the BLM Special Status plant and wildlife species website, and species occurrence records from other sites in the vicinity of the survey area.

Additional resources that were consulted included the Biological Technical Report for the Imperial Solar Energy Center West, Biological Technical Report for the Imperial Solar Energy Center South, the Biological Technical Report for the Centinela Solar Energy Project, Draft Environmental Impact Report/Environmental Assessment for the Centinela Solar Energy Project, and the Draft Environmental Impact Statement for the SES Solar Two.

C. ISSUES SCOPED OUT AS PART OF THE INITIAL STUDY

No checklist criteria were eliminated from further evaluation as part of the Initial Study. Each checklist item is discussed in the analysis of impacts for the solar generation facility site and the gen-tie, as appropriate.

D. PROJECT IMPACTS AND MITIGATION MEASURES

Impacts to Special-Status Species – Plants

Impact 4.12.1 The proposed solar generation facility site has been previously disturbed in association with past and current agricultural operations. The gen-tie corridor is not anticipated to contain special-status plants based on previous surveys within the corridor. Therefore, **no impacts** to special status plant species are expected to occur as a result of project implementation.

Solar Generation Facility Site

The solar generation facility site consists of disturbed agricultural lands with very little native vegetation. As shown, approximately 1,852 acres of the site would be temporarily and permanently disturbed consisting of primarily active agriculture. The site is regularly tilled, planted, and harvested/mowed. As a result, no special status plant species are expected to occur on the solar generation facility site and no impact is identified.

Gen-Tie

Special status plants within the gen-tie corridor on BLM lands will be addressed in a separate Environmental Assessment prepared by the BLM. However, based on the biological studies prepared for this project, no federally listed, state-listed or BLM sensitive plant species are known or expected to occur within the proposed gen-tie corridor based on spring surveys completed for projects in the same corridor. Abram's spurge (CNPS 2.2), glandular ditaxis (CNPS 2.2), and California ditaxis (CNPS 3.2) have a low potential for occurrence within the proposed gen-tie survey area. Rock nettle (CNPS 2.2 and CNDDDB special plant), Brown turbans, Parish's desert-thorn and hairy stickleaf (CNPS 2.3 and CNDDDB special plants), and Utah vine milkweed (CNPS 4.2) have a low to moderate potential for occurrence.

Impacts to these species are not anticipated because they were not observed during surveys and habitat is of low quality. However, if impacts occur, they will be relatively minor based on the small impact areas (7.40 acres of temporary impacts and 0.05 acre of permanent impacts).

Though considered sensitive species, the relatively low ranking status of these species means that mitigation for these species' habitats (e.g., mitigation for the creosote bush – white bursage scrub habitat would mitigate for impacts to the preferred habitats for these species) would be sufficient to reduce impacts to **less than significant** levels. Species-specific mitigation requirements would not be necessary. Therefore, impacts to special status species plants are considered less than significant.

Mitigation Measures

None required.

Significance After Mitigation

Not applicable.

Impacts on Special Status Species – Birds (Southwestern Willow Flycatcher)

Impact 4.12.2 Implementation of the proposed project has the potential to impact SWFL. This is considered a **potentially significant impact**.

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Solar Generation Facility Site

Construction of the proposed project is not likely to directly affect SWFL individuals because there is no nesting habitat in the survey area. Furthermore, no habitat used during migration will be removed to accommodate the proposed project. However, **potentially significant** impacts to SWFLs may occur in association with light and noise generated during construction.

Light and noise from heavy equipment may result in short-term avoidance by SWFL of small areas of foraging habitat near construction activities. These would be short-term impacts given the brief amount of time (likely two weeks or less) this species may forage in the project vicinity during migration. Work in the immediate vicinity of potentially suitable SWFL habitat will be conducted primarily during daylight hours. If it becomes necessary to conduct work at night, lighting will be needed for worker safety. Light could spill on to foraging areas potentially disturbing foraging activities.

Generally, noise from the construction of solar facilities similar to the proposed project may exceed 60 dB(A) for a distance of up to 1,280 feet from the source. These noise levels could potentially impact SWFL if they are foraging in the area during migration.

The O&M activities of the proposed project are not likely to adversely impact SWFL that may forage within migration habitats adjacent to the solar generation facility site (**Figure 4.12-2A**, **Figure 4.12-2B** and **Figure 4.12-2C**). Noise and lighting during operations will be minimal and directed toward the interior of the solar generation facility site where the operations facilities are located and would be similar in nature to noise associated with current agricultural activities. Therefore, O&M activities are not expected to provide a significant source of disturbance to avian species, including SWFL, outside of the solar generation facility site.

Suitable migration habitat exists in the vicinity of portions or all of Fig Drain, Diehl Drain, Wixom Drain, Dixie 3A Drain, Westside Drain, and Wormwood 7 Drain (**Figure 4.12-2A**, **Figure 4.12-2B** and **Figure 4.12-2C**). The project will not directly disturb acreage inside these habitats. No project features will be built within, over or under any of the drains or wetlands containing potentially suitable migratory habitat for the SWFL. The solar panels will be installed in areas that are actively farmed and fencing will be installed near existing field edges to prevent equipment from entering drains and wetlands or associated riparian habitats during construction and operations.

The solar generation facility site will include several earthen stormwater retention/detention basins to manage stormwater flows. Run-off flows from the solar generation facility site will be directed to these basins where water will be allowed to percolate through the soil. The detention basins will be sized to meet county and RWQCB standards. The O&M building and delivery areas will also be designed to accommodate storm water runoff in accordance with County guidelines. No indirect effects to SWFL foraging habitat along the portions of Fig Drain, Diehl Drain, Wixom Drain, Dixie 3 Drain, Dixie 3A Drain, Dixie 3B Drain, Dixie 4 Drain, Westside Drain, Forget-Me-Not Drain 1, and Wormwood 7 Drain supporting potentially suitable SWFL migratory habitat are expected to occur.

Gen-Tie

Construction of the proposed gen-tie is not likely to directly affect SWFL individuals because there is no nesting habitat in the survey area. Suitable SWFL migration habitat in the proposed gen-tie survey area occurs only in the vicinity of Dixie 3B Drain, just west of the Westside Main crossing (**Figure 4.12-2C**). The proposed gen-tie will not disturb acreage inside these habitats, nor would the gen-tie be built across this habitat. No project features will be built within, over or under any of the drains or wetlands containing potentially suitable migratory habitat for the SWFL.

Potential impacts to the SWFL would be limited to the risk that night-migrating SWFL individuals could collide with the gen-tie. Likewise, temporal displacement of migrant willow flycatchers could occur if nearby construction activities temporarily deter foraging. This impact is considered **potentially significant**.

Mitigation Measures

MM 4.12.2 Implement the following measures to address potential impacts to avian species, including SWFLs:

- The Applicant shall prepare and implement a Bird and Bat Conservation Strategy (BBCS) outlining conservation measures for construction and O&M activities that reduce potential impacts to migratory birds, bats and raptors. Conservation measures shall be developed based on, USFWS guidelines and input from the USFWS. Construction conservation measures to be addressed in the BBCS include:
 - Minimizing disturbance to vegetation to the maximum extent practicable.
 - Clearing vegetation outside of the breeding season. If construction occurs between February 1 and September 15, an approved biologist shall conduct a pre-construction clearance survey for nesting birds in suitable nesting habitat that occurs within the proposed area of impact. Pre-construction nesting surveys will identify any active migratory birds (and other sensitive non-migratory birds) nests. Direct impact to any active migratory bird nest should be avoided.
 - Minimize wildfire potential.
 - Minimize activities that attract prey and predators.
 - Control of invasive plants.
 - Apply APLIC design guidelines for overhead utilities by incorporating recommended or other methods that enhance the visibility of the lines to avian species.

Operations and maintenance conservation measures to be incorporated into the BBCS include:

- Preparation of a Raven Control Plan that avoids introducing water and food resources in the area surrounding the solar generation facility.
- Incorporate APLIC guidelines for overhead utilities as appropriate to minimize avian collisions with Gen-tie Line facilities.
- Minimize noise.
- Minimize use of outdoor lighting.
- Implement post—construction avian monitoring that will incorporate the Wildlife Mortality Reporting Program.

The BBCS shall also address disturbance minimization, timing of construction, minimization of activities that would attract prey and predators, lighting, noise, and incorporation of a Wildlife Mortality Reporting Program and Raven Control Plan discussed below.

- The Applicant shall prepare a *Raven Control Plan* that details specific measures for storage and disposal of all litter and trash produced by the Campo Verde Solar

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project site and its employees. This plan shall be designed to discourage scavengers that may also prey on wildlife in the vicinity. All employees shall be familiar with this plan and littering shall be prohibited. This plan will be reviewed and approved by the BLM and CDFG.

- Prepare a *Wildlife Mortality Reporting Program* to identify and report any dead or injured animals observed by personnel conducting O&M activities within the solar generation facility and along the gen-tie line. An appropriate reporting format for dead or injured special status wildlife observed within the solar generation facility and along the gen-tie line shall be developed in coordination with CDFG, USFWS and the BLM. In addition, reporting of any dead or injured avian species found along the gen-tie line shall follow the existing USFWS Bird Fatality/Injury Reporting Program (<https://birdreport.fws.gov/>). Species requiring reporting will be decided in consultation with CDFG, BLM and USFWS.
- Establish annual formal Worker Education Training for all employees and any subcontractors at the Campo Verde Solar project site to provide instruction on sensitive species identification; measures to avoid contact, disturbance, and injury; and reporting procedures in the case of dead and/or injured wildlife species. The USFWS and the BLM shall be notified per approved guidelines and channels of authority if mortality should occur. Species requiring reporting will be decided in consultation with CDFG, BLM and USFWS and will be detailed in the *Wildlife Mortality Reporting Program*.

Timing/Implementation: Prior to issuance of grading permits, and maintained throughout the operations and maintenance process.

Enforcement/Monitoring: Project Applicant in collaboration with CDFG, BLM and USFWS.

Significance After Mitigation

Implementation of **MM 4.12.2** would reduce impacts to SWFLs as well as well other bird populations and important avian habitats. These measures would include conservation measures, such as development of a BBCS, Raven Control Plan, Wildlife Mortality Reporting Program, and Worker Education Training. Implementation of these measures would reduce potential impacts to SWFLs throughout the construction and the operations and maintenance processes to **less than significant** levels.

Impacts on Special Status Species – Birds (Yuma Clapper Rail)

Impact 4.12.3 Implementation of the proposed project has the potential to impact YCR. This is considered a **potentially significant impact**.

Solar Generation Facility Site

Construction of the proposed project is unlikely to have an adverse impact on YCR individuals. The nearest known occurrence of YCR is approximately 0.5 miles north of the survey area. Potential YCR habitat in the project area is limited, isolated and of poor quality. No potential foraging or wintering habitat will be removed during construction or grading. No impacts to YCR due to habitat loss will occur.

Potential for YCR to forage or winter in the cattail marsh or common reed marsh vegetation associated with Fig Drain, Wixom Drain, Dixie 3A Drain, and an unnamed wetland adjacent to Dixie 3A Drain, Dixie 4

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Drain, Westside Drain and Wormwood 7 Drain is low (refer to **Figure 4.12-2A**, **Figure 4.12-2B** and **Figure 4.12-2C**). Thus, this species is not expected to nest within the survey area.

Temporary light and noise from heavy equipment during construction is unlikely to impact YCR given the low potential for this species to forage or winter adjacent to and/or within the solar generation facility site. Work will be conducted primarily during daylight hours. If it becomes necessary to conduct work at night, lighting will be needed for worker safety. Lighting could impact YCR in the unlikely event that they are present when night construction is occurring.

In general, noise from the construction of solar facilities similar to the proposed project may exceed 60 dB(A) for a distance of up to 1,280 feet from the source. Although it is unlikely that YCR forages or winters in the small habitat patches within the survey area, construction noise could potentially impact this species if it is present.

The O&M activities of the project would not affect YCR in the unlikely event that this species forages within the cattail marsh adjacent to and/or within the proposed solar generation facility site. Any noise and lighting during operations will be minimal, and the level of human disturbance is not expected to increase significantly above the agricultural practices that are currently taking place and will continue to take place. Therefore, O&M activities are not expected to affect YCR.

The solar generation facility site will include several earthen detention basins to manage stormwater flows. Run-off from the solar generation facility site will be directed to these basins where water will be allowed to percolate through the soil. The detention basins will be sized to meet county and RWQCB standards. The O&M building and delivery areas will be provided with stormwater containment designed to accommodate runoff in accordance with County guidelines. No indirect effects to YCR foraging habitat or wintering habitat along the with Fig Drain, Wixom Drain, Dixie 3A Drain, an unnamed wetland adjacent to Dixie 3A Drain, Dixie 4 Drain, Westside Drain or Wormwood 7 Drain are expected to occur as a result of run-off.

Unpaved roads exist adjacent to the Fig Drain, Wixom Drain, Dixie 3A Drain, an unnamed wetland adjacent to Dixie 3A Drain, Dixie 4 Drain, Westside Drain and Wormwood 7 Drain. These roads provide access to these facilities and no additional grading beyond standard maintenance of solar generation facility site access roads adjacent to potential foraging or winter habitat is anticipated. Impacts to these habitats resulting from sedimentation are not expected to occur. Because downstream flows are expected to be maintained at current levels, effects to downstream YCR habitat are not anticipated.

Gen-Tie

There is no habitat for Yuma Clapper Rail along the proposed gen-tie. No impact would occur.

Mitigation Measures

Implement MM 4.12.2

Timing/Implementation: Prior to issuance of grading permits, and maintained throughout the operations and maintenance process.

Enforcement/Monitoring: Project Applicant in collaboration with CDFG, BLM and USFWS.

Significance After Mitigation

Implementation of **MM 4.12.2** would reduce impacts to bird populations, including YCRs and other important avian habitats. These measures would include conservation measures, such as development of a BBCS, Raven Control Plan, Wildlife Mortality Reporting Program, and Worker Education Training.

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Implementation of these measures would reduce potential impacts to YCRs throughout the construction and the operations and maintenance processes to **less than significant** levels.

Impacts on Special Status Species – Birds (Greater Sandhill Crane)

Impact 4.12.4 Implementation of the proposed project has the potential to impact Greater Sandhill Crane. This is considered a **potentially significant impact**.

Solar Generation Facility Site

Greater Sandhill Cranes may forage during the winter in the active agricultural habitats present within the survey area. Approximately 1,677.5 acres of agricultural land would be removed to accommodate the proposed project (refer to **Table 4.12-10**). Given the large amount of potentially suitable foraging habitat in the immediate vicinity of the project area and the Imperial Valley, it is unlikely that the loss of this potentially suitable foraging habitat would significantly impact wintering Greater Sandhill Cranes.

Light and noise from heavy equipment during construction is not expected to adversely modify the behavioral patterns of foraging Sandhill Cranes given the vast amount of foraging habitat in the immediate vicinity of the survey area. Work will be conducted primarily during daylight hours. If it becomes necessary to conduct work at night, lighting will be needed for worker safety. This lighting will be directed toward the interior of the solar generation facility site in order to minimize effects to Sandhill Cranes that may be roosting in adjacent fields. The Sandhill Crane is a diurnal species and is not expected to be active at night.

Generally, noise from the construction of solar facilities similar to the solar generation facility site may exceed 60 dB(A) for a distance of up to 1,280 feet from the source. While the Sandhill Crane is relatively tolerant of disturbance on its wintering grounds, noise during construction has the potential to impact this species.

The O&M activities are unlikely to affect Sandhill Cranes that may be foraging adjacent to the solar generation facility site during the winter. Noise and lighting during operations will be minimal and directed toward the interior of the solar generation facility site where the operations facilities are located. General O&M activities that may be conducted within the solar generation facility site include equipment inspection and/or repairs, solar panel washing, weed abatement activities, and security guard duties involving the use of motor vehicles. Panel washing may also require a water truck access. These O&M activities are anticipated to be at the same level of intensity as the current agricultural operations and are not expected to affect the overall behavioral patterns of Sandhill Cranes within the survey area.

Gen-Tie

Sandhill Cranes are only active during daylight hours, and no collisions with the solar panels or other facility structures are anticipated, as they will be visible, and therefore avoidable. The potential for collisions with the proposed gen-tie would be low as APLIC guidelines for overhead utilities will be incorporated as appropriate to minimize this risk.

Mitigation Measures

Implement MM 4.12.2

Timing/Implementation: Prior to issuance of grading permits, and maintained throughout the operations and maintenance process.

Enforcement/Monitoring: Project Applicant in collaboration with CDFG, BLM and USFWS.

Significance After Mitigation

Implementation of **MM 4.12.2** would reduce impacts to bird populations, including Greater Sandhill Cranes and other important avian habitats. These measures would include conservation measures, such as development of a BBCS, Raven Control Plan, Wildlife Mortality Reporting Program, and Worker Education Training. Implementation of these measures would reduce potential impacts to Greater Sandhill Cranes throughout the construction and the operations and maintenance processes to **less than significant** levels.

Impacts on Special Status Species – Birds (Mountain Plover)

Impact 4.12.5 Implementation of the proposed project has the potential to impact Mountain Plover during construction, and operation and maintenance. This is considered a **potentially significant impact**.

Solar Generation Facility Site

The risk of death or injury to Mountain Plover resulting from the project is unlikely for the following reasons:

- This species does not nest within the survey area or in the Imperial Valley; therefore, there is no risk of destroying nests or eggs, harming chicks, or discouraging parents from returning to the nest.
- The species is naturally evasive and will readily move out of harm's way to avoid construction activities. They would likely find suitable fields nearby for foraging.
- Foraging habitat would be removed permanently on the solar generation facility site; therefore, Mountain Plovers would not attempt to forage on the site and there would be no risk of collision with solar panels and other components.

The Mountain Plover is protected under the MBTA. As such, it is unlawful to kill this species. Therefore, the Applicant must avoid killing Mountain Plover and employ avoidance measures necessary to avoid killing or injuring any Mountain Plover.

Light and noise from heavy equipment during construction is expected to be of short duration and should not adversely modify the behavioral patterns of foraging Mountain Plover in the region given the vast amount of foraging habitat in the immediate vicinity of the survey area. Work will be conducted primarily during daylight hours. If it becomes necessary to conduct work at night, lighting will be needed for worker safety. Lighting has the potential to impact Mountain Plover that may be roosting in adjacent fields. However, Mountain Plover is a diurnal species and is not expected to be active at night.

Generally, noise from the construction of solar facilities similar to the solar generation facility site may exceed 60 dB(A) for a distance of up to 1,280 feet from the source. While the Mountain Plover is relatively tolerant of disturbance on its wintering grounds, noise could potentially impact this species during the brief periods when plovers may forage within any given field in the vicinity of the survey area.

The O&M activities are unlikely to affect Mountain Plovers that may be foraging adjacent to the solar generation facility site during the winter. Noise and lighting during operations will be minimal and directed toward the interior of the solar generation facility site where the operations facilities are located. General O&M activities that may be conducted within the solar generation facility site include equipment inspection and/or repairs, solar panel washing, weed abatement activities, and security guard duties involving the use of motor vehicles. Panel washing may also require a water truck access. These O&M activities are anticipated to be at the same level of intensity as the current agricultural

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operations and are not expected to affect the overall behavioral patterns of Mountain Plovers within the survey area.

Mountain Plover is only active during daylight hours, and no collisions with solar panels, or other facility structures are anticipated, as they will be visible, and therefore avoidable, if Mountain Plovers are actively moving in and around the solar generation facility site. In addition, Therefore, O&M activities would have **less than significant** impact on Mountain Plover foraging within or adjacent to the survey area.

Approximately 1,677.5 acres of potential foraging habitat for Mountain Plover would be permanently removed. Conservatively assuming that entire acreage is suitable foraging habitat at any given time, this loss of foraging habitat would account for less than 0.8 percent of the estimated foraging habitat (using the five-year average of 214,962 acres) available in the Imperial Valley. This does not take into account the likely significant acreage of suitable foraging habitat in Mexico, just across the border. The permanent loss of less than 0.8 percent of suitable foraging habitat in the Imperial Valley represents minute portion of the loss of total habitat in the Imperial Valley.

Large avian predators such as ravens (genus *Corvus*), Loggerhead Shrikes (*Lanius ludovicianus*), and Prairie Falcon (*Falco mexicanus*) may be drawn to the solar generation facility site due to the increase in food sources such as garbage cans and nesting/perching areas such as the perimeter fence. This potential increase in avian predators may indirectly affect Mountain Plover within and adjacent to the solar generation facility site.

No indirect effects to Mountain Plover due to herbicide use are anticipated. The timing and formula of any herbicide used for control of weeds will be in accordance with the Weed Management Plan (refer to **MM 4.12.12a** and **MM 4.12.12b**), which will conform to resource agency standards to minimize impacts to sensitive biological resources.

Gen-Tie

Mountain Plover is only active during daylight hours, and no collisions with the gen-tie are anticipated as this feature will be visible and therefore avoidable. Impacts to Mountain Plover are expected to be **less than significant**.

Mitigation Measures

Implement MM 4.12.2

Timing/Implementation: Prior to issuance of grading permits, and maintained throughout the operations and maintenance process.

Enforcement/Monitoring: Project Applicant in collaboration with CDFG, BLM and USFWS.

Significance After Mitigation

Implementation of **MM 4.12.2** would reduce impacts to bird populations, including Mountain Plover and other important avian habitats. These measures would include conservation measures, such as development of a BBCS, Raven Control Plan, Wildlife Mortality Reporting Program, and Worker Education Training. Implementation of these measures would reduce potential impacts to Mountain Plover throughout the construction and the operations and maintenance processes to **less than significant** levels.

Impacts on Special Status Species – Raptors (Burrowing Owls)

Impact 4.12.6 Implementation of the proposed project has the potential to impact Burrowing Owls during construction, and operation and maintenance. This is considered a **potentially significant impact**.

Solar Generation Facility Site

The *1995 California Department of Fish and Game's Staff Report on Burrowing Owl Mitigation* defines impact to Burrowing Owl as:

- Disturbance within 50 meters (approximately 160 feet.) which may result in harassment of owls at occupied burrows;
- Destruction of natural and artificial burrows (culverts, concrete slabs, and debris piles that provide shelter to Burrowing Owls); and
- Destruction and/or degradation of foraging habitat adjacent (within 100 meters or approximately 328 feet) of an occupied burrow(s).

Sixty-five occupied Burrowing Owl burrows were observed within the survey area. While direct removal of these burrows are not anticipated as the result of project implementation, adjacent agricultural fields, which represent suitable foraging habitat for these burrows will be graded during construction activities. Based on the criteria above, impacts to any Burrowing Owl individuals and/or active Burrowing Owl burrows would be considered **potentially significant**. In accordance with the *1995 California Department of Fish and Game's Staff Report on Burrowing Owl Mitigation*, impacts to foraging habitat within 100 meters (approximately 300 feet) of each active burrow would be considered **significant**.

After construction is complete, Burrowing Owls may occur along the remaining earthen lined canals and drains in and around the project area. All permanent lighting within the solar generation facility site will be low profile fixtures that point inward toward the solar generation facility site with directional hoods or shades to reduce light from shining into the adjacent habitat. In addition, any lighting not required daily for security purposes will have motion sensor or temporary use capabilities. Thus, impacts to Burrowing Owl due to lighting are expected to be **less than significant**.

No equipment or components of the solar generation facility site are expected to produce noise that would exceed ambient noise in the vicinity. Thus, noise impacts to Burrowing Owl are expected to be **less than significant**.

Gen-Tie

Thirty suitable but unoccupied Burrowing Owl burrows were observed within the survey area, though they are located within the unstable desert dunes and are regularly filled in because of the structural instability of the sand. Removal of these burrows is not anticipated to occur as the result of implementation of the proposed gen-tie because the burrows would be spanned and adjacent suitable foraging habitat for these burrows would not be removed during construction activities.

No equipment or components of the gen-tie are expected to produce noise either during construction or operation that would exceed ambient noise in the vicinity. Therefore, noise impacts to Burrowing Owls during construction and operation of the gen-tie would be **less than significant**.

Mitigation Measures

MM 4.12.6a The following measures will avoid, minimize, or mitigate potential impacts to Burrowing Owls during construction activities:

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- 1) To the extent practicable, initial grading and clearing within the project footprint shall occur between September 1 and January 31 to avoid impacts to any breeding Burrowing Owls. Occupied burrows shall not be removed during the nesting season (February 1 through August 31) unless a qualified biologist approved by CDFG verifies through non-invasive methods that either: (a) the birds have not begun egg-laying and incubation; or (b) that juveniles from the occupied burrows are foraging independently and are capable of independent survival.

If initial grading and clearing within the project footprint is to begin during the breeding season (February 1 through August 31), measures 2 through 4 below will be implemented.

- 2) Within 30-days prior to initiation of initial grading and clearing, pre-construction clearance surveys for Burrowing Owl shall be conducted by qualified and agency-approved biologists to determine the presence or absence of this species within the grading area. The proposed grading areas shall be clearly demarcated in the field or via GPS by the project engineers and Designated Biologist prior to the commencement of the pre-construction clearance survey. The surveys shall follow the protocols provided in the *Burrowing Owl Survey Protocol and Mitigation Guidelines*.
- 3) When removal of occupied burrows is unavoidable, the following mitigation measures shall be implemented outside of the breeding season:
 - Passive relocation methods are to be used by the biological monitors to move the owls out of the impact zone. This includes covering or excavating all burrows and installing one-way doors into occupied burrows. This will allow any animals inside to leave the burrow, but will exclude any animals from re-entering the burrow. A period of at least one week is required after the relocation effort to allow the birds to leave the impacted area before excavation of the burrow can begin. The burrows should then be excavated and filled in to prevent their reuse.
 - The removal of active burrows on-site requires construction of new burrows or the enhancement of existing unsuitable burrows (i.e., enlargement or clearing of debris) at a mitigation ratio of 2:1 at least 50 meters from the impacted area and must be constructed as part of the above-described relocation efforts.
- 4) As the project construction schedule and details are finalized, an approved biologist shall prepare a Burrowing Owl Mitigation and Monitoring Plan that will detail the approved, site-specific methodology proposed to minimize and mitigate impacts to this species. Passive relocation, destruction of burrows, and construction of artificial burrows can only be completed upon prior approval by and in cooperation with the CDFG.

Timing/Implementation: Prior to issuance of grading permits.

Enforcement/Monitoring: Project Applicant in collaboration with CDFG, BLM and USFWS.

MM 4.12.6b The Applicant shall consult with CDFG to determine the amount and conditions of compensatory mitigation for foraging habitat lost as a result of project implementation. A mitigation and monitoring plan shall be prepared that could include a combination of (or one of) on-site mitigation, off-site mitigation, or contributions to National Fish and Wildlife Foundation's Impact-Directed Environmental Accounts program. Exact mitigation acreages will be determined in consultation with CDFG.

Timing/Implementation: Prior to issuance of grading permits.

Enforcement/Monitoring: Project Applicant in collaboration with CDFG, BLM and USFWS.

Significance After Mitigation

Implementation of **MM 4.12.6a** and **MM 4.12.6b** would reduce impacts to Burrowing Owls. These mitigation measures would include pre-construction clearance surveys, relocation of owls whose burrows would be directly removed by construction activities and compensatory mitigation acreage. Consultation with CDFG regarding on-site mitigation is ongoing and agency approval of the project Burrowing Owl Mitigation Plan would be required before the start of construction. Exact mitigation acreages will be determined in consultation with CDFG. Implementation of these measures would reduce potential impacts to Burrowing Owl throughout the construction and the operations and maintenance processes to **less than significant** levels.

Impacts on Special Status Species – Raptors (Golden Eagles)

Impact 4.12.7 Implementation of the proposed project has the potential to impact Golden Eagles during operation and maintenance. This is considered a **potentially significant impact**.

Solar Generation Facility Site

Suitable nesting habitat is not present within the survey area and Golden Eagles are not expected to nest within or in the immediate vicinity of the survey area. However, the project vicinity contains habitat features that could be conducive to eagle use and foraging. Furthermore, occasional foraging may occur on the project site. Suitable foraging habitat would be removed by the project. However, the amount of habitat that would be removed would be minimal compared to the amount of suitable foraging habitat available in and around the Imperial Valley. In addition, prey availability in agricultural habitats is low compared to the surrounding native desert. Thus, the loss of habitat necessary to accommodate the proposed project is unlikely to disturb Golden Eagles that may occasionally use the project area for foraging. Incidental observations within the valley suggest that the most suitable foraging habitat within the agricultural lands may be the larger IID-maintained drains. No large drains would be removed as a result of project implementation.

Historical records and results of the BTR analysis indicate that impacts to eagles as a result of the proposed project are unlikely due to the low numbers of eagles that may use the area for foraging. Likewise, tubular steel structures included as part of the project would decrease the potential for perching and nesting. Additionally, the amount of suitable foraging habitat (1,852 acres) that would be removed by the project is small relative to the amount of habitat available in and around the Imperial Valley (refer to **Table 4.12-10**). This would not represent a significant impact to this species given the vast amounts of suitable foraging habitat in the surrounding vicinity and in the Imperial Valley (essentially all agricultural lands) and the relative infrequency with which the species has been observed in the survey area and vicinity. Therefore, impacts to Golden Eagle are considered **less than significant**.

4.12 BIOLOGICAL RESOURCES

Gen-Tie

The proposed gen-tie poses a potential impact to Golden Eagles by presenting a risk of collisions. This is considered a **potentially significant impact**.

Mitigation Measures

Implement MM 4.12.2

Timing/Implementation: Prior to issuance of grading permits, and maintained throughout the operations and maintenance process.

Enforcement/Monitoring: Project Applicant in collaboration with CDFG, BLM and USFWS.

Significance After Mitigation

Implementation of **MM 4.12.2** would reduce impacts to Golden Eagles and other bird populations. These mitigation measures would include preconstruction surveys, appropriately timed construction, and conservation measures, such as development of a Bird and Bat Conservation Strategy (BBCS), Raven Control Plan, Wildlife Mortality Reporting Program, and Worker Education Training. These measures are intended to minimize potential impacts throughout the operations and maintenance process. With the implementation of these mitigation measures the residual impact to Golden Eagles is **less than significant**.

Impacts to Nesting Raptors

Impact 4.12.8 Implementation of the proposed project has the potential to impact nesting raptors during construction, operations and maintenance. This is considered a **potentially significant impact**.

Solar Generation Facility Site and Gen-Tie

Raptors and active raptor nests are protected under California Fish and Game Code Sections 3503.5, 3503, 3513. While the project site is devoted to agricultural fields, the limited number of trees in the project vicinity (located on properties with homes, the Westside Elementary School, etc.) could potentially provide suitable nesting substrate for several species of raptors. Possible nesting species include red-tailed hawk (*Buteo jamaicensis*) and great-horned owl (*Bubo virginianus*). Other common raptors included American Kestrel, Prairie Falcon, Burrowing Owl, and Barn Owl. Although no raptor nests were observed during any of the site visits, potential to disturb nesting raptors during construction, operations and maintenance is considered a **potentially significant impact**.

Mitigation Measures

Implement MM 4.12.2.

MM 4.12.8 To prevent nesting raptors from noise associated with project construction, the following shall be implemented:

- To the extent practicable, initial grading and clearing within the project site shall take place outside the raptors' breeding season of February 1 to July 15.
- If construction occurs between February 1 and July 15, an approved biologist shall conduct a pre-construction clearance survey for nesting raptors in suitable nesting habitat (e.g., tall trees or transmission towers) that occurs within 500 feet

of the survey area. If any active raptor nest is located, the nest area will be flagged, and a 500-foot buffer zone delineated, flagged, or otherwise marked. No work activity may occur within this buffer area, until an approved biologist determines that the fledglings are independent of the nest.

Timing/Implementation: Prior to issuance of grading permits, and maintained throughout the operations and maintenance process.

Enforcement/Monitoring: Project Applicant in collaboration with CDFG, BLM and USFWS.

Significance After Mitigation

Implementation of **MM 4.12.8** would reduce potential impacts to nesting raptors. These mitigation measures would include avoiding construction during breeding season and establishing buffers around any nests that are discovered during pre-construction surveys. These measures are intended to minimize potential impacts throughout construction. During operations and maintenance, impacts to raptors and nesting birds would be addressed through implementation of a BBPS which would mitigate potential for collision with the proposed gen-tie (**MM 4.12.2**).

Impacts on Special Status Species – Mammals (Pallid Bats and California Leaf-nosed Bats)

Impact 4.12.9 Implementation of the proposed project has the potential to impact pallid bats and California leaf-nosed bats during construction, and operation and maintenance. This is considered a **potentially significant impact**.

Solar Generation Facility Site

Pallid bats and California leaf-nosed bats may use all or portions of the project area for foraging, though neither is expected to roost within the project area or immediate vicinity. Project implementation would result in the permanent disturbance of approximately 1,852 acres of potentially suitable foraging habitat (refer to **Table 4.12-10**). This disturbance would reduce the quality of the foraging habitat, but is not expected to totally eliminate it. The potential for continued foraging following project implementation would be supported by the larger drains and canals within the solar generation facility site that would remain undisturbed and could continue to support prey populations for both species. Given the large amount of suitable foraging habitat in the immediate vicinity of the project and in the Imperial Valley (essentially all agricultural lands) and the continued foraging opportunities following project implementation, the proposed project is not expected to significantly impact either the pallid bat or the California leaf-nosed bat.

Gen-Tie

Pallid bats and California leaf-nosed bats may use the northern portion of the proposed gen-tie survey area for foraging (along the Westside Main Canal), though neither is expected to roost in the vicinity. Construction of the proposed gen-tie would not result in the temporary or permanent direct removal of potentially suitable foraging habitat because the canal would be spanned. Following construction, the span of the canal by the gen-tie could pose a minor collision risk to foraging bats but this would be considered less than significant because of the distance to known populations of these species and the species' inherent ability to avoid obstructions through the use of echolocation. The potential for continued foraging following project implementation would continue to be supported by the larger drains and canals that support prey populations for both species. Given that the project will not remove any suitable habitat for either pallid Bats or California leaf-nosed bats, the large amount of suitable

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foraging habitat available throughout Imperial County, and the continued foraging opportunities following project implementation, the proposed project is not expected to significantly impact either the pallid bat or the California leaf-nosed bat.

Mitigation Measures

Implement MM 4.12.2

Timing/Implementation: Prior to issuance of grading permits, and maintained throughout the operations and maintenance process.

Enforcement/Monitoring: Project Applicant in collaboration with CDFG, BLM and USFWS.

Significance After Mitigation

Implementation of **MM 4.12.2** would reduce impacts to bird populations, including pallid bats and California leaf-nosed bats, among other important avian habitats. These mitigation measures would include conservation measures, such as development of a Bird and Bat Conservation Strategy (BBCS), Raven Control Plan, Wildlife Mortality Reporting Program, and Worker Education Training. These measures are intended to minimize potential impacts throughout the operations and maintenance process. With the implementation of these mitigation measures the residual impact is **less than significant**.

Impacts on Special Status Species – Reptiles (Flat tailed horned lizard)

Impact 4.12.10 Implementation of the proposed project has the potential to impact Flat tailed horned lizard during construction, and operation and maintenance. This is considered a **potentially significant impact**.

Solar Generation Facility Site

The proposed solar generation facility site is located outside of the Yuha MA, within active agricultural fields. The solar generation facility site as agricultural lands do not provide habitat for FTHL. Therefore, no impacts to FTHL would occur in association with the solar generation facility site.

Gen-Tie

Impacts to FTHL may occur during construction of the gen-tie. Activities such as the movement of construction vehicles or heavy equipment and the installation of electric line towers or project facilities may result in the direct mortality, injury, or harassment of FTHLs. These impacts are considered **significant**.

The proposed gen-tie is within the Yuha Desert Flat-tailed Horned Lizard Management Area (MA), as designated in the 2003 *Flat-tailed Horned Lizard Rangewide Management Strategy* (RMS) (ICC, 2003). The creosote bush–white bursage scrub vegetation and stabilized desert dune habitat within the MA provides habitat for this species. Impacts to these habitats are considered **potentially significant**. In accordance with the *Flat-tailed Horned Lizard Rangewide Management Strategy*, compensation would be required for impacts to FTHL habitat. In accordance with the RMS, the proposed impacts to the MA have been reduced through limiting disturbance to short overland travel extending from existing access roads without constructing new access roads. Electric line components have been sited to create the least amount of disturbance to resources. Whenever possible, vegetation removal will be in the

form of trimming instead of root grubbing to allow shrubs to readily re-sprout. The only soil removal necessary during gen-tie construction will be during excavation of tower footings and trenching.

Proposed impacts to FTHL habitat within the MA for the proposed gen-tie are 0.05 acres of permanent impact and 7.16 acres of temporary impact (refer to **Table 4.12-8**). Disturbance of soil and vegetation will take place during construction, which can encourage invasive, exotic plant species to encroach into FTHL habitat. In addition, construction vehicles and equipment can transport seeds and vegetation from other regions within their tires and other various parts under the vehicles. This potential increase in invasive, exotic plant species would be considered a **significant** impact to FTHL due to construction of the proposed project.

**TABLE 4.12-8
POTENTIAL IMPACTS TO FTHL HABITAT FOR PROPOSED GEN-TIE**

	Gen-Tie
Permanent Impacts	0.05
Temporary Impacts	7.16

Source: Heritage, 2012.

General O&M activities that may be conducted along the gen-tie include equipment inspection and/or repairs, tower washing, and weed abatement activities. These O&M activities will require vehicles to occasionally drive the existing access roads in the area and travel overland to structure sites if needed.

FTHL injury or mortality could potentially occur due to occasional travel to the structure sites, weed abatement, or any other activities that may result in ground disturbance outside of the designated access roads. Frequency of travel to gen-tie structure sites is expected to be negligible compared to the ongoing traffic associated with construction and maintenance of the Imperial Valley Substation, Border Patrol activity and off-highway vehicle (OHV) use of the area.

Mitigation Measures

The following mitigation measures would be applied on the portion of the gen-tie located on BLM managed lands. Although the impacts and mitigations to FTHL would not occur on lands within the jurisdiction of Imperial County, they are documented as part of this EIR because the gen-tie is part of the proposed project. Impacts and mitigations to FTHL resulting from the gen-tie on BLM managed lands are also addressed as part of the separate environmental analysis being prepared by the BLM to satisfy the requirements of NEPA.

MM 4.12.10a In accordance with the *FTHL Rangelwide Management Strategy*, the measures proposed below are designed to avoid, minimize, and/or compensate for potential direct and indirect effects construction of the proposed project may have on FTHL. The following will be implemented when conducting construction activities within the creosote bush-white burr sage scrub and other native vegetation types in the gen-tie ROW:

1. Prior to ground-disturbing activities, an individual shall be designated and approved by the BLM as the Designated Biologist¹ (i.e. field contact representative) along with

¹ A qualified Designated Biologist must have (1) a bachelor’s degree with an emphasis in ecology, natural resource management, or related science; (2) three years of experience in field biology or current certification of a nationally recognized biological society, such as The Ecological Society of America or the Wildlife Society (3)

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approved Biological Monitors as needed for construction, particularly within the Yuha MA. The Designated Biologist will be designated for the period during which on-going construction and post-construction monitoring and reporting by an approved biologist is required, such as annual reporting on habitat restoration. Each successive Designated Biologist will be approved by the BLM's Authorized Officer (i.e., BLM field manager, El Centro). The Designated Biologist will have the authority to ensure compliance with the conservation measures for the FTHL and will be the primary agency contact for the implementation of these measures. The Designated Biologist will organize and oversee the work of the biological monitors and have the authority and responsibility to halt activities that are in violation of the conservation measures. An organizational chart shall be provided to BLM prior to ground-disturbing activities with a clear chain of command and contact information (cell phones). A detailed list of responsibilities for the Designated Biologist is summarized below. To avoid and minimize impacts to biological resources, the Designated Biologist will:

- Notify BLM's Authorizing Officer at least 14 calendar days before initiating ground disturbing activities.
 - Immediately notify BLM's Authorized Officer in writing if the project Applicant is not in compliance with any conservation measures, including but not limited to any actual or anticipated failure to implement conservation measures within the time periods specified.
 - Conduct compliance inspections at a minimum of once per month during on-going construction after clearing, grubbing, and grading are completed, and submit a monthly compliance report to BLM's Authorized Officer until construction is complete.
2. The boundaries of all areas to be disturbed (including staging areas, access roads, and sites for temporary placement of spoils) will be delineated with stakes and flagging prior to construction activities. Where feasible, the areas shall be cleared of FTHL and fenced (according to the Strategy) to exclude FTHL from re-entering these construction areas, particularly in the MA and other high-use areas such as for staging of equipment or parking areas. Spoils will be stockpiled in disturbed areas lacking native vegetation or where habitat quality is poor, such as the agricultural fields rather than native desert. To the extent possible, disturbance of shrubs and surface soils due to stockpiling will be minimized. All disturbances, vehicles, and equipment will be confined to the flagged and cleared areas. To the extent possible, surface disturbance will be timed to minimize mortality to FTHL.
 3. Approved Biological monitor(s) will assist the Designated Biologist in conducting pre-construction surveys and in monitoring of mobilization, ground disturbance, grading, construction, operation, closure, and restoration activities. The biological monitor(s) will have experience conducting FTHL field monitoring, have sufficient education and field experience to understand FTHL biology, be able to identify FTHL scat, and be able to identify and follow FTHL tracks. The Designated

previous experience with applying terms and conditions of a biological opinion; and, (4) the appropriate permit and/or training if conducting focused or protocol surveys for listed or proposed species.

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Biologist will submit the resume, at least three references, and contact information of the proposed biological monitors to the BLM for approval. To avoid and minimize impacts to biological resources, the Biological Monitors will assist the Designated Biologist with the following activities on BLM managed lands:

- Be present during construction (e.g., grubbing, grading,) activities that take place in FTHL habitat to avoid or minimize take of FTHL. Activities include, but are not limited to, ensuring compliance with all impact avoidance and minimization measures, monitoring for FTHLs and removing lizards from harm's way, and checking avoidance areas (e.g., washes) to ensure that signs, and stakes are intact and that human activities are restricted in these avoidance zones.
 - At the end of each work day, inspect all potential wildlife pitfalls (trenches, bores and other excavations) for wildlife and then backfill. If backfilling is not feasible, all trenches, bores, and other excavations will be contoured at a 3:1 slope at the ends to provide wildlife escape ramps, or completely and securely covered to prevent wildlife access.
 - During construction, examine areas of active surface disturbance periodically, at least hourly, when surface temperatures exceed 29°Celsius (C; 85°F) for the presence of FTHL.
4. Prior to project initiation of construction of the gen-tie on BLM managed lands, a Worker Environmental Awareness Program (WEAP) will be developed and implemented, and will be available in both English and Spanish. Wallet-sized cards summarizing this information will be provided to all construction, operation, and maintenance personnel. The education program will include the following aspects:
- biology and status of the FTHL,
 - protection measures designed to reduce potential impact to the species,
 - function of flagging designating authorized work areas,
 - reporting procedures to be used if a FTHL is encountered in the field, and
 - driving procedures and techniques, for commuting to, and driving on, the Project site, to reduce mortality of FTHL on roads.
5. FTHLs will be removed from harm's way during all construction activities, per item #6 below. To the extent feasible, methods to find FTHLs will be designed to achieve a maximal capture rate and will include, but not be limited to using strip transects, tracking, and raking around shrubs. During construction, the minimum survey effort will be 30 minutes per 0.40 ha (30 minutes per 1 ac). Persons that handle FTHLs will first obtain all necessary permits and authorization from the CDFG. If the species is federally listed, only persons authorized by both CDFG and USFWS will handle FTHLs. FTHL removal surveys will also include:
- A Horned Lizard Observation Data Sheet and a Project Reporting Form, per Appendix 8 of the RMS, will be completed. During construction, quarterly

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reports describing FTHL removal activity, per the reporting requirements, will be submitted to the BLM.

6. The removal of FTHLs out of harm's way will include relocation to nearby suitable habitat in low-impact (e.g., away from roads and solar panels) areas of the Yuha MA. Relocated FTHLs will be placed in the shade of a large shrub in undisturbed habitat. If surface temperatures in the sun are less than 24° Celsius (C) 75° Fahrenheit (F) or exceed 38°C (100° F), the Designated Biologist or biological monitor, if authorized, will hold the FTHL for later release. Initially, captured FTHLs will be held in a cloth bag, cooler, or other appropriate clean, dry container from which the lizard cannot escape. Lizards will be held at temperatures between 75° F and 90° F and will not be exposed to direct sunlight. Release will occur as soon as possible after capture and during daylight hours. The Designated Biologist or biological monitor will be allowed some judgment and discretion when relocating lizards to maximize survival of FTHLs found in the project area.
7. To the maximum extent practicable, grading in FTHL habitat will be conducted during the active season, which is defined as March 1 through September 30, or if ground temperatures are between 24°C (75° F) and 38 °C (100° F). If grading cannot be conducted during this time, any FTHLs found will be removed to low-impact areas (see above) where suitable burrowing habitat exists, (e.g., sandy substrates and shrub cover).
8. Temporarily disturbed areas associated with gen-tie construction and staging areas on federal lands, will be re-vegetated according to the Site Reclamation and Revegetation Plan (SRRP) approved by the BLM. The SRRP must be approved in writing by the BLM prior to any vegetation-disturbing activities. Restoration involves re-contouring the land, replacing the topsoil (if it was collected), and maintaining (i.e., weeding, replacement planting, supplemental watering, etc.), and monitoring the restored area for a period of 5 years (or less if the restoration meets all success criteria). Components of the SRRP will typically include:
 - The incorporation of Desert Bioregion Revegetation/Restoration Guidance measures. These measures generally include alleviating soil compaction, returning the surface to its original contour, pitting or imprinting the surface to allow small areas where seeds and rain water can be captured, planting seedlings that have acquired the necessary root mass to survive without watering, planting seedlings in the spring with herbivory cages, broadcasting locally collected seed immediately prior to the rainy season, and covering the seeds with mulch.

Timing/Implementation: Prior to issuance of grading permits.

Enforcement/Monitoring: Project Applicant in collaboration with the BLM.

MM 4.12.10b In accordance with the *FTHL Rangewide Management Strategy*, the measures proposed below are designed to avoid, minimize, and/or compensate for potential direct and indirect effects operations and maintenance of the proposed project may have on FTHL. In order to reduce the potential impact to FTHL during O&M, the following will be implemented when conducting O&M along the gen-tie:

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1. At least 15 days prior to the commencement of construction and within 15 days following completion of construction activities, the Designated Biologist will provide the BLM a Project FTHL Status Report, which will include, at a minimum:
 - A general description of the status of the project site within the MA.
 - A copy of the table in the project biological monitoring report with notes showing the current implementation status of each conservation measure.
 - An assessment of the effectiveness of each completed or partially completed measure in avoiding and minimizing project impacts.
 - A completed a Project Reporting Form from the Flat-tailed Horned Lizard Rangelwide Management Strategy.
 - A summary of information regarding any FTHL mortality in conjunction with the Project's Wildlife Mortality Reporting Program.
 - Recommendations on how conservation measures might be changed to more effectively avoid, minimize, and offset future project impacts on the FTHL.
2. The Designated Biologist or biological monitor(s) will evaluate and implement the best measures to reduce FTHL mortality along access and maintenance roads, particularly during the FTHL active season (March 1 through September 30). These measures will include:
 - A speed limit of 15 miles per hour when driving access roads within suitable FTHL habitat. The Designated Biologist may reduce this speed limit to 10 mph in areas identified as active wildlife corridors as needed to reduced mortality. All vehicles required for O&M within suitable FTHL habitat must remain on the designated access/maintenance roads. Cross country vehicle and equipment use outside of designated work areas in suitable FTHL habitat shall be prohibited.
 - O&M activities occurring within suitable FTHL habitat including weed abatement or any other O&M activity that may result in ground disturbance will be conducted outside of the FTHL active season whenever feasible. If any O&M activities must be conducted during the FTHL active season that may result in ground disturbance within suitable FTHL habitat, such as weed abatement or vehicles requiring access outside of a designated access road, a biological monitor will be present during activities to reduce FTHL impacts.

Timing/Implementation: Prior to issuance of grading permits for the gen-tie.

Enforcement/Monitoring: Project Applicant in collaboration with the BLM.

MM 4.12.10c In accordance with the *Flat-tailed Horned Lizard Rangelwide Management Strategy*, compensatory mitigation would be required for impacts to FTHL habitat. FTHL are known to occur in the native vegetation along the proposed gen-tie ROW. In accordance with the *Rangelwide Management Strategy*, compensation for permanent impact to this habitat within the MA will be at a 6:1 ratio. Acreages of proposed disturbance to FTHL habitat can be found in **Table 4.12-9**.

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**TABLE 4.12-9
VEGETATION COMMUNITIES/LAND COVER TYPES - PROPOSED GEN-TIE**

Vegetation Community	BLM Land (Acres)	Private Land (Acres)
Active Agriculture (AG-A)	1.49	2.22
Fallow Agriculture (AG-F)	0.79	0.96
Arrow Weed Thicket (AS)	0.41	0.44
Arrow Weed Thicket - Disturbed (AS-D)	0.21	0.50
Athel Tamarisk Type Woodland (AW)	0.42	0.52
Creosote Bush - White Bursage Scrub (CBS)	35.14	0.00
Creosote Bush - White Bursage Scrub - Disturbed (CBS-D)	1.82	2.33
Developed (DEV)	2.19	0.00
Open Water with Arrow Weed Thicket (OW)	0.71	0.44
Stabilized Desert Dunes - Disturbed (SDD-D)	22.28	0.00
Total	65.46	7.41

Source: Heritage, 2012.

Timing/Implementation: Prior to issuance of grading permits.

Enforcement/Monitoring: Project Applicant in collaboration with the BLM.

Implementation of **MM 4.12.11**, below, would address impacts to FTHL as a result of invasive, exotic plant species.

Significance After Mitigation

Implementation of **MM 4.12.10a**, **MM 4.12.10b** and **MM 4.12.10c** would avoid, minimize, and/or compensate for potential direct and indirect effects to FTHL as a result of construction, operation and maintenance of the proposed project. In addition, **MM 4.12.12** would reduce impacts to FTHL as a result of invasive and exotic plant species. With the implementation of these mitigation measures the residual impacts to FTHL would be **less than significant**.

Impacts on Special Status Species – Reptiles (Colorado Desert fringe-toed lizard)

Impact 4.12.11 Implementation of the proposed project has the potential to impact Colorado Desert fringe-toed lizard during construction, and operation and maintenance. This is considered a **potentially significant impact**.

Solar Generation Facility Site

Agricultural lands do not provide habitat for Colorado Desert fringe-toed lizard. Therefore, no impacts to FTHL would occur in association with the solar generation facility site.

Gen-Tie

Direct impacts to Colorado Desert fringe-toed lizard may occur during construction of the gen-tie. Construction activities such as the movement of construction vehicles or heavy equipment and the installation of electric line towers may result in the direct mortality, injury, or harassment of Colorado Desert fringe-toed lizards. These impacts would be considered **significant**.

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Extensive resource surveys have been conducted to facilitate the siting of the electric line components to insure they are located in a manner that creates the least amount of disturbance to resources. To avoid potential harm to Colorado Desert fringe-toed lizard during construction, no new access roads are proposed and disturbance would be limited to short overland travel extending from existing access roads. Whenever possible, any removal of vegetation will be in the form of trimming instead of root grubbing, to allow shrubs to readily re-sprout. The only soil removal necessary for gen-tie construction will be excavation of tower footings and trenching.

The creosote bush–white bursage scrub vegetation and stabilized desert dunes within the gen-tie corridor provides habitat for this species, and impacts to this habitat could be **potentially significant** for the Colorado Desert fringe-toed lizard.

The proposed gen-tie may permanently impact approximately 0.05 acres of suitable Colorado Desert fringe-toed lizard habitat and temporarily impact approximately 7.16 acres of suitable Colorado Desert fringe-toed lizard habitat (refer to **Table 4.12-8**).

Disturbance of soil and vegetation will take place during construction, which can encourage invasive, exotic plant species to encroach into Colorado Desert fringe-toed lizard habitat. In addition, construction vehicles and equipment can transport seeds and vegetation from other regions within their tires and other various parts under the vehicles. This potential increase in invasive, exotic plant species would be considered a **significant** impact to Colorado Desert fringe-toed lizard due to construction of the proposed project.

General O&M activities that may be conducted along the gen-tie include equipment inspection and/or repairs, tower washing, and weed abatement activities. These O&M activities will require vehicles to occasionally drive the existing access roads along the gen-tie and travel overland.

Colorado Desert fringe-toed lizard injury or mortality could potentially occur due to occasional use of the transmission line access roads, weed abatement, or any other activities that may result in ground disturbance outside of the designated access roads. The anticipated frequency of travel along gen-tie access roads is expected to represent a negligible increase in traffic compared to the ongoing traffic associated with construction and maintenance of the Imperial Valley Substation, Border Patrol activity and OHV use of the area.

Mitigation Measures

Implement **MM 4.12.10a**, **MM 4.12.10b**, and **MM 4.12.10c**. Mitigation for FTHL would be considered sufficient mitigation for Colorado Desert fringe-toed lizard habitat because these species occupy similar habitats.

Timing/Implementation: Prior to issuance of grading permits, and maintained throughout the operations and maintenance process.

Enforcement/Monitoring: Project Applicant in coordination with the BLM.

Significance After Mitigation

Mitigation measures **MM 4.12.10a**, **MM 4.12.10b**, and **MM 4.12.10c** that will be implemented for FTHL would also act as mitigation for Colorado Desert fringe-toed lizard habitat because suitable habitat for both species overlap. With the implementation of these mitigation measures the residual impact to Colorado Desert fringe-toed lizard habitat is **less than significant**.

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Substantial Adverse Effect on Riparian Habitat or Other Sensitive Natural Community

Impact 4.12.12 Implementation of the proposed project has the potential to impact riparian habitat or special status communities. This is considered a **potentially significant impact**.

Solar Generation Facility Site

Arrow weed thicket is the only special status natural community potentially affected by the proposed project. Impacts to arrow weed thicket are detailed in **Table 4.12-10 (Figure 4.12-2A, Figure 4.12-2B and Figure 4.12-2C)**. This community is considered sensitive regardless of if it has been disturbed. Although only 2.27 acres would be permanently disturbed, this impact is considered **potentially significant**.

**TABLE 4.12-10
TEMPORARY AND PERMANENT ACREAGE DISTURBANCE TO VEGETATION COMMUNITIES
SOLAR GENERATION FACILITY SITE**

Vegetation Community	Temporary	Permanent
Active Agriculture (AG-A)	1,677.45	1,677.45
Arrow Weed Thicket (AS)	0.08	0.08
Arrow Weed Thicket Disturbed (AS-D)	2.19	2.19
Athel Tamarisk Type Woodland (AW)	1.25	1.25
Common Reed Marsh- Disturbed (CRM-D)	--	--
Creosote Bush - White Bursage Scrub (CBS)	--	--
Creosote Bush - White Bursage Scrub - Disturbed (CBS-D)	--	--
Developed (DEV)	0.30	0.30
Disturbed Wetland (DW)		
Fallow Agriculture (AG-F)	123.13	123.13
Open Water with Arrow Weed Thicket (OW)		
Quailbush Scrub (BSS)	31.68	31.68
Quailbush Scrub- Disturbed (BSS-D)	15.51	15.51
Tamarisk Thicket (TS)	0.40	0.40
Stabilized Desert Dunes- Disturbed (SDD-D)	--	--
Total Permanent Impacts	1,852	1,852

Source: Heritage, 2012.

For purposes of this discussion, sensitive vegetation communities (i.e., natural communities) are those identified by the CDFG and CEQA. Reasons for the designation as “sensitive” include restricted range, cumulative losses throughout the region, and a high number of endemic sensitive plant and wildlife species that occur in the vegetation communities. Riparian habitats occur on the perimeters of surface or near-surface waters and provide a transition zone between aquatic and terrestrial zones. In the survey area, three communities would be characterized as riparian: arrow weed thicket, common reed marsh, and disturbed wetland. Arrow weed thicket is the only special status natural community potentially affected by the proposed project. This community is considered sensitive whether or not it has been disturbed. Though very limited in extent (2.27 acres of permanent impact and 0.22 acres of temporary disturbance), these impacts could be considered **potentially significant**.

Soil disturbed due to grading during construction and continued use of the solar generation facility site may result in the introduction or increased density of non-native invasive plant species. These species can undermine the habitat quality and integrity of the native plant communities. Non-native invasive plant species are considered a **potentially significant impact**.

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Gen-Tie

Special status plants within the gen-tie corridor on BLM lands will be addressed in a separate Environmental Assessment prepared by the BLM. While, spring surveys have not been completed for this project, no federally listed, state-listed or BLM sensitive plant species are known or expected to occur within the proposed gen-tie corridor based on spring surveys completed for projects in the same corridor.

For purposes of this discussion, special status vegetation communities (i.e., natural communities) are those communities “that are of limited distribution statewide or within a county or region and are often vulnerable to environmental effects of projects”. The project would have a **significant** impact if it would have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations or by the CDFG or USFWS.

Abram’s spurge (CNPS 2.2), glandular ditaxis (CNPS 2.2), and California ditaxis (CNPS 3.2) have a low potential for occurrence within the proposed gen-tie survey area. Rock nettle (CNPS 2.2 and CNDDDB special plant), Brown turbans, Parish’s desert-thorn and hairy stickleaf (CNPS 2.3 and CNDDDB special plants), and Utah vine milkweed (CNPS 4.2) have a low to moderate potential for occurrence. Though considered sensitive, the relatively low ranking status of these specie indicate that mitigation for these species’ habitats (e.g., mitigation for the creosote bush – white bursage scrub habitat would mitigate for impacts to the preferred habitats for these species) would be considered sufficient mitigation for species. No specie-specific mitigation would be necessary. Furthermore, if impacts occur, they will be relatively minor based on the small size of the affected areas (7.40 acres of temporary impacts and 0.05 acre of permanent impacts as shown in **Table 4.12-11**).

**TABLE 4.12-11
TEMPORARY AND PERMANENT ACREAGE DISTURBANCE TO VEGETATION COMMUNITIES - PROPOSED GEN-TIE**

Vegetation Community	Temporary	Permanent
Active Agriculture (AG-A)	--	--
Arrow Weed Thicket (AS)	0.21	--
Arrow Weed Thicket Disturbed (AS-D)	--	--
Athel Tamarisk Type Woodland (AW)	0.03	--
Common Reed Marsh- Disturbed (CRM-D)	--	--
Creosote Bush - White Bursage Scrub (CBS)	5.25	0.03
Creosote Bush - White Bursage Scrub - Disturbed (CBS-D)	--	--
Developed (DEV)	--	--
Disturbed Wetland (DW)	--	--
Fallow Agriculture (AG-F)	--	--
Open Water with Arrow Weed Thicket (OW)	--	--
Quailbush Scrub (BSS)	--	--
Quailbush Scrub- Disturbed (BSS-D)	--	--
Tamarisk Thicket (TS)	--	--
Stabilized Desert Dunes- Disturbed (SDD-D)	1.91	0.02
Total Permanent Impacts	7.40	0.05

Source: Heritage, 2012.

As shown in **Table 4.12-11**, during construction, approximately 7.40 acres would be temporarily disturbed consisting of 0.21 acre of arrow weed thicket, 0.03 acre of athel tamarisk type woodland, 5.25 acre of creosote bush - white bursage scrub, and 1.91 acre of stabilized desert dunes – disturbed. Soil

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disturbed due to continued use of access roads along the gen-tie may result in the introduction or increased density of non-native invasive plant species. These species can undermine the habitat quality and integrity of the native plant communities. Non-native invasive plant species are considered a **potentially significant impact**.

Mitigation Measures

Implement MM 4.12.10a, MM 4.12.10b, and MM 4.12.10c.

MM 4.12.12a To minimize the introduction and spread of weed species, a Weed Management Plan shall be developed and implemented. The weed management plan shall include a discussion of specific weeds identified on site that will be targeted for eradication or control as well as a variety of measures that will be undertaken during construction and O&M activities to prevent the introduction and spread of new weed species as a result of the project. A *Weed Management Plan* for the solar generation facility will be prepared and implemented that describes specific on-going measures to remove invasive plant species from the solar generation facility. This plan will be approved by the County. A companion Weed Management Plan will be prepared for the gen-tie that will be approved by BLM.

Timing/Implementation: Prior to issuance of grading permits, and maintained throughout the operations and maintenance process.

Enforcement/Monitoring: Project Applicant in collaboration with the BLM.

MM 4.12.12b The following measures shall be implemented to prevent the spread of weeds:

- Limit disturbance areas during construction to the minimal required to perform work and limit ingress and egress to defined routes
- Implement vehicle wash and inspection procedures and closely monitor the types of materials brought onto the site to minimize the potential for weed introduction
- Use of certified weed free mulch, straw wattles, hay bales and seed mixes
- Reestablish native vegetation along the gen-tie as quickly as practicable on disturbed sites to avoid weed invasions
- Monitor and rapidly implement control measures to ensure early detection and eradication for weed invasions

Weed control methods that may be used include both physical and chemical control. Physical control methods include manual hand pulling of weeds, or the use of hand and power tools to uproot, girdle, or cut plants. Herbicide applications are a widely used, effective control method for removing infestations of invasive weed species. However, inadvertent application of herbicide to adjacent native plants must be avoided, which can often be challenging when weeds are interspersed with native cover. Before applying herbicide, contractors will be required to obtain any required permits from state and local authorities. Only a State of California and federally certified contractor will be permitted to perform herbicide applications. All herbicides will be applied in accordance with applicable laws, regulations, and permit stipulations. Only herbicides and adjuvants approved by the State of California and Imperial County will be used to control invasive species at the energy facility site. Invasive plants species on BLM lands would be prevented, controlled, and treated through an Integrated Pest Management approach per the *Vegetation Treatments on*

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Bureau of Land Management Lands in 17 Western States Programmatic Environmental Report. Only herbicides approved by BLM in California will be used on BLM lands. Herbicide application can only occur on BLM lands with an approved Pesticide Use Proposal (PUP).

Timing/Implementation: Prior to issuance of grading permits, and maintained throughout the operations and maintenance process.

Enforcement/Monitoring: Project Applicant in collaboration with the BLM.

Significance After Mitigation

Mitigation for permanent and temporary impacts to creosote bush-white burr sage scrub, arrow weed scrub, tamarisk scrub, shall be accomplished via the mitigation for FTHL (**MM 4.12.10a**, **MM 4.12.10b**, and **MM 4.12.10c**) because these native habitats are considered potentially suitable flat-tailed horned lizard habitat and are within a designated management area on BLM land.

Implementation of **MM 4.12.12a** and **MM 4.12.12b** would reduce the introduction and spread of weed species. This includes the development of a Weed Management Plan that will include a discussion of specific weeds identified on site that will be targeted for eradication or control. The Weed Management Plan will present a variety of measures that will be undertaken during construction and O&M activities to prevent the introduction and spread of new weed species as a result of the project. With the implementation of these mitigation measures the residual impact to riparian habitat or other sensitive natural community would be **less than significant**.

Substantial Adverse Effect on Federally Protected Wetlands

Impact 4.12.13 Implementation of the proposed project has the potential to impact jurisdictional waters. This is considered a **potentially significant impact**.

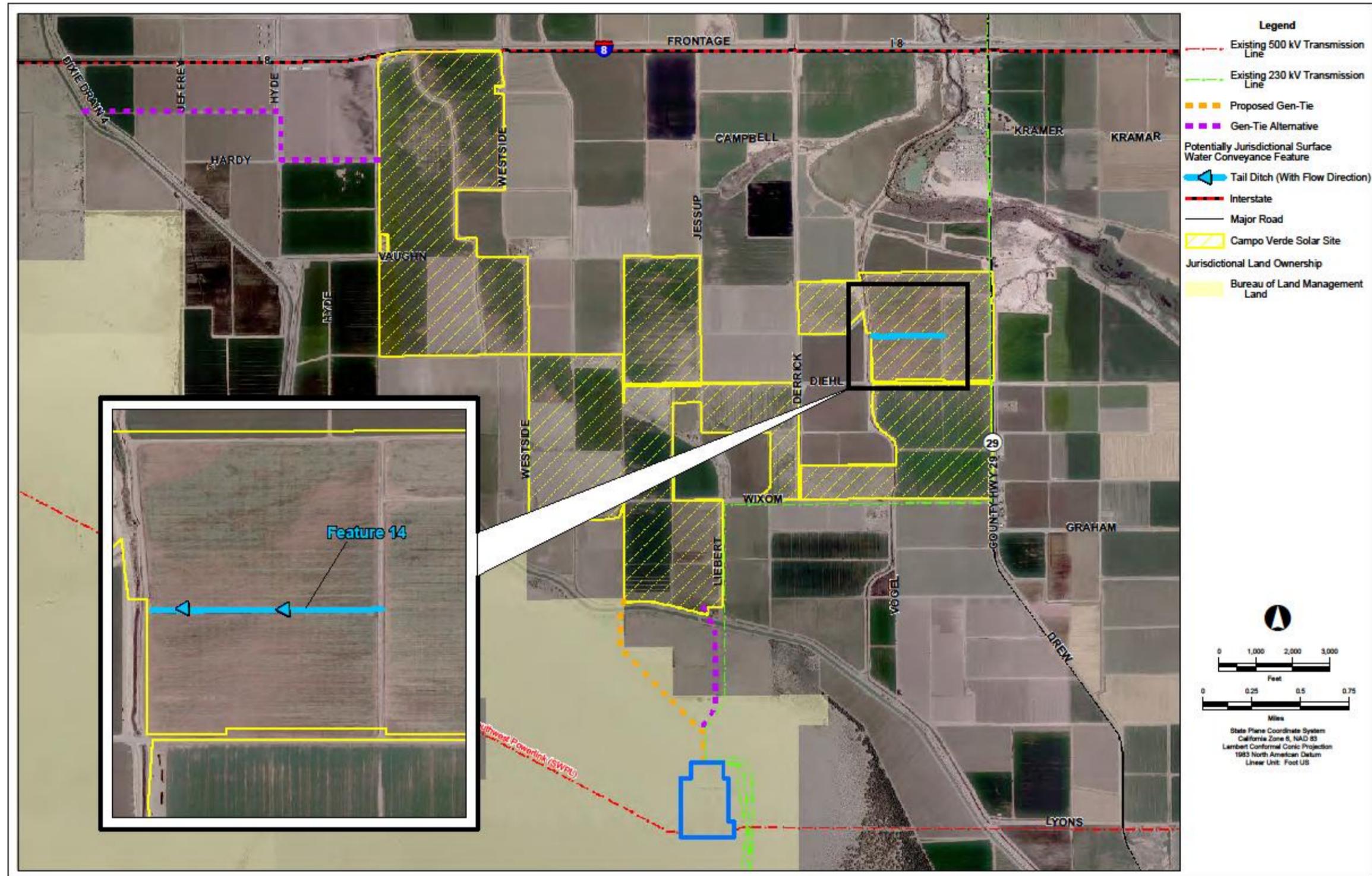
Solar Generation Facility Site

The jurisdictional waters report for the proposed project has been submitted to the appropriate agencies in order to verify the jurisdictional status of the drainage features present within the project area. To date, the agencies have not responded. No ACOE jurisdictional waters would be impacted by the solar generation facility (**Figure 4.12-5**). However, one CDFG jurisdictional feature, an agricultural tail ditch (Feature #14) supporting a small amount of riparian vegetation (primarily arrow weed) could be removed entirely. This feature is approximately 6 feet wide (bank to bank). Removal of this feature would result in the loss of approximately 0.26 acres of CDFG jurisdictional waters. This impact is considered **potentially significant**.

Gen-Tie

The final jurisdictional waters report for the proposed project was submitted to the ACOE and CDFG in order to verify the jurisdictional status of the features present within the project area. Based on the final jurisdictional waters report, all potentially state and federal jurisdictional waters will be spanned. Thus, the proposed gen-tie would result in no impacts to state or federal jurisdictional water.

4.12 BIOLOGICAL RESOURCES



Source: Heritage 2012.

FIGURE 4.12-5
POTENTIALLY IMPACTED JURISDICTIONAL WATERS

Mitigation Measures

MM 4.12.13 The Applicant shall coordinate with the CDFG to obtain a Section 1600 Streambed Alteration Agreement as necessary to address any impacted CDFG-jurisdictional water, and provide the appropriate (CDFG approved) compensatory mitigation for permanent and temporary impacts to CDFG jurisdictional riparian habitat. Mitigation for permanent impacts to CDFG riparian habitat is typically at a 2:1 ratio, while mitigation for temporary impacts to CDFG riparian habitat is typically at a 1:1 ratio.

Timing/Implementation: Prior to issuance of grading permits.

Enforcement/Monitoring: Project Applicant and in collaboration with CDFG, BLM and USFWS.

Significance After Mitigation

Implementation of **MM 4.12.13** would require a Section 1600 Streambed Alteration Agreement to be obtained prior to any impacts to CDFG resources. Additionally, the mitigation requires compensation for permanent and temporary impacts to CDFG riparian habitat. With the implementation of this mitigation measures the residual impact to federally protected wetlands and jurisdictional waters would be **less than significant**.

Interfere with Migratory Fish or Wildlife Movement/Impede the Use of Native Wildlife Nursery Sites

Impact 4.12.14 Implementation of the project would inhibit the ability of medium and large mammals to move through the solar generation facility site. However, the proposed project would not inhibit wildlife movement through the Yuha Basin or surrounding agricultural lands. Therefore, this impact is considered **less than significant**.

Solar Generation Facility Site

Wildlife movement corridors are considered sensitive by resource and conservation agencies. The impact analysis provided below is based on the CEQA thresholds of significance. The project would have a **significant impact** if it would: 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.

A chain link perimeter fence is proposed to surround the solar generation facility site. The fence would impact the ability of medium and large mammals to move through the solar generation facility site. However, the fence should not inhibit of movement of medium and large mammals through the Yuha Basin or surrounding agricultural lands. **No impact** to nursery sites is anticipated. Therefore, this impact is considered **less than significant**.

Gen-Tie

The proposed gen-tie would not inhibit the movement of wildlife in and around the gen-tie survey area. No fencing or other terrestrial obstructions would be installed. Moreover, the proposed gen-tie would be located in a designated utility corridor along with several other existing transmission lines and would not represent a novel feature on the landscape. Thus, no impact to wildlife movement or nursery sites is anticipated.

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Mitigation Measures

None required.

Significance After Mitigation

Not applicable.

Conflict with Local Policies or Ordinances Protecting Biological Resources

Impact 4.12.15 Implementation of the project is not anticipated to conflict with any local polices or ordinances protecting biological resources. Therefore, this impact is considered **less than significant**.

Solar Generation Facility Site

The Imperial County General Plan Open Space Conservation Policy requires detailed investigations to be conducted to determine the significance, location, extent, and condition of natural resources in the County. If any rare, sensitive, or unique plant or wildlife habitat would be impact by a project, the County must notify the agency responsible for protecting plant and wildlife before approving the project. Consistent with this policy, the County is requiring the Applicant to prepare all appropriate studies and co-ordinate with the appropriate agencies.

Likewise, the Imperial County General Plan Land Use Element Policy notes that the majority of the privately owned land in the County is designated "Agriculture," which is also the predominate area where burrowing owls create habitats. Consistent with this policy, BUOW surveys have been conducted and the results included in this EIR. No impact would occur relative to the policies of the Imperial County General Plan.

Gen-Tie

The proposed project would also be consistent with the California Desert Conservation Area Plan, Yuha Basin Area of Critical Environmental Concern; and the 2003 *Flat-tailed Horned Lizard Rangelwide Management Strategy* (RMS). Therefore, no impact would occur with regard to conflicts with local policies or ordinances protecting biological resources.

Mitigation Measures

None required.

Significance After Mitigation

Not applicable.

Conflict with the Provisions of a Habitat Conservation Plan

Impact 4.12.16 Implementation of the project would is not anticipated to conflict with the California Desert Conservation Area Plan. Therefore, this impact is considered **less than significant**.

Solar Generation Facility Site

The County of Imperial does not have an adopted Habitat Conservation Plan or Natural Community Conservation Plan. No impact would occur.

Gen-Tie

The proposed gen-tie is an allowable use under the CDCA, as the proposed ROW falls within the CDCA designated "Utility Corridor N." This area is also designated as an ACEC and the BLM manages all land uses within the ACEC in order to minimize impact to this sensitive area. All proposed impacts to resources are in conformance with the CDCA and maintain the integrity and intent of the Conservation Plan. Therefore, no impact would occur.

Mitigation Measures

None required.

Significance After Mitigation

Not applicable.

4.12.4 CUMULATIVE SETTING, IMPACTS AND MITIGATION MEASURES

A. CUMULATIVE SETTING

The cumulative setting for biological resources is the Imperial County region. Within this region, the geographic scope for cumulative impacts varies for each species. The geographic scope for considering cumulative impacts on flat-tailed horned lizard (FTHL) includes the creosote bush-white burr sage scrub and desert wash vegetation communities contiguous to and within the Yuha Basin FTHL Management Area (MA). The geographic scope for considering cumulative impacts for migratory birds, including raptors, is the Imperial Valley, which is part of the Pacific Migration Flyway for birds migrating between as far south as South America and as far north as the arctic circle, and serves as an important stopover site for many species for rest and foraging, and, for some, as breeding grounds. Although burrowing owls and some raptors do not migrate along the Pacific Migration Flyway, the species occur throughout the Imperial Valley; therefore, the Imperial Valley is the geographic scope considered for the evaluation of cumulative impacts for burrowing owl. The geographic scope for considering cumulative impacts for jurisdictional waters is the Imperial Hydrologic Unit of the Salton Sea watershed in the Colorado River region.

Development anticipated as part of the cumulative setting is reflected in the land uses shown on the County's General Plan Land Use Map, and the existing, planned, proposed, and reasonably foreseeable projects as identified in Table 3.0 in Chapter 3.0, Introduction to the Environmental Analysis and Assumptions Used.

B. CUMULATIVE IMPACTS AND MITIGATION MEASURES

Cumulative Impacts to Biological Resources

Impact 4.12.17 Implementation of the proposed project could have cumulative impacts on special status species, sensitive natural communities, and protected waters. However, mitigation measures are proposed to help ensure that the proposed project does not cumulatively affect any of these biological resources. Therefore, cumulative impacts are considered **less than cumulatively considerable**.

Construction

Construction activities could result in cumulative impacts on federal and/or state listed species, as well as BLM sensitive wildlife species, including Flat-tailed Horned Lizard, Burrowing owl, nesting raptors, migratory birds, sensitive vegetation communities and jurisdictional waters.

4.12 BIOLOGICAL RESOURCES

Flat-tailed Horned Lizard (FTHL)

Flat-tailed Horned Lizard receives protection via the BLM's FTHL RMS. The Flat-tailed Horned Lizard Interagency Coordinating Committee (ICC)'s FTHL RMS designated five Management Areas (MAs) to help focus conservation and management of FTHL key populations. The BLM has designated the Yuha Basin Management Area, the area in which the gen-tie would be located, as a management unit. FTHL habitat disturbances will be mitigated in accordance with the RMS, thereby reducing cumulative impacts to a **less than significant** level.

As shown in **Table 4.12-12**, the habitat disturbances that have occurred since the adoption of the FTHL Rangelwide Management Strategy (RMS) and those that could result from the proposed project and cumulative projects identified in Table 3.0-1 are estimated to impact a total of 467.49 acres of the 57,304-acre Yuha Basin MA. These habitat disturbances constitute approximately 0.8 percent of the 1 percent of habitat disturbance allowable within the Yuha Basin MA. Even though the area impacted is under the 1 percent threshold for acreage impacted, disturbance for each cumulative project will be mitigated in accordance with the RMS thereby reducing cumulative impacts to a **less than significant** level.

**TABLE 4.12-12
HABITAT DISTURBANCES
APPROVED, PROPOSED AND REASONABLY FORESEEABLE PROJECTS IN THE IMPERIAL VALLEY**

Project Name (Project Proponent)	Impacts to Private Lands (acres)	Impacts to BLM Land (acres)	Impacts to Yuha FTHL MA (acres)
Sunrise 500-kV Line IV West Solar Farm Interconnection to Imperial Valley Substation	0	1,423	46.41
"S" Line Upgrade 230-kV Transmission Line Project	106	2	2
Imperial Valley Solar	360	6,140	92.9
Imperial Solar Energy Center South	837.5	10.1	3
Imperial Solar Energy Center West	1,071.5	13.7	13.7
SDG&E Photovoltaic Solar Field	0	100	115
North Gila to Imperial Valley #2 Transmission Line	N/A	1,903	3
Dixieland Connection to Imperial Irrigation District Transmission System	19.19	44.34	42
Solar Reserve Imperial Valley	0	2,000	5
Centinela Solar Energy			23
Mount Signal Solar Farm I ¹	1,408 ¹		
Calexico I-A ¹			
Calexico I-B ¹	1,298 ¹ *	10.2 ¹	10.2 ¹
Calexico II-A ¹			
Calexico II-B ¹	1,438 ¹ **		
Other Proposed ²	N/A	N/A	25.93
Existing disturbance ²	N/A	N/A	88.34
Proposed Project	N/A	N/A	7.21
Total			477.69

Source: County of Imperial, 2011.

*Includes both Calexico I A & B; ** Includes both Calexico II A & B.

¹ HDR, 2012 p. 4.4-28 and 4.4-36.

² The projects that are included in the "Existing Disturbance" and "Other Proposed" categories are not included in the list of cumulative projects; however, the cumulative impact of these projects is considered in this analysis.

Based on the USFWS determination not to list the FTHL, the success of BLM's FTHL RMS, implementation of mitigation measures MM 4.12.10a, MM 4.12.10b and MM 4.12.10c, and the compensatory mitigation requirements, the proposed project, when combined with the cumulative projects, would result in a **less than cumulatively considerable impact** to FTHL.

Burrowing Owl

Burrowing owls are relatively widespread throughout the Imperial Valley. Sixty-five occupied Burrowing Owl burrows were observed within the survey area. The number of active burrowing owl burrows within the cumulative projects is not available for this analysis. Burrowing owls are protected by the California Department of Fish and Game mitigation guidelines for burrowing owl (1995) and Consortium guidance (1993), which require a suite of mitigation measures to ensure direct effects to burrowing owls during construction activities are avoided and indirect effects through burrow destruction and loss of foraging habitat are mitigated at prescribed ratios. BLM also considers burrowing owls a sensitive species, and generally follows CDFG recommendations for burrowing owl issues occurring under BLM jurisdiction.

Mitigation measures MM 4.12.6a and MM 4.12.6b are consistent with the CDFG mitigation guidelines for burrowing owls. MM 4.12.6b identifies that compensatory mitigation is required for burrowing owl. The Applicant has prepared a draft compensatory mitigation plan that includes several options for mitigation, including on-site mitigation. Consultation with CDFG regarding on-site mitigation is ongoing and agency approval of the project Burrowing Owl Mitigation Plan would be required before the start of construction. If on-site mitigation is not possible, the applicant would mitigate for impacts to foraging habitat either through the National Fish and Wildlife Foundation's Impact-Directed Environmental Accounts program, a similar program with another organization, or independent acquisition of like habitat. Exact mitigation acreages will be determined in consultation with CDFG in accordance with the CDFG Staff Report Guidelines on Burrowing Owl Mitigation (2012).

Cumulative projects have the potential to impact burrowing owls through direct impacts to burrowing owls and their burrows. It is anticipated that many of the cumulative projects would also have indirect impacts to burrowing owls through conversion of foraging habitat, such as creosote bush-white burrsage scrub vegetation and agricultural fields. With implementation of mitigation measure MM 4.12.6 and MM 4.12.6b, the proposed project, when combined with the cumulative projects, would result in a **less than cumulatively considerable impact** to burrowing owl.

Nesting Raptors

Raptors are known to occur throughout the geographic scope for cumulative projects identified in Table 3.0-1. Raptors and active raptor nests are protected under California Fish and Game Code 3503.5, 3503, 3513. The number of nesting raptors within the geographic scope is not available and therefore cannot be quantified as part of this analysis.

Mitigation measure MM 4.12.8 requires construction to avoid the raptor breeding season from February 1 to July 15, and if it cannot be avoided, an approved biologist will conduct a pre-construction clearance survey, which would include a 500-foot no-work buffer zone around any raptor nest until the fledglings leave the nest. This measure is standard for all cumulative projects. In addition, mitigation measure MM 4.12.2 is intended to reduce impacts to bird populations and important avian habitats. These measures would include conservation measures, such as development of a BBCS, Raven Control Plan, Wildlife Mortality Reporting Program, and Worker Education Training. MM 4.12.2 is intended to reduce the impact to raptors and other avian species resulting from collision with the proposed gen-tie. Any cumulative projects that include a transmission line are required to implement a similar measure. With

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implementation of these mitigation measures, the proposed project, when combined with the cumulative projects, would result in a less than cumulatively considerable impact to nesting raptors.

Migratory Birds

The proposed project and cumulative projects could have direct impacts on migratory birds as a result of vehicle strikes, nest crushing, or collisions. Indirect impacts may occur from noise and lighting impacts, making mating calls hard to hear or frightening birds from foraging activities. Birds listed at 50 CFR 10.3 are protected by the Migratory Bird Treaty Act (MBTA) (16 U.S.C. 703 et seq.), a Federal statute that implements treaties with several countries on the conservation and protection of migratory birds. The geographic scope includes the Pacific Flyway, which is a major north–south migration route for birds that travel between North and South America.

Mitigation measure MM 4.12.2 is provided to reduce the potential impacts to migratory birds, bats and raptors by preparing and implementing a Bird and Bat Conservation Strategy (BBCS). This BBCS will outline conservation measures for construction and O&M activities that would reduce potential impacts to bird populations and will be developed by the Applicant in conjunction with and input from the USFWS. With implementation of mitigation measure MM 4.12.2, the proposed project, when combined with other cumulative projects, would result in a **less than cumulatively considerable impact** to migratory birds.

Sensitive Vegetation Communities

Sensitive vegetation communities (i.e., natural communities) are designated by the CDFG for various reasons including: restricted range, cumulative losses throughout the region, and a high number of endemic sensitive plant and wildlife species that occur in the vegetation communities. Soil disturbed due to grading during construction and continued use of the proposed project and cumulative projects could result in the introduction or increased density of non-native invasive plant species. The extent of the cumulative project's impacts to sensitive vegetation communities is not available for this analysis.

Arrow weed thicket is the only special status natural community potentially affected by the proposed project. This community is considered sensitive whether or not it has been disturbed. The proposed project would result in permanent impacts to 2.27 acres and temporary impacts to 0.22 acres. Mitigation for permanent and temporary impacts to creosote bush-white burr sage scrub, arrow weed scrub, tamarisk scrub, shall be accomplished through the mitigation for FTHL (MM 4.12.10a, MM 4.12.10b, and MM 4.12.10c) because these native habitats are considered potentially suitable flat-tailed horned lizard habitat and are within a designated management area on BLM land. In addition, sensitive vegetation communities would be protected through implementation of MM 4.12.12a and MM 4.12.12b which would reduce the introduction and spread of weed species. These measures include development of a Weed Management Plan that will include a discussion of specific weeds identified on site that will be targeted for eradication or control. The Plan will also include measures that will be undertaken during construction and O&M activities to prevent the introduction and spread of new weed species as a result of the project. Cumulative projects are individually required to implement similar mitigation to avoid noxious, invasive and non-native weeds thereby reducing impacts to sensitive vegetation communities. With implementation of these measures, the proposed project, when combined with other cumulative projects, would result in a **less than cumulatively considerable impact** to sensitive vegetation communities.

Jurisdictional Waters

Construction activities could result in cumulative impacts on protected waters. The proposed project is not anticipated to impact ACOE jurisdictional waters. The estimated impact of the proposed project to CDFG jurisdictional waters is 0.26 acres. The final determination of impacts of the proposed project is subject to the ACOE and CDFG during their review process.

There are 24 cumulative projects, 10 of which do not have published environmental documents available so it is not possible to provide a definitive conclusion regarding the cumulative impacts of these projects on jurisdictional waters (refer to Table 3.0-1 in Chapter 3.0, Introduction to the Environmental Analysis and Assumptions Used). Of the fourteen cumulative projects with published environmental documents, three have impacts to jurisdictional waters. The Imperial Valley Solar Project has potential impacts to 312 acres of CDFG jurisdictional waters (County of Imperial, 2011, p. 5.0-201); the Centinela Solar Energy Project would impact 6.27 acres of CDFG jurisdictional habitat on BLM managed lands (6.14 acres of fill to manmade systems and 0.09 acre of permanent impacts and 0.04 acre of temporary disturbance to CDFG jurisdictional habitat on BLM managed lands) (County of Imperial, 2011, p. 5.0-201); and the Mount Signal and Calexico Solar Farm Projects (I-A, I-B, II-A, II-B) would impact 7.3 acres of USACOE jurisdictional areas assumed to be non-wetland waters and 45.1 acres of CDFG jurisdictional waters (including 44.6 acres of riparian and 0.5 acre of streambed (HDR, 2012, p. 4.4-21)).

Mitigation measure MM 4.12.13 requires the Applicant to coordinate with the CDFG to obtain a Section 1600 Streambed Alteration Agreement to address any impacted CDFG-jurisdictional water, and provide the appropriate (CDFG approved) compensatory mitigation for permanent (2:1 ratio) and temporary (1:1 ratio) impacts to CDFG jurisdictional riparian habitat. Final approval of mitigation of any project impacting CDFG jurisdictional waters comes in the form of a Section 1600 Streambed Alteration Agreement. Any cumulative project that results in an impact to jurisdictional waters would be required to implement a similar measure to reduce the impact in accordance with federal and state law. With implementation of mitigation measures, the proposed project, when combined with the cumulative projects, would result in less than cumulatively considerable impact to jurisdictional waters.

Operations and Maintenance

As described above, the construction phase of the proposed project would directly impact biological resources. While these impacts would take place during the construction phase, some would continue to exist throughout the operations and maintenance phase of the project. Additional impacts could occur during the operational phase from a variety of maintenance activities including lighting and traffic generated by night time work. However, the light and traffic generated during the night would be similar to the agricultural activities associated with harvesting alfalfa after dark. Specific mitigation measures (MM 4.12.2, 4.12.10b, 4.12.12a and 4.12.12b) are proposed to help ensure that the proposed project does not cumulatively affect any of these biological resources during the operations and maintenance phase.

Mitigation Measures

As discussed throughout this section, the proposed project would be subject to all mitigation measures identified with regard to project-specific impacts. These include MM 4.12.2 (to mitigate impacts to special status birds including SWFL), MM 4.12.6a and MM 4.12.6b (to mitigate impacts to BUOW), MM 4.12.8 (to mitigate impacts to nesting raptors), MM 4.12.10a, MM 4.12.10b and MM 4.12.10c (to mitigate impacts to FTHL), MM 4.12.11 (to mitigate impacts to Colorado Desert fringe-toed lizard), MM

4.12 BIOLOGICAL RESOURCES

4.12.12a, MM 4.12.12b (to mitigate impacts to riparian habitat or other sensitive natural community) and MM 4.12.13 (to mitigate impacts to CDFG jurisdictional waters).

Significance After Mitigation

Following implementation of the mitigation measures identified above, impact to biological resources including special status birds, special status raptors, nesting raptors, FTHL, Colorado Desert fringe-toed lizard, riparian habitat or other sensitive natural community and CDFG jurisdictional waters would be reduced to **less than significant** levels. Cumulative impacts would be less than cumulatively considerable following mitigation.

CHAPTER 5.0

CUMULATIVE IMPACTS SUMMARY

5.0 CUMULATIVE IMPACTS SUMMARY

This section identifies the cumulative impacts resulting from the proposed project. Cumulative impacts are the result of combining the potential effects of the project with other approved, proposed and reasonably foreseeable projects in the vicinity of the proposed project. Full discussion of the cumulative impacts are provided in Sections 4.1 through 4.4 and 4.6 through 4.12 under subsections 4.1.4, 4.2.4, 4.3.4, 4.4.4, 4.6.4, 4.7.4, 4.8.4, 4.9.4, 4.10.4, 4.11.4 and 4.12.4. Due to the global nature of climate change and GHG emissions and their potential effects, GHG emissions generated by an individual project were evaluated on a cumulative basis in Section 4.5.

5.1 INTRODUCTION

The California Environmental Quality Act (CEQA) requires that an Environmental Impact Report (EIR) include a discussion of cumulative impacts that may be associated with the proposed project. According to CEQA Guidelines Section 15130(a), “an EIR shall discuss cumulative impacts of a project when the project’s incremental effect is cumulatively considerable.” The term, “cumulatively considerable” means that “the incremental effects of an individual project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects” (as defined by Section 15130).

As defined in CEQA Guidelines Section 15355, a cumulative impact is an impact that results from the combination of the project evaluated in the EIR together with other projects causing related impacts. A cumulative impact occurs from:

... 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 future projects. Cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time.

CEQA Section 15130(b) identifies the following three elements as necessary for adequate cumulative analysis:

- 1) Either:
 - a) A list of past, present, and probable future projects producing related or cumulative impacts, including, if necessary, those projects outside the control of the agency; or,
 - b) A summary of projections contained in an adopted general plan or related planning document, or in a prior environmental document which has been adopted or certified, which described or evaluated regional or area wide conditions contributing to the cumulative impact. Any such planning document shall be referenced and made available to the public at a location specified by the lead agency.
- 2) A summary of the expected environmental effects to be produced by those projects with specific reference to additional information stating where that information is available; and
- 3) A reasonable analysis of the cumulative impacts of the relevant projects. An EIR shall examine reasonable, feasible options for mitigating or avoiding the project’s contribution to any significant cumulative effects.

5.0 CUMULATIVE IMPACTS SUMMARY

Where a lead agency is examining a project with an incremental effect that is not “cumulatively considerable,” a lead agency need not consider that effect significant, but shall briefly describe its basis for concluding that the incremental effect is not cumulatively considerable.

This EIR uses both the “list” approach described above in the cumulative analysis (refer to Table 3.0-1 in Chapter 3.0, Introduction to the Environmental Analysis and Assumptions Used).

5.2 CUMULATIVE IMPACTS SUMMARY

A summary of cumulative impacts that would result from the implementation of the project is provided below. Each cumulative impact is determined to have one of the following levels of significance: less than significant, significant, or significant and unavoidable. The reader is referred to Sections 4.1 through 4.12 for a complete discussion of the project’s cumulative impacts.

AESTHETICS

Cumulative Visual Impacts

Impact 4.1.4 Implementation of the proposed project, in conjunction with existing, approved, proposed, and reasonably foreseeable projects in the vicinity of the project site, would alter the visual character of the area, resulting in a change to public views as well as increased daytime glare and nighttime lighting levels. Such impacts are typically addressed on a project-by-project basis. Therefore, cumulative impacts to visual resources are considered **less than cumulatively considerable**.

LAND USE

Cumulative Conflicts with Applicable Land Use Plans, Policies, or Regulations

Impact 4.2.2 Development of the proposed project in combination with approved, proposed and reasonably foreseeable projects in the region would not incrementally add to conflicts with applicable land use plans, policies and regulations. Each project would be required to be consistent with the applicable plans that apply to the area in which it is located. Thus, this impact is considered less than cumulatively considerable.

Cumulative Land Use Compatibility/Conflict Impacts

Impact 4.2.3 Development of the proposed project in combination with approved, proposed and reasonably foreseeable projects in the region would change the land use patterns, present potential land use conflicts, and result in conversion of agricultural lands to a solar facility. This impact is considered **less than cumulatively considerable**.

TRANSPORTATION AND CIRCULATION

Cumulative Impacts to Intersection, Roadway and Freeway Segment LOS (Year 2013)

Impact 4.3.3 Implementation of the proposed project’s construction traffic in combination with year 2013 volumes would add traffic to study area intersections, roadways and freeways during peak construction. LOS at two intersections would operate below LOS C. This impact is considered **potentially cumulatively considerable**.

AIR QUALITY

Violate Air Quality Standard/Cause Air Quality Violation

Impact 4.4.3 The proposed project would generate criteria pollutant emissions during construction. However, the project would be required to comply with recommended and required mitigation to reduce emissions to meet threshold levels. Therefore, the project would result in a **less than cumulatively considerable impact** with regard to violating an air quality standard.

Cumulative Substantial Pollutant Concentrations

Impact 4.4.4 Implementation of the proposed project would not coincide with peak construction of other cumulative projects. Therefore, the proposed project would have a **less than cumulatively considerable impact** on DPM.

CLIMATE CHANGE AND GREENHOUSE GASES

Generation of Greenhouse Gas Emissions

Impact 4.5.1 The proposed project would generate greenhouse gas emissions. This impact is considered **less than significant**.

Conflict with an Applicable Plan, Policy, or Regulation Adopted to Reduce Greenhouse Gas Emissions

Impact 4.5.2 The project would not conflict with an applicable plan, policy, or regulation adopted to reduce greenhouse gas emissions. There is **no impact**.

GEOLOGY AND SOILS

Cumulative Exposure to Geologic and Seismic Impacts

Impact 4.6.7 Implementation of the proposed project, in combination with existing, approved, proposed, and reasonably foreseeable development, may result in cumulative exposure to geologic and seismic hazards. This is considered a **less than cumulatively considerable impact**.

CULTURAL RESOURCES

Cumulative impacts to Archaeological and Historic Resources

Impact 4.7.6 Implementation of the proposed project, in combination with existing, approved, proposed, and reasonably foreseeable development in the cumulative setting, has the potential to result in impacts to archaeological and historic resources. However, impacts are addressed on a project-by-project basis. Therefore, this is considered a **less than cumulatively considerable impact**.

5.0 CUMULATIVE IMPACTS SUMMARY

Cumulative Impacts to Paleontological Resources

Impact 4.7.7 Implementation of the proposed project in combination with existing, approved, proposed, and reasonably foreseeable development in the cumulative setting, has the potential to result in impacts to fossil remains and fossil bearing geological formations. However, such impacts are addressed on a project-by-project basis. Therefore, this is considered a **less than cumulatively considerable impact**.

NOISE

Cumulative Noise Increases

Impact 4.8.3 Construction and operation of the proposed project could incrementally contribute to the existing noise environment. This impact is considered **less than cumulatively considerable**.

Cumulative Noise Increases

Impact 4.8.3 Construction and operation of the proposed project could incrementally contribute to the existing noise environment. This impact is considered **less than cumulatively considerable**.

AGRICULTURAL RESOURCES

Cumulative Agricultural Resources Impacts

Impact 4.9.3 Implementation of the proposed project would incrementally add to the temporary conversion of agricultural land in Imperial County. Temporary impacts to agricultural resources are mitigated on a project-by-project basis through payment of in-lieu fees, conservation easements and/or execution of Public Benefit Agreements. Therefore, temporary impacts to agricultural resources are considered **less than cumulatively considerable**.

HAZARDOUS AND HAZARDOUS MATERIALS

Cumulative Hazards and Hazardous Materials Impact

Impact 4.10.4 The proposed project, in combination with other reasonably foreseeable projects in the vicinity of the project site, would increase the density of development in the area, thus potentially increasing the potential for the presence hazards and use of hazardous materials. However, this is considered to be a **less than cumulatively considerable impact**.

HYDROLOGY AND WATER QUALITY

Cumulative Impact to Hydrology and Water Quality

Impact 4.11.4 The proposed project, in combination with approved, proposed and other reasonably foreseeable projects in the Salton Sea watershed would contribute to the cumulative effects of degradation of water quality and changes in runoff patterns ultimately discharging to the Salton Sea. This impact is considered **less than cumulatively considerable**.

BIOLOGICAL RESOURCES

Cumulative Impacts to Biological Resources

Impact 4.12.17 Implementation of the proposed project could have cumulative impacts on special status species, sensitive natural communities, and protected waters. However, mitigation measures are proposed to help ensure that the proposed project does not cumulatively affect any of these biological resources. Therefore, cumulative impacts are considered **less than cumulatively considerable**.

5.0 CUMULATIVE IMPACTS SUMMARY

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CHAPTER 6.0

ALTERNATIVES

CEQA Guidelines Section 15126.6(a) states that an environmental impact report shall describe and analyze a range of reasonable alternatives to a project. These alternatives should feasibly attain most of the basic objectives of the project while avoiding or substantially lessening one or more of the significant environmental impacts of the project. An EIR need not consider every conceivable alternative to a project, nor is it required to consider alternatives that are infeasible. The discussion of alternatives shall focus on those which are capable of avoiding or substantially lessening any significant effects of the project, even if they impede the attainment of the project objectives to some degree or would be more costly (CEQA Guidelines Section 15126.6(b)).

CEQA Guidelines Section 15126.6(d) states that the EIR shall include sufficient information about each alternative to allow meaningful evaluation, analysis, and comparison with the proposed project. A matrix displaying the major characteristics and significant environmental effects of each alternative may be used to summarize the comparison. If an alternative would cause one or more significant effects in addition to those that would be caused by the project as proposed, the significant effects of the alternative shall be discussed, but in less detail than the significant effects of the project as proposed. The matrix appears as **Table 6.0-1** at the end of this section.

6.1 PROJECT OBJECTIVES

The proposed Campo Verde Solar Project has the following objectives:

- Meet the terms and requirements of the Project's Power Purchase Agreement (PPA) and Large Generator Interconnection Agreement.
- Deploy a technology that has been commercially proven and that is safe, readily available, efficient, and environmentally responsible.
- Generate electricity at a cost that is competitive on the renewable market.
- Provide a new source of renewable energy to assist the State of California in achieving the RPS.
- Provide local construction jobs for a variety of trades, reducing unemployment in the construction sector.
- Locate the project in Imperial County in close proximity to the existing California Independent System Operator (CAISO) electric transmission system at a location which has available capacity to deliver electricity to major load centers in California.
- Locate the project in an area that ranks among the highest in solar resource potential in the nation.
- Minimize the potential impact to the environment by:
 - Locating the project on disturbed land.
 - Maximizing the use of existing infrastructure (transmission lines, roads, and water sources).
 - Minimizing the potential impacts to threatened and endangered species by avoiding sensitive habitats and designated resource, reserves or protected areas.
 - Reducing the emission of GHGs from the generation of electricity by using renewable energy.

The Campo Verde Solar Project was developed to sell its electricity and all renewable and environmental attributes to an electric utility purchaser under a long-term contract to help meet California RPS goals.

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The Applicant has a long-term PPA (20 years) with San Diego Gas and Electric (SDG&E) to purchase the initial output from the project.

The County's objectives include the following:

- Encourage economic investment in renewable energy activities.
- Increase opportunities for construction employment, reducing unemployment in one of the labor sectors most affected by the recession.
- Diversify Imperial County's the economic base by developing environmentally responsible non-agricultural activities.
- Increase tax revenue through sales, use and property taxes generated by renewable energy development within Imperial County.
- Reinforce Imperial County's position as a leader in renewable energy production.
- Expand the renewable energy sector in Imperial County's economy.

6.2 ALTERNATIVES CONSIDERED BUT NOT SELECTED FOR ANALYSIS

Identifying alternatives to the proposed project was limited by the fact that the project is a utility-scale solar project (i.e., a solar energy project that generates a large amount of electricity that is transmitted from a solar energy plant to many users through the transmission grid). Based on the nature of the project, it required three key considerations in order to determine where it could be sited: 1) an area with access to high solar insolation (i.e., exposure to the sun's rays) rates; 2) a large area to accommodate solar collectors; and, 3) access to the California Independent System Operator (CAISO) transmission system to send electricity to consumers. The proposed project site is currently designated "Agriculture" in the Imperial County General Plan and zoned A-2 - General Agriculture, A-2-R - General Agriculture, Rural Zone, and A-3 - Heavy Agriculture. The site was chosen for the reasons identified above regarding utility-scale solar projects. The southwestern portion of Imperial County has year-round unobstructed access to sunlight during daytime hours. Likewise, sufficient land area is available to accommodate a utility-scale solar project. The flat topography and contiguous nature of large blocks of land are ideal for the project. Lastly, and perhaps most importantly, is the site's proximity relative to the Imperial Valley Substation, a CAISO interconnection point. Access to connect to the substation is a key factor in providing utility-scale solar power to the transmission grid for distribution to consumers. Choosing an "Alternative Site" was considered, but not selected for detailed analysis. A feasible alternative site would likely either be an area already designated for future residential development or contain Prime Farmland or Farmland of Statewide Importance (95% of all agricultural lands in Imperial County). Likewise, an alternative site, if vacant and undisturbed, could potentially have greater impacts on habitat for endangered and threatened species than a site that is actively cultivated for agricultural purposes. The Applicant does not own or possess access to an alternative site in Imperial County to develop the proposed project. Moreover, alternative locations are not available in closer proximity to the Imperial Valley Substation, which is entirely surrounded by land managed by the Bureau of Land Management (BLM), which is subject to significant environmental and development constraints. Development of the proposed project at an alternative location is therefore infeasible because of the difficulties in assembling contiguous land and the result in additional and greater impacts associated with such a location and a longer gen-tie.

A larger solar generation facility site of approximately 2,266 acres in size was also considered but not selected for detailed analysis. This alternative included the same parcels as the proposed project (which

total 1,990 acres) plus four additional contiguous parcels (051-300-009-000, 051-300-008-000, 051-310-026-000, and 051-300-005-000) totaling approximately 276 acres which are under Williamson Act Contract. The addition of these parcels would allow the generation of 35 to 50 MWs of additional solar energy while impacting the same amount of BLM land to connect to the Imperial Valley Substation as the proposed project. The gen-tie for a larger solar project would follow the same route as the proposed gen-tie. While this alternative would meet the project objectives and provide more renewable energy, it would result in greater impacts to agricultural lands, including loss of prime farmland and cancellation of four Williamson Act Contracts. In addition, some of these parcels were located close to the Fig Lagoon which is used by several bird species. Exclusion of these parcels could reduce potential biological impacts. For these reasons, this alternative was not selected for analysis.

A distributed generation alternative to the proposed project was also considered but not selected for detailed analysis. A distributed PV generation alternative would consist of small-scale PV installations on private or publicly owned residential, commercial, or industrial building rooftops, parking lots or areas adjacent to existing structures such as substations. The location of such small-scale installations is not geographically constrained and, as relevant for CEQA purposes, could be located anywhere in the State. California currently has over 773 MW of distributed PV systems which cover over 40 million square feet (CPUC 2010).

Even assuming that there are enough additional sites throughout California for installation of sufficient distributed PV to accomplish the project's objective of generating 139 MW, this alternative cannot feasibly accomplish most of the project's objectives.

Because distributed generation is not geographically constrained, there is no guarantee that any portion of the solar installation would occur in Imperial County. As such, this alternative would not meet any of the County's objectives (i.e., economic investment in the County; diversifying the County's economic base; generating local jobs and tax revenue; reinforcing the County's position as a leader in renewable energy production; and expanding the local renewable energy sector). Furthermore, because distributed PV can be installed anywhere in the State, such installations could be installed in areas that do not meet the objective of locating the project in an area that ranks among the highest in solar resource potential. The County has no authority or influence over the installation of distributed PV generation systems outside of its jurisdiction. As such, there is no guarantee that action by the County to approve a distributed generation alternative would: 1) result in the installation of 139 MW of generating capacity; or, 2) support the objective of assisting the State of California meet to its RPS goals. For these reasons, a distributed solar alternative was not considered for further analysis.

Lastly, a reduced size project alternative that results in a reduction in power output would not meet the Project Objectives and was therefore not analyzed in detail. However, the Applicant is continually working to refine the project design to increase project efficiency and further reduce impacts to the environment and natural resources. Therefore, the project layout and associated impacts identified and analyzed in this Draft EIR are considered a conservative (worse case) scenario, and may be further revised and reduced in the Final EIR.

6.3 SUMMARY OF ALTERNATIVES ANALYZED

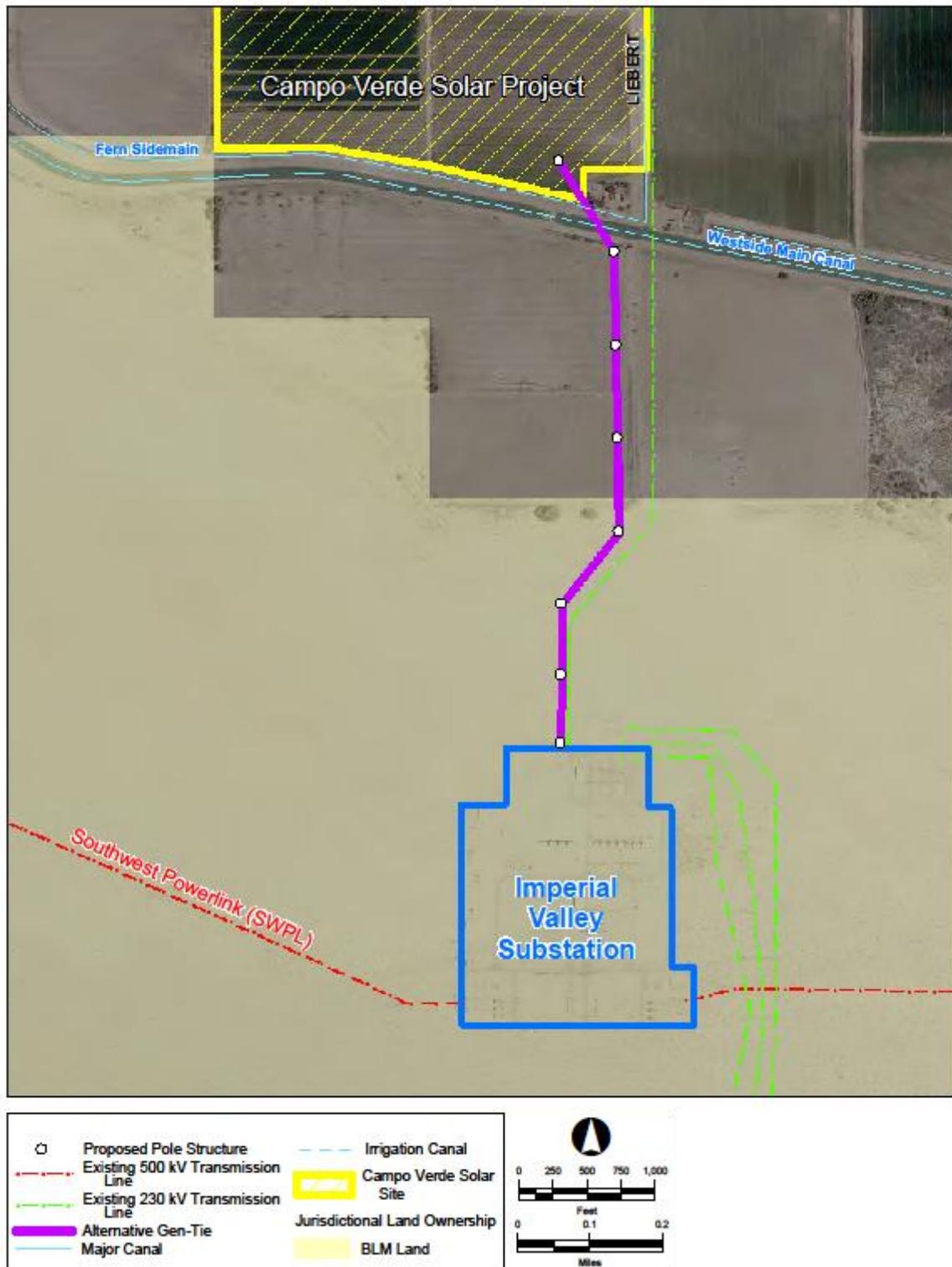
In accordance with the provisions of CEQA Guidelines Section 15126.6, the following alternatives to the proposed project are evaluated:

- **Alternative 1 - Alternative Gen-Tie Across BLM Land** - This alternative includes the same 1,990 acre solar generation facility site as the proposed project and proposes a gen-tie that would

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follow the existing IID S-line and associated access road. A 0.9 mile Gen-tie is proposed including a 0.1 mile segment on the solar generation facility site. The gen-tie would also cross approximately 0.4 miles of BLM land and 0.4 miles of private land. The purpose of analyzing this alternative is to reduce the length of the gen-tie on BLM land. **Figure 6.0-1** depicts this Alternative Gen-Tie across BLM land.

- **Alternative 2 - Private Land Gen-Tie Alternative** - This alternative includes the same 1,990 acre solar generation facility site as the proposed project and proposes a 1.85 mile gen-tie that would originate from the western side of the solar generation facility site (0.1 mile segment) and cross approximately 1.75 miles of private lands to the west (**Figure 6.0-2**). The gen-tie would follow existing field roads and ditches to the Imperial Solar Energy Center West site. From this point, the proposed project would use available capacity on Imperial Solar Energy Center West's gen-tie line that has an approved right-of-way to the Imperial Valley Substation (**Figure 6.0-3**). The purpose of analyzing this alternative is to avoid construction of new transmission facilities on BLM land. **Figure 6.0-2** depicts this Private Land Gen-Tie Alternative.
- **Alternative 3 - No Action Alternative** – This alternative would result in continued use of the project site for agricultural production. The proposed Campo Verde Solar Project would not be developed.

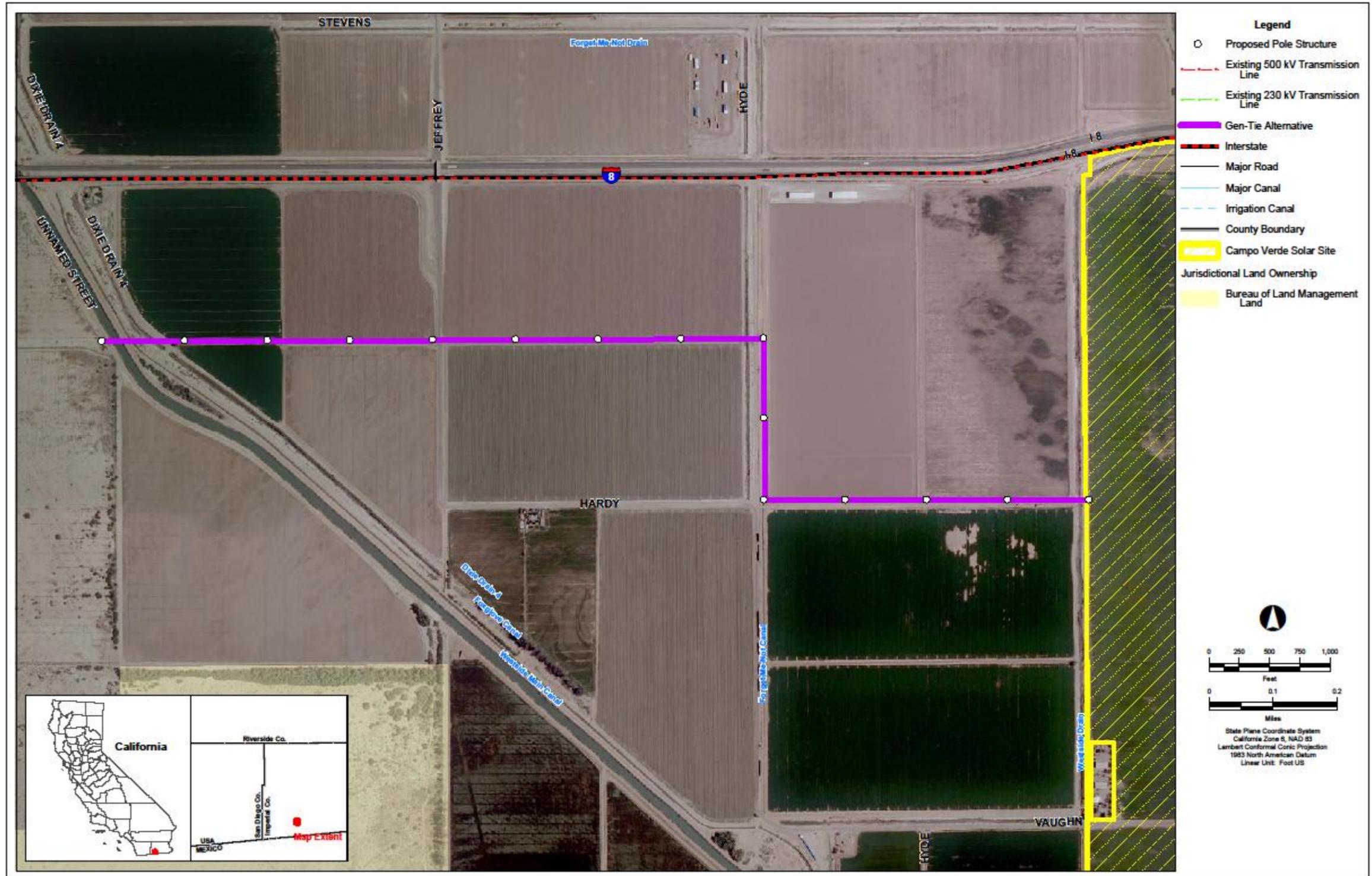


Source: kp environmental, 2012.

FIGURE 6.0-1
ALTERNATIVE GEN-TIE ACROSS BLM LAND

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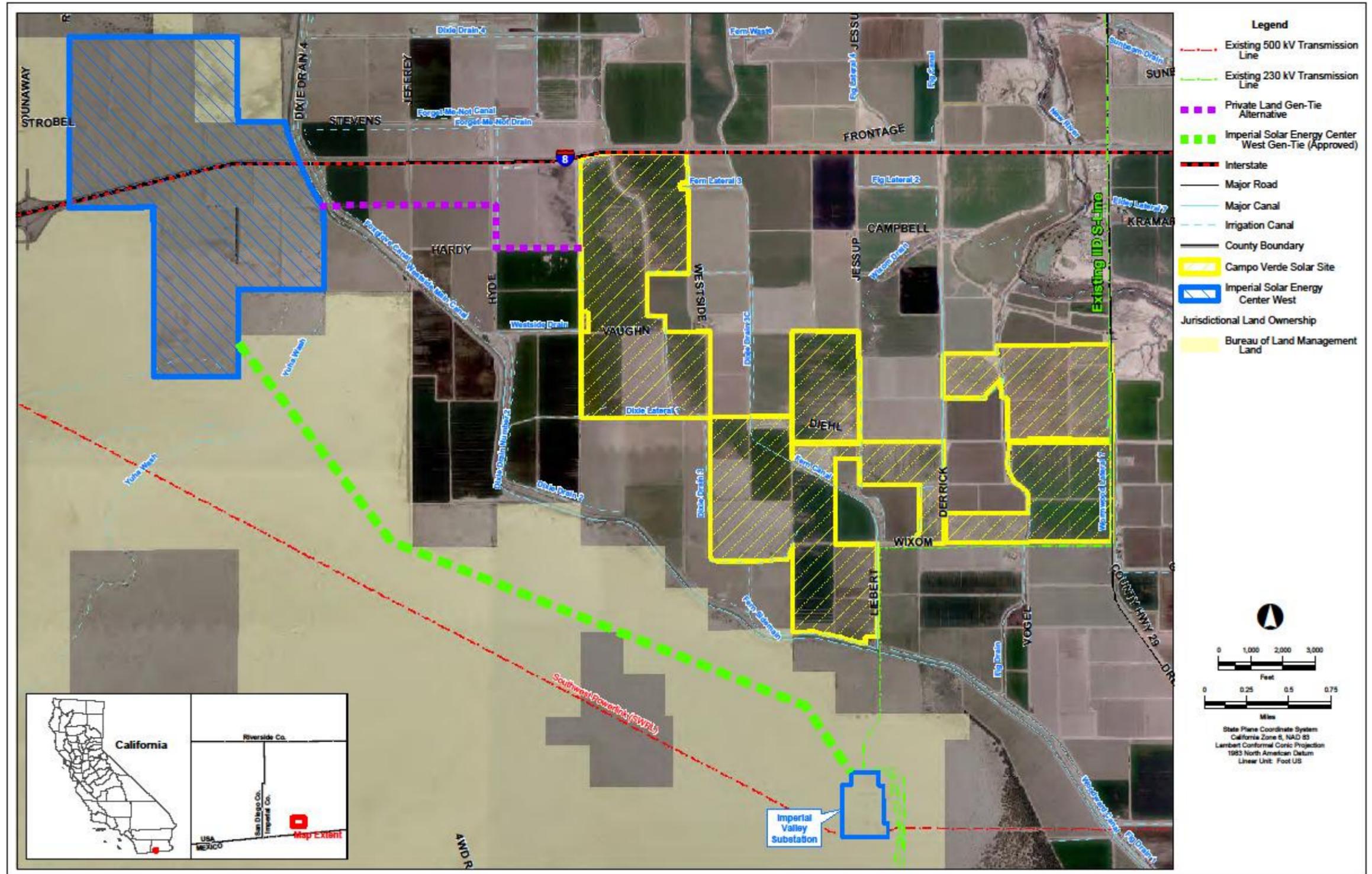
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Source: kp environmental, 2012.

FIGURE 6.0-2
PRIVATE LAND GEN-TIE ALTERNATIVE

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Source: kp environmental, 2012.

FIGURE 6.0-3
PRIVATE LAND ALTERNATIVE AND IMPERIAL VALLEY ENERGY CENTER WEST

6.4 ANALYSIS OF ALTERNATIVES

This section identifies the environmental effects of the alternatives and compares the environmental effects with those resulting from the proposed project. A table at the end of this section provides a summary of the comparisons. An "environmentally superior" alternative is also identified.

6.4.1 ALTERNATIVE 1 - ALTERNATIVE GEN-TIE ACROSS BLM LAND

Characteristics

Like the proposed project, the Alternative Gen-Tie across BLM land would construct a double-circuit 230 kV line interconnection to the Imperial Valley Substation. The gen-tie would parallel the existing IID S-line and be a total of approximately 0.9 miles long.

This alternative would begin on the southern portion of the solar generation facility site, cross the Westside Main Canal, and extend south approximately 0.4 miles through private land. From this point, the gen-tie would enter BLM land and continue south for approximately 0.4 miles to the Imperial Valley Substation.

Figure 6.0-1 shows the proposed alignment of the Alternative Gen-Tie across BLM land. Table 6.0-1 summarizes the assessor’s parcel number, acreage and nearest cross street/intersection for the privately owned parcels affected by this alternative.

**TABLE 6.0-1
PRIVATELY OWNED PARCELS – ALTERNATIVE GEN-TIE ON BLM LANDS**

Assessor’s Parcel Number	Acreage	Nearest Cross Street/Intersection
APN 051-350-014	Part of solar project site	Liebert and Mandrapa Roads
APN 051-350-010	1.5 acres	Liebert and Mandrapa Roads
APN 051-350-011	3.6 acres	Liebert and Mandrapa Roads

Source: Imperial County Zoning Maps.

Table 6.0-2 summarizes the Township/Range and Sections for the BLM lands affected by this alternative.

**TABLE 6.0-2
DESCRIPTION OF BLM LANDS ALTERNATIVE GEN-TIE ON BLM LANDS**

Township / Range	Sections
16 ½S 12E	NW ¼ NE ¼ of Section 3
	SW ¼ NE ¼ of Section 3

Source: BLM, 2012.

Structures and Facilities

Fewer pole structures (8) and associated facilities would be required for the Alternative Gen-Tie across BLM land compared to the proposed project (11). Four pole structures are proposed on BLM land, three are proposed on private lands, and one is proposed on the solar generation facility site. Like the proposed project, a small 100-foot by 150-foot area around each pole structure site would be cleared of obstructions and temporarily used for construction on the BLM land. Up to five pulling / tensioning sites are expected to be needed on BLM land for this alternative. Figure 6.0-1 shows the tentative locations of pole structure sites.

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Construction Activities

The construction activities for the Alternative Gen-Tie across BLM Land would be the same as that described for the proposed project. Refer to Chapter 2.0, subsection 2.1.4, item D, “Construction Process for the Solar Generation Facility” and subsection 2.1.5, item F, “Construction Process for Gen-Tie.”

Operations and Maintenance Activities

The operations and maintenance activities for the Alternative Gen-Tie across BLM Land would be the same as that described for the proposed project. Refer to Chapter 2.0, subsection 2.1.4, item E, “Operations and Maintenance of Solar Generation Facility” and subsection 2.1.5, item H, “Operations and Maintenance of Gen-Tie.”

Decommissioning Activities

The decommissioning activities for the Alternative Gen-Tie across BLM Land would be the same as for the proposed project. Refer to Chapter 2.0, subsection 2.1.4, item F, “Decommissioning Plan” and subsection 2.1.5, item I, “Decommissioning and Restoration of Gen-Tie.”

Design Features, BMPs, and Other Conditions

The design features and BMPs for the Alternative Gen-Tie across BLM Land would be the same as described for the proposed project. Refer to Chapter 2.0, subsection 2.1.5, item J, “Design Features and Best Management Practices.”

Relationship to Project Objectives

Implementation of the Alternative Gen-Tie across BLM Land would fulfill the project’s objectives to construct a solar generation facility. Development of the project would create a new source of renewable energy on previously disturbed land in a rural setting in proximity to the existing electric transmission system. Likewise, the Alternative Gen-Tie across BLM Land would support the objective of reducing the emission of GHGs from the generation of electricity. The Alternative Gen-Tie across BLM Land would allow the Applicant to meet its obligation to meet the terms and requirements of its Power Purchase Agreement which would aid progress in fulfilling the state’s RPS and compliance with Executive Order S-14-08 and SB X1-2.

Comparative Impacts

Aesthetics

Under the Alternative Gen-Tie across BLM Land, the aesthetic condition of the project site would be altered in association with development of a solar generation facility identical to the proposed project. The solar generation facility site would include PV panels, inverters, transformers and a segment of the gen-tie and result in the same visual impacts from surrounding KOPs. The overall length of the gen-tie for the Alternative Gen-Tie across BLM Land would be slightly shorter (0.9 mile) than the proposed gen-tie (1.4 miles), and would have three fewer poles on BLM land. The additional towers on the solar generation facility site included as part of the proposed project would not be prominent because of the distance of the poles from the KOPs. New sources of light or glare would be similar for both the Alternative Gen-Tie across BLM land and the proposed project. Therefore, potential impacts to aesthetics would be similar for both the Alternative Gen-Tie across BLM and the proposed project.

Land Use

The solar generation facility site for the Alternative Gen-Tie across BLM Land is identical to the proposed project and has an existing General Plan land use designation “Agriculture” and an existing zoning of A-2 - General Agriculture, A-2-R - General Agriculture, Rural Zone, and A-3 - Heavy Agriculture. Like the proposed project, the Alternative Gen-Tie across BLM Land would require both a Conditional Use Permit (CUP) and a Variance. Potential impacts to land use would be similar under the Alternative Gen-Tie across BLM Land and the proposed project.

Transportation and Circulation

Short-term construction-related traffic increases similar to the proposed project would also occur under the Alternative Gen-Tie across BLM Land. As with the proposed project, impacts to intersections under cumulative conditions could be mitigated with payment of a fair share contribution for improvements. Long-term increases in vehicle traffic related to operation and maintenance of the proposed solar generation facility would be similar for both the Alternative Gen-Tie across BLM Land and the proposed project under all traffic scenarios modeled (Existing Year 2011 Plus Project Conditions, Year 2013 Conditions Without Project, Year 2013 Plus Project Conditions, Year 2013 Plus Project Plus Cumulative Conditions). However, slightly less maintenance traffic would be generated for the Alternative Gen-Tie across BLM Land because fewer towers would require maintenance compared to the proposed project. Overall, potential impacts to traffic and circulation would be similar for both the Alternative Gen-Tie across BLM Land and the proposed project.

Air Quality

Under the Alternative Gen-Tie across BLM Land, short-term construction-related air quality impacts would be slightly less than those of the proposed project because three fewer towers would be constructed. Emissions of NO_x and PM₁₀ would be generated in association with site preparation, equipment operation and vehicle trips. Similar exposure of sensitive receptors would occur for both the Alternative Gen-Tie across BLM Land and the proposed project but impacts would be mitigated through T-BACT and measures to reduce NO_x and PM₁₀. Vehicle trip emissions associated with operation and maintenance would also be slightly less for the Alternative Gen-Tie across BLM Land compared to the proposed project because 3 fewer towers would require maintenance. Therefore, potential impacts to air quality would be slightly better for the the Alternative Gen-Tie across BLM Land compared to the proposed project.

Climate Change and Greenhouse Gases

Short-term construction-related greenhouse gas/climate impacts are anticipated to be slightly less for the Alternative Gen-Tie across BLM Land compared to the proposed project because less construction would be required. The reduction in towers associated with the Alternative Gen-Tie across BLM Land would mean less land disturbance and construction trips and associated emissions compared to the proposed project. Potential operational greenhouse gas/climate change impacts as a result of increased vehicle emissions for operations and maintenance would also be slightly less than the proposed project as there would be three fewer towers to maintain under Alternative Gen-Tie across BLM Land. Therefore, greenhouse gas/climate change impacts would slightly better under the Alternative Gen-Tie across BLM Land as compared to the proposed project.

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Geology and Soils

The solar generation facility site would be identical for both the proposed project and the Alternative Gen-Tie across BLM Land and thus would be exposed to similar geologic and seismic hazards as the proposed project (seismic exposure, liquefaction, expansive soils, erosion, and corrosive soils). However the gen-tie component includes three fewer towers than the proposed project and thus would potentially be exposed to less damage associated with geology and soils. Therefore, geology and soils impacts would be better for the Alternative Gen-Tie across BLM Land compared to the proposed project.

Cultural and Paleontological Resources

Potential cultural resource impacts associated with potential disturbance of undiscovered resources on the solar generation facility is expected to be the same for both the Alternative Gen-Tie across BLM Land and the proposed project. Construction activities required to install the Alternative Gen-Tie across BLM Land (i.e., foundations installation, etc.) would disturb less land than the proposed project because three fewer towers are proposed. Therefore, potential impacts to cultural resources would be better for the Alternative Gen-Tie across BLM Land compared to the proposed project.

Noise

Short-term construction-related noise impacts for the solar generation facility would be similar for both the Alternative Gen-Tie across BLM Land and the proposed project. Less construction noise would be generated by the Alternative Gen-Tie across BLM Land because three fewer towers would be built. Additionally, operational traffic noise and stationary noise impacts would be lower as less maintenance trips would be necessary to service fewer towers and the gen-tie would generate noise over a shorter span than the proposed project. Therefore, noise impacts would be better for the Alternative Gen-Tie across BLM Land compared to the proposed project.

Agricultural Resources

Both the Alternative Gen-Tie across BLM Land and the proposed project would convert the project site from agricultural uses to a solar generation facility. No agricultural land aside from the solar generation facility site would be disturbed in association with either the Alternative Gen-Tie across BLM Land or the proposed project. Therefore, similar impacts to agricultural resources would occur in association with the Alternative Gen-Tie across BLM Land and the proposed project.

Hazards and Hazardous Materials

Risks associated with site hazards, including construction activities and conditions (e.g., soil disturbance and use of hazardous materials associated with construction activities, etc.), and operational activities (e.g., transport, use and storage of fuel and herbicides, etc.) are anticipated to be similar for both the Alternative Gen-Tie across BLM Land and the proposed project. Existing residual on-site hazards on the solar generation facility site which present a risk of upset during construction would be the same for both the Alternative Gen-Tie across BLM Land and the proposed project.

Air traffic hazards were evaluated for the proposed project and found not to be an issue. Likewise, the DoD Preliminary Screening Tool shows that Alternative Gen-Tie across BLM Land would not have potential impacts to military airspace (ENValue, 2012, p. 4). Therefore, impacts associated with hazards and hazardous materials would be similar for both the Alternative Gen-Tie across BLM Land and the proposed project.

Hydrology and Water Quality

Impacts to surface water quality from construction activities, increased impervious surfaces, increased drainage rates, and potentially higher levels of contaminants in runoff are anticipated to be similar for both the Alternative Gen-Tie across BLM Land and the proposed project. The same solar generation facility site would be developed for both the Alternative Gen-Tie across BLM Land and the proposed project. Differences in gen-tie configurations between the Alternative Gen-Tie across BLM Land and the proposed project would not drastically change hydrology and water quality impacts. Therefore, impacts to hydrology and water quality would be similar for both the Alternative Gen-Tie across BLM Land and the proposed project.

Biological Resources

The Alternative Gen-Tie across BLM land would result in land disturbance similar to the proposed project. As shown in **Table 6.0-3**, the same area would be disturbed for the solar generation facility component under both the proposed project and the Alternative Gen-Tie across BLM land. Approximately 0.14 acres (7.40 acres minus 7.26 acres) more of temporary disturbance would occur for the proposed project compared to the Alternative Gen-Tie across BLM land.

**TABLE 6.0-3
TEMPORARY AND PERMANENT IMPACTS TO VEGETATION COMMUNITIES
PROPOSED PROJECT VS. ALTERNATIVE GEN-TIE ACROSS BLM LAND**

Project Component	Temporary Impacts (acres)	Permanent Impacts (acres)
Solar Generation Facility Site	1,852.0	1,852.0
Proposed Gen-Tie		
Off-site Pole Locations (7)	4.02	0.05
Pull-Sites (5)	3.38	0.00
Total	7.40	0.05
Alternative Gen-Tie Across BLM Land		
Off-site Pole Locations (4)	4.02	0.05
Pull-Sites (5)	3.24	0.00
Total	7.26	0.05

Source: Heritage, 2012.

Table 6.0-4 shows the vegetation communities that occur within the survey area for the Alternative Gen-Tie across BLM land compared to the proposed project (refer to Attachment 1, Figure 6, of **Appendix J** of this EIR). As shown, impacts to BLM lands would be greater for the proposed project than the Alternative Gen-Tie across BLM land. Conversely impacts to private lands would be greater for the Alternative Gen-Tie across BLM land compared to the proposed project.

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**TABLE 6.0-4
VEGETATION COMMUNITIES/LAND COVER TYPES
PROPOSED PROJECT VS. ALTERNATIVE GEN-TIE ACROSS BLM LAND**

Vegetation Community	Solar Generation Facility Site (Acres)	Proposed Gen-Tie		Alternative Gen-Tie Across BLM Land	
		BLM Land (Acres)	Private Land (Acres)	BLM Land (Acres)	Private Land (Acres)
Active Agriculture (AG-A)	1,677.45	1.49	2.22	0.00	1.40
Fallow Agriculture (AG-F)	123.13	0.79	0.96	0.00	21.50
Arrow Weed Thicket (AS)	0.08	0.41	0.44	--	--
Arrow Weed Thicket – Disturbed (AS-D)	2.19	0.21	0.50	0.00	0.32
Athel Tamarisk Type Woodland (AW)	1.25	0.42	0.52	0.43	0.04
Tamarisk Thicket (TS)	0.40	0.00	0.00	0.00	0.17
Creosote Bush - White Bursage Scrub (CBS)	--	35.14	0.00	22.36	2.03
Creosote Bush - White Bursage Scrub - Disturbed (CBS-D)	--	1.82	2.33	0.60	1.37
Developed (DEV)	0.30	2.19	0.00	2.19	2.13
Open Water with Arrow Weed Thicket (OW)	--	0.71	0.44	0.00	1.34
Stabilized Desert Dunes - Disturbed (SDD-D)	--	22.28	0.00	1.22	0.09
Total Impacts	1,852.00	65.46	7.41	26.92	30.39

Source: Heritage, 2012; BLM, 2012.

No federally listed, state-listed or BLM sensitive plant species are known or expected to occur within the Alternative Gen-Tie across BLM land based on spring surveys completed for other transmission projects paralleling the IID S-Line route. Spring rare plants are being done in March, April, and possibly May 2012, depending on conditions and guidance from the BLM. Based on survey results from other projects, there are no anticipated impacts to federally listed, state-listed or BLM sensitive plant species if the project uses the Alternative Gen-Tie route.

Abram's spurge (CNPS 2.2), glandular ditaxis (CNPS 2.2), and California ditaxis (CNPS 3.2) have a low potential for occurrence within the Alternative Gen-Tie across BLM land. Rock nettle (CNPS 2.2 and CNDDDB special plant), Brown turbans, Parish's desert-thorn and hairy stickleaf (CNPS 2.3 and CNDDDB special plants), and Utah vine milkweed (CNPS 4.2) have a low to moderate potential for occurrence. Impacts to these species are not anticipated because they were not observed during surveys and habitat is of low quality. However, if impacts occur, they will be relatively minor based on the small impact areas (7.40 acres of temporary impacts and 0.05 acre of permanent impacts).

Though considered sensitive species, the relatively low ranking status of these species means that any mitigation requirements would be satisfied with mitigation for these species' habitats (e.g., mitigation for the creosote bush–white bursage scrub habitat would mitigate for impacts to the preferred habitats for these species). Species-specific mitigation requirements would not be necessary.

The invertebrates, amphibians, reptiles, birds, and mammals that occur along the Alternative Gen-Tie across BLM land are the same as those described Section 4.12, subsection 4.12.2, General Wildlife.

Thirteen of the fifteen special status wildlife species discussed in Section 4.12, Biological Resources, have the potential to occur along the Alternative Gen-Tie across BLM land (there is no habitat for Yuma

Clapper Rail or barefoot-banded gecko). These species include federally listed species, state listed species, and BLM sensitive species that are known to occur in the Imperial Valley, as well as CDFG species of special concern that were observed during surveys.

There are approximately 1.34 acres of open water with arrow weed thicket and 0.32 acres of arrow weed thicket within the survey area for the Alternative Gen-Tie across BLM land (refer to **Table 6.0-4**).

Impacts to Southwestern Willow Fly Catcher (SWFL) with implementation of the Alternative Gen-Tie across BLM land would generally be the same as that described for the proposed gen-tie in Section 4.12. Suitable migration habitat in the vicinity of the Alternative Gen-Tie across BLM land occurs along the Dixie 3B Drain, approximately 2,000 feet west of the Westside Main Canal crossing associated with this alternative (refer to **Figure 4.12-2c** in Section 4.12). Construction of the Alternative Gen-Tie across BLM land will not directly disturb acreage inside these habitats nor would this alternative be built across any of the drains or wetlands containing potentially suitable migratory habitat for the SWFL. Potential impacts to the SWFL would appear to be limited to the risk that night-migrating SWFL individuals could collide with the gen-tie and temporal displacement of migrant willow flycatchers if construction activities temporarily deter foraging in nearby areas. Therefore, impacts to SWFL would be similar for both the Alternative Gen-Tie across BLM land and the proposed project.

Impacts to Peninsular bighorn sheep would not occur for both the Alternative Gen-Tie across BLM land and the proposed project.

The impacts to Colorado desert fringe-toed lizard resulting from implementation of the Alternative Gen-Tie across BLM land would generally be the same as that described for the proposed gen-tie in Section 4.12, Biological Resources. This alternative may temporarily impact approximately 5.63 acres of suitable Colorado Desert fringe-toed lizard habitat during construction and permanently impact approximately 0.03 acres after construction. The mitigation that will be implemented for FTHL (MM 4.12.10a, MM 4.12.10b and MM 4.12.10c) would also act as mitigation for this species because they use the same habitats. Therefore, impacts to Colorado desert fringe-toed lizard would be similar for both the Alternative Gen-Tie across BLM land and the proposed project.

Impacts to Burrowing Owl (BUOW) resulting from implementation of the Alternative Gen-Tie across BLM land would be similar to but slightly less than that described for the proposed gen-tie in Section 4.12, Biological Resources. Two suitable but unoccupied BUOW burrows were observed within the survey area. Removal of these burrows is not anticipated because they would be spanned by the Alternative Gen-Tie across BLM land. In addition, adjacent suitable foraging habitat for these burrows would not be removed during construction activities. Therefore, impacts to BUOW would be similar for both the Alternative Gen-Tie across BLM land and the proposed project.

Impacts to Mountain Plover, California leaf-nosed bat, and pallid bat resulting from implementation of the Alternative Gen-Tie across BLM land would be similar to those described for the proposed gen-tie in Section 4.12, Biological Resources.

The Alternative Gen-Tie across BLM land would affect small areas of the same habitats as would occur for the proposed gen-tie with regard to California species of special concern and fully protected species. The same mitigation measures used for the proposed gen-tie would be implemented for the Alternative Gen-Tie across BLM land. Therefore, impacts to California Species of special concern and fully protected species resulting from implementation of the Alternative Gen-Tie across BLM land would generally be the same as those described for the proposed Gen-Tie in Section 4.12, Biological Resources.

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In contrast to the proposed project (refer to Impact 4.12.12 in Section 4.12, Biological Resources), no impacts to riparian habitat or sensitive natural communities would occur under the Alternative Gen-Tie across BLM land. Thus, impacts to riparian habitat or sensitive natural communities would be better under the Alternative Gen-Tie across BLM land compared to the proposed project.

6.4.2 ALTERNATIVE 2 – PRIVATE LAND GEN-TIE ALTERNATIVE

Characteristics

The Private Land Gen-Tie Alternative would be a single or double-circuit 230 kV interconnection to the Imperial Valley Substation via the Imperial Solar Energy Center West site. This 1.85 mile gen-tie would originate at the western portion of the solar generation facility site (0.1 mile) and extend through approximately 1.75 miles of privately-owned agricultural lands (**Figure 6.0-2**), cross IID’s Westside Main Canal, and enter the Imperial Solar Energy Center West site. The Private Land Gen-Tie Alternative includes 15 towers: one on the solar generation facility site and 14 on private land. Rather than construct additional towers on BLM land, this alternative would use available gen-tie capacity on the Imperial Solar Energy Center West’s approved gen-tie right-of-way to the Imperial Valley Substation. As such, the Private Land Gen-Tie Alternative would not require an ROW approval from the BLM. Further, no additional disturbance or construction on BLM land would be necessary as this alternative would co-locate on existing Imperial Solar Energy Center West transmission facilities. **Figure 6.0-3** shows the location of the Imperial Solar Energy Center West site and its proposed gen-tie line to the Imperial Valley Substation.

Table 6.0-5 summarizes the assessor’s parcel number, acreage and nearest cross street/intersection for the privately owned parcels affected by the Private Land Gen-Tie Alternative.

**TABLE 6.0-5
PRIVATELY OWNED PARCELS – PRIVATE LAND GEN-TIE ALTERNATIVE**

Assessor’s Parcel Number	Acreage	Nearest Cross Street/Intersection
APN 051-290-014	11.0 acres	Jeffrey Road and Dixie Drain 4
APN 051-260-030	7.0 acres	Jeffrey Road and Dixie Drain 4
APN 051-260-029	3.7 acres	Hyde Road and Hardy Road
APN 051-260-033	2.1 acres	Hyde Road and Hardy Road

Source: Imperial County Zoning Maps.

Table 6.0-6 summarizes the Township/Range and Sections for the BLM lands affected by this alternative.

**TABLE 6.0-6
DESCRIPTION OF BLM LANDS - PRIVATE LANDS GEN-TIE ALTERNATIVE**

Township / Range	Sections
16S 12E	NE ¼ SE ¼ of Section 20
	NW ¼ SE ¼ of Section 20
	SW ¼ NE ¼ of Section 20
	NW ¼ NE ¼ of Section 20
	SE ¼ SW ¼ of Section 17
	SW ¼ SW ¼ of Section 17
	SE ¼ SE ¼ of Section 18
	SW ¼ SE ¼ of Section 18
	SE ¼ SW ¼ of Section 18

Source: BLM, 2012.

Structures and Facilities

More pole structures (15) and associated facilities would be required for the Private Land Gen-Tie Alternative compared to the proposed project (11). Fourteen pole structures are proposed on private lands, and one is proposed on the solar generation facility site. The Imperial Solar Energy Center West site would be needed for this alternative. Some structure locations may need to be cleared of agricultural crops for construction. Three pulling / tensioning sites are expected for this alternative.

Construction Activities

The construction activities for the Private Land Gen-Tie Alternative would be the same as that described for the proposed project. Refer to Chapter 2.0, subsection 2.1.4, item D, "Construction Process for the Solar Generation Facility" and subsection 2.1.5, item F, "Construction Process for Gen-Tie."

Operations and Maintenance Activities

The operations and maintenance activities for the Private Land Gen-Tie Alternative would be the same as that described for the proposed project. Refer to Chapter 2.0, subsection 2.1.4, item E, "Operations and Maintenance of Solar Generation Facility" and subsection 2.1.5, item H, "Operations and Maintenance of Gen-Tie."

Decommissioning Activities

The decommissioning activities for the Private Land Gen-Tie Alternative would be the same as that described for the proposed project. Refer to Chapter 2.0, subsection 2.1.4, item F, "Decommissioning Plan" and subsection 2.1.5, item I, "Decommissioning and Restoration of Gen-Tie."

Design Features, BMPs, and Other Conditions

The design features for the Private Land Gen-Tie Alternative would be the same as that described for the proposed gen-tie. However, many of the BMPs designed to minimize impacts on desert lands would not be needed here because all lands crossed by the Private Land Gen-Tie Alternative are currently disturbed by agriculture. Refer to Chapter 2.0, subsection 2.1.5, item J, "Design Features and Best Management Practices."

Relationship to Project Objectives

Implementation of the Private Land Gen-Tie Alternative would fulfill the project's objectives to construct a solar generation facility. Development of the project would create a new source of renewable energy on previously disturbed land in a rural setting in proximity to the existing electric transmission system. Likewise, the Private Land Gen-Tie Alternative would support the objective of reducing the emission of GHGs from the generation of electricity. The Private Land Gen-Tie Alternative would allow the Applicant to meet its obligation to meet the terms and requirements of its Power Purchase Agreement which would aid progress in fulfilling the state's RPS and compliance with Executive Order S-14-08 and SB X1-2.

Comparative Impacts

Aesthetics

Under the Private Land Gen-Tie Alternative, the aesthetic condition of the project site would be altered in association with development of a solar generation facility identical to the proposed project. The solar generation facility site would include PV panels, inverters, transformers and a segment of the gen-tie. However, the Private Land Gen-Tie Alternative would include a longer gen-tie overall (1.85 miles) which would be located entirely on private lands. This alternative would require more pole structures than the

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proposed project but would avoid adding structures on BLM land. New sources of light or glare for the Private Land Gen-Tie Alternative are anticipated to be similar to the proposed project. Therefore, potential impacts to aesthetics would be similar for both the Private Land Gen-Tie Alternative and the proposed project.

Land Use

The solar generation facility site for the Private Land Gen-Tie Alternative is identical to the proposed project and has an existing General Plan land use designation of “Agriculture” and existing zoning of A-2 - General Agriculture, A-2-R - General Agriculture, Rural Zone, and A-3 - Heavy Agriculture. Like the proposed project, the Private Land Gen-Tie Alternative would require both a Conditional Use Permit (CUP) and a Variance. Potential impacts to land use would be similar under the Private Land Gen-Tie Alternative and the proposed project.

Transportation and Circulation

Short-term construction-related traffic impacts similar to the proposed project would also occur under the Private Land Gen-Tie Alternative with potential for slightly more construction traffic to erect the 1.85 mile long gen-tie. As with the proposed project, impacts to intersections under cumulative conditions could be mitigated with payment of a fair share contribution for improvements. Long-term increases in vehicle traffic related to operation and maintenance of the proposed solar generation facility would be similar for both the Private Land Gen-Tie Alternative and the proposed project under all traffic scenarios modeled (Existing Year 2011 Plus Project Conditions, Year 2013 Conditions Without Project, Year 2013 Plus Project Conditions, Year 2013 Plus Project Plus Cumulative Conditions). However, slightly more traffic would be generated by maintenance trips for the additional towers included as part of the Private Land Gen-Tie Alternative. Overall, potential impacts to traffic and circulation would be similar for both the Private Land Gen-Tie Alternative and the proposed project.

Air Quality

Under the Private Land Gen-Tie Alternative, short-term construction-related air quality impacts would be slightly greater than those of the proposed project in association with the increased length of the gen-tie (1.85 miles compared to 1.4 miles for the proposed project). Emissions of NO_x and PM₁₀ would be generated during construction in association with site preparation, equipment and vehicle exhaust. Similar exposure of sensitive receptors would occur for both the Private Land Gen-Tie Alternative and the proposed project but impacts would be mitigated through T-BACT and measures to reduce NO_x and PM₁₀. Vehicle trips associated with operation and maintenance would also be slightly more for the Private Land Gen-Tie Alternative compared to the proposed project because several more towers would require maintenance. Therefore, potential impacts to air quality would be slightly worse for the Private Land Gen-Tie Alternative compared to the proposed project.

Climate Change and Greenhouse Gases

Short-term construction-related greenhouse gas/climate impacts are anticipated to be similar for both the Private Land Gen-Tie Alternative and the proposed project. The Private Land Gen-Tie Alternative has the potential for slightly higher emissions if additional vehicle trips are required to support construction of the longer length of the gen-tie under this alternative. Potential operational greenhouse gas/climate change impacts as a result of increased vehicle emissions would be slightly higher because the gen-tie for the Private Land Gen-Tie Alternative is almost twice the length of the proposed project’s gen-tie. Additional traffic may be generated in association with maintenance of additional pole structures required for the longer gen-tie under this alternative. Therefore, greenhouse gas/climate change

impacts are anticipated to slightly worse for the Private Land Gen-Tie Alternative compared to the proposed project.

Geology and Soils

The solar generation facility site would be identical for both the proposed project and the Private Land Gen-Tie Alternative and thus would be exposed to similar geologic and seismic hazards as the proposed project (seismic exposure, liquefaction, expansive soils, erosion, and corrosive soils). However the gen-tie component of the Private Land Gen-Tie Alternative includes several more towers than the proposed project and thus would potentially be exposed to more damage associated with geology and soils. Therefore, geology and soils impacts would be worse for the Private Land Gen-Tie Alternative compared to the proposed project.

Cultural and Paleontological Resources

Cultural resource impacts associated with potential disturbance of undiscovered resources is expected to be the similar for both the Private Land Gen-Tie Alternative and the proposed project. The solar generation facility site (i.e. foundations installation, etc) for the Private Land Gen-Tie Alternative would be the same as the proposed project. Table 4.7-2 in Section 4.7 identifies eight of the previously recorded cultural resources are within the project study area. **Table 6.0-7** shows two additional resources that were identified specific to the Private Land Gen-Tie Alternative.

**TABLE 6.0-7
PREVIOUSLY RECORDED CULTURAL RESOURCES IN THE PROJECT AREA**

Site Number	Type	Age	Location	Comment
CA-IMP-7834	Westside Main Canal	Historic	Private Land Gen-Tie Alternative	Part of the All-American Canal System
P-13-012690	Portion of Forget-Me-Not Canal	Historic	Private Land Gen-Tie Alternative	Part of the All-American Canal System

Source: SCIC, 2011.

Key to Site numbers: Site numbers beginning with P- are Primary numbers assigned by the SCIC; Site numbers beginning with CA-IMP- are Trinomial numbers assigned by the SCIC.

The field surveys identified 29 cultural resources more than 50 years old in the project area including 7 historic period water conveyance facilities (canals, drains, and ditches), 10 historical buildings, one historic archaeological site (CA-IMP-11758), as well as 11 isolates (1 or 2 artifacts each) shown in Table 4.7-2 in Section 4.7. In addition, **Table 6.0-8** summarizes the water conveyance facilities, and isolated finds (isolates) that are located along the Private Land Gen-Tie Alternative.

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TABLE 6.0-8
CULTURAL RESOURCES IDENTIFIED FOR THE PRIVATE LAND GEN-TIE ALTERNATIVE

Site Number	Description	Resource Type	Age	Location
CA-IMP-7834	Westside Main Canal and Westside Drain	Structure/Facility	Historic	Private Land Gen-Tie Alternative
CA-IMP-8821	Foxglove Canal	Structure/Facility	Historic	Private Land Gen-Tie Alternative
P-13-012688	Dixie Drains 2, 3, & 4, Dixie Lateral 1 (portions)	Structure/Facility	Historic	Private Land Gen-Tie Alternative
MS 11 (Isolate)	Isolate purple glass	Isolate	Historic	Private Land Gen-Tie Alternative

Source: Mitchell, 2011.

Key to Site numbers: Site numbers beginning with P- are Primary numbers assigned by the SCIC; Site numbers beginning with CA-IMP- are Trinomial numbers assigned by the SCIC; Site numbers beginning with MS- are temporary numbers assigned by kp environmental, the project cultural resources consultant.

The Westside Main Canal system (CA-IMP-7834), including the canal, lateral, and Westside Drain segments is in the project area (in the solar generation facility site, the proposed gen-tie, and the Private Land Gen-Tie Alternative) and is eligible for the CRHR under Criterion 1 for its significance in the agricultural and economic development of the Imperial Valley. However, the Private Land Gen-Tie Alternative would also potentially impact two additional historic facilities (CA-IMP-8821 and P-13-012688) as well as an isolate (MS 11). Therefore, impacts to cultural resources for the Private Land Gen-Tie Alternative would be considered worse than for the proposed project.

Noise

Short-term construction-related noise impacts are anticipated to be similar for both the Private Land Gen-Tie Alternative and the proposed project. However, the area in which the noise impacts would occur would cover a larger area since the Private Land Gen-Tie Alternative is longer (1.85 miles) than the proposed project (1.4 mile). Operational traffic noise and stationary noise impacts are anticipated to be similar, though the Private Land Gen-Tie Alternative would involve more gen-tie structures than the proposed project. Therefore, noise impacts would be worse for the Private Land Gen-Tie Alternative compared to the proposed project.

Agricultural Resources

Both the Private Land Gen-Tie Alternative and the proposed project would convert the project site from agricultural uses to a solar generation facility. Similar impacts to agricultural resources would occur in association with the Private Land Gen-Tie Alternative and the proposed project. However, slightly more agricultural land would be permanently impacted by placement of gen-tie pole structures (0.11 acre) for the Private Land Gen-Tie Alternative compared to the proposed project (0.08 acre). Therefore impacts to agricultural resources would be slightly worse under the Private Land Gen-Tie Alternative compared to the proposed project.

Hazardous and Hazardous Materials

Risks associated with site hazards, including construction activities and conditions (e.g., soil disturbance, use of hazardous materials associated with construction activities), and operational activities (e.g., transport, use and storage of fuel and herbicides) are anticipated to be similar for both the Private Land Gen-Tie Alternative and the proposed project. Existing residual on-site hazards located on the solar

generation facility site which present a risk of upset during construction would be the same for both the Private Land Gen-Tie Alternative and the proposed project.

Air traffic hazards were evaluated for the proposed project and found to not be an issue. The DoD Preliminary Screening Tool results for the Private Land Gen-Tie Alternative suggested additional consultation with the local military installation to determine whether impacts could occur. The DoD has been contacted but has not yet provided additional information (ENValue, 2012, p. 4). Thus, hazard impacts for the Private Land Gen-Tie Alternative could potentially be worse than would occur for the proposed project.

Hydrology and Water Quality

Impacts associated with surface water quality from construction activities, increased impervious surfaces, increased drainage rates, and potentially higher levels of contaminants in runoff are anticipated to be similar for both the Private Land Gen-Tie Alternative and the proposed project. The same solar generation facility site would be developed for both the Private Land Gen-Tie Alternative and the proposed project with on-site detention and retention basins. The increase in gen-tie towers on private lands (14 towers) associated with the Private Land Gen-Tie Alternative compared to the proposed project (0 towers) is not anticipated to drastically change hydrology and water quality impacts. Therefore, impacts to hydrology and water quality would be similar for both the Private Land Gen-Tie Alternative and the proposed project.

Biological Resources

The Private Land Gen-Tie Alternative would result in land disturbance similar to the proposed project on the solar generation facility site. As shown in **Table 6.0-9**, the same area would be disturbed for the solar generation facility component under both the proposed project and the Private Land Gen-Tie Alternative. Approximately 3.85 acres (11.25 acres minus 7.40 acres) more of temporary disturbance would occur for the Private Land Gen-Tie Alternative compared to the proposed project.

**TABLE 6.0-9
PROPOSED IMPACTS FOR THE CAMPO VERDE SOLAR PROJECT**

Project Component	Temporary Impacts (acres)	Permanent Impacts (acres)
Solar Generation Facility Site	1,852.0	1,852.0
Proposed Gen-Tie		
Off-site Pole Locations (7)	4.02	0.05
Pull-Sites (4)	3.38	0.00
Total	7.40	0.05
Private Land Gen-Tie Alternative		
Off-site Pole Locations (14)	8.04	0.10
Pull-Sites (5)	3.21	0.00
Total	11.25	0.10

Source: Campo Verde Solar, LLC.

Table 6.0-10 shows the vegetation communities that occur within the survey area for the Private Land Gen-Tie Alternative compared to the proposed project (refer to Attachment 1, Figure 6, of **Appendix J** of this EIR). As shown, there would be no impacts to BLM lands for the Private Land Gen-Tie Alternative

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compared to the proposed project. Conversely, impacts to private lands would be much greater (123.61 acres) for the Private Land Gen-Tie Alternative compared to the proposed project (7.41 acres).

**TABLE 6.0-10
VEGETATION COMMUNITIES/LAND COVER TYPES
PROPOSED PROJECT VS. PRIVATE LAND GEN-TIE ALTERNATIVE**

Vegetation Community	Solar Generation Facility Site (Acres)	Proposed Gen-Tie		Private Land Gen-Tie Alternative
		BLM Land (Acres)	Private Land (Acres)	Private Land (Acres)
Active Agriculture (AG-A)	1,677.45	1.49	2.22	112.26
Fallow Agriculture (AG-F)	123.13	0.79	0.96	4.04
Arrow Weed Thicket (AS)	0.08	0.41	0.44	0.83
Arrow Weed Thicket – Disturbed (AS-D)	2.19	0.21	0.50	--
Athel Tamarisk Type Woodland (AW)	1.25	0.42	0.52	0.27
Common Reed Marsh – Disturbed (CRM-D)	--	--	--	0.50
Disturbed Wetland	--	--	--	1.11
Creosote Bush - White Bursage Scrub (CBS)	--	35.14	0.00	--
Creosote Bush - White Bursage Scrub - Disturbed (CBS-D)	--	1.82	2.33	--
Developed (DEV)	0.30	2.19	0.00	3.35
Open Water with Arrow Weed Thicket (OW)	--	0.71	0.44	1.25
Stabilized Desert Dunes - Disturbed (SDD-D)	--	22.28	0.00	--
Total Impacts	1,852.00	65.46	7.41	123.61

Source: Heritage 2012; BLM, 2012.

There are no suitable habitats for special status species along the Private Land Gen-Tie Alternative. Likewise, no special status or priority plant species are expected to occur within the Private Land Gen-Tie Alternative survey area. Therefore, no impacts to special status or priority plant species are expected to occur as a result of project implementation.

The invertebrates, amphibians, reptiles, birds, and mammals that occur along this gen-tie alternative are the same as those described Section 4.12, subsection 4.12.2, General Wildlife. No reptile species were observed in the survey area for this alternative.

Eleven of the fifteen special status wildlife species discussed in Section 4.12, Biological Resources, have the potential to occur along the proposed gen-tie. These species include federally listed species, state listed species, and BLM sensitive species that are known to occur in the Imperial Valley, as well as CDFG species of special concern that were observed during surveys.

Special status wildlife species with no habitat in the Private Land Gen-Tie Alternative survey area include Peninsular bighorn sheep, barefoot-banded gecko, flat-tailed horned lizard, or Colorado desert fringe-toed lizard. Impacts to these species would not occur because there is no suitable habitat to support Peninsular bighorn sheep, barefoot-banded gecko, flat-tailed horned lizard, or Colorado desert fringe-toed lizard in the Private Gen-Tie Alternative survey area.

There are approximately 0.83 acres of arrow weed thicket and approximately 1.25 acres of open water with arrow weed thicket near the west end of the Private Land Gen-Tie Alternative. The Proposed Gen-

Tie would temporarily impact 0.44 acre of arrow weed thicket and 0.44 acre of open water with arrow weed thicket. This is less than would be disturbed by the Private Land Gen-Tie Alternative. However, the Private Land Gen-Tie Alternative would also entirely avoid impacts to 0.41 acre of arrow weed thicket and 0.71 acre of open water with arrow weed thicket.

Impacts to Southwestern Willow Fly Catcher (SWFL) with implementation of the Private Gen-Tie Alternative would generally be the same as those described for the proposed gen-tie in Section 4.12. Suitable migration habitat in the vicinity of the Private Land Gen-Tie Alternative occurs along the Dixie 3B Drain, approximately 2,000 feet west of the Westside Main Canal crossing associated with this alternative (refer to **Figure 4.12-2a** in Section 4.12). Construction of the Private Gen-Tie Alternative will not directly disturb acreage inside these habitats, but the Private Gen-Tie Alternative would be built across this habitat. Potential impacts to the SWFL would be limited to the risk of night-migrating SWFL individuals colliding with the gen-tie. Likewise, temporal displacement of migrant willow flycatchers could occur if nearby construction activities temporarily deter foraging. Therefore, impacts to this species would be similar for both the Private Gen-Tie Alternative and the proposed project.

Construction of the Private Gen-Tie Alternative is not likely to have an effect on YCR individuals. The nearest known occurrence of nesting YCR is approximately 1.8 miles east of the project area. However, there is no suitable nesting habitat in the survey area. There is a potential for YCR to forage or winter in the habitat associated with Dixie Drain 4 and Westside Drain (refer to **Figure 4.12-2a** in Section 4.12). Noise from equipment during construction would have a low probability of temporarily impacting YCR given the low potential for this species to occur within the Private Gen-Tie Alternative area. The O&M activities associated with the Private Gen-Tie Alternative are not expected to affect YCR. Any noise during operations will be minimal and the level of human disturbance is not expected to increase significantly above the level associated with agricultural practices that are currently taking place and will continue to take place. Therefore, impacts to this species would be similar for both the Private Gen-Tie Alternative and the proposed project.

Greater Sandhill Cranes may forage during the winter in the active agricultural habitats adjacent to the Private Gen-Tie Alternative corridor. Approximately 0.4 acres of agricultural land would be affected by implementation of the Private Gen-Tie Alternative. Given that all of the agricultural lands in Imperial County provide potentially suitable foraging habitat for this species, including lands in the vicinity of the Private Gen-Tie Alternative, it is unlikely that the loss of this small amount of potentially suitable foraging habitat would impact wintering Greater Sandhill Cranes. Noise from heavy equipment during construction is not expected to adversely modify the behavioral patterns of foraging Sandhill Cranes because the vast amount of foraging habitat in the vicinity will allow them to use the area. The Sandhill Crane is a diurnal species and is not expected to be active at night. Because the Sandhill Crane is relatively tolerant of disturbance on its wintering grounds, the brief periods when they may forage within any given field in the vicinity of the proposed project disturbance to Sandhill Cranes from noise would be unlikely. Sandhill Cranes are only active during daylight hours, and no collisions with the Private Gen-Tie Alternative are anticipated, as they will be visible and avoidable. Therefore, impacts to this species would be similar for both the Private Gen-Tie Alternative and the proposed project.

Impacts to Burrowing Owl (BUOW) resulting from implementation of the Private Gen-Tie Alternative would generally be the same as that described for the proposed gen-tie in Section 4.12. Three suitable but unoccupied Burrowing Owl burrows were observed within the survey area for this alternative. Removal of these burrows would not occur because these burrows would be spanned by the Private Gen-Tie Alternative. In addition, adjacent suitable foraging habitat for these burrows would not be removed to accommodate construction activities. No impacts to BUOW would occur during operation

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and maintenance activities because existing farm roads adjacent to the gen-tie would be used. Mitigation measures MM 4.12.6a and MM 4.12.6b would be implemented to ensure impacts would be minor. Therefore, impacts to BUOW would be similar for both the Private Gen-Tie Alternative and the proposed project.

The Private Gen-Tie Alternative traverses suitable habitat for the Mountain Plover. However, this species does not nest within the project area or in the Imperial Valley. Approximately 0.4 acres of agricultural land would be affected by implementation of the Private Gen-Tie Alternative. Given that all of the agricultural lands in Imperial County provide potentially suitable foraging habitat for Mountain Plover, including agricultural land in the vicinity of the Private Gen-Tie Alternative, it is unlikely that the loss of this small amount of potentially suitable foraging habitat would impact wintering Mountain Plovers. This species is protected under the MBTA. Avian predators such as ravens (genus *Corvus*), Loggerhead Shrikes (*Lanius ludovicianus*), and Prairie Falcon (*Falco mexicanus*) may be drawn to the area due to the increase in nesting/perching areas such as gen-tie structures. This potential increase in avian predators could potentially indirectly affect Mountain Plover within the vicinity of the Private Gen-Tie Alternative. No indirect effects to Mountain Plover due to herbicide use are anticipated.

The impacts to California leaf-nosed bat and pallid bat resulting from implementation of the Private Gen-Tie Alternative would be similar to that described for the proposed gen-tie in Section 4.12.

The impacts to California species of special concern and fully protected species resulting from implementation of Private Gen-Tie Alternative would generally be the same as that described for the proposed gen-tie in Section 4.12.

In contrast to the proposed project (refer to Impact 4.12.12 in Section 4.12, Biological Resources), no impacts to riparian habitat or sensitive natural communities would occur under the Alternative Gen-Tie Across BLM land. Thus, impacts to riparian habitat or sensitive natural communities would be better under the Private Gen-Tie Alternative land compared to the proposed project.

6.4.3 ALTERNATIVE 3 - NO PROJECT ALTERNATIVE

Alternative 3 is the No Project Alternative. Analysis of the No Project Alternative is required by CEQA Guidelines Section 15126.6(e)(1). The purpose of describing and analyzing a No Project Alternative is to allow decision-makers to compare the impacts of approving a proposed project with the impacts of not approving the proposed project. This alternative considers the circumstance under which the project does not proceed. This discussion analyzes the impacts of the No Project Alternative by projecting what can reasonably be expected to occur in the foreseeable future if the project were not approved, as compared to the proposed project. For the purposes of this analysis, the No Project Alternative assumes that the project site would continue to remain in agricultural uses and that the proposed solar generation facility would not be built on the site. Likewise, the proposed gen-tie would not be constructed.

Characteristics

Under the No Project Alternative, the Campo Verde Solar Project would not be constructed. The project site would remain in its existing state as active agricultural fields, canals, and drains (refer to Figure 2.0-2, Aerial of Project site). No CUP or variance would be necessary from the County. Likewise, no encroachment permits from the IID would be required.

Relationship to Project Objectives

Implementation of the No Project Alternative would fail to fulfill the project's objectives to develop a solar generation facility. Failure to construct the project would forego development of a new source of renewable energy and forfeit locating a project of this size on previously disturbed land in a rural setting in proximity to the existing electric transmission system.

Continued use of the site for agricultural production would not support the objective of reducing the emission of GHGs from the generation of electricity. The Applicant would not be able to meet its obligation to meet the terms and requirements of its Power Purchase Agreement which would ultimately slow progress in fulfilling the state's RPS and compliance with Executive Order S-14-08 and SB X1-2. Therefore, the No Project Alternative would not achieve the objectives of the proposed project.

Comparative Impacts

Aesthetics

Under the No Project Alternative, the aesthetic condition of the project site would remain as it currently exists. Alteration of the site from agricultural fields to a solar generation facility would not occur. Likewise, no new sources of light or glare would be introduced to the site. This alternative would not change existing views or create new sources of light and glare. Therefore, potential impacts to aesthetics would be better under the No Project Alternative compared to the proposed project.

Land Use

The site has an existing General Plan land use designation "Agriculture" and an existing zoning of A-2 - General Agriculture, A-2-R - General Agriculture, Rural Zone, and A-3 - Heavy Agriculture. No development would occur in association with the No Project Alternative. The proposed project would require both a Conditional Use Permit (CUP) and a Variance. Under the No Project Alternative, no CUP or Variance would be required. Potential impacts to land use would be better under the No Project Alternative compared to the proposed project.

Transportation and Circulation

Short-term construction-related traffic impacts would not occur under the No Project Alternative. Long-term increases in vehicle traffic related to operation and maintenance of the proposed solar generation facility would also not occur under the No Project Alternative. Surrounding roads would continue to be used for traffic generated by agricultural uses with no major changes in volumes or patterns. Therefore, potential impacts to traffic and circulation would be better under the No Project Alternative compared to the proposed project.

Air Quality

Under the No Project Alternative, short-term construction-related air quality impacts would not occur. Likewise, vehicle trips associated with operation and maintenance would also be avoided. However, operational air quality impacts associated with use of the site for agricultural production would continue. Generation of fugitive dust from tilling the site and mobile source emissions from farm equipment used to apply chemicals and harvest crops would still occur. Far lower operational emissions would occur if the proposed project were developed. Therefore, the long-term air quality impacts would be better if the proposed project were implemented compared to the No Project Alternative.

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Climate Change and Greenhouse Gases

Short-term construction-related greenhouse gas/climate impacts would not occur under the No Project Alternative. Likewise, operational greenhouse gas/climate change impacts generated by operations and maintenance vehicle trips as a result of increased vehicle emissions would not occur under the No Project Alternative. However, use of the site for agricultural production would result in the continued generation of greenhouse gases from operation of farm equipment and use of water to irrigate the agricultural fields. No such long-term impacts would be associated with the proposed solar generation facility. Therefore, greenhouse gas/climate change impacts would be better if the proposed project were implemented compared to the No Project Alternative.

Geology and Soils

Under the No Project Alternative, no structures would be built on the solar generation facility site and no gen-tie structures would be constructed. Therefore, impacts associated with geologic hazards would remain the same as under existing conditions. Continued use of the site for agricultural production could result in some soil erosion that would be avoided under the proposed project. However, under this alternative, there would be no change from existing conditions. Therefore, impacts to geology and soils would be better under the No Project Alternative compared to the proposed project.

Cultural and Paleontological Resources

Cultural resource impacts associated with potential disturbance of undiscovered resources would not occur under the No Project Alternative. Construction activities required to install the project (i.e. foundations installation, etc) would not occur. The upper portions of the soil profile where past disturbance already has occurred would continue in association with current agricultural practices. Therefore, potential impacts to cultural resources would be better under the No Project Alternative than under the proposed project.

Noise

Short-term construction-related noise impacts would not occur under the No Project Alternative. Additionally, operational traffic noise and stationary noise impacts would not occur with the No Project Alternative. Ambient noise levels are anticipated to remain unchanged in association with continued agricultural practices on the project site. Therefore, noise impacts would be better under the No Project Alternative than under the proposed project.

Agricultural Resources

The No Project Alternative would result in continued use of the site for agricultural production. No impacts to agricultural resources would occur in association with this alternative, as the site would not be converted from agriculture to accommodate construction of the proposed project. Therefore impacts to agricultural resources would be better under the No Project Alternative as compared to the proposed project. This alternative would have no impact on agricultural resources.

Hazardous Materials/Risk of Upset

Risks associated with site hazards, including construction activities and conditions (e.g., soil disturbance, use of hazardous materials associated with construction activities), and operational activities (e.g., transport, use and storage of fuel and herbicides) would not occur under the No Project Alternative. As no construction site preparation or construction activities would be required, no risk of upset of residual hazardous materials on the project site would occur. Continued use of the site for agricultural

production would result in the on-going use of pesticides and herbicides, which would not occur with implementation of the proposed project. Existing regulations in place for the use of pesticides and herbicides would ensure that significant hazardous material impacts would not occur. Therefore, potential impacts to hazardous materials/risk of upset would be better under the No Project Alternative than the proposed project.

Hydrology and Water Quality

Impacts associated with surface water quality from construction activities, increased impervious surfaces, increased drainage rates, and potentially higher levels of contaminants in runoff would not occur under the No Project Alternative. Continued use of the site for agricultural production would result in runoff contaminated with agricultural pollutants, such as herbicides and pesticides. Therefore, impacts to hydrology and water quality would be better under the No Project Alternative compared to the proposed project.

Biological and Natural Resources

The No Project Alternative would result in the project site remaining in its current agriculture use. Impacts to biological resources such as Southwestern Willow Flycatcher, Burrowing Owl, raptors, Mountain Plover, and nesting migratory birds would be avoided under the No Project Alternative as no change from existing conditions would occur. Therefore, impacts to biological resources would be better under the No Project Alternative as compared to the proposed project.

6.5 ENVIRONMENTALLY SUPERIOR ALTERNATIVE

Based upon the evaluation described in this section, the No Project Alternative (Alternative 3) is considered to be the environmentally superior alternative, as it would avoid all adverse impacts associated with the proposed project. The No Project Alternative was determined to have less adverse environmental impacts than the proposed project on most issues overall. However, the No Project Alternative would have a greater impact on air quality and climate change/greenhouse gases than would the proposed project, specifically with regard to continued agricultural dust and equipment emissions and continued reliance on fossil fuels for electricity rather than renewable energy created by the proposed project.

Under CEQA Guidelines Section 15126.6 (e)(2), if the environmentally superior alternative is the No Project Alternative, another environmentally superior alternative must be selected from the other alternatives analyzed. For this analysis, after the No Project Alternative, Alternative 1, the Alternative across BLM land is considered the environmentally superior alternative as it would obtain the objectives of the proposed project. Overall, the Alternative across BLM land would have similar impacts as the proposed project with better, less intense/extensive impacts to several issues (transportation and traffic, air quality, climate change and greenhouse gases, geology and soils) because fewer towers would be constructed and require maintenance. The Alternative across BLM land (Alternative 1) was determined to have less adverse environmental impacts than the proposed project on most issues overall.

Table 6.0-11, below, provides a summary of the potential impacts of the alternatives evaluated in this section, as compared with the potential impacts of the proposed project.

TABLE 6.0-11
COMPARISON OF ALTERNATIVES TO THE PROPOSED PROJECT

ISSUE AREA/IMPACT	ALTERNATIVE GEN-TIE ACROSS BLM LAND	PRIVATE LAND GEN-TIE ALTERNATIVE	NO PROJECT ALTERNATIVE
AESTHETICS			
Impact 4.1.1 Adverse Effect on Scenic Vista	S	S	B
Impact 4.1.2 Degrade Existing Visual Character or Quality of the Site	S	S	B
Impact 4.1.3 New Source of Substantial Light or Glare	S	S	B
Impact 4.1.4 Cumulative Visual Impacts	S	S	B
LAND USE			
Impact 4.2.1 Conflict With Any Applicable Land Use Plan, Policy, or Regulation	S	S	B
Impact 4.2.2 Cumulative Land Use Impacts	S	S	B
Impact 4.2.3 Land Use Conflicts	S	S	B
TRANSPORTATION AND CIRCULATION			
Impact 4.3.1 Impacts to Intersection, Roadway and Freeway Segment LOS (Year 2011 Plus Project)	B	W	B
Impact 4.3.2 Impacts to Intersection, Roadway and Freeway Segment LOS (Year 2013)	B	W	B
Impact 4.3.3 Cumulative Impacts to Intersection, Roadway and Freeway Segment LOS (Year 2013)	B	W	B
AIR QUALITY			
Impact 4.4.1 Conflict with or Obstruct Air Quality Plan/Violate Air Quality Standard	B	S	W
Impact 4.4.2 Expose Sensitive Receptors to Substantial Pollutant Concentrations	S	S	B
Impact 4.4.3 Violate Air Quality Standard/Cause Air Quality Violation	S	S	W
Impact 4.4.4 Cumulative Substantial Pollutant Concentrations	S	S	W
CLIMATE CHANGE AND GREENHOUSE GASES			
Impact 4.5.1 Generation of Greenhouse Gas Emissions	B	S	W
Impact 4.5.2 Conflict with an Applicable Plan, Policy, or Regulation Adopted to Reduce Greenhouse Gas Emissions	S	S	S
GEOLOGY AND SOILS			
Impact 4.6.1 Strong Seismic Ground Shaking	B	W	B
Impact 4.6.2 Liquefaction/Unstable Soils	B	W	B

**TABLE 6.0-11
COMPARISON OF ALTERNATIVES TO THE PROPOSED PROJECT**

ISSUE AREA/IMPACT	ALTERNATIVE GEN-TIE ACROSS BLM LAND	PRIVATE LAND GEN-TIE ALTERNATIVE	NO PROJECT ALTERNATIVE
Impact 4.6.3 Erosion	B	W	B
Impact 4.6.4 Expansive Soils	B	W	B
Impact 4.6.5 Soil Capability to Support Septic Systems	S	S	B
Impact 4.6.6 Soil Corrosivity	B	W	B
Impact 4.6.7 Cumulative Geology and Soils Impacts	B	W	B
CULTURAL RESOURCES			
Impact 4.7.1 Changes in Setting to the Westside Main Canal System	S	W	B
Impact 4.7.2 Impact to Archaeological Site CA-IMP-11758	S	S	B
Impact 4.7.3 Impacts to Unrecorded Subsurface Archaeological Resources	S	S	B
Impact 4.7.4 Impacts to Subsurface Human Remains	S	S	B
Impact 4.7.5 Impacts to Fossil Remains	S	S	B
Impact 4.7.6 Cumulative impacts to Archaeological and Historic Resources	S	S	B
Impact 4.7.7 Cumulative Impacts to Paleontological Resources	S	S	B
NOISE			
Impact 4.8.1 Noise Levels in Excess of Standards/Substantial Temporary Noise Increase	S	S	B
Impact 4.8.2 Noise Levels in Excess of Standards/Substantial Permanent Noise Increase	S	S	B
Impact 4.8.3 Cumulative Noise Increases	S	S	B
AGRICULTURAL RESOURCES			
Impact 4.9.1 Conversion of Prime Farmland, Unique Farmland, or Farmland of Statewide Importance	S	S	B
Impact 4.9.2 Conversion of Farmland	S	S	B
Impact 4.9.3 Cumulative Agricultural Resources Impacts	S	S	B
HAZARDS AND HAZARDOUS MATERIALS			
Impact 4.10.1 Hazardous Materials Transport, Use, Disposal and Accidental Release	S	S	B
Impact 4.10.2 Hazard Through Upset/Release of Hazardous Materials	S	S	B

6.0 ALTERNATIVES

**TABLE 6.0-11
COMPARISON OF ALTERNATIVES TO THE PROPOSED PROJECT**

ISSUE AREA/IMPACT	ALTERNATIVE GEN-TIE ACROSS BLM LAND	PRIVATE LAND GEN-TIE ALTERNATIVE	NO PROJECT ALTERNATIVE
Impact 4.10.3 Emit Hazardous Emissions	S	S	B
Impact 4.10.4 Cumulative Hazards and Hazardous Materials Impact	S	S	B
HYDROLOGY AND WATER QUALITY			
Impact 4.11.1 Violate Water Quality Standards or Waste Discharge Requirements	S	S	B
Impact 4.11.2 Result in Substantial Erosion or Siltation On- or Off-site	S	S	B
Impact 4.11.3 Result in Substantial Flooding On- Or Off-Site/Create or Contribute Runoff Exceeding Capacity	S	S	B
Impact 4.11.4 Cumulative Impact to Hydrology and Water Quality	S	S	B
BIOLOGICAL RESOURCES			
Impact 4.12.1 Impacts to Special-Status Species – Plants	S	S	B
Impact 4.12.2 Impacts on Special Status Species – Birds (Southwestern Willow Flycatcher)	S	S	B
Impact 4.12.3 Impacts on Special Status Species – Birds (Yuma Clapper Rail)	S	S	B
Impact 4.12.4 Impacts on Special Status Species – Birds (Greater Sandhill Crane)	S	S	B
Impact 4.12.5 Impacts on Special Status Species – Birds (Mountain Plover)	S	S	B
Impact 4.12.6 Impacts on Special Status Species – Raptors (Burrowing Owls)	S		B
Impact 4.12.7 Impacts on Special Status Species – Raptors (Golden Eagles)	S	S	B
Impact 4.12.8 Impacts to Nesting Raptors	S	S	B
Impact 4.12.9 Impacts on Special Status Species – Mammals (Pallid Bats and California Leaf-nosed Bats)	S	S	B
Impact 4.12.10 Impacts on Special Status Species – Reptiles (Flat tailed horned lizard)	S	B	B
Impact 4.12.11 Impacts on Special Status Species – Reptiles (Colorado desert fringe-toed lizard)	S	B	B
Impact 4.12.12 Substantial Adverse Effect on Riparian Habitat or Other Sensitive Natural Community	S	B	B
Impact 4.12.13 Substantial Adverse Effect on Federally Protected Wetlands	S	B	B
Impact 4.12.14 Interfere with Migratory Fish or Wildlife Movement/Impede the Use	S	S	B

**TABLE 6.0-11
COMPARISON OF ALTERNATIVES TO THE PROPOSED PROJECT**

ISSUE AREA/IMPACT	ALTERNATIVE GEN-TIE ACROSS BLM LAND	PRIVATE LAND GEN-TIE ALTERNATIVE	NO PROJECT ALTERNATIVE
of Native Wildlife Nursery Sites			
Impact 4.12.15 Conflict with Local Policies or Ordinances Protecting Biological Resources	S	S	B
Impact 4.12.16 Conflict with the Provisions of a Habitat Conservation Plan	S	B	B
Impact 4.12.17 Cumulative Impacts to Biological Resources	S	B	B

Notes: S = Similar Impact compared to the Proposed Project
 B = Better Impact compared to the Proposed Project
 W = Worse Impact compared to the Proposed Project.

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CHAPTER 7.0

OTHER CEQA REQUIRED CONSIDERATIONS

7.0 OTHER CEQA REQUIRED CONSIDERATIONS

This section discusses the additional topics statutorily required by the California Environmental Quality Act (CEQA). The topics discuss whether the project causes significant irreversible environmental changes, growth inducing impacts, or unavoidable significant environmental impacts. It also identifies effects found not to be significant (i.e. all issues determined to be less than significant under CEQA).

7.1 SIGNIFICANT AND UNAVOIDABLE ENVIRONMENTAL EFFECTS

CEQA Guidelines Section 15126.2(b) requires an EIR to discuss unavoidable significant environmental effects, including those that can be mitigated but not reduced to a level of insignificance. In addition, Section 15093(a) of the CEQA Guidelines requires the decision-making agency to balance, as applicable, the economic, legal, social, technological, or other benefits, including region-wide or statewide environmental benefits, of a proposed project against its unavoidable environmental risks when determining whether to approve the project. The County of Imperial can approve a project with unavoidable adverse impacts if it adopts a “Statement of Overriding Considerations” setting forth the specific reasons for its decision. Based on the analysis provided in Sections 4.1 through 4.12, the proposed project would not result in any significant and unavoidable adverse impacts.

7.2 GROWTH-INDUCING IMPACTS

A. INTRODUCTION

CEQA Guidelines Section 15126.2[d] requires that an EIR evaluate the growth-inducing impacts of a proposed action. A “growth-inducing impact” is defined by the CEQA Guidelines as:

“...the way in which a proposed project could foster economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment. Included in this are projects which would remove obstacles to population growth... It is not assumed that growth in an area is necessarily beneficial, detrimental, or of little significance to the environment.”

Growth inducement potential can result from a project either directly or indirectly. Direct growth inducement results from a project which can accommodate population growth such as residential subdivision or apartment complex. Indirect growth inducement potential can result from new permanent employment opportunities associated with commercial or industrial development. Likewise, indirect growth can occur if a project removes an obstacle to additional growth and development, such as removing a constraint on a required public service. Growth inducing projects provide resources (such as water) or infrastructure capacity (such as wastewater conveyance and treatment) that has previously been missing or inadequate to allow growth.

Environmental effects of growth inducement are considered indirect impacts. These indirect impacts or secondary effects of growth have the potential to result in significant, adverse environmental impacts. Potential secondary effects of growth include: increased traffic and noise; increased demand on other community and public services and infrastructure; adverse environmental impacts such as degradation of air and water quality; degradation or loss of plant and animal habitat; and conversion of agricultural and open space land to developed uses.

Growth inducement may constitute an adverse impact if the growth is inconsistent with the land use plans, growth management plans, and growth policies for the area affected. Local land use plans provide for land use development patterns and growth policies that allow for the orderly expansion of urban development supported by public utilities and services. A project that would induce unplanned growth or growth that conflicts with the local land use plans could indirectly cause additional adverse

5.0 CUMULATIVE IMPACTS SUMMARY

environmental and public services and utilities impacts. To determine if a growth-inducing project will result in adverse secondary effects, it is important to assess the degree to which the growth occurring as part of a project would or would not be consistent with applicable land use plans.

B. COMPONENTS OF GROWTH

The timing, location and extent of development and population growth in a community or region are based on multiple factors. Key variables include regional economic trends, market demand for residential and nonresidential uses, land availability and cost, the availability and quality of transportation facilities and public services, proximity to employment centers, the supply and cost of housing, and regulatory policies or conditions. The general plan is the primary mechanism used to regulate development and growth in California as it is used to define location, type, and intensity of growth.

C. PROJECT-SPECIFIC GROWTH-INDUCING IMPACTS

Growth Inducement Potential

As described in Chapter 2.0, Project Description, the Campo Verde Solar Project proposes to build, operate, and maintain a 140+ MW solar energy facility on approximately 1,990 acres of private land in southern Imperial County. The proposed project includes solar generation equipment and associated facilities on privately owned land as well as a 230-kilovolt (kV) aboveground Gen-Tie that will connect the generation facilities with the Imperial Valley Substation.

As described in Section 4.2, Land Use, the proposed project site is located in unincorporated Imperial County, and is subject to the Imperial County General Plan and Land Use Ordinance. The site encompasses twenty-seven parcels (refer to Table 2.0-1 in Chapter 2.0) with a General Plan designation of Agriculture and A-2 - General Agriculture, A-2-R - General Agriculture, Rural Zone, and A-3 - Heavy Agriculture zoning.

The project requires a CUP from Imperial County to construct and operate a solar energy facility on the proposed project site. The project also requires a Variance in order for the Gen-Tie pole structures to exceed the height limit for electric line tower. The existing zoning allows for a maximum height limit of 120 feet. However, the project may include some poles which may be up to 145 feet in height.

Approval of the CUP and Variance by the Imperial County Board of Supervisors would allow the project to attain consistency with the General Plan and Land Use Ordinance allowable land uses. By its nature as a solar energy facility, the project would not directly induce growth. Instead, the project would provide renewable energy to meet existing and future electricity demands of the region and provide a new source of renewable energy to assist the State of California in achieving the Renewable Portfolio Standard.

Growth Effects of the Project

Existing and Proposed Land Uses

Criterion “e” in Section 4.9, Agricultural Resources section of this Draft EIR (Section 4.9) inquires whether the project would “Involve other changes in the existing environment, which, due to their location or nature, could result in conversion of farmland to nonagricultural use.” The project would conditionally allow a solar energy facility on lands designated for agriculture on the Imperial County General Plan Land Use Map. Although implementation of the proposed project would result in the conversion of agricultural land, it is not anticipated to result in growth-related land use impacts as it

does not propose residential development or other use that would attract a population base. At the end of the useful life of the project, the Applicant plans to remove and/or properly abandon facilities and equipment associated with the project and restore the solar energy facility site back to irrigated agricultural production.

Infrastructure

Development of the project site would not result in the development and extension of infrastructure facilities located in and/or adjoining the project site. The project is not expected to have an impact on infrastructure availability to adjacent parcels. The project will not require new utility lines or extension of existing utility and service lines. Thus, there is no potential for the project to result in growth inducement.

As a general rule, extension of utilities or increased capacity of infrastructure has the potential to result in growth inducement. Any such improvements not only accommodate a project for which they are built but also for any other projects in the surrounding area that would be proposed or become feasible as a result of the availability of new infrastructure. The proposed project site is located in a rural area of Imperial County with limited infrastructure; no new infrastructure or utilities are included as part of the proposed project. Thus, implementation of the proposed project would not contribute to growth in this area of the County.

Housing

The Regional Housing Needs Assessment has determined that the unincorporated area of the county will need 13,427 housing units for the period 2006–2014. No housing is proposed as part of the Campo Verde Solar Project nor is the project anticipated to induce growth in other regions.

Roadways

Vehicular access to and throughout the project area would be provided via existing roadways as well as internal roads constructed in the PV solar fields. No improvements to area roadways would be necessary to accommodate the proposed project.

D. SECONDARY EFFECTS OF GROWTH

The Campo Verde Solar Project would not result in the introduction of people and activities to an area that is currently in agricultural use. Secondary effects of the proposed solar energy facility would include the creation of increased traffic, noise, and air emissions during construction. However, during operation and maintenance of the project, traffic, noise and air emissions would not increase substantially over existing levels. No long-term increase in traffic, noise or air emissions would occur as a result of the proposed project.

7.3 SIGNIFICANT IRREVERSIBLE ENVIRONMENTAL CHANGES

A. INTRODUCTION

CEQA Guidelines Section 15126.2(c) describes irreversible environmental changes as follows:

Uses of nonrenewable resources during the initial and continued phases of the project may be irreversible since a large commitment of such resources makes removal or nonuse thereafter unlikely. Primary impacts and, particularly, secondary impacts (such as highway improvement which provides access to a previously inaccessible area) generally commit future generations to similar

5.0 CUMULATIVE IMPACTS SUMMARY

uses. Also irreversible damage can result from environmental accidents associated with the project. Irretrievable commitments of resources should be evaluated to assure that such current consumption is justified.

Buildout of the proposed project area would result in the temporary conversion of parcels previously used for agricultural purposes to solar energy production and transmission.

Development of the project site would irretrievably commit building materials and energy to the construction and maintenance of the solar energy facility, Gen-Tie and associated buildings and infrastructure proposed upon project buildout. Renewable, nonrenewable, and limited resources that would likely be consumed as part of the development of the proposed project would include, but are not limited to, oil, gasoline, lumber, sand and gravel, asphalt, water, steel, and similar materials. Energy would also be irreversibly consumed, both as part of the construction and during operation of developments within the proposed project area.

7.4 MANDATORY FINDINGS OF SIGNIFICANCE

State CEQA Guidelines Section 15065 identifies four mandatory findings of significance that must be considered as part of the environmental review process of a project. These findings are identified below with an analysis of the project's relationship to these findings.

- 1) The project has the potential to substantially degrade the quality of the environment; substantially reduce the habitat of a fish or wildlife species; cause a fish or wildlife population to drop below self-sustaining levels; threaten to eliminate a plant or animal community; substantially reduce the number or restrict the range of an endangered, rare or threatened species; or eliminate important examples of the major periods of California history or prehistory.

The project's impacts on biological resources and cultural resources are evaluated in Section 4.12, Biological Resources, and Section 4.7, Cultural Resources, of this DEIR, respectively. Both sections identify mitigation measures to reduce impacts to these resources. Upon implementation these of these measures, impacts to biological and cultural resources will be less than significant.

- 2) The project has potential to achieve short-term environmental goals to the disadvantage of long-term environmental goals.

The project would result in short-term traffic and air quality impacts as a result of construction. However, the Campo Verde Solar Project would expand the renewable energy sector in Imperial County and reduce the emission of GHGs from the generation of electricity. In doing so, the project would assist the State of California in achieving the RPS. Development of the site may result in disadvantages to long-term preservation goals for important agricultural resources. However, the Applicant plans to remove and/or properly abandon facilities and equipment associated with the project and restore the solar energy facility site back to irrigated agricultural production at the end of the useful life of the project. Upon implementation of these measures, impacts to long-term environmental goals will be less than significant.

- 3) The project has possible environmental effects that are individually limited but cumulatively considerable. "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.

5.0 CUMULATIVE IMPACT ANALYSIS

The project's potential cumulative impacts are summarized in Chapter 5.0 of this DEIR. Sections 4.1 through 4.12 evaluate cumulative impacts related to each technical discussion area and identify mitigation measures addressing each cumulatively considerable impact. Upon implementation of these measures, cumulative impacts will be less than considerable.

- 4) The environmental effects of a project will cause substantial adverse effects on human beings, either directly or indirectly.

Potential adverse impacts on humans are discussed and evaluated in Section 4.4, Air Quality, Section 4.10, Hazards and Human Health, Section 4.8, Noise, and Section 4.5, Climate Change and Greenhouse Gases. As appropriate, each section identifies mitigation measures to reduce significant impacts associated with these resource areas. In addition, the proposed project would remain subject to applicable local, state, and federal regulations intended to avoid adverse effects on humans. The Campo Verde Solar Project would comply with all required regulatory/legal requirements, and project-specific conditions of approval, and would therefore result in less than significant impacts on humans.

5.0 CUMULATIVE IMPACTS SUMMARY

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CHAPTER 8.0

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CHAPTER 9.0

REFERENCES

9.1 DATA SOURCES USED IN DOCUMENT PREPARATION

The references listed below include reports, studies, data sources, and persons contacted in preparation of this EIR. These references are the primary sources of information used by the EIR preparers for the analyses provided in the EIR and are thus incorporated by reference as permitted by Section 15150 of the CEQA Guidelines. The Draft EIR appendices and any documents incorporated by reference or referred to in the EIR are available for public review at the County of Imperial.

2011 California Environmental Quality Act (CEQA) Statute and Guidelines. Referenced in text as “CEQA Guidelines.”

Avian Power Line Interaction Committee. 2006. *Suggested Practices for Avian Protection on Power Lines: The State of the Art in 2006.* Edison Electric Institute, APLIC, and the California Energy Commission. Washington, D.C. and Sacramento, CA. Available online at: <http://www.aplic.org/mission.php>. Referenced in text as (APLIC, 2006).

Avian Power Line Interaction Committee, 1994. *Mitigating Bird Collisions with Power Lines.* Edison Electric Institute, APLIC, and the California Energy Commission. Washington, D.C. and Sacramento, CA. Available online at: <http://www.aplic.org/mission.php>.

BRG Consulting, 2008. Draft Environmental Impact Report for the Mosaic Specific Plan. Prepared for County of Imperial. March, 2008. Referenced in text as (BRG, 2008).

Bureau of Land Management, 2012. Environmental Assessment Campo Verde Gen-Tie Project. April 2012. Available on line at: http://www.blm.gov/pgdata/etc/medialib/blm/ca/pdf/elcentro/nepa/campoverde.Par.94095.File.dat/ca670_ea_campoverde.pdf Referenced in text as (BLM, 2012).

Bureau of Land Management, 2011. List of Cumulative Projects within the Jurisdiction of BLM in the Vicinity of the Proposed Project. Referenced in text as BLM, 2011.

Bureau of Land Management, 2010. *Visual Resource Inventory.* September, 2010. Referenced in text as (BLM, 2010).

Bureau of Land Management, 2009. “Guidelines for Assessment and Mitigation of Potential Impacts to Paleontological Resources.” BLM Instruction Memorandum 2009-011. U. S. Department of the Interior, Bureau of Land Management. Referenced in text as (BLM, 2009).

Bureau of Land Management and California Energy Commission (BLM/CEC). 2010. *Blythe Solar Power Project Staff Report and Draft Environmental Impact Statement.* March, 2010. Referenced in text as (BLM/CEC, 2010).

Bureau of Land Management, 2001. “The Federal Land Policy and Management Act of 1976.” October 2001. Referenced in text as (BLM, 2001).

Bureau of Land Management, 1986. *Manual H-8410-1 - Visual Resource Inventory.* January 17, 1986. Accessed on-line at <http://www.blm.gov/nstc/VRM/8410.html>. July 5, 2011. Referenced in text as (BLM, 1986).

Bureau of Land Management, 1985. *Yuha Desert Management Plan.* March, 1985. Referenced in text as (BLM, 1985).

9.0 REFERENCES

- Bureau of Land Management, 1980. The California Desert Conservation Area Plan, amended in 1980 and reprinted in 1999. Referenced in text as (BLM, 1980).
- Cable, Joseph, P.E. Permitting Engineer. First Solar. 2012. Letter Regarding Campo Verde Solar project, summary of 4/10/12 meeting. (letter). April 13, 2012. Referenced in text as (Cable, 2012).
- California Air Resources Board, 2012. <http://www.arb.ca.gov/cc/inventory/data/data.htm>. Accessed January 17 and 19, 2012.
- California Air Resources Board. 2011. "Definitions of VOC and ROG" Last Revised January 2009. Accessed on-line http://www.arb.ca.gov/ei/speciate/voc_rog_dfn_1_09.pdf June 14, 2011. Referenced in text as (CARB, 2011).
- California Air Resources Board. 2010. Ambient Air Quality Standards. September 8, 2010. www.arb.ca.gov/research/aqs/aqs2.pdf Referenced in text as (CARB, 2010).
- California Air Resources Board, 2010a. California Greenhouse Gas Inventory for 2000-2008. May 2010. Referenced in text as (CARB, 2010a).
- California Air Resources Board, 2007. California Greenhouse Gas Inventory. November 2007.
- California Climate Change Center. 2006. Scenarios of Climate Change in California: An Overview. Sacramento, California, February 2006.
- California Energy Commission, 2006. Our Changing Climate: Assessing the Risks to California. July 2006. Referenced in text as (CEC 2006).
- California Department of Conservation. 2011. *Farmland Conversion Report: Imperial County*, "Table A-8 Imperial County 2006-2008 Land Use Conversion". Available at http://redirect.conservacion.ca.gov/dlrp/fmmp/county_info_results.asp Referenced in text as (DOC, 2011).
- California Department of Conservation, 1997. *California Agricultural Land Evaluation and Site Assessment (LESA) Model, Instruction Manual*. Prepared by the California Department of Conservation, Office of Land Conservation, 1997.
- California Environmental Protection Agency, 2012. State Agency Greenhouse Gas Reduction Report Card. January 2012.
- California Department of Forestry and Fire Protection, 2000. Website <http://www.fire.ca.gov/ab6/nhd13.pdf> accessed March 15, 2011. Referenced in text as (CDF, 2000).
- California Department of Public Health. 2009. "Epidemiologic Summary of Coccidioidomycosis in California, 2001 – 2008. November 5, 2009." Referenced in text as (CDPH, 2009).
- California Department of Transportation (Caltrans). 2002. *Guide for the Preparation of Traffic Impact Studies*. December, 2002. Referenced in text as (Caltrans, 2002).
- California Department of Water Resources website: <http://www.water.ca.gov/saltonsea/documents/watershed.cfm>, accessed December 15, 2011. Referenced in text as (DWR, 2011).

9.0 REFERENCES

- California Environmental Protection Agency, 2010. Climate Action Team Report to Governor Schwarznegger and the California Legislature. December 2010.
- California Environmental Protection Agency (CalEPA). Air Resources Board website <http://www.arb.ca.gov/adam> Referenced in text as (CalEPA, 2011).
- California Groundwater Bulletin 118. 2004. Hydrologic Region, Colorado River, Imperial Valley Groundwater Basin. Last updated February 27, 2004. Referenced in text as (Bulletin 118, 2004).
- California Public Utilities Commission website, 2012. <http://www.cpuc.ca.gov/PUC/energy/Renewables/overview.htm>. Accessed January 17 and 19, 2012.
- California Public Utilities Commission, 2011. Renewables Portfolio Standard Quarterly Report, 3rd Quarter 2011. Referenced in text as (CPUC, 2011).
- Campo Verde Solar, LLC, 2011. *Application Conditional Use Permit for the USS Mt. Signal Solar Project*. March 24, 2011.
- Campo Verde Solar, LLC, 2011. *Right-of-Way Plan of Development (POD) for the Campo Verde Gen-Tie Project*. September 2011. Referenced in text as (CVS, 2011).
- Campo Verde Solar, LLC, 2012. Various graphics.
- County of Imperial, 2012. Cumulative Projects List. Referenced in text as County of Imperial, 2012.
- County of Imperial, 2011. *Draft Environmental Impact Report/Environmental Assessment for the Centinela Solar Energy Project*. Referenced in text as County of Imperial, 2011.
- County of Imperial, 2009. "County of Imperial Land Use Ordinance." Adopted November 24, 1998 (revised October 27, 2009). Accessed at <http://www.icpds.com/?pid=573>
- County of Imperial, 2008. "Land Use Element." Adopted November 9, 1993. Revised January 29, 2008.
- County of Imperial, 2008. "Circulation and Scenic Highway Element." Approved January 29, 2008.
- County of Imperial, 2007. "Imperial County Land Use Plan." Prepared by the County of Imperial, 1993, Updated, March 1, 2007. Referenced in text as (Imperial County, 2007).
- County of Imperial, Planning/Building Department 2003. "Active Surface Mining Operations Map," Updated September 23, 2003. Referenced in text as (County of Imperial, 2003).
- County of Imperial, 1997. "Noise Element."
- County of Imperial. 1996. *Airport Land Use Compatibility Plan*. Imperial County Airports. June, 1996. Referenced in text as (Imperial County, 1996).
- County of Imperial, 1996a. Agricultural Element. Adopted November 9, 1993; revised November 19, 1996. Referenced in text as (County of Imperial, 1996a).
- County of Imperial, 1993. *County of Imperial General Plan*. Prepared by the County of Imperial, Planning/Building Department. 1993.
- County of Imperial. 1993. *Imperial County Land Use Plan*. Adopted November 9, 1993.

9.0 REFERENCES

- County of Imperial. 1993. *Imperial County General Plan*. Imperial County, CA. January 18, 1993, as amended.
- County of Imperial, 1993. "Conservation and Open Space Element." El Centro, CA. November 9, 1993.
- County of Imperial, 1993. "Seismic and Public Safety Element."
- County of Imperial, 1993. "Water Element." Referenced in text as (Imperial County, 1993a).
- Davis, Shannon, Jennifer Krintz, Sarah Stringer-Bowsher, and Sinéad Ní Ghabhláin, 2011. *Inventory, Evaluation, and Analysis of Impacts for Historic Resources on Private Lands Within the Area of Potential Effect of the Campo Verde Solar Project, Imperial County, California*. Prepared for KP Environmental, LLC, Cardiff By the Sea, California. ASM Affiliates, Inc., Carlsbad, California. Referenced in text as (Davis et al., 2011).
- Demere, Thomas A. and Sarah A. Siren, 2011. *2011 Paleontological Resource Assessment, Campo Verde Solar Project, Imperial County, California*. Prepared for KP Environmental, LLC, Cardiff By the Sea, California. Department of PaleoServices, San Diego Natural History Museum, San Diego, California. December 16, 2011. Referenced in text as (Demere and Siren, 2011).
- Department of Conservation, 2012. FMMP Important Farmland Categories. http://www.consrv.ca.gov/dlrp/fmmp/mccu/Pages/map_categories.aspx accessed January 4, 2012. Referenced in text as (DOC, 2012).
- EGA Consultants. 2011. *Preliminary Geotechnical Investigation: Proposed Mount Signal Solar Farm and Associated Structures West of Drew Road and South of Interstate 8, Imperial County, California*. June, 2011. Referenced in text as (EGA, 2011).
- ENValue, LLC. 2012. Air Traffic Analysis Campo Verde Solar Project Gen-Tie Structures. February, 2012. Referenced in text as (ENValue, 2012).
- Ericsson-Grant, 2011. *Campo Verde Solar Energy Project Land Evaluation and Site Assessment*. December, 2011. Referenced in text as (Ericsson-Grant, 2011).
- Estrada, Alfredo. Deputy Training Chief. Imperial County Fire Department. Personal communication (e-mail). March 23, 2012. Referenced in text as (Estrada, 2012).
- FEMA Map Service Center website, Flood Insurance Rate Maps. <http://map1.msc.fema.gov/idms/IntraView.cgi?KEY=42848445&IFIT=1> Referenced in text as (FEMA, 2008).
- Flat-tailed Horned Lizard Interagency Coordinating Committee (ICC), 2003. *Flat-tailed Horned Lizard Rangewide Management Strategy (2003 Revision) - An Arizona-California Conservation Strategy*, 2003. Referenced in text as (ICC, 2003).
- Federal Land Policy and Management Act, 2001. Federal Land Policy and Management Act, October 2001. <http://www.blm.gov/flpma/index.html>
- Gutierrez, Steve. Chief Deputy. Imperial County Sheriff's Office. Personal communication (e-mail). March 22, 2012.
- Fusco Engineering, 2012. *Campo Verde Solar Conceptual Drainage Study and Storm Water Quality Analysis*. January 16, 2012. Referenced in text as (Fusco, 2012).

9.0 REFERENCES

- Heritage Environmental Consultants. 2012. *Final Biological Technical Report for the Campo Verde Solar Project* February 2012. Referenced in text as (Heritage, 2012).
- HDR Engineering, Inc. 2012. Final Environmental Impact Report Mount Signal and Calexico Solar Farm Projects Imperial County, California. March 2012. Referenced in text as (HDR, 2012).
- Imperial County Air Pollution Control District. August 11, 2009. *2009 Imperial County State Implementation Plan for Particulate Matter Less than Ten Microns in Aerodynamic Diameter – Final*. August 11, 2009. Referenced in text as (ICAPCD, 2009).
- Imperial County Air Pollution Control District, 2007. *2007 Imperial County Air Pollution Control District CEQA Air Quality Handbook*, as amended, November 2007. Referenced in document as (ICAPCD, 2007).
- Imperial County Air Pollution Control District. 2010. Draft 2009 Ozone Modified Air Quality Management Plan. June 9, 2010. Referenced in text as (ICAPCD, 2010).
- California Department of Forestry and Fire Protection. 2000. Imperial County Natural Hazard Disclosure (Fire) Map. January 6, 2000. <http://www.fire.ca.gov/ab6/nhd13.pdf> Accessed March 15, 2011. Referenced in text as (CDF, 2000).
- Imperial County Office of Emergency Services, 2007. Imperial County Operational Area Emergency Operations Plan (EOP). July, 2007. Referenced in text as (Imperial County OES, 2007).
- Imperial County Air Pollution Control District, 2006. *Rule 801 - Construction And Earthmoving Activities* Revised October 10, 2006. Referenced in text as (ICAPCD, 2006).
- Imperial County Office of Emergency Services, 2007. Emergency Operations Plan (EOP). Revised July 2007. <http://www.co.imperial.ca.us/EmergencyPlans/EmergencyPlanOperationsRevJuly2007.pdf> Referenced in text as (Imperial County OES, 2007)
- Imperial Irrigation District. n.d. IID Water History. Imperial Irrigation District. <http://www.iid.com/index.aspx?page=125> Referenced in text as (IID, n.d.)
- Imperial Irrigation District website. <http://www.iid.com/index.aspx?page=169>, <http://www.iid.com/index.aspx?page=168>, <http://www.iid.com/index.aspx?page=151>, <http://www.iid.com/index.aspx?page=117>, accessed March 15, 2012. Referenced in text as (IID, 2011).
- Imperial Irrigation District. 2009. *2009 Annual Water Report*. Referenced in text as (IID, 2009).
- McCormick, H. Jill, M.A. Cultural Resource Manager, Cocopah Indian Tribe. Letter to Patricia T. Mitchell, M.A., R.P.A, RE: Cultural Resources Inventory Report for Campo Verde Solar Project, Imperial County, California. March 5, 2012. Referenced in text as (McCormick, 2012).
- Mitchell, Patricia T., M.A. RPA, 2011. *Inventory Report of the Cultural Resources Within the Campo Verde Solar Project, Imperial County, California*. Prepared for First Solar. Referenced in text as (Mitchell, 2011).
- kp environmental, LLC. 2012. GIS graphics and figures.
- Ldn Consulting, Inc., 2011a. Air Quality Assessment Campo Verde Solar, County of Imperial. September 4, 2011. Referenced in text as (Ldn, 2011a).

9.0 REFERENCES

- Ldn Consulting, Inc., 2012b. Noise Assessment Campo Verde Solar, County of Imperial. February 10, 2012. Referenced in text as (Ldn, 2012b).
- LOS Engineering, Inc. 2012. Campo Verde Solar County of Imperial (South of I-8 and east of Drew Road) Draft Traffic Impact Analysis. February 6, 2012. Referenced in text as (LOS, 2012).
- PMC. 2011. *East Brawley Geothermal Draft Environmental Impact Report*. March, 2011. Referenced in text as (PMC, 2011).
- Ray, Robert. Project Director, URS. 2011. Letter RE: URS Responses to Ericsson-Grant, Inc. Comments on the First Solar Phase I ESA for the Sagebrush Project Site in Imperial County, CA. November 15, 2011. Referenced in text as (Ray, 2011)
- Southern California Association of Governments (SCAG). 2008. SCAG Policies for Intergovernmental Review. October 31, 2008. Referenced in text as (SCAG, 2008).
- South Coast Air Quality Management District, 2008 Interim CEQA GHG Significance Threshold for Stationary Sources, Rules and Plans. Accessed July 15, 2011. <http://www.aqmd.gov/hb/2008/December/081231a.htm> Referenced in text as (SCQAMD, 2008).
- South Coast Information Center. 2011. California Historical Resources Information System Records Search. July 8, 2011. Referenced in text as (SCIC, 2011).
- State Water Resources Control Board, Storm Water Program, Industrial Storm Water website: http://www.ca.gov/water_issues/programs/stormwater/construction.shtml accessed March 15, 2012. Referenced in text as (SWRCB, 2012a).
- State Water Resources Control Board, Storm Water Program, Industrial Storm Water website http://www.swrcb.ca.gov/water_issues/programs/stormwater/industrial.shtml accessed J March 15, 2012. Referenced in text as (SWRCB, 2012b).
- Society of Vertebrate Paleontology, 2010. "Standard Procedures for the Assessment and Mitigation of Adverse Impacts to Paleontological Resources." http://www.vertpaleo.org/Content/NavigationMenu/TheSociety/StatementsandGuidelines/ImpactMitigationGuidelines/SVP_Impact_Mitigation_Guidelines.pdf
- Trafficware Ltd., 2003-2007. Synchro 7.0 computer software (build 773).
- Transportation Research Board National Research Council Washington, D.C. 2000. *Highway Capacity Manual 2000*.
- Tribal Energy and Environmental Information Clearinghouse. 2012. <http://teeic.anl.gov/er/solar/restech/tech/index.cfm> Referenced in text as (teeic, 2012).
- United States Department of Agricultural Soil Conservation Service, 1981. *Soil Survey of Imperial County, California, Imperial Valley Area*. Prepared by the United States Department of Agriculture Soil Conservation Service in cooperation with University of California Agricultural Experiment Station and Imperial Irrigation District. Issued October 1981. Referenced in text as (USDA, 1981).
- United States Bureau of Land Management and California Energy Commission. 2010. *Stirling Energy Systems (SES) Solar Two Project Staff Assessment and Draft Environmental Impact Statement*

9.0 REFERENCES

- and Draft California Desert Conservation Area Plan Amendment*. February, 2010. Referenced in text as (BLM/CEC, 2010).
- United States Department of the Interior Bureau of Land Management, 2010a. *Final Environmental Impact Statement Imperial Valley Solar Project*. El Centro, CA July 2010. Referenced in text as (BLM, 2010a).
- United States Department of the Interior/Bureau of Land Management (DOI/BLM). 2009. *Approved Resource Management Plan Amendments/Record of Decision (ROD) for a Designation of Energy Corridors on Bureau of Land Management-Administered Lands in the 11 Western States*. January, 2009. Referenced in text as (DOI/BLM, 2009).
- United States Fish and Wildlife Service (USFWS), 2011. "News Release: Flat-Tailed Horned Lizard Does Not Need Endangered Species Act Protection." March 14, 2011. Referenced in text as (USFWS, 2011).
- U.S. Forest Service. 1995. *Landscape Aesthetics: A Handbook for Scenery Management*. (Agriculture Handbook No. 701). Washington, D.C. accessed on-line at <http://naldc.nal.usda.gov/catalog/CAT11132970> December 1995. Referenced in Text as U.S. Forest Service, 1995.
- URS. 2011. *Phase I Environmental Site Assessment for the First Solar Project Sagebursh Site, Imperial County, California*. July 7, 2011. Referenced in text as (URS, 2011)
- Visual Environments. 2012. *Visual Simulations*. Referenced in text as Visual Environments, 2012.

9.0 REFERENCES

In addition to the scoping and Draft EIR public review processes, the BLM has been consulting and coordinating with public agencies that may be requested to take action on the Campo Verde Solar Project. The ongoing consultation and coordination involves the agencies identified below.

9.2 UNITED STATES FISH AND WILDLIFE SERVICE

In accordance with requirements under Section 7 of the Endangered Species Act, the BLM requested initiation of informal consultation for the southwestern willow flycatcher and the Yuma clapper rail and submitted a letter to the USFWS for the Campo Verde Solar Project.

9.3 NATIVE AMERICAN CONSULTATION/COORDINATION AND SECTION 106 CONSULTATION/COORDINATION

A key requirement of cultural resources analysis under CEQA, NEPA, and Section 106 of the National Historic Preservation Act of 1966, as amended 1992 (NHPA), is to ascertain if a proposed undertaking has the potential to impact historic sites and properties that qualify for inclusion on the National Register of Historic Places or the California Register of Historical Resources.

Historic properties and archaeological sites are avoided in the Campo Verde Solar Project. The solar project is located on lands that do not contain any significant resources and the proposed gen-tie was designed to purposely avoid all archaeological sites.

The BLM initiated tribal consultation for the Campo Verde Solar Project by letter in October 2011 and another letter was sent with the cultural resources report and the Environmental Assessment in April, 2012. The BLM is conducting consultation with the Tribes as outlined in 36 CFR 800. The BLM must consult to identify properties of religious and cultural significance to the Tribes to be addressed in the Section 106 process.

The following Tribes or tribal organizations have been invited to be consulting parties:

Edwin Romero, Chairman - Barona Band of Mission Indians
Monique LaChappa, Chairwoman - Campo Band of Mission Indians
Sherry Cordova, Chairwoman - Cocopah Indian Tribe
Robert Pinto, Sr., Chairman - Ewiiapaayp Band of Kumeyaay Indians
Keeny Escalanti, Sr., President - Fort Yuma Quechan Tribe
Kenneth Meza, Sr., Chairman - Jamul Indian Village
Carmen Lucas - Kwaaymii Laguna Band of Indians
Gwendolyn Parada, Chairperson - La Posta Band of Kumeyaay Indians
Leroy Elliott, Chairman - Manzanita Band of Kumeyaay Indi
Mark Romero, Chairman - Mesa Grande Band of Mission Indians
Allen Lawson, Jr., Chairman - San Pasqual Band of Diegueno Indians
Virgil Perez, Chairman - Santa Ysabel Band of Diegueno Indi
Daniel Tucker, Chairman - Sycuan Band of Kumeyaay Nation
Mary Resvaloso, Chairwoman - Torres-Martinez Desert Cahuilla Indians
Anthony Pico, Chairman - Viejas Band of Kumeyaay Indians

Section 106 consultation with the SHPO, ACHP, Tribes, and interested parties for the Campo Verde Solar Project is ongoing.