

DRAFT
Environmental Impact Report
for

IP Athos LLC's
Athos Renewable Energy Project

(SCH No. 2018051021)



Conditional Use Permit No. 18-0001
Public Use Permit No. 18-0001
Variance No. VAR190001
Tentative Parcel Map Nos. TPM37700, TPM37701,
TPM377002, TPM37703, TPM37704, & TPM37705

Lead Agency:



RIVERSIDE COUNTY
PLANNING DEPARTMENT

Technical Assistance by:



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List of Acronyms

AC	Alternating current
ACEC	Area of Critical Environmental Concern
ADT	Average daily trips
AG	Agriculture
AGR	Agriculture Supply
AIA	Airport Influence Area
ALUC	Airport Land Use Commission
APM	Applicant-proposed measure
APS	Arizona Public Service
AQMP	Air Quality Management Plan
AQTR	Air Quality Technical Report
ARB	Air Resources Board
BAT	Best available technology economically achievable
BBCS	Bird and Bat Conservation Strategy
BCT	Best conventional pollutant control technology
BGEPA	Bald and Golden Eagle Protection Act
BLM	Bureau of Land Management
BMP	Best management practices
BRTR	Biological Resources Resources Technical Report
CAA	Clean Air Act
Cal/EPA	California Environmental Protection Agency
CAP	Climate Action Plan
CAPCOA	California Air Pollution Control Officers Association
CCR	California Code of Regulations
CCT	Correlated Color Temperature
CDCA	California Desert Conservation Area
CDFW	California Department of Fish and Wildlife
CEC	California Energy Commission
CEQA	California Environmental Quality Act
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CESA	California Endangered Species Act
CGS	California Geologic Survey
CH ₄	Methane
CHP	California Highway Patrol
CHRIS	California Historical Resources Information System
CHWMP	County Hazardous Waste Management Plan
CIWMB	California Integrated Waste Management Board
CIWMP	County Integrated Waste Management Plan
CMA	Congestion Management Agency
CMLUCA	California Military Land Use Compatibility Analysis
CMP	Congestion Management Plan
CNDDB	California Natural Diversity Data Base
CNEL	Community Noise Equivalent Level
CNPS	California Native Plant Society
CO	Carbon monoxide
CO ₂	Carbon dioxide

CRA	Colorado River Aqueduct
CRHR	California Register of Historical Resources
CRIT	Colorado River Indian Tribes
CRPR	California Rare Plant Rank
CSA	Community Service Area
CSP	Concentrating solar power
CUP	Conditional Use Permit
CVC	California Vehicle Code
CVGB	Chuckwalla Valley Groundwater Basin
CWA	Clean Water Act
DC	Direct current
DCAP	Desert Center Area Plan
DESCP	Drainage Erosion and Sedimentation Control Plan
DFA	Development focus area
DNI	Direct normal irradiance
DOC	Department of Conservation
DPM	Diesel particulate matter
DPR	Department of Pesticide Regulation
DPV2	Devers–Palo Verde No. 2
DRECP	Desert Renewable Energy Conservation Plan
DTCCCL	Desert Training Center Cultural Landscape/Historic District
DTSC	Department of Toxic Substance Control
DWMA	Desert Wildlife Management Area
EA	Environmental Assessment
EAP	Emergency Action Plan
EIC	Eastern Information Center
EIR	Environmental Impact Report
EMF	Electromagnetic fields
EPA	Environmental Protection Agency
ESA	Endangered Species Act
FAA	Federal Aviation Administration
FCR	Field Contact Representative
FEIS	Final Environmental Impact Statement
FEMA	Federal Emergency Management Agency
FERC	Federal Energy Regulatory Commission
FLPMA	Federal Land Policy and Management Act
FMMP	Farmland Mapping and Monitoring Program
GHG	Greenhouse gas
GIS	Geographic Information Systems
GPA	General Plan Amendment
GWR	Groundwater Recharge
HCM	Highway Capacity Manual
HFC	Hydrofluorocarbon
HSA	Hydrologic Sub-Area
HSC	Health and Safety Code
HSWA	Hazardous and Solid Waste Act
HWCL	Hazardous Waste Control Law
I-10	Interstate 10

IIPP	Injury and Illness Prevention Program
IND	Industrial Service Supply
IWMB	Integrated Waste Management Board
IWMP	Integrated Weed Management Plan
JTNP	Joshua Tree National Park
KOP	Key Observation Point
LADWP	Los Angeles Department of Water and Power
LOS	Level of Service
LSAA	Lake or Streambed Alteration Agreement
LST	Localized significance thresholds
LU	Land Use
LUPA	Land Use Plan Amendment
MDAB	Mojave Desert Air Basin
MICR	Maximum Incremental Cancer Risk
MLD	Most Likely Descendants
MMRP	Mitigation Monitoring and Reporting Program
MRR	Mandatory reporting rule
MRZ	Mineral Resource Zone
MUN	Municipal and Domestic Supply
MW	Megawatts
MWD	Metropolitan Water District
N-A	Natural Assets
N ₂ O	Nitrous oxide
NAHC	Native American Heritage Commission
NCCP	Natural Community Conservation Plan
NCP	National Contingency Plan
NECO	Northern and Eastern Colorado Desert Coordinated Management
NEPA	National Environmental Policy Act
NESC	National Electric and Safety Code
NHMLAC	Natural History Museum of Los Angeles County
NHPA	National Historic Preservation Act
NO	Nitric oxide
NOAA	National Oceanic and Atmospheric Administration
NOC	Notice of Completion
NOP	Notice of Preparation
NPDES	National Pollutant Discharge Elimination System
NPL	National Priorities List
NPPA	Native Plant Protection Act
NPS	National Park System
NRCS	Natural Resources Conservation Service
OEHHA	Office of Environmental Health Hazard Assessment
OHV	Off-highway vehicle
OPGW	Optical ground wire
OS	Open Space
OSHA	Occupational Safety and Health Administration
OS-RUR	Open Space Rural
PCB	polychlorinated biphenyl
PEIS	Programmatic Environmental Impact Statement

PERP	Portable Equipment Registration Program
PFC	Perfluorocarbons
PGA	Horizontal ground acceleration
PM2.5	Fine particulate matter (less than 2.5 microns in diameter)
PM10	Particulate matter (less than 10 microns in diameter)
POD	Plan of Development
PPE	Personal protective equipment
PPV	Peak particle velocity
PRC	Public Resources Code
PRIMP	Paleontological resource impact mitigation program
PRPA	Paleontological Resources Preservation Act
PSD	Prevention of Significant Deterioration
PTNCL	Prehistoric Trails Network Cultural Landscape/Historic District
PUP	Public Use Permit
PV	Photovoltaic
PVC	Polyvinyl chloride
PVMGB	Palo Verde Mesa
RBS	Red Bluff Substation
RCALUCP	Riverside County Airport Land Use Compatibility Plan
RCFD	Riverside County Fire Department
RCGP	Riverside County General Plan
RCNM	Roadway Construction Noise Model
RCRA	Recovery Act of 1976
RCTC	Riverside County Transportation Commission
RMP	Resource Management Plan
ROD	Record of Decision
ROG	Reactive organic gases
ROW	Right-of-way
RPS	Renewable Portfolio Standard
RSABG	Rancho Santa Ana Botanic Garden
RV	Recreational vehicle
RWQCB	Regional Water Quality Control Board
SARA	Superfund Amendments and Reauthorization Act
SB	Senate Bill
SCADA	Supervisory Control and Data Acquisition System
SCAG	Southern California Association of Governments'
SCAQMD	South Coast Air Quality Control District
SCE	Southern California Edison
SCHWMA	Southern California Hazardous Waste Management Authority
SDC	Seismic Design Category
SEZ	Solar Energy Zone
SF ₆	Sulfur hexafluoride
SLF	Sacred Lands File
SR	State Route
SR-177	State Route 177
SRMA	Special Recreation Management Area
SRP	Special Recreation Permit
SWPPP	Stormwater Pollution Prevention Plan

SWRCB	State Water Resources Control Board
TAC	Technical Advisory Committee
TCR	Tribal Cultural Resource
TDM	Transportation Demand Management
TIS	Traffic Impact Studies
TTM	Tentative Tract Map
TUA	Traditional Use Area
UCMP	University of California Museum of Paleontology's online database
USACE	U.S. Army Corps of Engineers
USDA	United States Department of Agriculture
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
UXO	Unexploded ordnance
VCR	Visual contrast rating
VMT	Vehicle Miles Travelled
VOC	Volatile organic compounds
VR	Visual Route
VRM	Visual Resource Management
WARM	Warm Freshwater Habitat
WEAP	Worker Environmental Awareness Program
WHIP	Wildlife habitat incentives program
WSA	Water Supply Assessment
WWEC	West-Wide Energy Corridor
WWII	World War II

Executive Summary

ES.1 Introduction

IP Athos, LLC (Applicant or Proponent), a subsidiary of Intersect Power, proposes to construct, operate and decommission the IP Athos Renewable Energy Project (Athos or Project), a utility-scale solar photovoltaic (PV) electrical generation and storage facility, and associated infrastructure to generate and deliver renewable electricity to the statewide electricity transmission grid.

The proposed Project is located on approximately 3,440 acres across 7 groups of non-contiguous parcels in the Desert Center area of Riverside County. The renewable energy facility sites would occupy approximately 3,224 acres of largely disturbed (retired agricultural), privately owned land, which would minimize ground disturbance and impacts to environmental resources. The proposed solar facility would generate up to 500 megawatts (MW) of renewable energy and would include up to 500 MW of integrated energy storage capacity. The power produced by the Project would be conveyed to the statewide power grid via an overhead 220 kilovolt (kV) generation tie (gen-tie) transmission line interconnecting to the Southern California Edison (SCE) Red Bluff Substation, an existing substation located south of Interstate 10 (I-10) and approximately 1.1 miles south of the Project area on land administered by the Bureau of Land Management (BLM)¹

The 220 kV gen-tie transmission line would traverse 7 miles of federal lands managed by BLM, Palm Springs-South Coast Field Office and approximately 4 miles of privately owned land, primarily within the solar facility sites. BLM is performing a separate review of the Project under the National Environmental Policy Act (NEPA).

ES.2 Project Objectives

The Applicant's project objectives and purpose and need for the proposed Project are:

1. Assist Californians in meeting their renewable energy generation goals under the Clean Energy and Pollution Reduction Act of 2015 (Senate Bill 350) and greenhouse gas emissions reduction goals of the California Global Warming Solutions Act of 2006 (AB 32), as amended by Senate Bill 32 in 2016;²
2. Bring living-wage jobs to eastern Riverside County;
3. Minimize environmental impacts and land disturbance associated with solar development by siting the facility on relatively flat, contiguous lands with high solar insolation, in close proximity to established utility corridors, existing transmission lines with available capacity to facilitate interconnection, and road access;
4. Further the purpose of Secretarial Order 3285A1, establishing the development of environmentally responsible renewable energy as a priority for the Department of the Interior; and

¹ The term "Project area" refers to the proposed 500 MW solar PV facility, substations, collector lines, battery storage area, access/spur roads, and 11 miles of 220 kV gen-tie lines that would connect the solar facility to regional electric transmission grid at the Red Bluff Substation (approximately 3,440 acres). The term "solar facility site" is defined as the area within the Project Area boundary consisting of approximately 3,224 acres of privately-owned land across 7 groups of non-contiguous parcels on which the solar PV facility, substations, and battery storage area will be developed.

² Senate Bill 32 California Global Warming Solutions Act of 2006: emissions limit. [online] https://leginfo.ca.gov/faces/billNavClient.xhtml?bill_id=201520160SB32.

5. Make the highest and best use of primarily disturbed, retired agricultural land in and around a federal “Solar Energy Zone” and “Development Focus Area” to generate, store, and transmit affordable, wholesale solar electricity.

ES.3 Summary of the Project Evaluated in This EIR

The County of Riverside is the Lead Agency for the proposed Project, under whose authority this EIR has been prepared. For purposes of this EIR, the term “Project” refers to the discretionary actions required to implement Conditional Use Permit (CUP) 180001, Public Use Permit (PUP) 180001, Tentative Parcel Map (TPM) (TPM37700-TPM37705), and Variance VAR190001 as proposed along with all of the activities associated with its implementation including planning, construction, and long-term operation. In summary, the Project, as evaluated throughout this EIR evaluates the impacts that would occur as a result of developing the Project site in accordance with the land uses that will be specified in the Tentative Tract Map. Specifically, IP Athos LLC is requesting the following governmental approvals from the County of Riverside to implement the Project (refer to Chapter 2, Description of the Proposed Project and Alternatives, for a complete description of the Project’s construction and operational characteristics):

- **Conditional Use Permit (CUP 180001)** is proposed for the construction, operation, and decommissioning of the proposed solar facility, electrical storage equipment, and portions of the gen-tie line within the County of Riverside’s jurisdiction.
- **Public Use Permit (PUP 180001)** is proposed for the portions of the 220 kV gen-tie line that would traverse County roads (SR-177/Rice Road).
- **Variance (VAR190001)** will be necessary for all structures located within the Natural Assets (N-A) zone that would be higher than 20 feet and in the Controlled Development Area (W-2) zone that would exceed 105 feet.
- **Tentative Parcel Map (TPM37700-TPM37705).** The Applicant is planning to propose to vacate the facility’s interior roadways and merge contiguous Project parcels within the Project area into a contiguous area. Roads along the Project perimeter on the solar facility lands would remain dedicated public access.

Provided below is a list of known discretionary and ministerial actions needed to implement the proposed Project. This EIR covers all federal, state, and local government approvals which may be needed to construct or implement the Project, whether explicitly noted below or not.

Riverside County Board of Supervisors

1. Approval by resolution of CUP 180001.
2. Approval by resolution of PUP 180001.
3. Adoption of Variance
4. Approval of TPM.
5. Certify this EIR and make appropriate CEQA findings.

Subsequent Project Approvals

Subsequent approvals associated with the proposed Project and covered by this EIR may include, but are not limited to, the following. A table of required permits is also included in Table 1-1 in Section 1.8 (Agencies Relying on the EIR; Anticipated Permits and Approvals).

1. Conditional and public use permits by the County of Riverside, approving development of specific uses conditionally permitted by the approved zoning.
2. Variance request to exceed the maximum height allowed per Zoning, to facilitate the construction of the support towers for the gen-tie lines for all structures located within the Natural Assets (N-A) zone that would be higher than 20 feet and in the Controlled Development Area (W-2) zone that would exceed 105 feet.
3. Tentative map(s) (including tentative map revisions) and/or final maps by the County of Riverside to allow implementation of the parcel mergers.
4. Grading permits, road improvements, and drainage improvements by the County of Riverside and Riverside County Flood Control and Water Conservation District to allow implementation of the Project.
5. Grant of Right-of-Way and Temporary Use Permit by the U.S. Bureau of Land Management for the construction and operation of the portions of the gen-tie line on BLM-administered land.
6. Encroachment permits by the County to allow access within County ROWs, for construction of various roadway/circulation and utility improvements, as well as by encroachment permits by the California Department of Transportation and Metropolitan Water District of Southern California.

Board of Supervisors Policy B-29. The proposed Project is subject to Policy B-29, and the developer would need to enter into a development agreement with the County. The purpose of Policy B-29 is to ensure that the County does not disproportionately bear the burden of solar energy production and ensure the County is compensated in an amount it deems appropriate for the use of its real property. The policy states that the solar power plant owner shall annually pay the County \$150 for each acre of land involved in the power production process. It also lists requirements for solar power plant owners relating to sales and use taxes payable in connection with the construction of a solar power plant. Once the development agreement is enacted, the proposed Project would comply with this policy.

ES.4 Public Involvement

ES.4.1 Notice of Preparation

In compliance with Section 15082 of the CEQA Guidelines, a Notice of Preparation (NOP) was issued on May 11, 2018. The notice briefly described the proposed Project and location, environmental review process, the potential environmental effects, and contact information; as well as announced the time and location of the public scoping meeting.

ES.4.2 CEQA Public Scoping

The 30-day public scoping period commenced on May 11, 2018 with the issuance of the NOP and ended on June 11, 2018. A public scoping meeting was conducted at the County of Riverside, Desert Office in Palm Desert, on June 4, 2018.

ES.4.3 Areas of Controversy/Public Scoping Issues

Based on input received during the public scoping period and at the scoping meeting, concerns expressed by the public and agencies addressed potential impacts of the project on: aesthetics, agricultural resources, air quality, biological resources, cultural resources, hazards and hazardous materials, hydrology and water quality, land use, noise, property access, public services, and traffic and circulation. A scoping report was prepared for the Project in June 2018. A full copy of the report is provided in Appendix A. Public scoping comments are also summarized in Section 1.5 (Scoping Comments Summary).

ES.5 Proposed Project

ES.5.1 Project Location

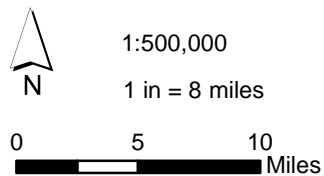
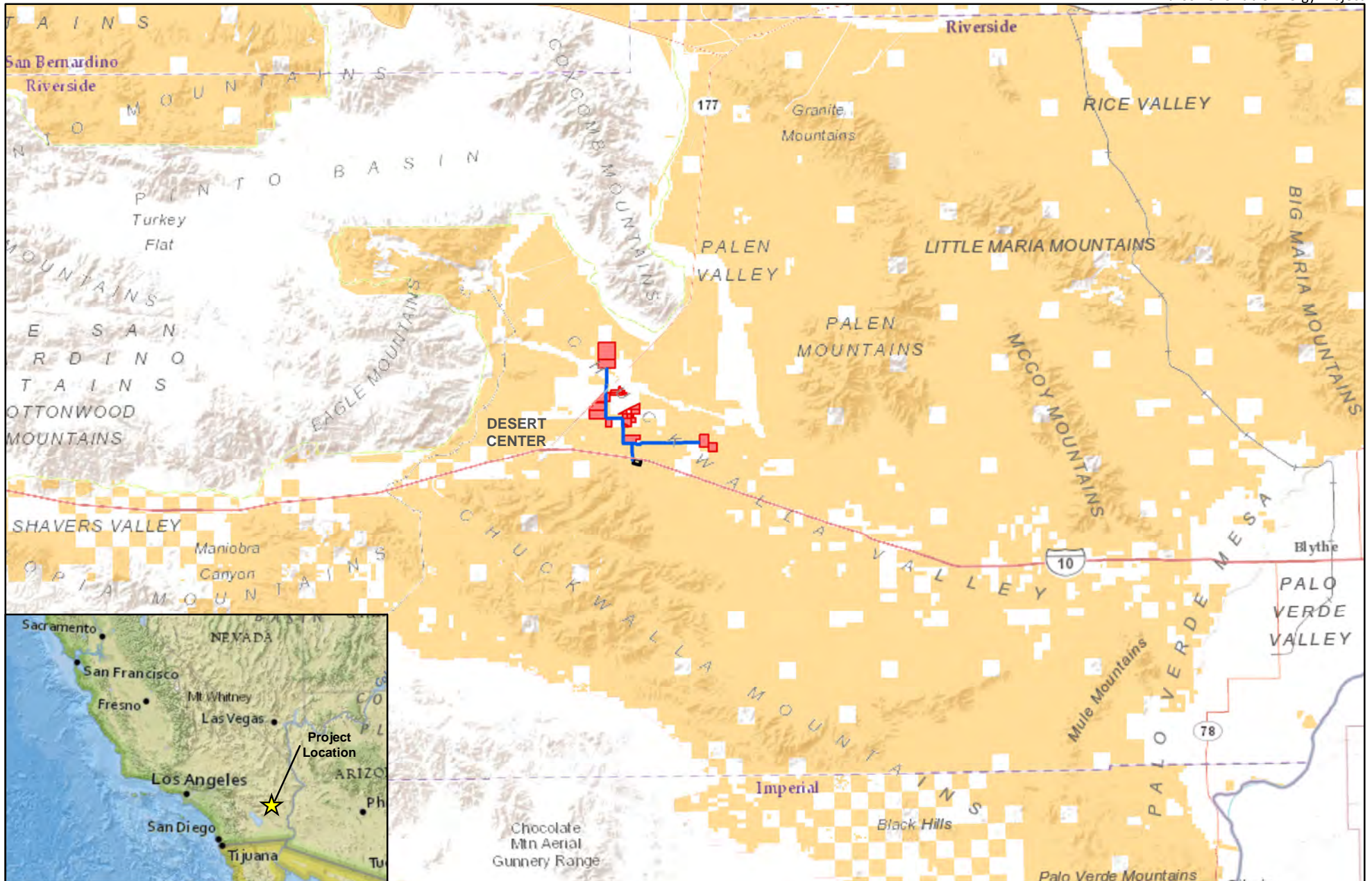
The Athos Project is located in Riverside County, north of I-10 and approximately 4 miles east and north-east of the town of Desert Center, California (see Figure ES-1). The solar facility is located within the County of Riverside's jurisdiction within an area covered by the Desert Center Area Plan. The parcels proposed for development consist of active and fallow agricultural land and some open space. The existing Desert Sunlight and approved Desert Harvest solar projects are northwest of the Project's northernmost parcels, the approved Palen Solar Project is located adjacent to the easternmost parcels of the Project, the proposed Victory Pass Solar Project is located directly to the west of the Project, and there are several other solar projects and associated gen-ties proposed on private and BLM-administered land in the area. The 220 kV gen-tie line would be located north and south of the I-10 freeway to connect into the existing SCE Red Bluff 500/220 kV Substation.

ES.5.2 Project Components

The proposed Project would consist of the following major components, which are described in greater detail in Section 2, Description of the Proposed Project and Alternatives:

- **Solar Facility** (3,228 total acres, private land)
 - Solar array field that utilizes single-axis solar PV trackers.
 - Inverters on a concrete pad or steel skid containing up to four inverters, a transformer, a battery enclosure, and a switchboard 8 to 11 feet high.
 - System of 34.5 kV interior collection power lines located between inverters and substations, located either underground or installed overhead on wood poles.
 - Up to 4 on-site substations, each approximately 150 feet long by 200 feet wide.
 - One operation and maintenance (O&M) building, utilizing an existing house onsite or construction of a new building, approximately 3,000 square feet.
 - Supervisory Control and Data Acquisition System (SCADA) and telecommunications facilities.
 - Meteorological data collection system.
 - Battery or flywheel storage system capable of storing up to 500 MW of electricity.
 - Several interior access roads.
- **New 220 kV Gen-tie Line** (approximately 11 miles, private and BLM-administered land)
 - Approximately 3.4 miles of gen-tie lines would be located within the solar facility sites on private land.
 - Outside of the solar facility boundaries, approximately 7 miles of gen-tie lines would be placed within a 100-foot-wide right-of-way (ROW) on BLM-administered land (90 acres) and 0.75 miles would be located on private land (14 acres).³

³ Gen-Tie Segment #1 would cross 0.5 mile of land owned by the Metropolitan Water District of Southern California, which is public land, but is considered within the private land component for this analysis, as it is subject to CEQA.



- Proposed Gen-Tie
- Solar Facility
- Red Bluff Substation
- BLM Land

Figure ES-1
Project Vicinity

As part of the Project, the applicant is also seeking to vacate interior roadways and merge contiguous Project parcels. Roads along the Project perimeter on the solar facility lands would remain dedicated public access. Additionally, a variance will be required for all structures located within the N-A zone that would be higher than 20 feet and for structures in the W-2 zone that would exceed 105 feet.

ES.6 Alternatives

ES.6.2 Alternatives Analyzed in Detail

This EIR includes detailed evaluations of a reduced project alternative to the solar facility and an alternative route option for Gen-Tie Segment #1. The analysis also includes an evaluation of a No Project Alternative, as required under CEQA.

- **Alternative 1: No Project Alternative.** Under the No Project Alternative, the construction of a solar generating facility and associated infrastructure would not occur. This alternative discusses existing conditions as well as what would be reasonably expected to occur in the foreseeable future if the Project was not approved and does not take place.
- **Alternative 2: Reduced Footprint Alternative.** This alternative was developed to address concerns from agencies and the public during scoping and would modify the proposed Project in the following ways:
 - Reduction in solar facility site acreage by 387 acres (2,841 total acres) by eliminating the development of Parcel Groups D and F, which consist of creosote bush scrub and desert dry wash woodland.
 - Reduction of solar energy generation by 50 MW to 450 MW with up to 450 MW of integrated energy storage capacity (compared to 500 MW under the proposed Project).
 - Relocation of one onsite substation and related facilities.
- **Gen-Tie Segment #1 Alternative Route Option.** Under this alternative, the onsite substation (SS1) would be located approximately 0.2 miles east of its currently proposed location on Parcel Group A. The alternative would exit the onsite substation (SS1) and head due south onto BLM-administered land for approximately 0.25 miles before turning southeast for almost 0.3 miles and south for 0.15 miles to enter private land. On private land, the alternative route would turn due west and travel 0.45 miles to rejoin Gen-Tie Segment #1. The Alternative Gen-Tie Segment #1 Route Option would be approximately 0.65 miles longer (1.15 miles compared to 0.5 miles with this segment of the proposed Project).

ES.6.3 Alternatives Considered but Eliminated

CEQA requires an EIR to consider a reasonable range of alternatives to the Project that would feasibly attain most of the basic objectives of the Project. In addition, CEQA requires the consideration of how to avoid or substantially lessen any adverse effects of the proposed Project.

Alternatives to the proposed Project were identified through the scoping process, informational public meetings, and preliminary studies. A number of potential alternatives to the proposed Project were identified. Some of these alternatives did not have the potential to meet the Project objectives, or the potential to avoid or minimize adverse environmental effects. Initial evaluation revealed that others are infeasible. The following alternatives were considered but eliminated from further evaluation, for the reasons explained below:

- Federal Land Alternative
- Private Land Alternative

- Reduced Footprint Alternative (Remove Parcel Group A)
- Alternative Solar Technologies
- Alternative Renewable Energy Technologies
- Conservation and Demand-Side Management

Federal Land Alternative

Similar to the proposed Project, an alternative site on BLM-managed lands would involve the construction, operation, maintenance, and decommissioning of an up to 500 MW solar facility and 220 kV gen-tie line. This alternative would be located within the Riverside East Solar Energy Zone (SEZ) of BLM's Western Solar Plan, and within a DRECP development focus area (DFA). Additionally, the Federal Land Alternative would be located less than 15 miles from the Red Bluff Substation. It is also assumed that this alternative would require a BLM Right-of-Way Grant to allow for the construction and operation of solar facilities within BLM-managed lands.

The Federal Land Alternative on BLM-managed lands would not likely reduce any potentially significant impacts from the proposed Project, as the proposed Project is sited primarily on previously disturbed lands with minimal resource value. A Federal Land Alternative is likely to have more severe biological, cultural, and visual resource impacts, as it would likely be located on undisturbed lands. Its impacts on other resource elements, such as air quality and traffic, would be similar due to the comparable size of the development. A Federal Land Alternative may also not be feasible because much of the land within the DFA and developable areas of the Riverside East SEZ is in use, proposed for other solar energy projects, or within mountainous areas. Site control for the remaining developable BLM lands is highly uncertain, given that the Western Solar Plan, DRECP and BLM Rents and Bonds Policy [81 Fed. Reg. 92,122 (Dec. 16, 2016)] require a competitive auction to secure land within SEZs/DFAs and BLM has yet to conduct one for sites in Riverside County. The Federal Land Alternative accordingly would not reduce any of the potentially significant impacts of the proposed Project, especially not to a level of insignificance, would likely have greater and potentially significant impacts on additional resources, and is not feasible due to site control issues. This alternative has thus been eliminated from consideration.

Private Land Alternative

An alternative that would develop the solar facility on other private lands elsewhere was not considered further, because it is considered speculative and infeasible based on the number of landowners whose agreement would be required to assemble a project site of comparable site. In development of the Project parcels, IP reached out to many area landowners. In some cases, IP did not receive responses from property owners and/or there were title issues with some of the land. In addition, another site would likely have environmental impacts equal to or greater than the proposed site, which is located primarily on disturbed (retired agricultural) land and is surrounded by BLM-administered land that is within the Riverside East SEZ of BLM's Western Solar Plan and within the DRECP DFA, near available transmission and thus targeted for renewable energy development.

Reduced Footprint Alternative (Removal of Parcel Group A)

The northernmost group of parcels in the Project area (Parcel Group A) is located in a California Department of Water Resources 100-year floodplain, Special Flood Hazard Area. Under this Reduced Footprint Alternative (Removed Parcel Group A), which was developed in response to concerns from the County and voiced by the public during scoping, these 36 parcels (approximately 966 acres) would be removed from development. The onsite substation (SS1) currently located on the northern group of parcels and all

of Gen-Tie Segment #1 (2.5 miles) would be eliminated and the entire Project (solar facility and gen-tie lines) would be located south of Highway 177, also eliminating the 220 kV gen-tie line crossing of Highway 177. Except for the following components, all aspects of this Reduced Footprint Alternative (Removal of Parcel Group A) alternative would be similar to the proposed Project:

- Reduction in solar facility site acreage by 966 acres (2,262 total acres) by eliminating the development of Parcel Group A.
- Reduction in solar energy generation (up to 450 MW), compared to 500 MW with the proposed Project.
- Elimination of one onsite substation and related facilities.
- Elimination of Gen-Tie Segment #1 (2.5 miles, including 0.8 miles of BLM-administered land and crossing of Highway 177).

Due to the reduction of acreage, the solar panels would have a higher ground cover ratio, which would result in greater shading between panel rows and less efficient energy generation than with the proposed Project. As listed above, under Reduced Footprint Alternative (Removal of Parcel Group A), the solar facility would produce up to 450 MW of renewable energy, compared to 500 MW with the proposed Project.

This alternative was initially developed to address technical feasibility concerns with the placement of the proposed solar facility in an area of potential flooding. Based on further hydrological and geotechnical evaluation, construction of the proposed solar facility on Parcel Group A would be technically feasible and the projected flood depths would not affect Project design. Therefore, given that that proposed Project is technically feasible, that this alternative would reduce the overall energy generation capacity, and that there is another reduced footprint alternative (see Alternative 2 in Section 2.8.3) that would provide greater environmental benefits, namely to biological and cultural resources, the Reduced Footprint Alternative (Removal of Parcel Group A) has been eliminated from detailed analysis in the EIR, because it is not meaningfully different from other alternatives analyzed in detail.

Alternative Solar Technologies

The following alternative solar technologies have been screened and are recommended for elimination from detailed analysis since they are considered infeasible.

- **Solar Power Tower Technology.** Solar power tower technology is a concentrating solar power (CSP) technology that uses a flat mirror “heliostat” system that tracks the sun and focuses solar energy on a central receiver at the top of a high tower. The focused energy is used to heat a transfer fluid (to 800 to 1,000 degrees Fahrenheit [°F]) to produce steam and run a center power generator.

This alternative was eliminated from consideration, because no substantial reduction in impacts would occur under this alternative technology and visual impact may be greater due to the height of the towers. In addition, due to the extent of the facility and the height of the power towers as well as a greater potential for glare, impacts to the Desert Center Airport would be potentially greater under this alternative. It has also been suggested that, due to a phenomenon known as “solar flux,” power tower projects pose a greater risk to avian species by creating an invisible zone where the concentrated solar power can singe feathers and interfere with flight.

- **Solar Parabolic Trough Technology.** Parabolic trough technology is another CSP technology that uses large, U-shaped (parabolic) reflectors (focusing mirrors) that have fluid-filled pipes running along their center, or focal point. The mirrored reflectors are tilted toward the sun and focus sunlight on the pipes

to heat the heat transfer fluid inside, similar to the solar power tower technology. The hot fluid is then used to boil water, which makes steam to run conventional steam turbines and generators.

Solar trough fields have stringent grading requirements, as parabolic troughs must be almost level along their troughs, and grades perpendicular to the troughs are generally benched to 2 percent or less. Therefore, most of the solar facility site would need to be graded and scraped free of vegetation. Use of solar trough technology would also likely require engineered drainage channels along the facility boundary to intercept any modeled offsite surface flows and convey them around and through the site for discharge.

Therefore, similar to solar power tower and other CSP technologies, parabolic trough technology has been eliminated from consideration because it would have the potential for more severe impacts than the proposed solar PV technology. These impacts would include more dramatic degradation of visual resources (due to use of mirrors and power towers), more extensive ground disturbance, increased industrial construction for the turbines and power blocks, and use of potentially hazardous heat transfer fluids.

- **Distributed Solar Technology.** There is no single accepted definition of distributed solar technology. The 2011 Integrated Energy Policy Report defines distributed generation resources as “(1) fuels and technologies accepted as renewable for purposes of the Renewables Portfolio Standard; (2) sized up to 20 MW; and (3) located within the low-voltage distribution grid or supplying power directly to a consumer.” Distributed solar facilities vary in size from kilowatts to tens of MWs but do not require transmission to get to the areas in which the generation is used.

A distributed solar alternative would consist of PV panels that would absorb solar radiation and convert it directly to electricity. The PV panels could be installed on residential, commercial, or industrial building rooftops or in other disturbed areas like parking lots or disturbed areas adjacent to existing structures such as substations. To create a viable alternative to the proposed Project, there would have to be sufficient newly installed panels to generate up to 500 MW of capacity, which would be similar in size to the proposed Project.

Although there is potential to achieve up to 500 MW of distributed solar energy, the limited number of existing facilities makes it unlikely to be feasible and unlike that it will offer environmental benefits. Although the type of panel used for the proposed Project is not yet known, rooftop systems typically consist of less efficient fixed-tilt systems that may not be oriented optimally towards the sun, meaning that developers would need to obtain more surface area for the Project if constructed on a rooftop instead of on the ground. The transaction costs of obtaining multiple rooftops, the complexity of mobilizing construction crews across multiple projects including the transporting and deployment of construction materials in a less efficient manner, the need to develop the deals to secure the same amount of PV-produced electricity, and building upgrade required to prepare rooftops to support the weight of the systems make this type of alternative infeasible for companies, like the applicant, that are in the business of developing utility-scale facilities.

To the extent that distributed generation projects might have fewer impacts on certain resources because they do not utilize substations and transmission facilities, this illustrates that distributed generation projects cannot meet one of the fundamental objectives of a utility-scale solar project: to provide renewable energy to utility off-takers and their customers. Rooftop systems that are not connected to the utility side of the electric grid only generate power for on-site consumption. At the same time, the difficulties in supplying a comparable amount of MWs of clean energy to the public through the utility sector has its own set of impacts due to failure to offset the impacts of counterpart fossil fuel energy sources.

Because of the challenges associated with the implementation of a distributed solar technology, which include widely varying codes, standards, and fees; environmental requirements and permitting concerns; interconnection of distributed generation; inefficiencies; and integration of distributed generation. As a result, this technology was eliminated from detailed analysis as an alternative to the Project.

Alternative Renewable Energy Technologies

Alternative renewable energy technologies, such as wind, geothermal, biomass, tidal and wave power technologies, have been eliminated from consideration because they are not within the Applicant, IP Athos, LLC's, area of expertise and so would not be technically or economically feasible for the Applicant to implement. Most of these technologies are furthermore not suited for the area proposed for development, where there is critically important transmission available.

Conservation and Demand-Side Management

This alternative is not feasible as a replacement for the proposed Project, because although energy efficiency and renewable generation goals are complementary, California utilities are required to achieve both and the fundamental purpose of the proposed Project is to create renewable generation resources (specifically, utility scale solar) to meet these goals. Furthermore, affecting consumer choice to the extent that would be necessary for a conservation and demand-side management solution would be beyond the County, BLM and/or the Applicant's control. Even if additional energy efficiency beyond that occurring in the baseline condition may be technically possible, it is speculative to assume that energy efficiency would achieve the necessary greenhouse gas reduction goals. Indeed, if policy makers believed this were possible, they would not have established the Renewable Portfolio Standard (RPS). Additionally, with population growth and increasing demand for energy, conservation and demand management alone is not sufficient to address all of California's energy needs. Conservation and demand-side management has therefore been eliminated from detailed analysis because it is considered remote or speculative and would not meet the stated Project objectives.

ES.7 Environmental Impacts

Detailed descriptions of impacts of proposed Project and alternatives are provided in Section 3, along with a discussion of the cumulative impacts.

ES.7.2 Proposed Project

Table ES-1 at the end of this section provides a summary of all impacts and mitigation measures and a mitigation monitoring plan. For each impact, the following information is presented: impact number, impact significance level, mitigation measure(s) if applicable, and residual impact following the implementation of recommended mitigation measures (i.e., significant and unavoidable or less than significant). For each mitigation measure, Table ES-1 indicates the Responsible Party, Responsible Monitoring Party, Monitoring Phase/Timing, and Verification Approval Party.

The Project would result in significant and unmitigable impacts in aesthetics, as well as a cumulatively considerable contribution to a significant cumulative impact under aesthetics and cultural resources.

ES.7.3 Alternatives

Alternative 1: No Project Alternative. No substantially adverse and long-term impacts would occur to the environment as a result of the No Project Alternative. However, site remediation of existing onsite contamination, which would occur as part of the proposed Project, would not occur under the No Project Alternative. The benefits of expanding renewable energy resources would also not be realized.

Alternative 2: Reduced Footprint Alternative. The Reduced Footprint Alternative would require 2,841 acres of land and would eliminate the development of Parcel Groups D and F, which consist of creosote bush scrub and desert dry wash woodland. Although the renewable energy output would be 450 MW (compared to 500 MW with the proposed Project), the majority of the impacts of the alternative would be substantially similar to those described for the proposed Project (see Tables ES-1 and ES-2). It would result in a reduction of impacts to native trees (primarily palo verde and ironwood trees), which are mainly located within desert dry wash woodland vegetation. These reduced impacts to dry wash woodland habitat areas would lead to reduced direct impacts to birds and mammals using the habitat. In addition, four California Register of Historical Resources (CRHR) eligible resources in Parcel Groups D and F would not be destroyed under the Reduced Footprint Alternative. Finally, ground disturbance and the resulting level of construction would be reduced by 347 acres.

Although the overall significance conclusions would be similar to the proposed Project, reduced construction activity and ground disturbance under this alternative would slightly decrease impacts in air quality, noise, transportation and traffic, hazardous materials related to environmental contamination, and geologic resources related to soil erosion. The potential to disturb unknown cultural resources and impact vegetation and wildlife is also decreased with less ground disturbance. Decreased disturbance and removal of vegetation would decrease the chance of noxious weed introduction as well as the removal of more native vegetation.

Gen-Tie Segment #1 Alternative Route Option. The Gen-Tie Segment #1 Alternative Route Option would be approximately 0.65 miles longer than the proposed Gen-Tie Segment #1, but overall impacts from the gen-tie option would be similar to the proposed Project. With its additional length, the Gen-Tie Segment #1 Alternative Route Option would increase the structural complexity and form and line visual contrast visible to both northbound and southbound travelers on SR-177 resulting in a slightly more adverse visual change (see the discussion of KOP 5 [Northbound SR-177 North] in Section 3.2.5).

ES.8 Alternatives Comparison and Environmentally Superior Alternative

ES.8.1 Comparison of Alternatives to the Proposed Project

Each alternative was evaluated for its ability to meet the Applicant's project objectives and purpose and need for the proposed Project, which are listed in Section ES.2 (Project Objectives). The No Project Alternative (Alternative 1) would fail to meet any of the Project's objectives and would not achieve any of the environmental benefits of increasing renewable energy generation consistent with the State of California's Renewable Portfolio Standard (RPS). The Gen-Tie Segment #1 Alternative Route Option would meet all Project objectives.

The Reduced Footprint Alternative (Alternative 2) would meet most of the Project's objectives, which include the provision of environmental benefits; however, it would achieve these objectives to a lesser extent compared with the proposed Project. The Reduced Footprint Alternative would assist Californians

in meeting their renewable energy generation goals (Objective #1). However, Alternative 2 would generate and store a smaller amount of renewable energy compared with the proposed Project, and so it would assist Californians to a lesser degree in meeting their renewable energy generation goals. Although the Reduced Footprint Alternative would bring living-wage jobs to eastern Riverside County (Objective #2), it would create fewer jobs compared with the proposed Project. Finally, although Alternative 2 would make the highest and best use of primarily disturbed, retired agricultural land in and around priority solar areas (Objective #5), it would not capture the same economies of scale as the proposed Project, and it would generate, store, and transmit less wholesale solar electricity, and the electricity would be less affordable.

Table ES-2 compares the potential impacts of the proposed Project to the solar facility alternatives. The proposed Project and Gen-Tie Segment #1 Alternative Route Option are similar, so the gen-tie options are discussed in a general comparison in Section ES.8.2 (Environmentally Superior Alternative).

As described above, Alternative 2 (Reduced Footprint Alternative) would not reduce any of the Project’s significant and unmitigable impacts to a less-than-significant level or result in a change to overall impact classifications or significance conclusions. Therefore, Table ES-2 compares the project alternatives based on differences in the level of similar impacts resulting from ground disturbance, as well as the size and duration of construction activities, operations and decommissioning.

Table ES-2. Comparison of Solar Facility Alternatives to the Proposed Project

Environmental Resource	Alternative 1: No Project*	Alternative 2: Reduced Footprint Alternative
Aesthetics	Fewer impacts	Fewer impacts
Agriculture and Forestry Resources	Fewer impacts	Similar impacts
Air Quality	Fewer impacts	Fewer impacts
Biological Resources	Fewer impacts	Fewer impacts
Cultural Resources	Fewer impacts	Fewer impacts
Geology, Soils and Mineral Resources	Fewer impacts	Fewer impacts
Greenhouse Gas Emissions	Fewer impacts	Fewer impacts
Hazards and Hazardous Materials	Fewer benefits	Fewer impacts
Hydrology and Water Quality	Fewer impacts	Fewer impacts
Land Use and Planning	Fewer impacts	Similar impacts
Noise	Fewer impacts	Fewer impacts
Paleontological Resources	Fewer impacts	Fewer impacts
Population and Housing	Fewer impacts	Fewer impacts
Public Services and Utilities	Fewer impacts	Fewer impacts
Recreation	Fewer impacts	Fewer impacts
Traffic and Transportation	Fewer impacts	Fewer impacts
Potential to Meet Project Objectives?	NO	YES

* The No Project Alternative would have no impacts, and the terms “fewer” and “greater” are used for ease of reference only. “Fewer” is used to indicate that the alternative, such as the No Project Alternative, would create reduced or fewer impacts than the Project would create. The term “Greater” indicates that the alternative would result in a greater level of impact than would the Project. Bolded text indicates issue areas where the difference in impacts between the proposed Project and Alternative 2 is substantial, even if the overall significance determinations are similar.

ES.8.2 Environmentally Superior Alternative

Section 15126.6 of the CEQA Guidelines requires an EIR to identify an “environmentally superior” alternative; if the “No Project” alternative is the environmentally superior alternative, then the EIR must identify which of the other alternatives is environmentally superior. Table ES-2 summarizes the comparison of impacts between the Alternatives to the proposed Project to help determine the Environmentally Superior Alternative.

As presented in the comparative analysis above, the Environmentally Superior Alternative for the proposed Project would be **Alternative 1, No Project Alternative**. No substantially adverse and long-term impacts would occur to the environment as a result of the No Project Alternative. The No Project Alternative would also avoid the impacts of the Project analyzed in Section 3. While another project may ultimately be developed on the Athos site, it is not now foreseeable, so the analysis assumes that the construction and operational impacts of the proposed Project would not occur under the No Project Alternative.

In accordance with Section 15126.6 of the CEQA Guidelines, **Alternative 2, Reduced Footprint Alternative**, would be the Environmentally Superior Alternative since it would result in fewer impacts than the proposed Project due to the smaller footprint and reduction in direct impacts namely to biological and cultural resources. The Reduced Footprint Alternative would meet most of the project objectives and would be feasible, but it would generate 450 MW of renewable energy (compared to 500 MW under the proposed Project). Therefore, because the Reduced Footprint Alternative would achieve the project objectives, which include the provision of environmental benefits, to a lesser extent compared with the proposed Project (see Section 5.3.1), the proposed Project is considered preferred.

Gen-Tie Segment #1. Although the impacts would be largely similar, the increased route length for the Alternative Route Option compared to the proposed Project would result in slightly greater ground disturbance, visual intrusion impacts, level of construction activities and associated environmental impacts. Therefore, the **proposed Project for Gen-Tie Route Segment #1** is the Environmentally Superior Alternative. Should the Applicant be unable to obtain an option agreement with the affected landowner, then the proposed Project route would not be legally feasible. In that case, the Gen-Tie Segment #1 Alternative Route Option would be the environmentally superior route for Gen-Tie Segment #1.

Table ES-1. Summary of Impacts, Mitigation Measures, and Monitoring Plan for the Proposed Project

Aesthetics	
Impact AES-1. Project construction activities and associated industrial character could cause short-term aesthetic effects resulting from increased visual contrast.	
Significance before Mitigation	Significant
Significance after Mitigation	Less Than Significant
Mitigation Measures	MM BIO-5 (Revegetation Plan) <i>See Impact BIO-1.</i> MM AQ-1 (Fugitive Dust Control). <i>See Impact AQ-2.</i>
Mitigation Measures	MM AES-1 (Night Lighting Management Plan)
Responsible Party	Project Owner
Responsible Monitoring Party	Riverside County, BLM, and NPS JTNP
Monitoring Phase/Timing	Prior to construction
Verification Approval Party	Riverside County
Impact AES-2. The Project could substantially degrade the existing visual character or quality of public views of the site and its surroundings.	
Significance before Mitigation	Significant
Significance after Mitigation	Less Than Significant (<i>except for the area along SR 177 located in the immediate vicinity of the gen-tie span of SR 177 and immediately adjacent to Parcel Group C, which remains Significant</i>)
Mitigation Measures	MM AES-2 (Surface Treatment of Project Structures and Buildings)
Responsible Party	Project Owner
Responsible Monitoring Party	Riverside County and BLM
Monitoring Phase/Timing	Prior to construction
Verification Approval Party	Riverside County and BLM
Mitigation Measures	MM AES-3 (Project Design)
Responsible Party	Project Owner
Responsible Monitoring Party	Riverside County and BLM
Monitoring Phase/Timing	Prior to and during construction
Verification Approval Party	Riverside County and BLM
Mitigation Measures	MM AES-4 (Retention of Roadside Vegetation)
Responsible Party	Project Owner
Responsible Monitoring Party	Riverside County and BLM
Monitoring Phase/Timing	During construction
Verification Approval Party	Riverside County and BLM
Impact AES-3. The Project could create a new source of substantial light or glare which would adversely affect day or nighttime views in the area.	
Significance before Mitigation	Significant
Significance after Mitigation	Less Than Significant
Mitigation Measures	MM AES-1 (Night Lighting Management Plan) MM AES-2 (Surface Treatment of Project Structures and Buildings) MM AES-4 (Retention of Roadside Vegetation). <i>See Impact AES-1 and Impact AES-2.</i>
Impact AES-4. The Project could result in the creation of an aesthetically offensive site open to public view.	
Significance before Mitigation	Significant

Table ES-1. Summary of Impacts, Mitigation Measures, and Monitoring Plan for the Proposed Project

Significance after Mitigation	Less Than Significant (<i>except</i> for the area along SR 177 located in the immediate vicinity of the gen-tie span of SR 177 and immediately adjacent to Parcel Group C, which remains <i>Significant</i>)
Mitigation Measures	MM BIO-5 (Vegetation Resources Management Plan) MM AQ-1 (Fugitive Dust) MM AES-1 through MM AES-4. <i>See Impact BIO-1, Impact AQ-2, Impact AES-1, and Impact AES-2.</i>
Impact AES-5. The Project could expose residential property to unacceptable light levels.	
Significance before Mitigation	Significant
Significance after Mitigation	Less Than Significant
Mitigation Measures	MM AES-1 (Night Lighting Management Plan). <i>See Impact AES-1.</i>
Impact AES-6. The Project could result in an inconsistency with regulatory plans, policies, and standards applicable to the protection of aesthetics.	
Significance before Mitigation	Significant
Significance after Mitigation	Less Than Significant
Mitigation Measures	MM AES-1 (Night Lighting Management Plan) MM AES-2 (Surface Treatment of Project Structures and Buildings) MM AES-4 (Retention of Roadside Vegetation). <i>See Impact AES-1 and Impact AES-2.</i>
Impact AES-7. Project decommissioning activities and associated industrial character could cause short-term and/or long-term aesthetic effects resulting from increased visual contrast.	
Significance before Mitigation	Significant
Significance after Mitigation	<i>Significant</i> (visible contrast due to long-term ground disturbance and vegetation removal); Less than Significant (aesthetic impacts resulting from temporary fugitive dust and temporary night lighting)
Mitigation Measures	MM BIO-5 (Revegetation Plan) MM AQ-1 (Fugitive Dust Control) MM AES-1 (Night Lighting Management Plan). <i>See Impact BIO-1, Impact AQ-2, and Impact AES-1.</i>
Cumulative Impacts	
Significance before Mitigation	Cumulatively Significant
Significance after Mitigation	Cumulatively Considerable (<i>Significant</i>) visual impacts when viewed by sensitive viewing populations along I-10 and SR-177, from nearby residences, and in the surrounding mountains and wilderness
Mitigation Measures	MM BIO-5 (Revegetation Plan) MM AES-1 through MM AES-4. <i>See Impact BIO-1 and Impact AES-1.</i>
Agriculture and Forestry Resources	
Impact AG-1. The Project would conflict with existing zoning for agricultural use, a Williamson Act contract, or land within an agricultural preserve.	
Significance before Mitigation	Less Than Significant
Mitigation Measures	None required
Impact AG-2. 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 or conversion of forest land to non-forest use.	
Significance before Mitigation	Less Than Significant
Mitigation Measures	None required

Table ES-1. Summary of Impacts, Mitigation Measures, and Monitoring Plan for the Proposed Project

Impact AG-3. The Project would cause development of non-agricultural uses within 300 feet of agriculturally zoned property (Ordinance No. 625, "Right-to-Farm").

Significance before Mitigation Less Than Significant

Mitigation Measures None required

Cumulative Impacts

Significance before Mitigation Cumulatively Less Than Significant

Mitigation Measures None required

Air Quality

Impact AQ-1. The Project would conflict with or obstruct implementation of the applicable air quality plan.

Significance before Mitigation Less Than Significant

Mitigation Measures None required

Impact AQ-2. The Project would result in a cumulatively considerable net increase of any criteria pollutant for which the Project region is nonattainment.

Significance before Mitigation Significant (during construction)

Significance after Mitigation Less than Significant

Mitigation Measures MM AQ-1 (Fugitive Dust Control Plan)
MM AQ-2 (Control On-Site Off-Road Equipment Emissions)
MM AQ-3 (Require Newer Vehicles for On-Road Vendor and Hauling Trucks)
MM AQ-4 (Construction Activity Management Plan)
See Impact AQ-2.

Impact AQ-3. The Project would expose sensitive receptors to substantial pollutant concentrations.

Significance before Mitigation Less Than Significant

Mitigation Measures None required

Impact AQ-4. The Project would result in other emissions (such as those leading to odors) adversely affecting a substantial number of people.

Significance before Mitigation Less Than Significant

Mitigation Measures None required

Cumulative Impacts

Significance before Mitigation Cumulatively Significant (during construction), as discussed under Impact AQ-3

Significance after Mitigation Not Cumulatively Considerable (Less Than Significant), as discussed under Impact AQ-3

Mitigation Measures MM AQ-1 (Fugitive Dust Control Plan)
MM AQ-2 (Control On-Site Off-Road Equipment Emissions)
MM AQ-3 (Require Newer Vehicles for On-Road Vendor and Hauling Trucks)
MM AQ-4 (Construction Activity Management Plan)
See Impact AQ-2.

Biological Resources

Impact BIO-1. The Project would cause substantial adverse effect, either directly or through habitat modifications, to rare, threatened, endangered, or other special-status species; substantially reduce the number or restrict the range of an endangered, rare, or threatened species.

Significance before Mitigation Significant

Significance after Mitigation Less Than Significant

Mitigation Measures MM BIO-1 (Biological Monitoring)

Responsible Party Project Owner

Responsible Monitoring Party Riverside County Planning Department

Monitoring Phase/Timing Prior to ground disturbance

Table ES-1. Summary of Impacts, Mitigation Measures, and Monitoring Plan for the Proposed Project

Verification Approval Party	Riverside County Planning Department
Mitigation Measures	MM BIO-2 (Worker Environmental Awareness Training)
Responsible Party	Project Owner
Responsible Monitoring Party	Riverside County Planning Department
Monitoring Phase/Timing	Prior to beginning work on the project and throughout construction and operations
Verification Approval Party	Riverside County Planning Department
Mitigation Measures	MM BIO-3 (Minimization of Vegetation and Habitat Impacts)
Responsible Party	Project Owner
Responsible Monitoring Party	Riverside County Planning Department
Monitoring Phase/Timing	Prior to ground disturbance
Verification Approval Party	Riverside County Planning Department
Mitigation Measures	MM BIO-4 (Integrated Weed Management Plan)
Responsible Party	Project Owner
Responsible Monitoring Party	Riverside County Planning Department and BLM
Monitoring Phase/Timing	Prior to ground disturbance and during construction, operation, maintenance, and decommissioning
Verification Approval Party	Riverside County Planning Department and BLM
Mitigation Measures	MM BIO-5 (Vegetation Resources Management Plan)
Responsible Party	Project Owner
Responsible Monitoring Party	Riverside County Planning Department
Monitoring Phase/Timing	Prior to ground disturbance and during construction and operation
Verification Approval Party	Riverside County Planning Department
Mitigation Measures	MM BIO-6 (Compensation for Natural Habitat Impacts)
Responsible Party	Project Owner
Responsible Monitoring Party	Riverside County Planning Department
Monitoring Phase/Timing	Prior to ground disturbance
Verification Approval Party	Riverside County Planning Department
Mitigation Measures	MM BIO-7 (Emory's Crucifixion Thorn Mitigation)
Responsible Party	Project Owner
Responsible Monitoring Party	Riverside County Planning Department
Monitoring Phase/Timing	Prior to ground disturbance
Verification Approval Party	Riverside County Planning Department
Mitigation Measures	MM BIO-8 (Wildlife Protection)
Responsible Party	Project Owner
Responsible Monitoring Party	Riverside County Planning Department
Monitoring Phase/Timing	During construction, operation, and maintenance
Verification Approval Party	Riverside County Planning Department
Mitigation Measures	MM BIO-9 (Desert Tortoise Protection)
Responsible Party	Project Owner
Responsible Monitoring Party	USFWS and CDFW
Monitoring Phase/Timing	Prior to construction and during construction, operation, and maintenance

Table ES-1. Summary of Impacts, Mitigation Measures, and Monitoring Plan for the Proposed Project

Verification Approval Party	USFWS and CDFW
Mitigation Measures	MM BIO-10 (Desert Kit Fox and American Badger Relocation)
Responsible Party	Project Owner
Responsible Monitoring Party	Riverside County Planning Department
Monitoring Phase/Timing	No more than 30 days prior to initiation of construction activities and during construction
Verification Approval Party	Riverside County Planning Department
Mitigation Measures	MM BIO-11 (Wildlife Water Source)
Responsible Party	Project Owner
Responsible Monitoring Party	Riverside County Planning Department, BLM, CDFW, and USFWS
Monitoring Phase/Timing	Prior to ground disturbance and during construction, operation, maintenance, and decommissioning
Verification Approval Party	Riverside County Planning Department, BLM, CDFW, and USFWS
Mitigation Measures	MM BIO-12 (Bird and Bat Conservation Strategy)
Responsible Party	Project Owner
Responsible Monitoring Party	Riverside County Planning Department
Monitoring Phase/Timing	Prior to construction and during construction, operation, and maintenance
Verification Approval Party	Riverside County Planning Department
Mitigation Measures	MM BIO-13 (Burrowing Owl Avoidance and Relocation)
Responsible Party	Project Owner
Responsible Monitoring Party	Riverside County Planning Department
Monitoring Phase/Timing	Prior to construction
Verification Approval Party	Riverside County Planning Department
Mitigation Measures	MM BIO-14 (Gen-Tie Lines)
Responsible Party	Project Owner
Responsible Monitoring Party	BLM
Monitoring Phase/Timing	Prior to and during construction
Verification Approval Party	BLM
Impact BIO-2. The Project would cause substantial adverse effect, on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations or by CDFW or USFWS.	
Significance before Mitigation	Significant
Significance after Mitigation	Less Than Significant
Mitigation Measures	MM BIO-1 through MM BIO-6. <i>See Impact BIO-1.</i>
Impact BIO-3. The Project would cause substantial adverse effect on federally protected wetlands or State-protected jurisdictional areas.	
Significance before Mitigation	Significant
Significance after Mitigation	Less Than Significant
Mitigation Measures	MM BIO-1 through MM BIO-6. <i>See Impact BIO-1.</i>
Mitigation Measures	MM BIO-15 (Streambed and Watershed Protection)
Responsible Party	Project Owner
Responsible Monitoring Party	CDFW and RWQCB
Monitoring Phase/Timing	Prior to ground disturbance in jurisdictional waters of the state

Table ES-1. Summary of Impacts, Mitigation Measures, and Monitoring Plan for the Proposed Project

Verification Approval Party	CDFW and RWQCB
Impact BIO-4. The Project would interfere substantially with the movement of fish or wildlife, wildlife corridors, or impede the use of native wildlife nursery sites.	
Significance before Mitigation	Significant
Significance after Mitigation	Less Than Significant
Mitigation Measures	MM BIO-1 through MM BIO-6 and MM BIO-8 through MM BIO-14. <i>See Impact BIO-1.</i>
Impact BIO-5. Conflict with any local policies or ordinances protecting biological resources.	
Significance before Mitigation	Significant
Significance after Mitigation	Less Than Significant
Mitigation Measures	MM BIO-1 through MM BIO-6 and MM BIO-8 through MM BIO-15. <i>See Impact BIO-1 and Impact BIO-3.</i>
Impact BIO-6. The Project would substantially reduce the habitat of a wildlife species; cause a wildlife population to drop below self-sustaining levels; threaten to eliminate a plant or animal community.	
Significance before Mitigation	Significant
Significance after Mitigation	Less Than Significant
Mitigation Measures	MM BIO-1 through MM BIO-6 and MM BIO-8 through MM BIO-15. <i>See Impact BIO-1 and Impact BIO-3.</i>
Cumulative Impacts	
Significance before Mitigation	Cumulatively Significant
Significance after Mitigation	Not Cumulatively Considerable (Less Than Significant)
Mitigation Measures	MM BIO-1 through MM BIO-15. <i>See Impact BIO-1 and Impact BIO-3.</i>
Cultural Resources and Tribal Cultural Resources	
Impact CUL-1. The Project would alter or destroy an historical site or archaeological site or cause adverse change in significance of historical resource pursuant to California Code of Regulations, Section 15064.5.	
Significance before Mitigation	Significant
Significance after Mitigation	Less Than Significant
Mitigation Measures	MM CUL-1 (Project Archaeologist)
Responsible Party	Applicant/Developer
Responsible Monitoring Party	Riverside County Planning Department
Monitoring Phase/Timing	Prior to issuance of grading permits
Verification Approval Party	Riverside County Planning Department
Mitigation Measures	MM CUL-2 (Cultural Resource Monitoring Plan)
Responsible Party	Applicant/Developer
Responsible Monitoring Party	Riverside County Planning Department
Monitoring Phase/Timing	Prior to issuance of grading permits
Verification Approval Party	Riverside County Planning Department
Mitigation Measures	MM CUL-3 (Archaeological Monitor)
Responsible Party	Applicant/Developer
Responsible Monitoring Party	Riverside County Planning Department
Monitoring Phase/Timing	Prior to issuance of grading permits
Verification Approval Party	Riverside County Planning Department

Table ES-1. Summary of Impacts, Mitigation Measures, and Monitoring Plan for the Proposed Project

Mitigation Measures	MM CUL-4 (Native American Monitor)
Responsible Party	Applicant/Developer
Responsible Monitoring Party	Native American Monitor(s)
Monitoring Phase/Timing	Prior to issuance of grading permits
Verification Approval Party	Riverside County
Mitigation Measures	MM CUL-5 (Tribal Cultural Sensitivity Training)
Responsible Party	Applicant/Developer
Responsible Monitoring Party	Consulting Tribe(s) Representative
Monitoring Phase/Timing	Prior to issuance of grading permits
Verification Approval Party	Riverside County
Mitigation Measures	MM CUL-6 (Discovery of Unanticipated Resources)
Responsible Party	Applicant/Developer
Responsible Monitoring Party	Archaeological and/or Tribal Monitor(s)
Monitoring Phase/Timing	During construction
Verification Approval Party	Riverside County
Mitigation Measures	MM CUL-7 (Artifact Disposition)
Responsible Party	Landowner(s)
Responsible Monitoring Party	Riverside County
Monitoring Phase/Timing	Prior to Grading Permit Final Inspection
Verification Approval Party	Riverside County
Mitigation Measures	MM CUL-8 (Monitoring Report)
Responsible Party	Applicant/Developer
Responsible Monitoring Party	Riverside County Planning Department
Monitoring Phase/Timing	Prior to Grading Permit Final Inspection
Verification Approval Party	Riverside County Planning Department
Mitigation Measures	MM CUL-9 (Temporary Fencing)
Responsible Party	Applicant/Developer
Responsible Monitoring Party	Archaeological and/or Tribal Monitor(s)
Monitoring Phase/Timing	Prior to and during construction activities along Gen-Tie lines
Verification Approval Party	Riverside County
Mitigation Measures	MM CUL-10 (Journal Article)
Responsible Party	Applicant/Developer
Responsible Monitoring Party	Riverside County Archaeologist
Monitoring Phase/Timing	After research on AE-3752-066H (historic refuse dump), AE-3752-106H (historic road segment), and P-33-025150/CA-RIV-12372H (SR 177/Rice Road segment)
Verification Approval Party	Riverside County
Mitigation Measures	MM CUL-11 (Desert Center DTC/C-AMA Summary Report and District DPR Form)
Responsible Party	Project Owner
Responsible Monitoring Party	Riverside County
Monitoring Phase/Timing	Prior to Grading Permit Final Inspection
Verification Approval Party	Riverside County

Table ES-1. Summary of Impacts, Mitigation Measures, and Monitoring Plan for the Proposed Project

Mitigation Measures	MM CUL-12 (Prehistoric Trails Summary Report)
Responsible Party	Applicant/Developer
Responsible Monitoring Party	Riverside County
Monitoring Phase/Timing	Prior to Grading Permit Final Inspection
Verification Approval Party	Riverside County
Mitigation Measures	MM CUL-13 (Archival and Field Studies for Historic-Era Resources)
Responsible Party	Applicant/Developer
Responsible Monitoring Party	Riverside County
Monitoring Phase/Timing	Prior to Grading Permit Final Inspection
Verification Approval Party	Riverside County
Mitigation Measures	MM AES-1 through MM AES-4. <i>See Impact AES-1 and Impact AES-2.</i>
Impact CUL-2. The Project would cause an adverse change in significance of a unique archaeological resource pursuant to California Code of Regulations, Section 15064.5.	
Significance before Mitigation	Significant
Significance after Mitigation	Less Than Significant
Mitigation Measures	MM CUL-1 through MM CUL-13. <i>See Impact CUL-1.</i> MM AES-1 through MM AES-4. <i>See Impact AES-1 and Impact AES-2</i>
Impact CUL-3. The Project would disturb any human remains including those interred outside of formal cemeteries.	
Significance before Mitigation	Significant
Significance after Mitigation	Less Than Significant
Mitigation Measures	MM CUL-1 through MM CUL-9 and MM CUL-12. <i>See Impact CUL-1.</i> MM AES-1 through MM AES-4. <i>See Impact AES-1 and Impact AES-2</i>
Impact CUL-4. The Project would restrict existing religious or sacred uses within the potential impact area.	
Significance before Mitigation	Significant
Significance after Mitigation	Less Than Significant
Mitigation Measures	MM CUL-1 through MM CUL-9 and MM CUL-12. <i>See Impact CUL-1.</i> MM AES-1 through MM AES-4. <i>See Impact AES-1 and Impact AES-2</i>
Impact TCR-1. The Project would cause adverse change in the significance of a Tribal Cultural Resource determined by the Lead Agency.	
Significance before Mitigation	Significant
Significance after Mitigation	Less Than Significant
Mitigation Measures	MM CUL-1 through MM CUL-9 and MM CUL-12. <i>See Impact CUL-1.</i> MM AES-1 through MM AES-4. <i>See Impact AES-1 and Impact AES-2</i>
Impact TCR-2. The Project would cause adverse change in the significance of a Tribal Cultural Resource eligible for or listed on the CRHR or in a local register of historical resources as defined in Public Resources Code section 5020.1 (k).	
Significance before Mitigation	Significant
Significance after Mitigation	Less Than Significant

Table ES-1. Summary of Impacts, Mitigation Measures, and Monitoring Plan for the Proposed Project

Mitigation Measures	MM CUL-1 through MM CUL-9 and MM CUL-12. <i>See Impact CUL-1.</i> MM AES-1 through MM AES-4. <i>See Impact AES-1 and Impact AES-2</i>
Cumulative Impacts	
Significance before Mitigation	<i>Cumulatively Significant</i>
Significance after Mitigation	Cumulatively Considerable to the Prehistoric Trails Network Cultural Landscape/Historic District (<i>Significant</i>)
Mitigation Measures	MM CUL-11 and MM CUL-12. <i>See Impact CUL-1.</i> MM AES-1 through MM AES-4. <i>See Impact AES-1 and Impact AES-2</i>
Geology, Soils and Mineral Resources	
Impact GEO-1. The Project would directly or indirectly cause substantial adverse effects, including the risk of loss, injury, or death, involving geologic hazards.	
Significance before Mitigation	Less Than Significant
Mitigation Measures	None required
Impact GEO-2. The Project would change topography or ground surface or result in an increase in deposition, siltation, or wind and water erosion which could result in substantial soil erosion or loss of topsoil.	
Significance before Mitigation	Significant
Significance after Mitigation	Less Than Significant
Mitigation Measures	MM AQ-1 (Fugitive Dust Control Plan). <i>See Impact AQ-2.</i> MM HWQ-1 (Drainage Erosion and Sedimentation Control Plan [DESCP]). <i>See Impact HWQ-1.</i> MM HWQ-4 (Project Drainage Report and Plans). <i>See Impact HWQ-4.</i>
Impact GEO-3. The Project would be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the Project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse.	
Significance before Mitigation	Less Than Significant
Mitigation Measures	None required
Impact GEO-4. The Project would be located on expansive soils creating direct or indirect risks to life and property.	
Significance before Mitigation	Less Than Significant
Mitigation Measures	None required
Impact GEO-5. The Project would have soils that are incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater or result in grading that affects or negates subsurface sewage disposal systems.	
Significance before Mitigation	Less Than Significant
Mitigation Measures	None required
Impact MR-1. The Project would 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.	
Significance before Mitigation	Less Than Significant
Mitigation Measures	None required
Cumulative Impacts	
Significance before Mitigation	Cumulatively Significant for geology and soils Cumulatively Less than Significant for mineral resources

Table ES-1. Summary of Impacts, Mitigation Measures, and Monitoring Plan for the Proposed Project

Significance after Mitigation	Not Cumulatively Considerable (Less Than Significant)
Mitigation Measures	MM AQ-1 (Fugitive Dust Control Plan). <i>See Impact AQ-2.</i> MM HWQ-1 (Drainage Erosion and Sedimentation Control Plan [DESCP]). <i>See Impact HWQ-1.</i> MM HWQ-4 (Project Drainage Plan). <i>See Impact HWQ-4.</i>
Greenhouse Gas Emissions	
Impact GHG-1. The Project would generate greenhouse gas emissions that may have a significant impact on the environment.	
Significance before Mitigation	Less Than Significant
Mitigation Measures	None required
Impact GHG-2. The Project would conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases.	
Significance before Mitigation	Less Than Significant
Mitigation Measures	None required
Cumulative Impacts	
Significance before Mitigation	Cumulatively Less Than Significant
Mitigation Measures	None required
Hazards and Hazardous Materials	
Impact HAZ-1. The Project would create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials	
Significance before Mitigation	Significant
Significance after Mitigation	Less Than Significant
Mitigation Measures	MM HAZ-1 (Soil Investigation)
Responsible Party	Project Owner
Responsible Monitoring Party	Riverside County Department of Environmental Health
Monitoring Phase/Timing	Prior to issuance of a grading permit
Verification Approval Party	Riverside County Department of Environmental Health
Mitigation Measures	MM HAZ-2 (Worker Environmental Awareness Program)
Responsible Party	Project Owner
Responsible Monitoring Party	Riverside County Planning Department and BLM
Monitoring Phase/Timing	During construction, operation, maintenance, and decommissioning
Verification Approval Party	Riverside County Planning Department and BLM
Mitigation Measures	MM HAZ-3 (UXO Identification, Training and Reporting Plan)
Responsible Party	Project Owner
Responsible Monitoring Party	Riverside County Planning Department
Monitoring Phase/Timing	Prior to construction
Verification Approval Party	Riverside County Planning Department
Impact HAZ-2. The Project would 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.	
Significance before Mitigation	Significant
Significance after Mitigation	Less Than Significant

Table ES-1. Summary of Impacts, Mitigation Measures, and Monitoring Plan for the Proposed Project

Mitigation Measures	MM HAZ-2 (Worker Environmental Awareness Program). <i>See Impact HAZ-1.</i>
Impact HAZ-3. The Project would 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 create a significant hazard to the public or the environment.	
Significance before Mitigation	Significant
Significance after Mitigation	Less Than Significant
Mitigation Measures	MM HAZ-1 through MM HAZ-3 <i>See Impact HAZ-1.</i>
Impact HAZ-4. The Project is located within 2 miles of a public use airport and would result in a safety hazard or excessive noise for people residing or working in the Project area.	
Significance before Mitigation	Less Than Significant
Mitigation Measures	None required
Impact HAZ-5. The Project would impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.	
Significance before Mitigation	Less Than Significant
Mitigation Measures	None required
Impact HAZ-6. The Project would expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires.	
Significance before Mitigation	Significant
Significance after Mitigation	Less Than Significant
Mitigation Measures	MM HAZ-2 (Worker Environmental Awareness Program). <i>See Impact HAZ-1.</i>
Cumulative Impacts	
Significance before Mitigation	Cumulatively Significant
Significance after Mitigation	Not Cumulatively Considerable (Less Than Significant)
Mitigation Measures	MM HAZ-1 through MM HAZ-4 <i>See Impacts HAZ-1.</i>
Hydrology and Water Quality	
Impact HWQ-1. The Project would violate water quality standard or waste discharge requirements or otherwise substantially degrade surface or groundwater quality, or conflict with the implementation of a water quality control plan.	
Significance before Mitigation	Significant
Significance after Mitigation	Less Than Significant
Mitigation Measures	MM HWQ-1 (Drainage Erosion and Sedimentation Control Plan [DESCP])
Responsible Party	Project Owner
Responsible Monitoring Party	Riverside County Planning Department and the BLM
Monitoring Phase/Timing	Prior to site mobilization
Verification Approval Party	Riverside County Planning Department and the BLM
Mitigation Measures	MM HWQ-2 (Septic System Rehabilitation)
Responsible Party	Project Owner
Responsible Monitoring Party	Riverside County Planning Department
Monitoring Phase/Timing	Prior to construction
Verification Approval Party	Riverside County Planning Department

Table ES-1. Summary of Impacts, Mitigation Measures, and Monitoring Plan for the Proposed Project

Impact HWQ-2. The Project would substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin.	
Significance before Mitigation	Significant
Significance after Mitigation	Less Than Significant
Mitigation Measures	MM HWQ-3 (Mitigation of Impacts to the Palo Verde Mesa (PVMGB) Groundwater Basin)
Responsible Party	Project Owner
Responsible Monitoring Party	United States Bureau of Reclamation
Monitoring Phase/Timing	Any time groundwater withdrawals will likely reach Accounting Surface during life of Project
Verification Approval Party	United States Bureau of Reclamation
Impact HWQ-3. The Project would substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would result in substantial erosion or siltation on- or off-site.	
Significance before Mitigation	Significant
Significance after Mitigation	Less Than Significant
Mitigation Measures	MM HWQ-1 (Drainage Erosion and Sedimentation Control Plan [DESCP]). <i>See Impact HWQ-1.</i>
Impact HWQ-4. The Project would substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site.	
Significance before Mitigation	Significant
Significance after Mitigation	Less Than Significant
Mitigation Measures	MM HWQ-1 (Drainage Erosion and Sedimentation Control Plan [DESCP]). <i>See Impact HWQ-1.</i>
Mitigation Measures	MM HWQ-4 (Project Drainage Plan)
Responsible Party	Project Owner
Responsible Monitoring Party	Riverside County Planning Department
Monitoring Phase/Timing	Prior to construction
Verification Approval Party	Riverside County Planning Department
Impact HWQ-5. The Project would substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would create or contribute runoff water which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff.	
Significance before Mitigation	Significant
Significance after Mitigation	Less Than Significant
Mitigation Measures	MM HWQ-1 (Drainage Erosion and Sedimentation Control Plan [DESCP]) and MM HWQ-4 (Project Drainage Plan). <i>See Impact HWQ-1 and Impact HWQ-4.</i>
Impact HWQ-6. The Project would substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would impede or redirect flood flows.	
Significance before Mitigation	Significant
Significance after Mitigation	Less Than Significant
Mitigation Measures	MM HWQ-1 (Drainage Erosion and Sedimentation Control Plan [DESCP]), MM HWQ-4 (Project Drainage Plan), MM HWQ-5 (Flood Protection). <i>See Impact HWQ-1 and Impact HWQ-4.</i>

Table ES-1. Summary of Impacts, Mitigation Measures, and Monitoring Plan for the Proposed Project

Cumulative Impacts	
Significance before Mitigation	Cumulatively Significant
Significance after Mitigation	Not Cumulatively Considerable (Less Than Significant)
Mitigation Measures	MM HWQ-1 through HWQ-5 See <i>Impact HWQ-1</i> , <i>Impact HWQ-4</i> , and <i>Impact HWQ-6</i> .
Land Use and Planning	
Impact LU-1. The Project would cause a significant environmental impact due to conflict with applicable land use plans, policies, or regulations; result in an alteration of the present or planned land use of an area; or be inconsistent or incompatible with the site's existing, proposed or surrounding zoning or land uses.	
Significance before Mitigation	No Impact
Mitigation Measures	N/A
Cumulative Impacts	
Significance before Mitigation	Cumulatively Less than Significant
Mitigation Measures	None required
Noise	
Impact N-1. The Project would generate a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of established standards.	
Significance before Mitigation	Significant
Significance after Mitigation	Less Than Significant
Mitigation Measures	MM N-1 (Construction Restrictions)
Responsible Party	Project Owner
Responsible Monitoring Party	Riverside County Planning Department
Monitoring Phase/Timing	During construction
Verification Approval Party	Riverside County Planning Department
Mitigation Measures	MM N-2 (Public Notification Process)
Responsible Party	Project Owner
Responsible Monitoring Party	Riverside County Planning Department
Monitoring Phase/Timing	At least 15 days prior to ground disturbance
Verification Approval Party	Riverside County Planning Department
Mitigation Measures	MM N-3 (Noise Complaint Process)
Responsible Party	Project Owner
Responsible Monitoring Party	Riverside County Planning Department
Monitoring Phase/Timing	During construction and operation
Verification Approval Party	Riverside County Planning Department
Mitigation Measures	MM N-4 (Noise Restrictions)
Responsible Party	Project Owner
Responsible Monitoring Party	Riverside County Planning Department
Monitoring Phase/Timing	During operation
Verification Approval Party	Riverside County Planning Department
Impact N-2. The Project would result in excessive groundborne vibration or groundborne noise levels.	
Significance before Mitigation	Less Than Significant
Mitigation Measures	None required

Table ES-1. Summary of Impacts, Mitigation Measures, and Monitoring Plan for the Proposed Project

Cumulative Impacts	
Significance before Mitigation	Cumulatively Significant
Significance after Mitigation	Not Cumulatively Considerable (Less Than Significant)
Mitigation Measures	MM N-1 through MM N-3. <i>See Impact N-1.</i>
Paleontological Resources	
Impact PAL-1. The Project would directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.	
Significance before Mitigation	Significant
Significance after Mitigation	Less Than Significant
Mitigation Measures	MM PAL-1 (Project Paleontologist)
Responsible Party	Applicant
Responsible Monitoring Party	Riverside County
Monitoring Phase/Timing	Prior to issuance of grading permits
Verification Approval Party	Riverside County
Mitigation Measures	MM PAL-2 (Paleontological Resource Impact Mitigation Program)
Responsible Party	Applicant
Responsible Monitoring Party	Riverside County
Monitoring Phase/Timing	Prior to issuance of grading permits
Verification Approval Party	Riverside County
Mitigation Measures	MM PAL-3 (Paleontological Monitoring)
Responsible Party	Applicant
Responsible Monitoring Party	Riverside County
Monitoring Phase/Timing	During ground disturbing activities in sediments classified as High or Undetermined sensitivity
Verification Approval Party	Riverside County
Mitigation Measures	MM PAL-4 (Paleontological Awareness Training)
Responsible Party	Applicant/Developer
Responsible Monitoring Party	Riverside County
Monitoring Phase/Timing	Prior to ground disturbance
Verification Approval Party	Riverside County
Mitigation Measures	MM PAL-5 (Paleontological Monitoring Report Requirement)
Responsible Party	Applicant/Developer
Responsible Monitoring Party	Riverside County
Monitoring Phase/Timing	Prior to ground disturbance
Verification Approval Party	Riverside County
Cumulative Impacts	
Significance before Mitigation	Cumulatively Significant
Significance after Mitigation	Not Cumulatively Considerable (Less Than Significant)
Mitigation Measures	MM PAL-1 through MM PAL-5 <i>See Impact PAL-1</i>

Table ES-1. Summary of Impacts, Mitigation Measures, and Monitoring Plan for the Proposed Project

Population and Housing	
Impact PH-1. The Project could induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure).	
Significance before Mitigation	Less Than Significant
Mitigation Measures	None required
Cumulative Impacts	
Significance before Mitigation	Cumulatively Less Than Significant
Mitigation Measures	None required
Public Services and Utilities	
Impact PSU-1. The Project would result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities; and/or result in the need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for public services.	
Significance before Mitigation	Less Than Significant
Mitigation Measures	None required
Impact PSU-2. The Project would require or result in the relocation or construction of new or expanded water, wastewater treatment, storm water drainage, electric power, natural gas, or telecommunications facilities, which could cause significant environmental effects.	
Significance before Mitigation	Less Than Significant
Mitigation Measures	None required
Impact PSU-3. The Project would have insufficient water supplies available to serve the Project and reasonably foreseeable future development during normal, dry and multiple dry years.	
Significance before Mitigation	Less Than Significant
Mitigation Measures	None required
Impact PSU-4. The Project would generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals.	
Significance before Mitigation	Less Than Significant
Mitigation Measures	None required
Cumulative Impacts	
Significance before Mitigation	Cumulatively Less Than Significant
Mitigation Measures	None required
Recreation	
Impact REC-1. Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated.	
Significance before Mitigation	Less Than Significant
Mitigation Measures	None required
Cumulative Impacts	
Significance before Mitigation	Cumulatively Less Than Significant
Mitigation Measures	None required
Traffic and Transportation	
Impact TRA-1. The Project would conflict with an applicable plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities.	
Significance before Mitigation	Significant

Table ES-1. Summary of Impacts, Mitigation Measures, and Monitoring Plan for the Proposed Project

Significance after Mitigation	Less Than Significant
Mitigation Measures	MM TRA-1 (Construction Traffic Control Plan)
Responsible Party	Project Owner
Responsible Monitoring Party	Caltrans and Riverside County Planning Department
Monitoring Phase/Timing	Prior to construction
Verification Approval Party	Caltrans and Riverside County Planning Department
Impact TRA-2. Construction or operational daily vehicle trips would conflict with Congestion Management Program performance standards.	
Significance before Mitigation	Significant
Significance after Mitigation	Less Than Significant
Mitigation Measures	MM TRA-1 (Construction Traffic Control Plan). <i>See Impact TRA-1.</i>
Impact TRA-3. Project components would affect aviation safety or activities associated with airport facilities.	
Significance before Mitigation	Significant
Significance after Mitigation	Less Than Significant
Mitigation Measures	MM TRA-2 (Comply with FAA 7460-1 Determination Recommendations)
Responsible Party	Project Owner
Responsible Monitoring Party	Manager of the FAA Air Traffic Division
Monitoring Phase/Timing	Prior to construction
Verification Approval Party	Manager of the FAA Air Traffic Division
Impact TRA-4. Project activities would increase transportation hazards or damage roads in the Project area.	
Significance before Mitigation	Significant
Significance after Mitigation	Less Than Significant
Mitigation Measures	MM TRA-1 (Construction Traffic Control Plan). <i>See Impact TRA-1.</i>
Mitigation Measures	MM TRA-3 (Repair Roadways and Transportation Facilities Damaged by Construction Activities)
Responsible Party	Project Owner
Responsible Monitoring Party	Riverside County Planning Department and Caltrans
Monitoring Phase/Timing	Prior to construction and at end of major construction
Verification Approval Party	Riverside County Planning Department and Caltrans
Impact TRA-5. Project activities would cause a temporary disruption to emergency response access or vehicle movement.	
Significance before Mitigation	Significant
Significance after Mitigation	Less Than Significant
Mitigation Measures	MM TRA-1 (Construction Traffic Control Plan). <i>See Impact TRA-1.</i>
Impact TRA-6. The Project would conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b).	
Significance before Mitigation	Significant
Significance after Mitigation	Less Than Significant
Mitigation Measures	MM TRA-1 (Construction Traffic Control Plan). <i>See Impact TRA-1.</i>

Table ES-1. Summary of Impacts, Mitigation Measures, and Monitoring Plan for the Proposed Project

Cumulative Impacts	
Significance before Mitigation	Cumulatively Significant
Significance after Mitigation	Not Cumulatively Considerable (Less Than Significant)
Mitigation Measures	MM TRA-1 (Construction Traffic Control Plan). <i>See Impact TRA-1.</i>
Energy	
Impact ENERGY-1. The Project would result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation.	
Significance before Mitigation	Significant
Significance after Mitigation	Less Than Significant
Mitigation Measures	MM AQ-2 (Control On-Site Off-Road Equipment Emissions) <i>See Impact AQ-2.</i> MM AQ-3 (Require Newer Vehicles for On-Road Vendor and Hauling Trucks) <i>See Impact AQ-2.</i> MM AQ-4 (Construction Activity Management Plan) <i>See Impact AQ-2.</i> MM N-1 (Construction Restrictions) <i>See Impact N-1.</i> MM TRA-1 (Construction Traffic Control Plan) <i>See Impact TRA-1.</i>
Impact ENERGY-2. The Project would conflict with or obstruct a state or local plan for renewable energy or energy efficiency.	
Significance before Mitigation	No impact
Mitigation Measures	None required
Cumulative Impacts	
Significance before Mitigation	Cumulatively Significant
Significance after Mitigation	Not Cumulatively Considerable (Less Than Significant)
Mitigation Measures	MM AQ-2 (Control On-Site Off-Road Equipment Emissions) <i>See Impact AQ-2.</i> MM AQ-3 (Require Newer Vehicles for On-Road Vendor and Hauling Trucks) <i>See Impact AQ-2.</i> MM AQ-4 (Construction Activity Management Plan) <i>See Impact AQ-2.</i> MM N-1 (Construction Restrictions) <i>See Impact N-1.</i> MM TRA-1 (Construction Traffic Control Plan) <i>See Impact TRA-1.</i>

1. Introduction

1.1 Overview

In compliance with the California Environmental Quality Act (CEQA), the County of Riverside (County) is the Lead Agency responsible for preparation of this Draft Environmental Impact Report (EIR) for the Athos Renewable Energy Project (Athos or Project). As the CEQA Lead Agency, the County is responsible for coordinating with the Project applicant, IP Athos LLC (Applicant or Proponent), the public, and responsible agencies during the CEQA process. This EIR will inform the public and decision-makers at local and State permitting agencies of potentially significant environmental impacts associated with the Project and identify means of reducing or eliminating those impacts. The information contained within this EIR will be considered by applicable decision-makers in determining whether to grant the necessary Project approvals.

The Applicant is proposing the Project to generate up to 500 megawatts (MW) of electricity from solar photovoltaic (PV) panels on approximately 3,400 acres in Riverside County, California. The Applicant would site the solar facility, electrical storage equipment, and portions of a generation intertie line (gen-tie) on 3,228 acres within the County of Riverside's jurisdiction that would require a Conditional Use Permit (CUP) for construction, operation, and decommissioning. A Public Use Permit (PUP) and a height Variance from the County would also be required for portions of the gen-tie line on County-owned lands. In addition to the CUP 180001, PUP 180001, and Variance VAR190001, the Applicant is seeking to vacate the facility's interior roadways and merge contiguous Project parcels within the Project area into a contiguous area (TPM37700 through TPM37705). Roads along the Project perimeter on the solar facility lands would remain dedicated public access.

If approved, the Project would interconnect to the electrical grid at Southern California Edison's (SCE) Red Bluff Substation (RBS). Approximately 7 miles of the Project's gen-tie line leading to Red Bluff Substation would traverse federal lands managed by the Bureau of Land Management (BLM) and require a Right-of-Way (ROW) Grant. However as explained below, although this EIR will consider the environmental impacts of the project as a whole, including components outside State and local agency jurisdiction, the BLM will prepare and rely on its own environmental review document in accordance with the National Environmental Policy Act (NEPA).

1.2 California Environmental Quality Act

Under CEQA, as amended (Public Resources Code Section 21080(a)), an environmental review document must be prepared, reviewed, and certified by the decision-making body before action is taken on any non-exempt discretionary project proposed to be carried out or approved by a State or local public agency in the State of California. Following CEQA review, the County, as the lead agency, has the authority to act first on the project before any of the responsible agencies take action on the Project. Riverside County decision makers (Board of Supervisors) will use the EIR for decision making regarding the proposed Project. If the proposed Project is approved by all required permitting agencies, the County would be responsible for reviewing and approving all CEQA-related pre-construction compliance plans and ensuring that the proposed Project modifications and operations are conducted in accordance with the mitigation measures and other permit conditions.

1.2.1 Purpose of the EIR

This EIR is an informational disclosure document for the County, responsible agencies, and other interested parties. According to Section 15121(a) of the CEQA Guidelines:

“[An EIR] will inform public agency decision-makers and the public generally of the significant environmental effect of a project, identify possible ways to minimize the significant effects, and describe reasonable alternatives to the project. The public agency shall consider the information in the EIR along with other information which may be presented to the agency

Section 15151 of the State CEQA Guidelines provides the following standards for EIR adequacy:

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 light of what is reasonably feasible. Disagreement among experts does not make an EIR inadequate, but the EIR should summarize the main points of disagreement among the experts. The courts have looked not for perfection; but for adequacy, completeness, and a good faith effort at full disclosure.

This Draft EIR has been distributed for review to responsible agencies, trustee agencies with resources affected by the Project, and other interested agencies and individuals. The County will consider the Draft EIR, comments received on the Draft EIR, responses to those comments, and any changes to the Draft EIR, before deciding whether to certify the Final EIR as complying with CEQA and take action on the proposed Project. The County will consider whether to approve the CUP 180001 and PUP 180001 for the construction, operation, maintenance, and decommissioning of the proposed Project on lands subject to County jurisdiction.

Comments on this Draft EIR should focus on the adequacy of the document in identifying and analyzing the potential environmental effects, determination of significance, and effectiveness of mitigation measures.

1.3 Project Objectives

The Applicant’s project objectives and purpose and need for the proposed Project are:

1. Assist Californians in meeting their renewable energy generation goals under the Clean Energy and Pollution Reduction Act of 2015 (Senate Bill 350) and greenhouse gas emissions reduction goals of the California Global Warming Solutions Act of 2006 (AB 32), as amended by Senate Bill 32 in 2016;¹
2. Bring living-wage jobs to eastern Riverside County;
3. Minimize environmental impacts and land disturbance associated with solar development by siting the facility on relatively flat, contiguous lands with high solar insolation, in close proximity to established utility corridors, existing transmission lines with available capacity to facilitate interconnection, and road access;
4. Further the purpose of Secretarial Order 3285A1, establishing the development of environmentally responsible renewable energy as a priority for the Department of the Interior; and
5. Make the highest and best use of primarily disturbed, retired agricultural land in and around a federal “Solar Energy Zone” and “Development Focus Area” to generate, store, and transmit affordable, wholesale solar electricity.

¹ Senate Bill 32 California Global Warming Solutions Act of 2006: emissions limit. [online] https://leginfo.ca.gov/faces/billNavClient.xhtml?bill_id=201520160SB32.

1.4 Summary of the Project Evaluated in This EIR

The County of Riverside is the Lead Agency for the proposed Project, under whose authority this EIR has been prepared. For purposes of this EIR, the term “Project” refers to the discretionary actions required to implement Conditional Use Permit (CUP) 180001, Public Use Permit (PUP) 180001, Tentative Tract Map (TTM), and Variance as proposed along with all of the activities associated with its implementation including planning, construction, and long-term operation. In summary, the Project, as evaluated throughout this EIR evaluates the impacts that would occur as a result of developing the Project site in accordance with the land uses that will be specified in the Tentative Tract Map. Specifically, IP Athos LLC is requesting the following governmental approvals from the County of Riverside to implement the Project (refer to Chapter 2, Description of the Proposed Project and Alternatives, for a complete description of the Project’s construction and operational characteristics):

- **Conditional Use Permit (CUP 180001)** is proposed for the construction, operation, and decommissioning of the proposed solar facility, electrical storage equipment, and portions of the gen-tie line within the County of Riverside’s jurisdiction.
- **Public Use Permit (PUP 180001)** is proposed for the portions of the 220 kV gen-tie line that would traverse County roads (SR-177/Rice Road).
- **Variance (VAR190001)** will be necessary for all structures located within the Natural Assets (N-A) zone that would be higher than 20 feet and in the Controlled Development Area (W-2) zone that would exceed 105 feet.
- **Tentative Parcel Map (TPM37700-TPM37705)**. The Applicant is planning to propose to vacate the facility’s interior roadways and merge contiguous Project parcels within the Project area into a contiguous area. Roads along the Project perimeter on the solar facility lands would remain dedicated public access.

Provided below is a list of known discretionary and ministerial actions needed to implement the proposed Project. This EIR covers all federal, state, and local government approvals which may be needed to construct or implement the Project, whether explicitly noted below or not.

Riverside County Board of Supervisors

1. Approval by resolution of CUP 180001.
2. Approval by resolution of PUP 180001.
3. Approval of Variance
4. Approval of TPM.
5. Enter into a Development Agreement with IP Athos LLC, per Board of Supervisors Policy B-29 (discussed below)
6. Certify this EIR and make appropriate CEQA findings.

Subsequent Project Approvals

Subsequent approvals associated with the proposed Project and covered by this EIR may include, but are not limited to, the following. A table of required permits is also included in Table 1-1 in Section 1.8 (Agencies Relying on the EIR; Anticipated Permits and Approvals).

1. Conditional and public use permits by the County of Riverside, approving development of specific uses conditionally permitted by the approved zoning.
2. Tentative map(s) (including tentative map revisions) and/or final maps by the County of Riverside to allow implementation of the parcel mergers.

3. Grading permits, road improvements, and drainage improvements by the County of Riverside and Riverside County Flood Control and Water Conservation District to allow implementation of the Project.
4. Grant of Right-of-Way and Temporary Use Permit by the U.S. Bureau of Land Management for the construction and operation of the portions of the gen-tie line on BLM-administered land.
5. Encroachment permits by the County to allow access within County rights-of-way, for construction of various roadway/circulation and utility improvements, as well as by encroachment permits by the California Department of Transportation and Metropolitan Water District of Southern California.

Board of Supervisors Policy B-29. The proposed Project is subject to Policy B-29, and the developer would need to enter into a development agreement with the County. The purpose of Policy B-29 is to ensure that the County does not disproportionately bear the burden of solar energy production and ensure the County is compensated in an amount it deems appropriate for the use of its real property. The policy states that the solar power plant owner shall annually pay the County \$150 for each acre of land involved in the power production process. It also lists requirements for solar power plant owners relating to sales and use taxes payable in connection with the construction of a solar power plant. Once the development agreement is enacted, the proposed Project would comply with this policy.

1.5 Public Review and Noticing

CEQA requires lead agencies to solicit, record, and evaluate feedback from other agencies, the public, and other interested parties on the environmental effects of a project to aid decision-making. Additionally, CEQA can, in certain circumstances, require that projects be monitored after they have been permitted to ensure that mitigation measures are implemented.

Public and agency participation in the CEQA process for the proposed Project has and will continue to occur through the steps described below.

1.5.1 Notice of Preparation

In compliance with CEQA Guidelines Section 15082, a Notice of Preparation (NOP) was issued on May 11, 2018. The notice briefly described the proposed Project, Project location, environmental review process, potential environmental effects, and opportunities for public involvement. A map was included that illustrated the Study Area boundary.

Fifteen copies of the NOP were mailed to the Office of Planning and Research (State Clearinghouse) for issuance to State agencies. The NOP was filed with the Riverside County Clerk on May 11, 2018. It was mailed to agencies, organizations, local governments, elected officials, Native American Tribes, all residents within 2,400 feet of the Project boundaries and individuals on the County's interested parties list. A copy of the NOP was also mailed to both the Desert Sun and Press-Enterprise newspapers, and the Riverside County Public Library in the City of Riverside.

The NOP solicited input regarding the scope and content of the environmental information to be included in the Draft EIR. The public comment period for the NOP ended on June 11, 2018. A full copy of the NOP and the list of the agencies, elected officials, and Native American Tribes that received the NOP are provided in Appendix A.

A total of 15 comment letters were received during the scoping period and 10 commenters provided verbal comments during the Scoping Meeting. Section 1.6 includes a summary of the written and oral comments received.

1.5.2 Public Scoping Meeting

In compliance with California Code of Regulations Section 15082(c), Riverside County conducted a public scoping meeting to inform the public about the Project, provide information regarding the environmental review process; and gather public input regarding the scope and content of the Draft EIR. The public scoping meeting was held on the following date and location:

June 4, 2018, 1:30 p.m.
Riverside County Planning Department, Palm Desert Office
77588 El Duna Ct, Suite H
Palm Desert, CA 92211

The CEQA Scoping Report, provided in Appendix A of this EIR, contains copies of the PowerPoint Presentation, sign-in sheets and speaker registration cards that were used at the scoping meeting, as well as a summary of oral comments received at the meeting. Eighteen people signed in at the scoping meeting.

1.5.3 Native American Tribal Outreach and AB 52 Compliance

On March 29, 2018, the County of Riverside mailed certified letters to representatives of 10 tribes that had previously submitted a written request to the County of Riverside to receive notification of proposed projects. These tribes included Agua Caliente Band of Cahuilla Indians, Soboba Band of Luiseño Indians, Twenty-Nine Palms Band of Mission Indians, Morongo Band of Mission Indians, Torres Martinez Desert Cahuilla Indians, Cabazon Band of Mission Indians, Cahuilla Band of Indians, Ramona Band of Cahuilla, Quechan Indian Nation, and Colorado River Indian Tribes (CRIT). In addition, because of staffing changes with some groups, follow up notices were sent to the Quechan on August 6, 2018. The letters included a brief description of the proposed Project, information on how to contact the lead agency Project Manager, and a USGS topographic quadrangle showing the Project components and lay-down areas. The letters noted that requests for consultation needed to be received within 30 days of the date of receipt of the notification letter; three responses were received, which came from the Agua Caliente, Soboba and Twenty-Nine Palms tribes. Additional details on the AB 52 consultation process are included in Section 3.6 (Cultural Resources) and EIR Appendix D.

1.5.4 Review of Draft EIR

A Notice of Completion (NOC) has been filed with the State Clearinghouse to begin the public review period (Public Resources Code [PRC], Section 21161) for this Draft EIR. Pursuant to PRC Section 21092.3 and CEQA Guidelines Section 15087(c), a notice of availability of this Draft EIR was posted in the Riverside County Clerk's office.

This Draft EIR has been distributed directly to agencies, organizations, and interested individuals, and made publicly available for review and comment in accordance with Section 15087 of the CEQA Guidelines and PRC 21092(b)(3). In compliance with CEQA Guidelines Section 15129, a list of federal, State, and local agencies and other organizations contacted in preparation of this Draft EIR is provided in Section 6.

The Draft EIR and the studies upon which it is based are available for review at the locations shown as follows:

**Riverside County Planning
Department**
4080 Lemon Street, 12th Floor,
Riverside, CA 92501
(951) 955-3200

**Riverside County Planning
Department, Palm Desert Office**
77588 El Duna Court, Suite H
Palm Desert, CA 92211
(760) 863-8277

Lake Tamarisk Library
43880 Tamarisk Drive
Desert Center, CA 92239
(760) 227-3272

The Draft EIR is also available for review online at <http://www.rctlma.org/planning/>. Organizations and interested members of the public are invited to comment on the information presented in this Draft EIR during the 45-day public review period.

Written comments may be mailed, emailed or faxed using the following contact information:

Jason Killebrew, Planner
Riverside County Planning Department
4080 Lemon Street, 12th Floor, Riverside CA, 92501
Phone: (951) 955-0314; Fax: (951) 955-1811
Email: jkillebr@rivco.org

All significant environmental issues raised in comments received during the public review period for the Draft EIR will be responded to in the Final EIR.

1.5.5 Preparation and Certification of Final EIR and MMRP

Following consideration of the comments received during this Draft EIR comment period, the Final EIR will be prepared and circulated per CEQA requirements and will include responses to all comments that raise significant environmental issues. Consideration of the Final EIR and requested Project approvals by the County Board of Supervisors is anticipated in mid/late 2019.

The Final EIR will include comments received on the Draft EIR and responses to those comments, along with any modifications to the Draft EIR. In addition, CEQA Guidelines Section 15097 requires that public agencies adopt a program for monitoring mitigation measures that reduce or eliminate significant impacts on the environment. Accordingly, a Mitigation Monitoring and Reporting Program (MMRP) will be prepared for the proposed Project and included as part of the Final EIR.

The County Board of Supervisors will consider all comments on the Draft EIR before deciding whether to certify the Final EIR and make a decision whether or not to approve the Project.

1.6 Scoping Comments

1.6.1 Scoping Comments Summary

This section summarizes the verbal and written comments received from the public and agencies during the scoping period for the proposed Project. A total of 15 comment letters were received during the scoping period and 10 commenters provided verbal comments during the Scoping Meeting. Copies of the original comment letters received during the NOP scoping period may be found in the Scoping Report. A full copy of the Scoping Report is provided in Appendix A.

California Department of Toxic Substances Control

- The EIR needs to determine whether current or historic uses of the site may have resulted in any release of hazardous wastes.
- A Phase I Environmental Site Assessment might be needed.
- If any environmental conditions are found to occur in the Project area, sampling and remedial action should be conducted prior to construction.
- Recommends evaluation, proper investigation, and mitigation for onsite areas with current or historic polychlorinated biphenyls (PCB)-containing transformers.

- If the Project requires importing soil to backfill excavated areas, proper evaluation should be conducted to ensure the imported soil is free of contamination.
- If soil contamination is suspected during construction, then all construction should cease, and appropriate health and safety procedures should be implemented.
- If it is determined that contaminated soil and/or groundwater exists, the EIR should identify how any required investigation and/or remediation will be conducted and the appropriate agency to provide regulatory oversight.

South Coast Air Quality Control District (SCAQMD)

- Recommends the Lead Agency use the CEQA Air Quality Handbook (1993) as guidance when preparing the air quality analysis.
- Recommends the Lead Agency use the CalEEMod land use emissions software available at www.caleemod.com.
- Requests the Lead Agency quantify criteria pollutant emissions and compare the results to SCAQMD's CEQA regional pollutant emissions significance thresholds to determine impacts.
- Recommends calculating localized air quality impacts and comparing the results to localized significance thresholds (LST) by either using the LSTs developed by SCAQMD or performing dispersion modeling as necessary.
- The Lead Agency should identify any potential adverse air quality impacts that could occur from all phases of the Project and all air pollutant sources related to the Project, including from indirect sources.
- Recommends the Lead Agency perform a mobile source health risk assessment in the event the Project would generate or attract vehicular trips, especially heavy-duty diesel-fueled vehicles.
- An analysis of all toxic air contaminant impacts due to the use of equipment potentially generating such air pollutants should be included.
- States the California Air Resources Board's Air Quality and Land Use Handbook: A Community Health Perspective gives guidance on siting incompatible land uses and can be used as a general reference guide for reducing air pollution impacts.
- States where to find guidance on strategies to reduce air pollution exposure near high-volume roadways.
- States that CEQA requires that all feasible mitigation measures that go beyond what is required by law be utilized during Project construction and operation to minimize these impacts; and, any impacts resulting from mitigation measures must also be discussed.
- SCAQMD notifies the Lead Agency of several resources useful for identifying potential mitigation measures for the Project.
- Pursuant to CEQA Guidelines Section 15126.6(d), the Draft EIR shall include sufficient information about each alternative to allow meaningful evaluation, analysis, and comparison with the proposed Project.
- If the Project requires a permit from SCAQMD, then SCAQMD should be identified as a Responsible Agency.

United States Fish and Wildlife Service

- Federal trust resources to likely occur in the Project area include the threatened Mojave desert tortoise, endangered Yuma clapper rail and Yuma Ridgway's rail, endangered southwestern willow flycatcher, and endangered yellow-billed cuckoo.
- Other sensitive resources include the golden eagle and the western burrowing owl.
- Comments are made based on familiarity with the locations for other large solar projects.
- Recommends conducting appropriate protocol surveys so USFWS can more effectively advise the County of potential impacts.
- Recommends representatives of the County and the applicant meet with BLM, USFWS, and California Department of Fish and Wildlife (CDFW) to discuss jurisdiction.
- Suggest standard measures to avoid, minimize, and mitigate Project impacts to Federal trust resources
- Offers to further refine site-specific measures as more information becomes available.

Twenty-Nine Palms Band of Missions Indians (two letters)

- The Twenty-Nine Palms Band of Mission Indians Tribal Historic Preservation Office was aware of over 75 cultural resources within 1-mile of the Project area and 2 resources in the study area that fit into the category of a Tribal Cultural Resource (TCR).
- The Project is in the vicinity of a culturally sensitive site and within the Chemehuevi Traditional Use Area.
- The Project would have significant impacts on potential cultural resources that concern the Twenty-Nine Palms Band of Mission Indians.
- The EIR should identify and evaluate the potential for the Project to adversely affect archaeological and historical resources.
- A Phase II and III Cultural Resource Investigation should be done
- Recommends creating a mitigation monitoring plan with input and participation from the consulting Tribes.
- Recommends a comprehensive Visual Impact Assessment emphasizing the visual effects that may compromise the integrity of cultural resources and TCRs. Representatives from the consulting Tribe(s) should be able to accompany the firm conducting the Visual Impact Assessment.

Rena Van Fleet, Colorado River Indian Tribes (CRIT)

- CRIT would like to be advised when the archaeological walkover will happen
- Corridors in the area between Red Bluff Substation and Eagle Mountain are sacred to the Mojave Tribe, so they would like to be updated on the proposed Project

Private Citizens

- Requested to view online or to receive digital copies of the proposed Project's plans.
- Concerned that noise and movement from construction will be very difficult — citizens moved to the Desert Center area to get away from city chaos.

- Concerned about physical impacts including: dust that could trigger asthma, noise and traffic that would cause severe stress, views from homes and use of open spaces, devaluation of home, and probability of being forced to move due to these physical impacts.
- Concerned about environmental impacts: flooding, berm destruction, increased heat, endangering wildlife (kangaroo rats, desert iguanas), increase snake problem as they migrate, and access from the home during emergencies (flash flood).
- Stated that Steve Jones is the county manager of Desert Center, and he can set up a local meeting at the community center, if interested.
- Suggested the meeting could be held at Lake Tamarisk, and that the winter is the best time because of the “snowbirds.”
- Stated that there are four other nearby major projects that may coincide with construction:
 - Eagle Crest Energy Pumped Storage Project, Eagle Mountain (former Kaiser mine site)
 - Palen Solar Energy Project, Corn Springs Road (10 miles east of Desert Center)
 - Desert Harvest Solar Energy Project, Kaiser Road (immediately south of Desert Sunlight Solar Energy Plant)
 - Interstate 10 Upgrade & Repair, Desert Center to Blythe (\$400 million Caltrans budget)
- Concerned that there is only one access road to some areas and are already being negatively impacted by the environmental studies crews.
- Concerned about the access road not being open during an emergency, and whose responsibility it is to maintain the road.
- Concerned about the migratory and other birds flying into the panels due to the fact that it may look like a lake.
- Curious about what will happen to the displaced animals, loss of habitat, and loss of migration patterns due to the Project.
- Concerned about massive water use lowering the water table and the Project interfering with their right to water.
- Concerned about noise from the transmission lines and the on-site building throughout the Project area.
- Curious about the plans to mitigate noise and light pollution (they have very dark nights) and the aesthetic impacts.
- Asked whether the Project will add to the heat already felt in the area.
- Concerned about trash and proper waste disposal in the Project area.
- States that a positive of the Project is that it will be on already disturbed land, not on pristine desert land.
- Concerned about displaced animals, animal deaths, loss of habitat, and loss of migration and corridor patterns. Proposed fencing with large enough opening to let the small animals pass through.
- Asked whether there would be compensation for the need to lower groundwater wells since residents maintain their own pumps and wells.
- Concerned about water diversions and flash flooding. Asked who would be responsible for providing and maintaining berms to protect residents.

- Requested that the substation be moved to the west of the gen-tie/Project access road since there are no neighbors over there.
- Concerned about a wildlife habitat incentives program (WHIP) pond on their property and its proximity to the substation.
- Concerned about transmission lines or substation having a negative effect on people with pacemakers.
- Stated their opposition to the Project.
- Concerned that the Project would prevent quiet enjoyment of property.
- Stated a similar project is off of Interstate 15 near Prim, NV and it causes glare problems that affect drivers nearby.
- Concerned that the new California law requiring new builds to have solar panels will make this Project obsolete.
- Concerned that increased tillage with construction of the solar plant will blow silt and dirt.
- Stated that after the rerouting of the water flow, the family and animals have suffered from allergies that they did not have in the past.
- Concerned for the wildlife and their habitat, including mountain lions, deer, big horn sheep, badger, coyote, fox, iguanas, snakes, lizards, buzzards, dove, geese, ducks, local birds, and desert tortoises.
- Stated that State Route (SR) 177, a two-lane road, is dangerous with a multitude of trucks on it.
- Submitted description and Plat Plan of the Green Acres Mobile Home Park and recommended the property as a Project staging site.
- Supported clean renewable energy
- Owns date farm and concerned that current zoning will be changed for surrounding properties, which could include height limits and setbacks for the date trees
- Concerned about heat and reflection on agriculture, which could damage trees
- Questioned why their parcel was not considered for inclusion in the Project.
- Concerned about impacts to Loma Verde Road, which could preclude property access. Said that specialists performing environmental studies are already causing deterioration. Loma Verde Road also becomes a “river” in big rain events and this is the only access to their property.
- Concerned about the right-of-way of the Eagle Crest transmission line through several proposed Project parcels.
- Stated that federal approval is required by the Federal Energy Regulatory Commission (FERC) in addition to the U.S. Bureau of Land Management, so it doesn’t interfere with a federally licensed project.
- Concerned about access to game bird hunting areas northwest of the proposed Project.
- Concerned about an increase in traffic accidents on Interstate 10 as travelers may take their eyes off the road to view the solar facility.
- Concerned about reflective (glare) issues for drivers on the Chuckwalla Raceway from the solar panels.
- Concerned about how many people will be involved in construction and where the construction workers will live and shop.
- Asked who will maintain the perimeter roads around the solar facility site parcels.

1.6.2 Environmental Topics Addressed

Applicable scoping comments for each resource are discussed and addressed under the Proposed Project Impact Analysis for each issue area section in Chapter 3. Questions regarding inclusion and/or use of individual properties for the Project are outside of the scope of CEQA, but have been directed to the Applicant. Likewise, suggestions for a local meeting in Lake Tamarisk will be taken into consideration when future public meetings on the proposed Project are scheduled.

1.7 EIR Format and Content

This EIR was prepared in accordance with State and County administrative guidelines established to comply with the CEQA. CEQA Guidelines Section 15151 provides the following standards for EIR adequacy:

“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 light of what is reasonably feasible. Disagreement among experts does not make an EIR inadequate, but the EIR should summarize the main points of disagreement among the experts. The courts have looked not for perfection; but for adequacy, completeness, and a good faith effort at full disclosure.”

This EIR is divided into the following major sections. Figures are provided as necessary in each section to graphically represent the topic at hand.

- **Executive Summary.** Provides an overview of the Project and a summary of the significant impacts identified in the analysis and associated mitigation measures. A summary of the alternatives and environmentally superior alternative is also provided.
- **Section 1. Introduction.** Provides an overview on the proposed Project evaluated in the EIR and a summary of the objectives for the Project. This section also discusses agency use of the document and provides a summary of the contents of the EIR.
- **Section 2. Proposed Project Description and Alternatives.** This chapter gives an overview of solar technology and details the location and characteristics of the Project along with a description of the surrounding land uses. It includes construction and operational aspects of the Project and relevant background information. It provides descriptions of the alternatives that were evaluated in the document. The section also presents an alternatives screening analysis that was used to identify alternatives that could reduce significant impacts associated with the proposed Project. The alternatives that made it through the screening analysis are evaluated in detail throughout the document.
- **Section 3. Environmental Setting, Impacts, and Mitigation Measures:** This chapter contains a detailed environmental analysis of the existing conditions, Project impacts, mitigation measures, and cumulative impacts.
- **Section 4. Other CEQA Considerations:** This chapter presents an analysis of the Project’s growth-inducing impacts and other CEQA requirements, irreversible commitment of resources, significant and unavoidable impacts and energy conservation.
- **Section 5. Comparison of Alternatives.** This Section provides a comparative analysis (matrix) to distinguish the relative effects of each alternative and its relationship to Project objectives and impacts. The alternatives analysis also identifies the “environmentally superior alternative,” as required by CEQA Guidelines Sections 15126.6(d) and (e)(2).

- **Section 6. List of Preparers:** This chapter provides a list of individuals that prepared or contributed to this Draft EIR.
- **Section 7. References:** This chapter lists reference materials used to prepare the Draft EIR.
- **Appendices:** The CEQA Scoping Report, technical reports and studies, and other relevant information are included as appendices to support the environmental analyses.

1.7.1 Terminology Used in this Document

CEQA documents include the use of specific terminology. To aid the reader in understanding terminology and language used throughout this document, the following CEQA terms are defined below:

Project: The whole of an action that has the potential to result in a direct or indirect physical change in the environment.

Environment: The baseline physical conditions that exist in the area before commencement of the proposed Project and that the proposed Project would potentially affect or alter. The environment is where significant direct or indirect impacts could occur as a result of Project implementation, and it includes such elements as air, biological resources (i.e., flora and fauna), land, ambient noise, mineral resources, water, and objects of aesthetic or cultural significance.

Direct impacts: Impacts that would result in a direct physical change in the environment as a result of Project implementation. Direct impacts would occur at the same time and place as the Project.

Indirect or secondary impacts: Impacts that would result from proposed Project implementation but that may occur later in time or farther removed in distance.

Significant impact on the environment: A substantial, or potentially substantial, adverse change in physical conditions that is the result of proposed Project implementation. This can include substantial or potentially substantial adverse changes to air, biological resources (flora or fauna), land, water, minerals, ambient noise, and objects of cultural or aesthetic significance. An economic or social change may factor into an assessment of whether a physical impact is significant, but it not itself a significant impact on the environment.

Mitigation measures: Project-specific actions that, if adopted, avoid or substantially reduce the proposed Project's significant environmental effects. Effective mitigation measures can:

- avoid the impact altogether;
- minimize the impact by reducing the degree or magnitude of the action and its implications;
- rectify the impact by repairing, rehabilitating, or restoring the affected environment;
- reduce or eliminate the impact over time by preservation and maintenance operations during the life of the action; or
- compensate for the impact by replacing or providing substitute resources or environments.

Applicant Proposed Measures (APMs): Measures that avoid, minimize, or reduce impacts, which are distinguished from mitigation measures in this EIR, because IP Athos, LLC, commits to complying with these measures to reduce potential impacts during construction and operation. Any APMs discussed in the EIR are inherently part of the proposed Project and are not additional mitigation measures proposed as a result of the significance findings from the CEQA environmental review process.

Best Management Practices (BMPs): Measures that avoid, minimize, or reduce impacts, which are distinguished from mitigation measures because BMPs are: (1) requirements of existing policies, practices, and

measures required by law, regulation, or local policy; (2) ongoing, regularly occurring practices; and (3) not specific to this proposed Project. Similar to APMs, any BMPs discussed in the EIR are inherently part of the proposed Project and are not additional mitigation measures proposed as a result of the significance findings from the CEQA environmental review process.

Cumulative impacts: Two or more individual impacts that, when considered together, are considerable or that compound or increase other environmental impacts (CEQA Guidelines Section 15355). The following statements also apply when considering cumulative impacts:

- The individual impacts may be changes resulting from a single project or a number of separate projects.
- The cumulative impact from several projects is the change in the environment that results from the incremental impact of the Project when added to other closely related past, present, and reasonably foreseeable probable future projects. Cumulative impacts can result from individually minor but collectively significant projects taking place over time.

Section 15130 of the CEQA Guidelines provides further direction on the definition of cumulative impacts:

(a)(1) As defined in Section 15355, a cumulative impact consists of an impact which is created as a result of the combination of the project evaluated in the EIR together with other projects causing related impacts [emphasis added].

(b)...The discussion of cumulative impacts shall...focus on the cumulative impact to which the identified other projects contribute rather than the attributes of other projects which do not contribute to the cumulative impact [emphasis added].

For example, if another project contributes only to a cumulative impact upon natural resources, its impacts on public services need not be discussed as part of cumulative impact analysis. Taken together, these elements define what counts for the practitioner and help to focus the evaluation upon other actions that are closely related in terms of impact on the resource — not closely related project types.

Terms used in this document to describe the level of significance of adverse impacts are defined as follows:

- **No Impact:** An impact to a specific environmental resource would not occur.
- **Less than significant:** An impact that is adverse but that falls below the defined thresholds of significance and does not require mitigation.
- **Less than significant with mitigation incorporated:** An impact that exceeds the defined thresholds of significance but is reduced to a less than significant level through the incorporation of mitigation measures.
- **Significant:** An impact that exceeds the defined thresholds of significance. A significant impact would or could potentially cause a substantial adverse change in the environment and would require incorporation of feasible mitigation measures to eliminate the impact or reduce it to less than significant.
- **Significant and unavoidable:** An impact that cannot be eliminated or lessened to a less-than-significant level through incorporation of mitigation measures.

1.8 Agencies Relying on the EIR; Anticipated Permits and Approvals

The majority of the Athos Project would be located on private lands under County jurisdiction, which would require discretionary approvals from Riverside County. The Applicant is seeking a minimum 40-year CUP (CUP 180001) and PUP (PUP 180001) for the construction, operation, and decommissioning of the proposed solar facility and gen-tie line, as well as a PUP for portions of the gen-tie line that would traverse

County Roads (SR-177/Rice Road). As part of the Project, the Applicant is seeking to vacate the facility’s interior roadways and merge contiguous Project parcels. Roads along the Project perimeter on the solar facility lands would remain dedicated public access.

Ancillary permits, including encroachment permits, grading and construction permits, and certificates of occupancy, are anticipated from the County. These permits and approvals are local ministerial actions that will follow CEQA compliance. Other State and local agencies or regulatory entities that could exercise authority over specific elements of the proposed Project are described in Table 1-1.

Table 1-1 provides a list of permits and other approvals that will (or may) be needed for the proposed Project. The County, as the CEQA lead agency, will act first on the Project before any of the responsible agencies. Riverside County decision-makers (Board of Supervisors) will certify the EIR as being in compliance with CEQA and will make any findings or statement of overriding considerations required by law, prior to the County or any other agency relying on the EIR for permit/land use approvals. Then the County decision-makers will use the EIR for decision-making regarding the proposed Project. If the proposed Project is approved by all required permitting agencies, the County would be responsible for reviewing and approving all pre-construction compliance plans and ensuring that the proposed Project modifications and operations are conducted in accordance with the Project mitigation measures and other permit conditions.

Table 1-1. Permits and Approvals for the Athos Renewable Energy Project

Agency	Permit	Applicability
County		
Riverside County	Conditional Use Permit	Construction of the solar facility on private land under County jurisdiction
	Public Use Permit	Construction of the gen-tie line on or across County-owned land under County jurisdiction
	Parcel Mergers	Merging of contiguous solar facility parcels pursuant to State Subdivision Map Act.
	Variance	For all structures located within the N-A zone that would be higher than 20 feet and for structures in the W-2 zone that would exceed 105 feet.
	Construction Permit (Building Permit)	Riverside County authorizes construction activities under the master Construction Permit. This permit encompasses grading, building, electrical, mechanical, landscaping and other activities. The County’s review for ordinance standards is undertaken as part of this review.
	Encroachment Permit	Riverside County requires an Encroachment Permit for utility trenching within a public right-of-way. The proposed gen-tie lines would be overhead when crossing roadways; however, driveway aprons for proposed access roads may require an encroachment permit. As part of the application for the Encroachment Permit, the applicant must submit construction drawings and a traffic control plan for any work that would take place in public streets.
State or Regional Approvals		
South Coast Air Quality Management District (SCAQMD)	Indirect Source Review	An Indirect Source Review (District Rule 9510) will be filed with the SCAQMD to determine potential mitigation, if any, for oxides of nitrogen (NOx) and particulate matter less than or equal to 10 microns in diameter (PM10) emissions.
	Dust Control Plan	A dust control plan is required to be submitted and approved by the SJVAPCD prior to initiation of ground disturbances activities associated with construction.
	Authority to Construct and Permit to Operate	Facility backup generator permits for Project operations, if required.

Table 1-1. Permits and Approvals for the Athos Renewable Energy Project

Agency	Permit	Applicability
California Department of Transportation, District 8	Encroachment Permit	An encroachment permit would be required for installation of ingress egress lane along SR-177, construction of the gen-tie line across I-10 to access the Red Bluff Substation, and the installation of the telecommunication line, if required.
California Department of Fish and Wildlife (CDFW)	Lake and Streambed Alteration Agreement	For compliance with Fish and Game Code 1602 for all perennial, intermittent, and ephemeral rivers, streams, and lakes in the state.
	Incidental Take Permit	For compliance with Section 2081 of the California Endangered Species Act.
Metropolitan Water District (MWD) of Southern California	Encroachment Permit	For Gen-Tie Segment #1 easement across MWD-owned land.
Federal		
BLM	Grant of Right-of-Way and Temporary Use Permit	For gen-tie line construction and operation on BLM-administered land.
United States Fish & Wildlife Service	Biological Opinion	For compliance with Section 7 of the federal Endangered Species Act.

The Project is being pursued in accordance with land use plan amendments adopted by Riverside County. These include General Plan Amendment (GPA) 1080, which added Land Use Policy LU-15.15, stating: “Permit and encourage, in an environmentally and fiscally responsible manner, the development of renewable energy resources and related infrastructure, including but not limited to, the development of solar power plants in the County of Riverside.”

1.8.1 Related Federal Review and Consultation Requirements

The power produced by the Project would be conveyed to the statewide power grid via an overhead 220 kV gen-tie transmission line interconnecting to the SCE Red Bluff Substation, an existing substation located south of Interstate 10 (I-10) and approximately 1.1 miles south of the Project area on BLM-administered land. The portion of the 220 kV gen-tie transmission line outside of the solar facility would be located on 7 miles of federal lands managed by the BLM, Palm Springs-South Coast Field Office. Construction, operation, and maintenance of the gen-tie lines will be analyzed in this EIR and additionally in an Environmental Assessment (EA) under NEPA.

It is anticipated that BLM may rely upon the information contained in this EIR when it prepares the EA for its proposed actions under NEPA. However, such review would occur at a later date. While the BLM is being consulted in preparation of this document, the BLM is not participating as a joint preparer of this document, and the BLM is not circulating this document for comments.

1.9 Primary Contact Person

The primary contact person for this EIR is Jason Killebrew and his contact information is listed below:

Jason Killebrew, Planner
Riverside County Planning Department
4080 Lemon Street, 12th Floor, Riverside CA, 92501
Phone: (951) 955-0314, Fax: (951) 955-1811
Email: jkillebr@rivco.org

2. Description of the Proposed Project and Alternatives

2.1 Introduction

IP Athos, LLC (Applicant or Proponent), a subsidiary of Intersect Power, proposes to construct, operate and decommission the IP Athos Renewable Energy Project (Athos or Project), a utility-scale solar photovoltaic (PV) electrical generating and storage facility, and associated infrastructure to generate and deliver renewable electricity to the statewide electricity transmission grid.

The proposed Project is located on approximately 3,440 acres across 7 groups of non-contiguous parcels in the Desert Center area of Riverside County. The renewable energy facility sites would occupy approximately 3,224 acres of largely disturbed (retired agricultural), privately owned land, which would minimize ground disturbance and impacts to resources. The proposed solar facility would generate up to 500 megawatts (MW) of renewable energy and would include up to 500 MW of integrated energy storage capacity. The power produced by the Project would be conveyed to the statewide power grid via an overhead 220 kilovolt (kV) generation tie (gen-tie) transmission line interconnecting to the Southern California Edison (SCE) Red Bluff Substation, an existing substation located south of Interstate 10 (I-10) and approximately 1.1 miles south of the Project area on land administered by the Bureau of Land Management (BLM).¹

The portion of the 220 kV gen-tie transmission line outside of the solar facility would be located on 7 miles of federal lands managed by the BLM Palm Springs-South Coast Field Office. The remainder of the gen-tie lines would traverse approximately 4 miles of privately owned land, primarily on the solar facility sites.² BLM will perform a separate review of the Project under the National Environmental Policy Act (NEPA).

2.1.1 Overview of Solar Technology

Solar cells, also called PV cells, convert sunlight directly into electricity. PV gets its name from the process of converting light (photons) to electricity (voltage), which is called the “PV effect.” PV cells are located on panels, which are mounted at a fixed angle facing south or on a tracking device that follows the sun. Many solar panels on multiple rows combined together and controlled by a single motor create one system called a solar tracker. For large electric utility or industrial applications, hundreds of solar trackers are interconnected to form a utility-scale PV system.

2.1.2 Insolation

Insolation is a measure of solar radiation energy received on a given surface in a given time. It is commonly expressed as an average irradiance in watts per square meter (W/m^2) or kilowatt-hours per square meter per day ($kWh/m^2/day$). The region in which the proposed Project is located receives greater than 6.5 $kWh/m^2/day$ of solar radiation energy, giving it a higher degree of solar radiation than most areas within the United States (NREL, 2012).

¹ The term “Project area” refers to the proposed 500 MW solar PV facility, substations, collector lines, battery storage area, access/spur roads, and 11 miles of 220 kV gen-tie lines that would connect the solar facility to regional electric transmission grid at the Red Bluff Substation (approximately 3,440 acres). The term “solar facility site” is defined as the area within the Project Area boundary consisting of approximately 3,224 acres of privately-owned land across 7 groups of non-contiguous parcels on which the solar PV facility, substations, and battery storage area will be developed.

² Gen-Tie Segment #1 would cross 0.5 mile of land owned by the Metropolitan Water District of Southern California, which is public land, but is considered within the private land component for this analysis, as it is subject to CEQA.

2.2 Description of the Proposed Project

2.2.1 Project Location and Land Uses

The Athos Project is located in Riverside County, north of I-10 and approximately 4 miles east and north-east of the town of Desert Center, California. The Project consists of 65 parcels on private land listed in Table 2-1 for the solar facility, and 25 parcels located on BLM-administered and private land³ listed in Table 2-2 for the gen-tie lines. The 220 kV gen-tie line would be located north and south of the I-10 freeway to connect into the existing SCE Red Bluff 500/220 kV Substation. Figure 2-1 (Project Vicinity) illustrates the location of the proposed Project and its relationship to major highways, access roads, and cities. Figure 2-2 shows in the Project Area and indicates the individual parcels (property lines) listed in Table 2-2, as well as labels the 7 groups of non-contiguous parcels (Parcel Groups A through G). There are several existing structures (residential and other) on the proposed solar facility parcels.

The solar facility site is located within the County of Riverside's jurisdiction. The proposed Project would be constructed within an area covered by the Desert Center Area Plan primarily on land designated in the Plan as Agriculture and Open Space Rural (OS-RUR) with smaller areas zoned Public Facilities (PF; the designation for the previous Desert Center Airport, now the Chuckwalla Valley Raceway in Parcel Group B) and Agriculture (AG) in Parcel Group C. The majority of the site is zoned W-2-10 under the Riverside Zoning Ordinance, along with smaller areas zoned N-A, M-H and A-1-20. The proposed parcels consist of active and fallow agricultural land and some open space. The parcels are not within a Specific Plan area.

The 220 kV gen-tie line would traverse mainly BLM-administered public lands within the Riverside East Solar Energy Zone (SEZ) of BLM's Western Solar Plan, and within the Desert Renewable Energy Conservation Plan (DRECP) Development Focus Area (DFA). The Western Solar Plan and DRECP amended the California Desert Conservation Area (CDCA) Plan to allow for development of solar energy generation and appurtenant facilities (see Figure 2-3) on public lands in this specific area. A portion of the gen-tie line would also be sited within the Section 368 Federal Energy Corridor as established by the Westwide Energy Corridor Final Programmatic Environmental Impact Statement (PEIS) and Record of Decision. South of I-10 the gen-tie line would cross the Chuckwalla Area of Critical Environmental Concern (ACEC), paralleling an existing overhead transmission corridor.

The existing Desert Sunlight and approved Desert Harvest solar projects are northwest of the Project's northernmost parcels, the approved Palen Solar Project is located adjacent to the easternmost parcels of the Project, the proposed Victory Pass Solar Project is located directly to the west of the Project, and there are several other solar projects and associated gen-ties proposed on private and BLM-administered land in the area. To minimize disturbance and other environmental impacts, the proposed Athos gen-tie lines have been routed to most directly connect its Project substations and to parallel the gen-ties associated with other existing and proposed solar projects in the area to the maximum extent feasible. Figure 2-4 shows the proposed Athos Project in relation to other proposed solar facilities in the Desert Center area and illustrates the proposed consolidation of the gen-tie corridors. Figure 3.1-1 in Section 3.1 depicts all projects located in the vicinity of the Project.

³ Gen-Tie Segment #1 would cross 0.5 miles of land owned by the Metropolitan Water District of Southern California, which is public land, but is considered within the private land component for this analysis, as it is subject to CEQA.

Table 2-1. Solar Facility Parcels Legal Descriptions

Property Owner	APNs	Section(s)	Township & Range	USGS Quad
Ann R. Angelo, Claire Naples Eisinger, Raymond and Vincent M. Paglia	811-170-002	16NW¼ NW¼	T.5S, R.16E	Corn Springs
	811-180-001	17NE¼ NE¼		
Apollo Venture Partnership	807-191-004	31N½	T.5S, R.16E	East of Victory Pass
Castellanos	811-122-002	5S½	T.5S, R.16E	East of Victory Pass
	811-142-007	8N¼	T.5S, R.16E	
Chuckwalla Valley Associates, LLC	811-122-009	8NE¼ NE¼	T.5S, R.16E	East of Victory Pass
	811-142-015	9NW¼ NW¼		
	811-130-010	4SW¼ SW¼ SW¼		
	811-150-002	5SE¼ SE¼		
Cocopah Nurseries	810-110-001	19SE¼	T.5S, R.17E	Sidewinder Well
	810-110-006	30N½ NE¼ 29NW¼	T.5S, R.17E	
Conrado and Carmencita Castro	811-108-014	16NW¼SW¼ NE¼	T.5S, R.16E	Corn Spring
CP Land Holdings, LLC	811-142-006	8W½ NW¼	T.5S, R.16E	East of Victory Pass; Corn Spring
	811-180-013	16N½ NE¼		
David Caspers	811-180-024	16NW¼ SE¼	T.5S, R.16E	Corn Spring
Holcomb / Lawrence Powell	811-190-001 ²	21S½	T.5S, R.16E	Corn Spring
North Star Capital Development	811-142-005 ²	7NE¼	T.5S, R.16E	East of Victory Pass
Om Garg	811-260-013 ²	7S½	T.5S, R.16E	East of Victory Pass; Corn Spring
Philip Hu, Catherine Hu Zangrilli, & Vivian Hu Shen	811-180-002	16SW¼ NW¼	T.5S, R.16E	Corn Spring
	811-180-003	16SE¼ NW¼		
	811-180-004	16SW¼		
	811-180-005	16SW¼ SW¼		
Raul Lopez	811-170-013 ²	18N½	T.5S, R.16E	Corn Spring
Rltheary Chea	811-150-001	9SE½	T.5S, R.16E	Corn Spring
Robert Freedlander	811-170-009 ² 811-170-007 ² 811-170-008 ²	17W½ SW¼ ¹	T.4S, R.16E ¹	Corn Spring ¹
Southwest Conservancy III, LLC	811-122-001	6SE¼ SE¼	T.5S, R.16E	East of Victory Pass

Table 2-1. Solar Facility Parcels Legal Descriptions

Property Owner	APNs	Section(s)	Township & Range	USGS Quad	
VG Devco	807-680-001	807-690-027	30E $\frac{3}{4}$ 1	T.5S, R.16E ¹	East of Victory Pass ¹
	807-680-002	807-690-028			
	807-680-003	807-690-011			
	807-680-004	807-690-012			
	807-680-005	807-690-013			
	807-680-006	807-690-014			
	807-680-007	807-690-015			
	807-680-008	807-690-016			
	807-680-009	807-690-017			
	807-680-010	807-690-018			
	807-680-011	807-690-019			
	807-680-012	807-690-020			
	807-680-013	807-690-021			
	807-690-001	807-690-022			
	807-690-002	807-690-023			
	807-690-003	807-690-024			
807-690-004	807-690-025				
	807-690-026				

1: Applies to all APNs in the property.
 2: Gen-tie also located on this parcel.

Table 2-2. Gen-Tie Parcels Legal Descriptions

Segment	APNs	Section(s)	Township & Range	USGS Quad
Gen-Tie Segment #1	807-191-004 (private land) ²	31SE $\frac{1}{4}$,	T.4S, R.16E.; T.5S, R.16E.	Corn Spring East of Victory Pass
	807-191-030	5W $\frac{1}{2}$,		
	807-191-031 (private land) ³	7E $\frac{1}{2}$,		
	811-121-003 (private land)	18E $\frac{1}{2}$		
	811-121-007			
	811-122-005			
	811-142-006			
	811-122-001 (private land) ²			
	811-142-005 (private land) ²			
	811-260-013 (private land) ²			
Gen-Tie Segment #1 Alternative Route Option	807-191-030	31SE $\frac{1}{4}$,	T.4S, R.16E.; T.5S, R.16E.	East of Victory Pass
	811-121-003	5NW $\frac{1}{2}$,		
	811-121-007	7E $\frac{1}{2}$,		
	811-122-005	18E $\frac{1}{2}$		
	811-122-001 (private land) ²			
Gen-Tie Segment #2	811-170-013 (private land) ²	17SW $\frac{1}{4}$,	T.5S, R.16E.	Corn Spring
	811-170-011	18NE $\frac{1}{4}$ SE $\frac{1}{4}$,		
	811-170-009 (private land) ²	20N $\frac{1}{2}$,		
	811-180-004 (private land) ²	21SW $\frac{1}{4}$		
	811-180-005 (private land) ²			
	811-190-009			
	811-190-001 (private land) ²			

Table 2-2. Gen-Tie Parcels Legal Descriptions

Segment	APNs	Section(s)	Township & Range	USGS Quad
Gen-Tie Segment #3	810-110-001 (private land) ² 810-110-014 811-190-012 811-190-011 811-190-010 811-211-002 811-211-001 811-190-001 (private land) ²	21SE $\frac{1}{4}$, 22S $\frac{1}{2}$, 23S $\frac{1}{2}$, 24S $\frac{1}{2}$, 19SW $\frac{1}{4}$	T.5S, R.16E.; T.5S, R.17E.	Corn Spring Sidewinder Well
Gen-Tie Segment #4	811-190-001 (private land) ² 811-211-001, RW ¹ 811-212-001 811-221-001 ³	28, 33N $\frac{1}{2}$	T.5S, R.16E.	Corn Spring

Note: Parcels are located on BLM-administered public lands unless otherwise noted. Additional BLM-administered parcels may be required for access and spur road ROWs.

1 - "RW" indicates "Right-of-Way." Here, it applies to Interstate 10.

2 - Solar Facility also located on this parcel.

3 - Parcel owned by the Metropolitan Water District of Southern California

4 - Dependent on route into SCE's Red Bluff Substation.

2.2.2 Summary of Project Components

The proposed Project would consist of the following major components, which are described in greater detail in this section:

■ Solar Facility (3,224 total acres, private land)

- Solar array field that utilizes single-axis solar PV trackers.
- Inverters on a concrete pad or steel skid containing up to four inverters, a transformer, a battery enclosure, and a switchboard 8 to 11 feet high.
- System of 34.5 kV interior collection power lines located between inverters and substations, located either underground or installed overhead on wood poles.
- Up to 4 on-site substations, each approximately 150 feet long by 200 feet wide.
- One operation and maintenance (O&M) building, utilizing an existing house onsite or construction of a new building, approximately 3,000 square feet.
- Supervisory Control and Data Acquisition System (SCADA) and telecommunications facilities.
- Meteorological data collection system.
- Battery or flywheel storage system capable of storing up to 500 MW of electricity.
- Several interior access roads and a new access road in a disturbed area from Parcel Group A to State Route (SR) 177 (14 acres).

■ New 220 kV Gen-tie Line (approximately 11 miles, private and BLM-administered land)

- Approximately 3.4 miles of gen-tie lines would be located within the solar facility sites on private land.
- Outside of the solar facility boundaries, approximately 7 miles of gen-tie line would be placed within a 100-foot-wide right-of-way (ROW) on BLM-administered land (96 acres) and 0.75 miles of gen-tie line would be located on private land (15 acres). Additionally, approximately 86 acres of access and spur roads would be constructed or upgraded on BLM-administered land.

As part of the Project, the applicant is also seeking to vacate interior roadways and merge contiguous Project parcels (TPM37700 through TPM37705). Roads along the Project perimeter on the solar facility lands would remain dedicated public access. Additionally, a variance (VAR190001) may be required for all structures located within the N-A zone that would be higher than 20 feet and for structures in the W-2 zone that would exceed 105 feet.

2.2.3 Solar Facility

Photovoltaic Modules and Support Structures

The solar facility would include several million solar panels; the precise panel count would depend on the technology ultimately selected at the time of procurement. The ultimate decision for the panel types and racking systems described here would depend on market conditions and environmental factors, including the recycling potential of the panels at the end of their useful lives.

Types of panels that may be installed include thin-film panels (including cadmium telluride [CdTe or “cad tel”] and copper indium gallium diselenide [CIGS] technologies), crystalline silicon panels, or any other commercially available PV technology. Solar thermal technology is not being considered because the developer does not have the necessary experience to design and operate such a project, the technology is less competitive on price, and such projects tend to have more significant resource impacts.

The PV modules would be manufactured at an offsite location and transported to the Project site. Panels would be arranged in strings with a maximum height of 12 feet. Panel faces would be minimally reflective, dark in color, and highly absorptive.

Panels would be arranged on the site in solar arrays mounted on either fixed-tilt or tracking technology, depending on the PV panels ultimately selected. For single-axis tracking systems, the length of each row of panels would be approximately 350 feet along the north/south axis. For fixed-tilt systems, a row consists of multiple tables (4 panels high by 10 panels wide, depending on design), each table approximately 65 feet along the east/west axis, with 1 foot spacing between each table. Spacing between each row would be a minimum of 4 feet. The solar panel array would generate electricity directly from sunlight, collect the electricity to a single point at one of the Project substations, and interconnect it to the Red Bluff Substation.

Structures supporting the PV modules would consist of steel piles (e.g., cylindrical pipes, H-beams, or similar), which would be driven into the soil using pneumatic techniques, such as a hydraulic rock hammer attachment on the boom of a rubber-tired backhoe excavator. The piles typically would be spaced 10 feet apart. For a single-axis tracking system, piles typically would be installed to a reveal height of approximately 4 feet above grade, while for a fixed-tilt system the reveal height would vary based on the racking configuration specified in the final design. For single-axis tracking systems, following pile installation the associated motors, torque tubes, and drivelines (if applicable) would be placed and secured. Some designs allow for PV panels to be secured directly to the torque tubes using appropriate panel clamps. For some single-axis tracking systems, and for all fixed-tilt systems, a galvanized metal racking system, which secures the PV panels to the installed foundations, would be field-assembled and attached according to the manufacturer’s guidelines.

Fixed-tilt arrays would be oriented along an east-west axis with panels facing generally south. Tracking arrays would be oriented along a north-south axis with panels tracking east to west to follow the movement of the sun. The total height of the panel system measured from ground surface would be up to 12 feet. For fixed-tilt systems, the panels would be fixed at an approximate 20- to 60-degree angle or as otherwise determined necessary during final Project design.

Where excavations are required, the majority of proposed construction activities would be limited to less than 6 feet in depth; however, some excavations, such as those undertaken for the installation of collector poles and dead-end structures, may reach depths of 20 feet or more.

Inverters, Transformers, and Electrical Collection System

The Project would be designed and laid out primarily in 2 MW increments which would include an inverter equipment area measuring 40 feet by 25 feet. Non-conforming module blocks would be designed and sized as appropriate to accommodate the irregular shape of the Project footprint. The final module block increment sizes ultimately would depend on available technology and market conditions. Each 2 MW increment would include an inverter-transformer station constructed on a concrete pad or steel skid, and centrally located within the PV arrays. Each inverter-transformer station would contain up to four inverters, a transformer, a battery enclosure, and a switchboard 8 to 11 feet high. The pads would contain a security camera at the top of an approximately 20-foot pole. If required based on site meteorological conditions, an inverter shade structure would be installed at each pad. The shade structure would consist of wood or metal supports and a durable outdoor material shade structure (metal, vinyl, or similar). The shade structure would extend up to 10 feet above the top of the inverter pad.

Panels would be electrically connected into panel strings using wiring secured to the panel racking system. Underground cables would be installed to convey the direct current (DC) electricity from the panels via combiner boxes located throughout the PV arrays, to inverters to convert the DC to alternating current (AC) electricity. The output voltage of the inverters would be stepped up to the collection system voltage via transformers located in close proximity to the inverters. The 34.5 kV level collection cables would either be buried underground or installed overhead on wood poles.

If the collection system is installed overhead, some of the wood poles could be located at the outside edge of the property line, but a majority of these poles are expected to be located interior to the site. Approximately 300 to 500 wood poles located at 250-foot intervals could be installed across the entire site. The typical height of the poles would be approximately 30 to 50 feet, with diameters varying from 12 to 14 inches.

Project Substations and Switchyards

Up to 4 substations to transform or step up the voltage from 34.5 kV to 220 kV would be located across the sites, as shown in Figure 2-2 (Project Area). Switchyards to interconnect the generation and collector system would be co-located with some of the substations. The area of each substation and associated equipment would be approximately 37,500 square feet (150 feet by 250 feet). Each substation would collect consolidated intermediate voltage cables from the PV collector system. Electrical transformers, switchgear, and related substation facilities would be designed and constructed to transform medium-voltage power from the Project's delivery system to the 220 kV Red Bluff Substation. On rare occasion, a back-up generator may be required for use in the event of an outage of the substation's back-up distribution power source.

The internal arrangement for each substation would include:

- Power inverters and transformers with footings in pre-fabricated control buildings to enclose the protection and control equipment, including relays and low voltage switchgear (total of approximately 130 feet by 240 feet, and 90 to 110 feet high);
- Metering stand;
- Capacitor bank(s);

- Circuit breakers and air disconnect switches;
- One microwave tower adjacent to the control building comprising a monopole structure up to 100 feet in height mounted with an antenna up to 5 feet in diameter; and
- Dead-end structure(s) up to 80 feet in height to connect the Project substation(s) to the Red Bluff Substation.

The substation area would be graded and compacted to an approximately level grade. Concrete pads would be constructed on site as foundations for substation equipment, and the remaining area would be graveled to a maximum depth of approximately 6 inches. Because each of the substation transformers would contain mineral oil, the substations would be designed to accommodate an accidental spill of transformer fluid by the use of containment-style mounting. Each substation would be surrounded by an up-to 6-foot high chain link fence topped with one foot of barbed wire. Each of the dead-end structures would require foundations excavated to a depth of 20 feet or more.

Operation and Maintenance Building

During O&M, the Applicant may use one of the homes that currently exists on the solar facility site, or it may use an existing homes' septic system and build a new O&M building. The facility would be designed for Project security, employee offices, and parts storage. If a new O&M building is constructed, the O&M building would be approximately 3,000 square feet in size and approximately 15 feet at its tallest point, which would accommodate operation and maintenance staff. The O&M building would be constructed on a concrete foundation and in compliance with all applicable County development ordinances, such as County Ordinance No. 671 (Establishing Consolidated Fees for Land Use and Related Functions) and County Ordinance No. 749 (Surcharge to Apply to All Fees and Charges Collected Under Ordinance No. 671).

SCADA and Telecommunications Facilities

The facility would be designed with a comprehensive Supervisory Control and Data Acquisition System (SCADA) system to allow remote monitoring of facility operation and/or remote control of critical components. The fiber optic or other cabling required for the monitoring system typically would be installed in buried conduit, leading to a SCADA system cabinet centrally located within the Project site or a series of appropriately located SCADA system cabinets constructed within the O&M building. External telecommunications connections to the SCADA system cabinets could be provided through wireless or hard-wired connections to locally available commercial service providers, but they are not anticipated as part of the Project at this time.

The Project's SCADA system would interconnect to this fiber optic network at the Red Bluff Substation, and no additional disturbance associated with telecommunications is anticipated.

Energy Storage System

Energy storage systems can assist grid operators in more effectively integrating intermittent renewable resources into the statewide grid and can assist utilities in their efforts to meet energy storage goals mandated by the CPUC. The Project could include, at the Applicant's option, a battery or flywheel storage system capable of storing up to 500 MW of electricity. If provided, the storage system would consist of battery or flywheel banks housed in electrical enclosures and buried electrical conduit. The battery system would either be concentrated near the Project substations or dispersed throughout the solar facility sites.

Up to 3,000 electrical enclosures measuring approximately 40 feet by 8 feet by 8.5 feet high would be installed on concrete foundations designed for secondary containment. The Project could use any commercially available battery technology, including but not limited to lithium ion, lead acid, sodium sulfur and sodium or nickel hydride. Battery systems are operationally silent, and flywheel systems have a noise rating of 45 dBA.

Meteorological Data Collection System

The Project would include a meteorological (met) data collection system with approximately 15 met stations throughout the Project area. Each met station would be approximately 20 feet tall and would have multiple weather sensors: a pyranometer for measuring solar irradiance, a thermometer to measure air temperature, a barometric pressure sensor, and wind sensors to measure speed and direction. The 4-foot horizontal cross-arm of each met system would include the pyranometer mounted on the left-hand side and the two wind sensors installed on a vertical mast to the right. The temperature sensor would be mounted inside the solar shield behind the main mast. Each sensor would be connected by cable to a data logger inside the enclosure.

Solar Facility Site Security, Fencing and Lighting

Controlled Access

Multiple points of ingress/egress would be accessed via locked gates located at multiple points. Each Project unit would have at least one point of access.

Fencing

The solar facility would be enclosed with fencing that meets National Electric and Safety Code (NESC) requirements for protective arrangements in electric supply stations. The boundary of the Project sites would be secured by up-to 6-foot-high chain-link perimeter fences, topped with one foot of three strand barbed wire, or as dictated by Riverside County specifications. If required by a regulatory agency, site fencing would also adhere to U.S. Fish and Wildlife Service (USFWS) design guidelines (USFWS, 2009) to exclude desert tortoise from the Project site. The fence would typically be set approximately 100 feet from the edge of the array.

Lighting

Motion sensitive, directional security lights would be installed to provide adequate illumination around the substation areas, each inverter cluster, at gates, and along perimeter fencing. All lighting would be shielded and directed downward to minimize the potential for glare or spillover onto adjacent properties.

Exterior lighting would be required to comply with current Title 24 regulations from the State of California and would be coordinated with the California Department of Transportation (Caltrans) to comply with exterior lighting regulations along Interstate 10. Lighting would also comply with County Ordinance 655 (Regulating Light Pollution) and County Ordinance 915 (Regulating Outdoor Lighting).

All structures would be lower than the 200-foot height standard that triggers Federal Aviation Administration Part 77 Obstruction Evaluation Consultation, so no aviation lighting is required.

The proposed Project area is located approximately 89 miles east of the Mt. Palomar Observatory, which far exceeds the distance to the Observatory's areas of sensitivity (Zone A at a 15-mile radius and Zone B at a 45-mile radius from the Observatory).

Other Security Measures

No nighttime activities are anticipated during operation of the Athos Project; however, off-site security personnel could be dispatched during nighttime hours or could be on-site, depending on security risks and operating needs. Infrared security cameras, motion detectors, and/or other similar technology would be installed to allow for monitoring of the site through review of live footage 24 hours a day, 7 days a week. Such cameras or other equipment would be placed along the perimeter of the facility and/or at the inverters. Security cameras located at the inverters would be posted on poles approximately 20 feet high.

2.2.4 220 kV Gen-tie Transmission Line

IP Athos LLC proposes to construct approximately 11 miles of 220 kV gen-tie transmission lines (including 7 miles on BLM administered lands) to connect the Project's substations to the SCE Red Bluff Substation in the following 4 segments (see Figure 2-2, Project Area):

- **Gen-Tie Segment #1** (2.5 miles, including 0.8 miles of BLM-administered land): Gen-Tie Segment #1 would extend for a total of 2.5 miles due south from the Project substation located at the southern end of the northernmost group of solar facility parcels (Parcel Group A). After leaving the solar facility site substation, which is located on private land, Gen-Tie Segment #1 would cross BLM-administered land for approximately 0.2 miles, 0.75 miles of land owned by the Metropolitan Water District, and an additional 0.5 miles of BLM-administered land and SR-177, before entering the solar facility site on private land. Gen-Tie Segment #1 would travel south across the solar facility site for approximately 1 mile before entering the Project substation and joining Gen-Tie Segment #2 in Parcel Group C.
- **Gen-Tie Segment #2** (3.5 miles, including 1.2 miles of BLM-administered land): Gen-Tie Segment #2 would travel south from Project substation and switchyard across solar facility parcels in Parcel Group C for 0.5 miles. At the southern end of the parcel, Gen-Tie Segment #2 would turn east, briefly traversing BLM-administered land in order to cross the northern edge of a non-contiguous solar facility parcel for 0.3 miles (Parcel Group D). Gen-Tie Segment #2 would then continue east and traverse BLM-administered land for 0.7 miles until it would turn south at the southernmost central solar facility parcel, which is on private land (Parcel Group E). The gen-tie line would travel to the south, along the western boundary of the solar facility parcel for 0.5 miles, and then would once again traverse BLM land for 0.5 miles. Upon reaching the southernmost central solar facility parcel (Parcel Group F), the route would continue traveling along the western boundary of the solar facility parcel for 0.5 miles before it would turn east, traveling along the southern boundary of the parcel for 0.5 miles to where it would join Gen-Tie 4 at the solar facility substation, approximately 1.1 miles north of the Red Bluff Substation.
- **Gen-Tie Segment #3** (4 miles, all on BLM-administered land): Gen-Tie Segment #3 would extend from the Project substation located at the western end of the easternmost group of solar facility parcels (Parcel Group G) for approximately 4 miles to the west across BLM-administered land adjacent to or collocated with the Palen Solar Project's proposed transmission line into the Project substation at the southern boundary of the south-central solar facility site parcel (Parcel Group F). Here Gen-Tie Segment #3 would join Gen-Tie Segment #4, approximately 1.1 miles north of the Red Bluff Substation.
- **Gen-Tie Segment #4** (1.1 miles, all on BLM-administered land): Gen-Tie Segment #4 would extend for 1.1 miles adjacent to the Desert Sunlight existing 220 kV transmission line and the proposed Palen gen-tie line due south from the Project substation located on the south-central solar facility site parcel (Parcel Group F), crossing Interstate 10 and terminating at SCE's existing Red Bluff 500/230 kV Substation. After leaving the solar facility site substation, which is located on private land, Gen-Tie Segment #4 would be located entirely on BLM-administered land. Gen-Tie Segment #4 would also parallel the proposed gen-tie for the Palen Solar Project into Red Bluff Substation.

The Project gen-tie lines would be located within a 100-foot right-of-way (ROW), and would be constructed with either monopoles, lattice steel structures, or wooden H-frame poles. For the overhead gen-tie line, structure foundations would be excavated to a depth of 35 feet or more and include concrete supports depending on final engineering. Gen-tie structures would be on average 90 feet tall, with a minimum height around 30 feet and a maximum height up to approximately 120 feet. Given the structure heights, a variance may be required within certain zoning areas. The total number of gen-tie support structures would be up to 120 structures. A 3-phase 220 kV conductor would be strung along the gen-tie line, and the line would be equipped with a ground wire and a telecommunications fiber-optic cable. See Figure 2-5 for a depiction of typical 220 kV gen-tie structures.

2.2.5 Access Roads

Access to the Project site would be provided from SR-177. A new east-west access road from SR-177 to Parcel Group A would be constructed, along with shorter new access road segments, as needed, in order to provide primary and some secondary access to Parcel Groups B through G. In some cases, access would be via improved existing BLM open routes and agricultural roads, rather than new route construction. If building structures, such as the O&M Building, and associated access roadways would be within 1,320 feet of SR-177, secondary access is not required by the Riverside County Fire Department.

All new and improved access roads would be 24 feet wide with a two-foot-wide shoulder on each side, for a total width of approximately 30 feet, including allowances for side slopes and surface runoff control. Construction of the access road segments would include compacting subsurface soils and placing a four-inch-thick layer of asphalt concrete over a 6-inch-thick layer of compacted aggregate base. Design of all access roads would be consistent with County Transportation Department requirements, such as County Ordinance 461 (Road Improvement Standards and Specifications).

The Project's on-site roadway system would include a perimeter road, access roads, and internal roads. The perimeter road and main access roads would be approximately 20 feet wide and constructed to be consistent with facility maintenance requirements and County standards and the gate would be 24 feet wide. These roads would be surfaced with gravel, compacted dirt, or another commercially available surface and would provide a fire buffer, accommodate Project O&M activities such as cleaning of solar panels, and facilitate on-site circulation for emergency vehicles.

Internal roads would have permeable surfaces and be approximately 16 feet in width or as otherwise required by County standards. They would be treated to create a durable, dustless surface for use during construction and operation. This would not involve lime treatment but would likely involve surfacing with gravel, compacted native soil, or a dust palliative.

Appendix B (Site Plan) illustrates the proposed access roads to the solar facility site from SR-177, as well as interior dirt access roads within the solar facility site. The site plan also shows preliminary drainage basins and laydown areas, which will be finalized based on detailed hydrologic modeling. The final layout may include panels covering a larger area of the site plan within the parcels identified in Table 1.

2.2.6 Water Requirements

Water for construction-related dust control and operations would be obtained from one or more of several potential sources, including an on-site or off-site groundwater well, or trucked from an offsite water purveyor.

During the construction phase, it is anticipated that a total of up to 500 acre-feet would be used for dust suppression (including truck wheel washing) and other purposes during the 30-month construction

timeframe. During construction, restroom facilities would be provided by portable units to be serviced by licensed providers.

During the operation and maintenance phase water would be required for panel washing and maintenance, and for substation restroom facilities. During operation, the Project would require panel washing up to four times per year resulting in the use of approximately 15 to 40 acre-feet annually for panel washing and other uses. No solvents or chemicals would be used to clean the panels and no wastewater would be generated during panel washing as water would be absorbed into the surrounding soil or would evaporate. Water would be sourced from an onsite well or trucked in from another source, such as a nearby well or a municipal water supplier (e.g., Riverside 51 in Desert Center).

2.2.7 Waste Generation

Construction of the Project would involve the use of small amounts of hazardous materials, such as fuels and greases to fuel and service construction equipment. Such substances may be stored in temporary aboveground storage tanks or sheds located on the Project site. The fuels stored on-site would be in a locked container within a fenced and secure temporary staging area. As there would be regulated hazardous materials onsite, storage procedures would be dictated by a Hazardous Materials Business Plan that would be developed prior to construction. Spill prevention measures and secondary containment would be implemented as part of the Project where warranted; however, strict compliance under 40 CFR 112 or CWA Section 311 would not be required, because there would be no discharges to waters of the U.S. (i.e., navigable waterways or shorelines).

Trucks and construction vehicles would be serviced from off-site facilities. The use, storage, transport, and disposal of hazardous materials used in construction of the facility would be carried out in accordance with federal, state, and county regulations. No extremely hazardous substances (i.e., those governed pursuant to Title 40, Part 335 of the Code of Federal Regulations) are anticipated to be produced, used, stored, transported, or disposed of as a result of Project construction. Material Safety Data Sheets for all applicable materials present on-site would be made readily available to on-site personnel.

Construction materials would be sorted on-site throughout construction and transported to appropriate waste management facilities. Recyclable materials would be separated from non-recyclable items and stored until they could be transported to a designated recycling facility. It is anticipated that at least 20 percent of construction waste would be recyclable, and 50 percent of those materials would be recycled. Wooden construction waste (such as wood from wood pallets) would be sold, recycled, or chipped and composted. Other compostable materials, such as vegetation, might also be composted off-site. Non-hazardous construction materials that cannot be reused or recycled would likely be disposed of at municipal county landfills. Hazardous waste and electronic waste would not be placed in a landfill, but rather would be transported to a hazardous waste handling facility (e.g., electronic-waste recycling). All contractors and workers would be educated about waste sorting, appropriate recycling storage areas, and how to reduce landfill waste.

2.2.8 Fire Safety

Fire protection would be provided to limit risk of personnel injury, property loss, and possible disruption of the electricity generated by the Project. Fire protection would include minimizing flammable materials in the solar field, such as vegetation.

A Fire Management and Prevention Plan would be prepared for construction, operation, and decommissioning of the facility. The plan would include measures to safeguard human life, preventing personnel

injury, preserve property and minimize downtime due to fire or explosion. Of concern are fire-safe construction, reduction of ignition sources, control of fuel sources, availability of water, and proper maintenance of firefighting systems. The plan would be coordinated with the Riverside County Fire Department and BLM Fire Management Officer.

During construction, a fire suppression system may be placed in service if required by Riverside County Fire Department or BLM Fire. In addition, standard defensible space requirements would be maintained surrounding any welding or digging operations. Fire extinguishers and other portable fire-fighting equipment would be available onsite, as well as additional water for use at the on- or off-site O&M facility. These fire extinguishers would be maintained for the full construction duration in accordance with local and federal Occupational Safety and Health Administration (OSHA) requirements.

Locations of portable fire extinguishers would include, but not be limited to, office spaces, hot work areas, flammable storage areas, and mobile equipment such as work trucks and other vehicles. Fire-fighting equipment would be marked conspicuously and be accessible. Portable equipment would be routinely inspected, as required by local and federal laws, ordinances, regulations, and standards, and replaced immediately if defective or needing charge.

Fire Safety during operations is further discussed in Section 2.4.4 (Fire Safety During Operations).

2.3 Construction Activities

2.3.1 Construction Schedule and Workforce

Solar Facility

Construction is anticipated to occur over a 30-month period with construction activities occurring simultaneously. The Project may be phased. The on-site workforce would consist of laborers, craftsmen, supervisory personnel, supply personnel, and construction management personnel. The on-site workforce is expected to reach its peak of approximately 530 individuals with an average construction-related on-site workforce of 320 individuals. The construction workforce would largely be recruited from within Riverside and San Bernardino Counties. Certain non-local specialty trade workers supporting proprietary plant equipment/components and construction processes may also be employed on a short-term basis during construction.

Construction would begin with pre-construction surveys, construction of the main access road, security fencing around solar facility site, biological resource exclusion (on site groups where desert tortoise are found to be present), clearing and construction of a laydown yard, site grading and preparation, construction of the O&M building, parking area, and pad mounts for transformers. Construction would continue with the installation of temporary power, construction of on-site roads, construction of the Project substation, and assembly and installation of panel blocks and wiring.

In accordance with the County Ordinance 847 (Regulating Noise in Riverside County), construction equipment would operate Monday through Friday between the hours of 6:00 a.m. to 6:00 p.m. during the months of June through September and 7:00 a.m. to 6:00 p.m. during the months of October through May, for up to a maximum of 8 hours per piece of equipment, daily. Weekend construction work is not expected to be required, but may occur on occasion, depending on schedule considerations.

Generation-Tie Line

Gen-tie construction would occur over a 6-month period and may be phased based on the anticipated 30-month construction of the proposed solar facility. Gen-tie work would begin with geotechnical borings

at structure locations on BLM-administered land (2 field days) and approximately 2 months of testing and final design, followed by 3 months of construction activities. Once the gen-tie line is installed, restoration of temporary disturbance areas would take approximately 1 month.

Of the total workforce described above for the solar facility, an average of approximately 20 individuals would be associated with the gen-tie line construction. The typical work force for line construction would be approximately two crews consisting of 5 to 10 individuals on each crew. On the days that the conductor is installed and sagged, the gen-tie line workforce could be as large as four crews consisting of 10 individuals per crew for a total of 40 workers. During line work, crews would typically be working at adjacent structures. During wire stringing activities, two crews would be working at different work areas but typically no more than 2 miles apart.

2.3.2 Pre-construction Activities

Prior to construction activities at the Project site and along the gen-tie alignment, a number of activities would be undertaken to prepare the site and crews for construction. These pre-construction activities are listed below.

Pre-Construction Surveys

Qualified biologists would conduct pre-construction surveys for sensitive species. Sensitive resource areas would be flagged so they are avoided or appropriately managed during construction.

Gen-Tie Geotechnical Evaluation

The Applicant would conduct a geotechnical evaluation to gather information on the physical properties of the soil and rock for the gen-tie line on BLM-administered land for incorporation into the design of the gen-tie line. The subsurface scientific testing and analysis would include geotechnical borings, trenching, and pile testing along the routes.

Geotechnical evaluations have already been performed and incorporated into Project design of the solar facility and energy storage system.

Construction Crew Training

Prior to construction, all contractors, subcontractors, and Project personnel would receive Worker Environmental Awareness Program (WEAP) training regarding the appropriate work practices necessary to effectively understand and implement the biological commitments in the project description; implement the mitigation measures; comply with applicable environmental laws and regulations; avoid and minimize impacts; and understand the importance of these resources and the purpose and necessity of protecting them. The following species and their habitat would be specifically covered in the WEAP: desert tortoise, burrowing owl, other raptors and migratory birds, American badger, and desert kit fox. Applicable sensitive plant species would also be covered in the WEAP.

Surveying, Staking, and Flagging

Pre-construction field survey work would include identifying precise locations of the site boundary, desert tortoise and security fence, and gen-tie ROW boundary. These features would be subsequently staked in the field. No paint or permanent discoloring agents would be applied to rocks or vegetation to indicate survey or construction limits. All off-road vehicle travel across BLM-administered land would be monitored by qualified biologists, archaeologists, and tribal monitors, as appropriate.

Desert Tortoise Fence Installation

A desert tortoise exclusion fence, if required by a regulatory agency, would be installed per the USFWS protocol. The permanent desert tortoise fence would be integrated with the site security fence for maximum durability. Fence installation would be monitored by qualified biologists, archaeologists, and tribal monitors, as appropriate. Following installation, clearance surveys would be conducted.

Biological Clearance Surveys

Desert tortoise, mammal, and burrowing owl clearance surveys would be conducted following fence installation. Mammals and owls would be passively relocated using one-way doors or other techniques. Desert tortoise individuals would be moved off-site, “out of harm’s way,” or actively translocated to an approved site pursuant to an approved Translocation Plan to be developed in consultation with USFWS and the California Department of Fish and Wildlife (CDFW).

Establishment of Construction Staging Area

Several staging areas would be established within the solar facility site boundaries for storing materials, construction equipment, and vehicles. The staging area would be surveyed and monitored by qualified biologists, archaeologists, and tribal monitors, as appropriate.

2.3.3 Construction Phase 1: Site Preparation

Construction-Related Grading and Vegetation Management

Since most of the site has nearly level to gently sloping topography, no mass grading would be required; however, much of the solar facility would be impacted by some form of ground disturbance, either from compaction, micro-grading, or disc-and-roll grading. Some of the parcels where facilities and arrays would be located would require light grubbing for leveling and trenching. The existing date palm trees would be removed from Parcel Group G, which would require grubbing to ensure that the roots are removed. Most of the roots would be less than 6 feet deep since date palm roots primarily extend horizontally and there is no tap root. Following removal, the date trees may be mulched and spread across the solar facility site. After grubbing and light grading, construction of staging areas would occur.

Access road beds would also be grubbed, graded, and compacted; however minimal grading is anticipated. The site cut and fill would be approximately balanced; minimal import/export would be necessary. On-site pre-assembly of trackers would take place in the staging area.

Erosion and Sediment Control and Pollution Prevention

A Storm water Pollution Prevention Plan (SWPPP) or SWPPP-equivalent document would be prepared by a qualified engineer or erosion control specialist and would be implemented before and during construction. The SWPPP would be designed to reduce potential impacts related to erosion and surface water quality during construction activities and throughout the life of the Project. It would include Project information and best management practices (BMP). The BMPs would include storm water runoff quality control measures, concrete waste management, storm water detention, watering for dust control, and construction of perimeter silt fences, as needed.

2.3.4 Construction Phase 2: Photovoltaic Panel System

The structure supporting the PV module arrays would consist of steel piles (e.g., cylindrical pipes, H-beams, or similar), which would be driven into the soil using pneumatic techniques, similar to a hydraulic

rock hammer attachment on the boom of a rubber-tired backhoe excavator. The piles typically are spaced 10 feet apart. For a single-axis tracking system, piles typically would be installed to a reveal height of approximately 4 feet above grade, while for a fixed-tilt system the reveal height would vary based on the racking configuration specified in the final design. For single-axis tracking systems, following pile installation the associated motors, torque tubes, and drivelines (if applicable) would be placed and secured. Some designs allow for PV panels to be secured directly to the torque tubes using appropriate panel clamps. For some single-axis tracking systems and for all fixed-tilt systems, a galvanized metal racking system, which secures the PV panels to the installed foundations, would then be field-assembled and attached according to the manufacturer's guidelines.

2.3.5 Construction Phase 3: Inverters, Transformers, Substations and Electrical Collector System

Underground cables to connect panel strings would be installed using ordinary trenching techniques, which typically include a rubber-tired backhoe excavator or trencher. Wire depths would be in accordance with local, State, and Federal requirements, and would likely be buried at a minimum of 18 inches below grade, by excavating a trench approximately 3 to 6 feet wide to accommodate the conduits or direct buried cables. After excavation, cable rated for direct burial or cables installed inside a polyvinyl chloride (PVC) conduit would be installed in the trench, and, the excavated soil would likely be used to fill the trench and lightly compressed. All cabling excavations would be to a maximum depth of 10 feet.

All electrical inverters and the transformer would be placed on concrete foundation structures or steel skids. In lieu of steel skids or pre-cast concrete foundations, foundations for the transformer and inverter locations would be formed with plywood, and reinforced with structural rebar. Commissioning of equipment would include testing, calibration of equipment, and troubleshooting. The substation equipment, inverters, collector system, and PV array systems would be tested prior to commencement of commercial operations. Upon completion of successful testing, the equipment would be energized.

The substation areas would be excavated for the transformer equipment and control building foundation and oil containment area. The site area for the substations would be graded and compacted to an approximately level grade. Foundations for the substation would be formed with plywood and reinforced with structural rebar. Concrete pads would be constructed as foundations for substation equipment, and the remaining area would be graveled. Concrete for foundations would be brought to the site from a batching plant in Blythe or would be batched on site as necessary.

2.3.6 220 kV Gen-Tie Line Construction

Since most of the site has nearly level to gently sloping topography, no grading would be required for the gen-tie structures; however, some light grubbing may be required to clear vegetation from an approximately 12,500 square-foot area (0.3 acres) where the structure would be erected and selectively in some work areas, as needed.

As discussed in Section 2.2.4, the Project gen-tie lines would be constructed with either monopoles, lattice steel structures, or wooden H-frame poles. Structure heights and corresponding span lengths would meet Federal Aviation Administration (FAA) requirements for the nearby Desert Center Airport. Structure installation would consist of the following basic steps:

- Deliver new structure to structure site;
- Auger new hole using line truck attachment to a depth of up to 35 feet and include concrete supports depending on final engineering;

- Pour concrete foundation;
- Install bottom section by line truck, crane, or helicopter; and
- Install top section(s) by line truck, crane, or helicopter, if required.

Once poles are erected, the conductor will be strung from conductor pull and tension sites at the end of the power line interconnection alignment moving from one pole to the next. Each conductor will be pulled into place at a pre-calculated sag and then tension-clamped to the end of each insulator. The sheaves and vibration dampers and accessories will be removed once installation is complete. The average distance is approximately 4,000 feet between pull and tension sites.

The line may also be equipped with optical ground wire (OPGW), which would serve as a ground wire and a telecommunication link. Alternately, telecommunications fiber optic cable may be installed in a small trench within the access roads with no new surface disturbance anticipated.

Prior to pulling and tensioning, workers would install temporary guard structures where the line crosses public roadways, existing transmission lines or other obstacles to prevent sock line or conductors from dropping onto the road or object. Guard structures consist of H-frame wood pole structures placed on either side of the obstacle and would follow the same procedures for installation as described for the 220 kV structures above. Guard structures may not be required on small roads; on such occasions, other safety measures such as barriers, flagmen or other traffic control are used.

2.3.7 Construction Site Stabilization and Restoration

Following the completion of major construction, the Project site would be revegetated for the operations phase pursuant to an approved Vegetation Management Plan. The Plan would describe the Applicant's strategy to minimize adverse effects of the Project on native vegetation, soils, and habitat, while recognizing that the mitigation for these impacts is the acquisition and long-term protection of off-site vegetation and habitat, or the restoration and enhancement of degraded lands, or a combination of these two methods. Where necessary, native re-seeding or vertical mulching techniques would be used. However, it is anticipated that many species will regenerate post construction since no large-scale grading is proposed.

2.3.8 Construction Access, Equipment, and Traffic

All materials for the Project's construction would be delivered by truck. The majority of truck traffic would occur on designated truck routes and major streets. Flatbed trailers and trucks would be used to transport construction equipment and construction materials to the site. Project components would be assembled on-site. Traffic resulting from construction activities would be temporary and could occur along area roadways as workers and materials are transported to and from the Project site. Materials deliveries during construction would travel up to 150 miles one way from source to the Project site.

During construction, an average of 320 workers per day would commute to the Project site with a maximum of 530 workers during peak construction. In addition, an estimated 40 roundtrips per day would be required to deliver materials and equipment to the Project site.

2.3.9 Post-Construction Cleanup

Construction sites would be kept in an orderly condition throughout the construction period by using approved enclosed refuse containers. All refuse and trash would be removed from the sites and disposed of in accordance with BLM (for the gen-tie lines) and other applicable regulations. No open burning of construction trash would occur. All vegetation that may interfere with equipment would be trimmed and removed using manual non-mechanical means or sprayed with an approved herbicide, as necessary.

Based on the aridity of the Project area and the overall low densities of vegetation present, it is not likely that vegetation would encroach upon structures so that access would become impaired. However, noxious weeds and other nonnative invasive plant species could create a fire hazard if allowed to become established, and invasive weeds could also become problematic from an ecological perspective. Therefore, weed control activities would be implemented within the Project limits.

Weed control activities would include both mechanical and herbicide control methods. Mechanical control activities include chaining, disking, grubbing, and mowing using tractors or other heavy equipment, as necessary.

On BLM-administered land (gen-tie component only), herbicide control would involve the use of BLM-approved herbicides to control weed populations when manual control methods are not successful in managing the spread of invasive plants. No pest control or rodenticides would be used on BLM-administered land.

All weed control using herbicides and adjuvants would be conducted in compliance with California BLM-approved chemicals (including manufacturer application rates and use) as identified in the BLM's 2007 PEIS for vegetation management using herbicides (BLM, 2007) and updated in Information Bulletin No. 2012-022 (December 2011). The process for treatments would be characterized in a Weed Management Plan followed by a Pesticide Use Proposal (PUP) for specific chemical treatments, both approved by the BLM. Herbicides would likely be necessary to control the spread of invasive weeds following construction disturbance as part of an integrated pest management strategy. All components of the weed management approach would comply with the requirements of the Record of Decision for the 2007 Vegetation Treatments PEIS. Herbicide control on BLM-administered land would include the following:

- Use of Monsanto Corporation glyphosate products, including Roundup PRO[®] or AquaMaster[®] herbicides, with Roundup PRO applied in the upland portions of the ROW and AquaMaster applied in the potentially jurisdictional waters of the State or drainages.
- Triclopyr (Garlon[®]) from Dow Agrosiences may be used as an alternative treatment chemical if needed, and would be applied at the manufacturer's recommended typical application rate.
- Herbicide would be applied by hand from a backpack sprayer or a truck-mounted spray rig. The truck mounted spray rig would use individual lines that are applied by hand directly to individual plants and would not use a truck-mounted boom sprayer, or any broadcast type sprayer. Non-toxic dye would be added to the mixture to mark areas that have already been treated, thereby avoiding over-application.
- The maximum rate of application for Roundup would be 10.6 quarts per acre per year, and for AquaMaster would be 8 quarts per acre per year.
- The intended rate of application is 2% solution for Roundup and 1.5% solution for AquaMaster.
- The maximum rate of application for Garlon 4 would be 2 gallons per acre per year.
- The pound of active ingredient or acid equivalent would be 8 pounds per acre per year.
- Application dates would be intended to cover the entire period of the ROW grant, beginning during the construction phase, if needed.
- Treatments would be as needed, upon emergence of the target weed species during the growing season. Growing seasons are typically during the winter months (November to April), but may include the summer months (July to September) if summer rainfall is sufficient to germinate target weed species during those months.

- The total number of applications would depend on the extent of weed infestation within the disturbance area, but it is expected that three or more treatment efforts may be required per year. Treatment efforts may be defined as one round of complete coverage for the entire gen-tie ROW within BLM lands. Rainfall amounts would determine the number of treatment efforts that would be needed, but it is assumed that there would be weed control visits conducted no more than once a month during the winter/spring season. Based on these basic assumptions (three visits per year), there is the potential for approximately 105 annual treatments for the gen-tie ROW during a 35-year period.
- The primary nonnative species to be targeted are Saharan mustard (*Brassica tournefortii*), Russian thistle (*Salsola tragus*), Mediterranean grass (*Schismus barbatus*), and filaree (*Erodium* spp.). If additional nonnative plant species are identified during monitoring, these would also be targeted for control efforts.
- Crew members who conduct weed treatment in the Project area would have extensive experience working around sensitive habitats and species. In addition, crews would be monitored by a restoration ecologist and a desert tortoise monitor. Weed control would be specifically applied to individual plants and not sprayed broadly across the Project area.
- Crews would work under the direct supervision of a licensed Certified Pesticide Applicator.
- Crews would adhere to strict application guidelines when applying herbicide during wind to minimize drift and chemical contact with non-target vegetation or wildlife. Herbicide application would be suspended if winds are in excess of 6 miles per hour, or if precipitation is occurring or imminent (predicted within the next 24 hours).
- The chemicals chosen (glyphosate and triclopyr or a similar alternative) have been identified for use due to low likelihood of toxicity to wildlife species, in particular Agassiz's desert tortoise, as analyzed in BLM's 2007 Vegetation Treatments PEIS. There is a potential for ingestion of recently treated plants, but an on-site restoration ecologist and tortoise monitors would minimize this risk. After treatment, the herbicide would dry rapidly in the desert environment and the risk would be further minimized.

On private land, the same potential herbicides would be used in accordance with label instructions and as needed.

2.4 Operation and Maintenance

2.4.1 Operation and Maintenance Activities

Upon commissioning, the Project would enter the operation phase. The solar modules at the site would operate during daylight 7 days a week, 365 days a year. Operational activities at the Project site would include:

- Solar module washing;
- Vegetation, weed, and pest management;
- Security;
- Responding to automated electronic alerts based on monitored data, including actual versus expected tolerances for system output and other key performance metrics; and
- Communicating with customers, transmission system operators, and other entities involved in facility operations.

2.4.2 Operation and Maintenance Workforce

Up to 10 permanent staff could be on the site at any one time for ongoing facility maintenance and repairs. Alternatively, approximately 2 permanent staff and 8 Project operators would be located off-site and would be on call to respond to alerts generated by the monitoring equipment at the Project site. Security personnel would be on-call. The O&M building would house the security monitoring equipment, inclusive of security cameras feeds for monitoring the Project 24-hours per day.

2.4.3 Site Maintenance

The Project site maintenance program would be largely conducted on-site during daytime hours. Equipment repairs could take place in the early morning or evening when the plant would be producing the least amount of energy. Key program elements would include maintenance activities originating from the on-site O&M facility.

Maintenance typically would include panel repairs; panel washing; maintenance of transformers, inverters, energy storage system, and other electrical equipment as needed; road and fence repairs; and weed management.

On-site vegetation would be managed to ensure access to all areas of the site and to screen Project elements as needed. Solar modules would be washed as needed (up to four times each year) using light utility vehicles with tow-behind water trailers, as needed, to maintain optimal electricity production. No chemical cleaners would be used for module washing.

No heavy equipment would be used during normal operation. O&M vehicles would include trucks (pickup and flatbed), forklifts, and loaders for routine and unscheduled maintenance and water trucks for solar panel washing. Large heavy-haul transport equipment may be brought to the solar facility infrequently for equipment repair or replacement.

Long-term maintenance schedules would be developed to arrange periodic maintenance and equipment replacement in accordance with manufacturer recommendations. Solar panels are warranted for 25 years or longer and are expected to have a life of 30 or more years, with a degradation rate of 0.5 percent per year. Moving parts, such as motors and tracking module drive equipment, motorized circuit breakers and disconnects, and inverter ventilation equipment, would be serviced on a regular basis, and unscheduled maintenance would be performed as necessary.

2.4.4 Fire Safety During Operation

Solar arrays and PV modules are fire-resistant, as they are constructed largely out of steel, glass, aluminum, or components housed within steel enclosures. As the tops and sides of the panels are constructed from glass and aluminum, PV modules are not vulnerable to ignition from firebrands from wild-land fires. In a wildfire situation, the panels would be rotated and stowed in a panel-up position. The rotation of the tracker rows would be controlled remotely via a wireless local area network. All trackers could be rotated simultaneously in a hazard situation. Fire safety and suppression measures, such as smoke detectors and extinguishers, would be installed and available at the O&M facility, per the Riverside County Building and Safety Department's requirements.

As described in Section 2.2.8 (Fire Safety), a Fire Management and Prevention Plan will be prepared in coordination with the Riverside County Fire Department, BLM Fire, or other emergency response organizations to identify the fire hazards and response scenarios that may be involved with operating the solar

facility. This would include information on response to accidents involving downed power lines or accidents involving damage to solar arrays and facilities.

2.5 Electrical Interconnection

Electricity generated by the Project would be conveyed to the SCE Devers–Palo Verde #2 (DPV2) 500 kV regional transmission line through approximately 11 miles of 220 kV electrical gen-tie lines constructed between the Athos Project electrical substations and SCE’s existing Red Bluff Substation. The Red Bluff Substation is located about 1.1 miles south of the southernmost parcel of the solar facility site, adjacent to the south side of I-10. The proposed gen-tie line alignments are described in Section 2.2.4 (220 kV Gen-Tie Transmission Line) and shown on Figure 2-2.

2.6 Decommissioning and Repowering

As the facility’s equipment has a useful life of 40 years, at the end of the power purchase agreement’s 25-year contract term, the power from the facility would be sold to another buyer and/or repowered to increase the plant’s efficiency. If the Athos Renewable Energy Project continues to operate, the long-term operations would be the same as described above.

The Applicant is seeking a minimum 40-year CUP and PUP (CUP/PUP 180001) for the Project. At the end of the Project’s useful life, the solar arrays and gen-tie line would be decommissioned and dismantled. Upon ultimate decommissioning, a majority of Project components will be suitable for recycling or reuse, and Project decommissioning would be designed to optimize such salvage as circumstances allow and in compliance with all local, State, and federal laws and regulations as they exist at the time of decommissioning. Following removal of the above-ground and buried Project components, the site would be restored to its pre-solar facility conditions, or such condition as appropriate in accordance with County policy at the time of decommissioning.

Decommissioning activities would require similar equipment and workforce as construction, but would be substantially less intense. The following activities would be involved:

- Dismantling and removal of all above-ground equipment (solar panels, track units, transformers, inverters, substations, O&M buildings, switchyard, etc.)
- Excavation and removal of all above-ground cables
- Removal of solar panel posts
- Removal of primary roads (aggregate-based)
- Break-up and removal of concrete pads and foundations
- Removal of septic system and leach field
- Removal of 34.5 kV distribution lines
- Dismantling of 220 kV gen-tie line
- Scarification of compacted areas

The panels could be sold into a secondary solar PV panel market. It is expected that a robust market for used PV panels will exist in the future because the panels can be used in various configurations and at various scales. Electricity demand is expected to continue to rise and electricity prices are projected to continue their steady increase. Demand for solar energy is rapidly accelerating and is expected to grow for decades to come.

The module's component materials lack toxic metals such as mercury or lead, and the majority of the components of the solar installation are made of materials that can be readily recycled. To the extent that the panels selected include cadmium telluride or gallium, testing of the panels would ensure that they are not leaching prior to removal and recycling. If the panels can no longer be used in a solar array, the silicon can be recovered, the aluminum resold, and the glass recycled. Other components of the solar installation, such as the tracker structures and mechanical assemblies, can be recycled, as they are made from galvanized steel. Equipment such as drive controllers, inverters, transformers, and switchgear can be either reused or their components recycled. The equipment pads are made from concrete, which can be crushed and recycled. Underground conduit and wire can be removed by uncovering trenches and backfilling when done. The electrical wiring is made from copper and/or aluminum and can be reused or recycled, as well.

The Plan of Development (POD), which has been submitted to BLM for the gen-tie line, will include a Closure, Decommissioning, and Reclamation Plan for the gen-tie line. At the time when the gen-tie line would not be further used by the public or private utility or power generator, this decommissioning plan for the gen-tie component would be updated if needed and submitted to the BLM for review and approval. Decommissioning of the aboveground portion of the line consists of removal of the overhead conductors and removal of poles (risers). All steel would be recycled, and the foundations removed to a depth of at least 2 feet below the ground surface. Aluminum from overhead conductors would be recycled. Procedures would be designed to ensure public health and safety, environmental protection and compliance with all applicable laws, ordinances, regulations, and standards.

Following decommissioning and dismantling of the solar facility, the Athos site would be made available for reversion to agricultural use, open space, or developed for another use.

2.7 Applicant Proposed Measures

Table 2-3 provides a list of Applicant-proposed measures (APMs) specific for the Project. IP Athos, LLC, commits to complying with these measures to reduce potential impacts during construction and operation. Therefore, the APMs are considered part of the project description.

The impact analysis in this EIR assumes implementation of all of IP Athos, LLC's APMs. However, where other impacts are identified that are not addressed by these APMs, or where the APMs are not adequate to reduce impacts to less than significant levels, the EIR recommends additional mitigation measures. APMs will be incorporated into the Mitigation Monitoring and Reporting Program developed for this Project, and implementation of the APMs will be monitored in the same fashion as the mitigation measures developed in this EIR.

Table 2-3. APMs for the Athos Renewable Energy Project

APM Number	Issue Area
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Biological Resources	
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APM B-1	Wildlife Relocation. The Applicant will prepare and implement a Wildlife Relocation Plan to ensure that special-status wildlife species, including (but not limited to) desert tortoise, burrowing owl, and desert kit fox, are safely avoided or relocated off the Project site prior to construction. The Wildlife Relocation Plan will conform to USFWS guidelines for desert tortoise surveys, avoidance, and relocation, and to CDFW guidelines for burrowing owl and desert kit fox passive relocation, including scheduling to avoid disturbance to natal dens or burrows. The Wildlife Relocation Plan will specify methodology for pre-construction clearance surveys on the proposed solar fields and gen-tie routes; monitoring or tracking special-status species, burrows, or dens that may be located during the surveys; construction of off-site artificial burrows if needed; avoidance to allow for wildlife to safely move out of harm's way, or methods for localized "out of harm's way" or desert tortoise relocation; passive relocation methods for burrowing owl or desert kit fox; qualifications of field personnel who may handle desert tortoises; and follow-up monitoring of translocated animals.
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Table 2-3. APMs for the Athos Renewable Energy Project

Transportation and Traffic	
APM T-1	All designated public roadway easements directly impacted by the solar facility will remain open to the public during construction and operation as not to preclude access to nearby properties.
APM T-2	If any designated vehicle routes are temporarily impacted by Project activities, the Applicant will develop alternative routes to allow for continued vehicular access. Traffic Safety Coordinator(s) will oversee the installation of proper signage to ensure safe public use of open routes and other recreation opportunities on public lands in the Project area.

2.8 Alternatives Analyzed in Detail

2.8.1 CEQA Requirements for Alternatives

Section 15126.6(a) of the State California Environmental Quality Act (CEQA) Guidelines states that an Environmental Impact Report (EIR) “shall describe a range of reasonable alternatives to the project, or to the location of the project, which would feasibly attain most of the basic objectives of the project, but would avoid or substantially lessen any of the significant effects of the project, and evaluate the comparative merits of the alternatives.” Further, an EIR need not consider every conceivable alternative to a project. Rather, it must consider a reasonable range of potentially feasible alternatives that will foster informed decision making and public participation. An EIR is not required to consider alternatives that are infeasible. The CEQA Guidelines state that factors that may be considered when determining the feasibility of alternatives are “site suitability, economic viability, availability of infrastructure, general plan consistency, other plans or regulatory limitations, jurisdictional boundaries (projects with a regionally significant impact should consider the regional context) and whether the proponent can reasonably acquire, control, or otherwise have access to the alternative site (or the site is already owned by the proponent)” [CEQA Guidelines Section 15126.6(f)(1)].

Additionally, the No Project Alternative must be analyzed. The EIR must explain the rationale for selecting the alternatives to be discussed, identify those that were not carried forward because they were infeasible, and briefly explain why these were not carried forward. The “environmentally superior” alternative to the Project must be identified and discussed (see Section 5, Comparison of Alternatives). If the environmentally superior alternative is the No Project Alternative, the EIR must identify an additional “environmentally superior” choice among the other Project alternatives.

As presented below, a variety of alternatives to the Project were considered to determine potential alternatives which might produce fewer significant impacts, or reduce the severity of those significant impacts, than the proposed Project, including the No Project Alternative. Possible alternatives were assessed as to whether they would satisfy the following:

- The alternative is technically feasible;
- The alternative would avoid or substantially lessen any of the significant impacts of the proposed Project; and
- The alternative would attain most of the basic proposed Project objectives.

Alternatives considered included the No Project Alternative and those associated with reduced footprint and an alternative gen-tie route. The No Project Alternative and other alternatives carried forward for evaluation in Section 4 (Environmental Analysis) are presented in Section 2.8. An alternative comparison is provided in Section 5. Alternatives considered, but not carried forward for further analysis are presented in Section 2.9.

2.8.2 Alternative 1: No Project Alternative

The No Project Alternative is required by CEQA. Under the No Project Alternative, the construction of a solar generating facility and associated infrastructure would not occur. This alternative discusses existing conditions as well as what would be reasonably expected to occur in the foreseeable future if the Project was not approved and does not take place.

2.8.3 Alternative 2: Reduced Footprint Alternative

Under this alternative, Parcels Groups D and F, which consist of approximately 387 acres of undisturbed land consisting of creosote bush scrub and desert dry wash woodland, would be removed from development to reduce potential biological and cultural resources impacts (see Figure 2-6, Reduced Footprint Alternative), which would reduce the solar energy production and integrated energy storage to 450 MW each (instead of 500 MW under the proposed Project).

The two separate groups of parcels of undisturbed land (Parcels Group D and F) are located at the southern end of the Project area on 3 parcels (APNs 811-170-007, 811-170-008 & 811-170-009 in Parcel Group D) and 1 parcel (APN 811-190-001 in Parcel Group F). All other parcels associated with the proposed Project are classified as disturbed creosote bush scrub, active and fallow agricultural land, or disturbed/developed land. Elimination of development of the southern parcel, Parcel Group F (APN 811-190-001), may also reduce potential impacts to cultural resources.

Under the Reduced Footprint Alternative, the onsite substation (SS4) currently located on the southern parcel would instead be located at the southwest corner of the group of parcels to the north. The overall length of the gen-tie lines under the proposed Project and this alternative would be the same. However, approximately 1.5 miles of Gen-Tie Segment #2 would become part of Gen-Tie Segment #4 by instead ending Gen-Tie Segment #2 at the alternative onsite substation location. Except for the following components, all aspects of this alternative would be similar to the proposed Project:

- Reduction in solar facility site acreage by 387 acres (2,841 total acres) by eliminating the development of two groups of separate parcels.
- Reduction of solar energy generation by 50 MW to 450 MW with up to 450 MW of integrated energy storage capacity (compared to 500 MW under the proposed Project).
- Relocation of one onsite substation and related facilities.

This alternative would meet Project objectives and would be technically, regulatorily and legally feasible.

2.8.4 Gen-Tie Segment #1 Alternative Route Option

A route alternative for Gen-Tie Segment #1 has been developed due to challenges obtaining landowner easements (see Figure 2-7). Under this alternative option, the onsite substation (SS1) would be located approximately 0.2 miles east of its currently proposed location on Parcel Group A. The alternative would exit the onsite substation (SS1) and head due south onto BLM-administered land for approximately 0.25 miles before turning southeast for almost 0.3 miles and south for 0.15 miles to enter private land. On private land, the alternative route would turn due west and travel 0.45 miles to rejoin Gen-Tie Segment #1. The Alternative Gen-Tie Segment #1 Route Option would be approximately 0.65 miles longer (1.15 miles compared to 0.5 miles with this segment of the proposed Project).

The alternative gen-tie route option would meet Project objectives and would be technically, regulatorily and legally feasible. As with the proposed Project, BLM would perform a separate NEPA review of the

portions of the routes on BLM-administered land. The alternative route option would enable energy generated from the northernmost group of Project parcels to be transmitted to the SCE Red Bluff Substation should negotiations with landowners fall through.

2.9 Alternatives Considered and Eliminated from Further Analysis

2.9.1 Federal Land Alternative

Similar to the proposed Project, an alternative site on BLM-managed lands would involve the construction, operation, maintenance, and decommissioning of an up to 500 MW solar facility and 220 kV gen-tie line. This alternative would be located within the Riverside East SEZ of BLM's Western Solar Plan, and within a DRECP DFA. Additionally, the Federal Land Alternative would be located less than 15 miles from the Red Bluff Substation. It is also assumed that this alternative would require a BLM Right-of-Way Grant to allow for the construction and operation of solar facilities within BLM-managed lands.

The Federal Land Alternative on BLM-managed lands would not likely reduce any potentially significant impacts from the proposed Project, as the proposed Project is sited primarily on previously disturbed lands with minimal resource value. This alternative would likely have impacts similar to those of the proposed site for many resource elements, such as air quality and traffic. However, it is likely to have more severe biological, cultural, and visual resource impacts, as it would likely be located on undisturbed lands. Also, it may not be feasible to find an alternative site on BLM-managed lands, because most of the land within the DFA and Developable Areas of the Riverside East SEZ is in use, proposed for other solar energy projects, or within mountainous areas. Site control is also an issue, given that the Western Solar Plan, DRECP and BLM Rents and Bonds Policy (CITE) require a competitive auction to secure land within SEZs/DFAs and BLM has yet to conduct one for sites in Riverside County. The Federal Land Alternative would not present significant environmental advantages over the proposed Project and has thus been eliminated from consideration.

2.9.2 Private Land Alternative

An alternative that would develop the solar facility on other private lands elsewhere was not considered further, because it is considered speculative and infeasible based on the number of landowners whose agreement would be required. In addition, another site would likely have environmental impacts equal to or greater than the proposed site, which is located primarily on disturbed (retired agricultural) land and is surrounded by BLM-administered land that is within the Riverside East SEZ of BLM's Western Solar Plan and within the DRECP DFA, and thus, targeted for renewable energy development.

2.9.3 Reduced Footprint Alternative (Removal of Parcel Group A)

The northernmost group of parcels in the Project area (Parcel Group A) is located in a California Department of Water Resources 100-year floodplain, Special Flood Hazard Area. Under this alternative, which was developed in response to public concerns raised during scoping, these 36 parcels (approximately 966 acres) would be removed from development.

Under Reduced Footprint Alternative (Removal of Parcel Group A), the onsite substation (SS1) currently located on the northern group of parcels and all of Gen-Tie Segment #1 (2.5 miles) would be eliminated. Thus, the entire Project (solar facility and gen-tie lines) would be located south of SR-177, also eliminating the 220 kV gen-tie line crossing of SR-177. Except for the following components, all aspects of this alternative would be similar to the proposed Project:

- Reduction in solar facility site acreage by 966 acres (2,262 total acres) by eliminating the development of Parcel Group A.
- Reduction in solar energy generation (up to 400 MW), compared to 500 MW with the proposed Project.
- Elimination of one onsite substation and related facilities.
- Elimination of Gen-Tie Segment #1 (2.5 miles, including 0.8 miles of BLM-administered land and crossing of SR-177).

Due to the reduction of acreage, the solar panels would have a higher ground cover ratio, which would result in greater shading between panel rows and less efficient energy generation than with the proposed Project. As listed above, under Reduced Footprint Alternative (Removal of Parcel Group A), the solar facility would produce up to 450 MW of renewable energy, compared to 500 MW with the proposed Project.

This alternative was initially developed to address technical feasibility concerns with the placement of the proposed solar facility in an area of potential flooding. Based on further hydrological and geotechnical evaluation, construction of the proposed solar facility on Parcel Group A would be technically feasible and the projected flood depths would not affect Project design. Therefore, given that that proposed Project is technically feasible, that this alternative would reduce the overall energy generation capacity, and that there is another reduced footprint alternative (see Alternative 2 in Section 2.8.3) that would provide greater environmental benefits, namely to biological and cultural resources, the Reduced Footprint Alternative (Removal of Parcel Group A) has been eliminated from detailed analysis in the EIR.

2.9.4 Alternative Solar Technologies

The following alternative solar technologies have been screened and are recommended for elimination from detailed analysis since they are considered infeasible.

- **Solar Power Tower Technology.** Solar power tower technology is a concentrating solar power (CSP) technology that uses a flat mirror “heliostat” system that tracks the sun and focuses solar energy on a central receiver at the top of a high tower. The focused energy is used to heat a transfer fluid (to 800 to 1,000 degrees Fahrenheit [°F]) to produce steam and run a center power generator. The transfer fluid is super-heated before being pumped to heat exchangers that transfer the heat to boil water and run a conventional steam turbine to produce electricity. Although concentrated, solar power systems can store heated fluids to deliver electricity even when the sun is not shining. In areas of high solar insolation potential (i.e., desert environments), the land required to develop a CSP power tower facility is comparable to that required for a PV project.

This alternative was eliminated from consideration, because no substantial reduction in impacts would occur under this alternative technology and visual impact may be greater due to the height of the towers. In addition, due to the extent of the facility and the height of the power towers as well as a greater potential for glare, impacts to the Desert Center Airport would be potentially greater under this alternative. It has also been suggested that, due to a phenomenon known as “solar flux,” power tower projects pose a greater risk to avian species by creating an invisible zone where the concentrated solar power can singe feathers and interfere with flight.

- **Solar Parabolic Trough Technology.** Parabolic trough technology is another CSP technology that uses large, U-shaped (parabolic) reflectors (focusing mirrors) that have fluid-filled pipes running along their center, or focal point. The mirrored reflectors are tilted toward the sun and focus sunlight on the pipes

to heat the heat transfer fluid inside, similar to the solar power tower technology. The hot fluid is then used to boil water, which makes steam to run conventional steam turbines and generators.

Solar trough fields have stringent grading requirements, as parabolic troughs must be almost level along their troughs, and grades perpendicular to the troughs are generally benched to 2 percent or less. Therefore, most of the solar facility site would need to be graded and scraped free of vegetation. Use of solar trough technology would also likely require engineered drainage channels along the facility boundary to intercept any modeled offsite surface flows and convey them around and through the site for discharge.

Therefore, similar to solar power tower and other CSP technologies, parabolic trough technology has been eliminated from consideration because it would have the potential for more severe impacts than the proposed solar PV technology. These impacts would include more dramatic degradation of visual resources (due to use of mirrors and power towers), more extensive ground disturbance, increased industrial construction for the turbines and power blocks, and use of potentially hazardous heat transfer fluids.

- **Distributed Solar Technology.** There is no single accepted definition of distributed solar technology. The 2011 Integrated Energy Policy Report defines distributed generation resources as “(1) fuels and technologies accepted as renewable for purposes of the Renewables Portfolio Standard; (2) sized up to 20 MW; and (3) located within the low-voltage distribution grid or supplying power directly to a consumer.” Distributed solar facilities vary in size from kilowatts to tens of MWs but do not require transmission to get to the areas in which the generation is used.

A distributed solar alternative would consist of PV panels that would absorb solar radiation and convert it directly to electricity. The PV panels could be installed on residential, commercial, or industrial building rooftops or in other disturbed areas like parking lots or disturbed areas adjacent to existing structures such as substations. To create a viable alternative to the proposed Project, there would have to be sufficient newly installed panels to generate up to 500 MW of capacity, which would be similar in size to the proposed Project.

Although there is potential to achieve up to 500 MW of distributed solar energy, the limited number of existing facilities makes it unlikely to be feasible or present environmental benefits. Although the type of panel used for the proposed Project is not yet known, rooftop systems typically consist of less efficient fixed-tilt systems that may not be oriented optimally towards the sun, meaning that developers would need to obtain more surface area for the Project if constructed on a rooftop instead of on the ground. The transaction costs of obtaining multiple rooftops, the complexity of mobilizing construction crews across multiple projects including the transporting and deployment of construction materials in a less efficient manner, and the need to develop the deals to secure the same amount of PV-produced electricity can make this type of alternative infeasible.

To the extent that distributed generation projects might have fewer impacts on certain resources because they do not utilize substations and transmission facilities, this illustrates that distributed generation projects cannot meet one of the fundamental objectives of a utility-scale solar project: to provide renewable energy to utility off-takers and their customers. Rooftop systems that are not connected to the utility side of the electric grid only generate power for on-site consumption. At the same time, the difficulties in supplying a comparable amount of MWs of clean energy to the public through the utility sector has its own set of impacts due to failure to offset the impacts of counterpart fossil fuel energy sources.

Because of the challenges associated with the implementation of a distributed solar technology, which include widely varying codes, standards, and fees; environmental requirements and permitting con-

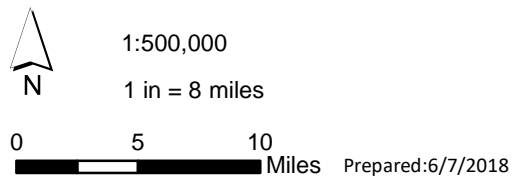
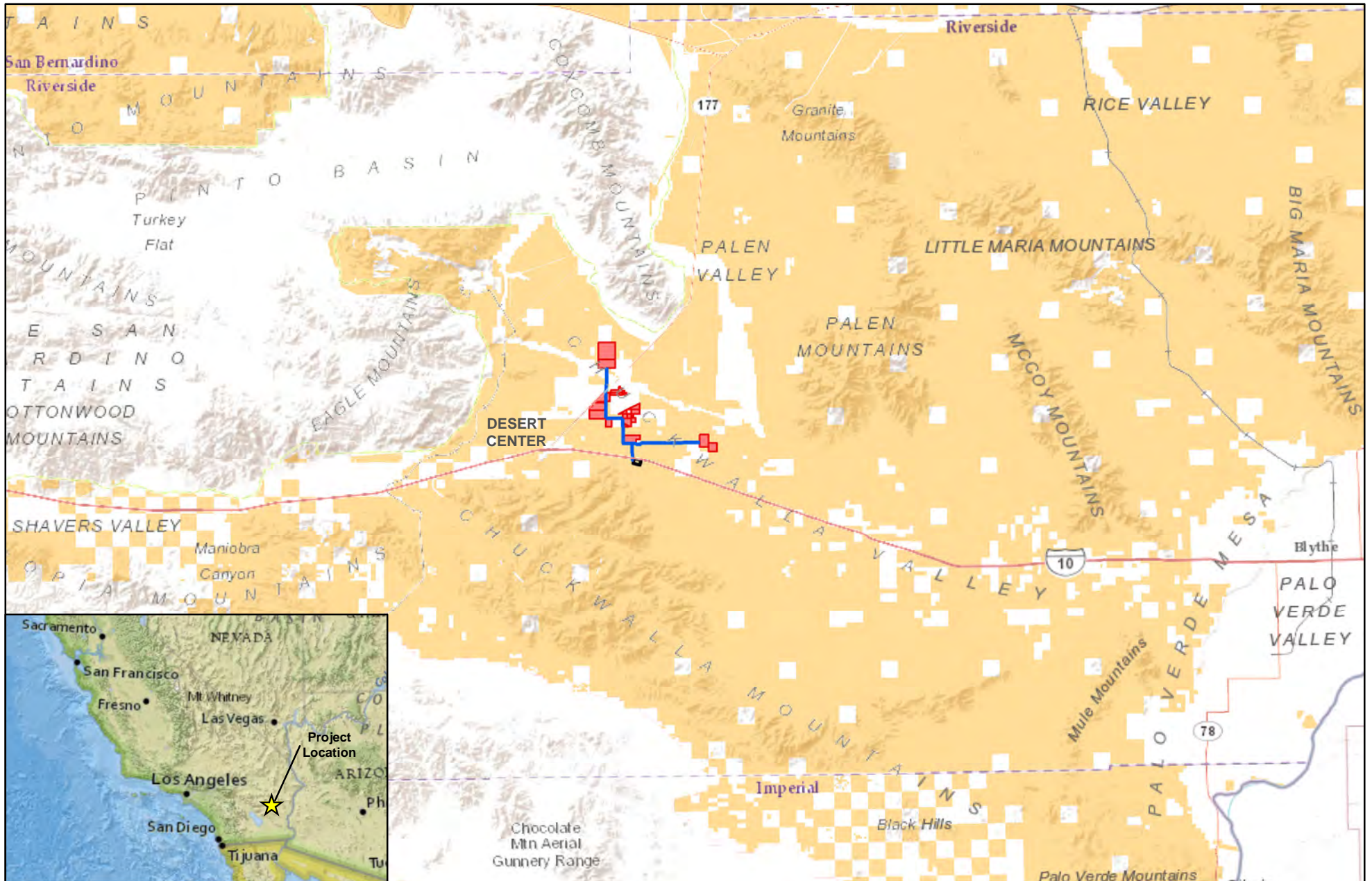
cerns; interconnection of distributed generation; inefficiencies; and integration of distributed generation. As a result, this technology was eliminated from detailed analysis as an alternative to the proposed Project.

2.9.5 Alternative Renewable Energy Technologies

Alternative renewable energy technologies, such as wind, geothermal, biomass, tidal and wave power technologies, have been eliminated from consideration, because they are not within the Applicant, IP Athos, LLC's, area of expertise and so would not be technically or economically feasible for the Applicant to implement.

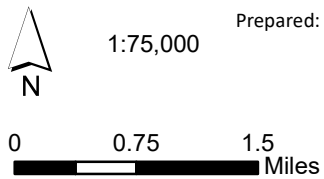
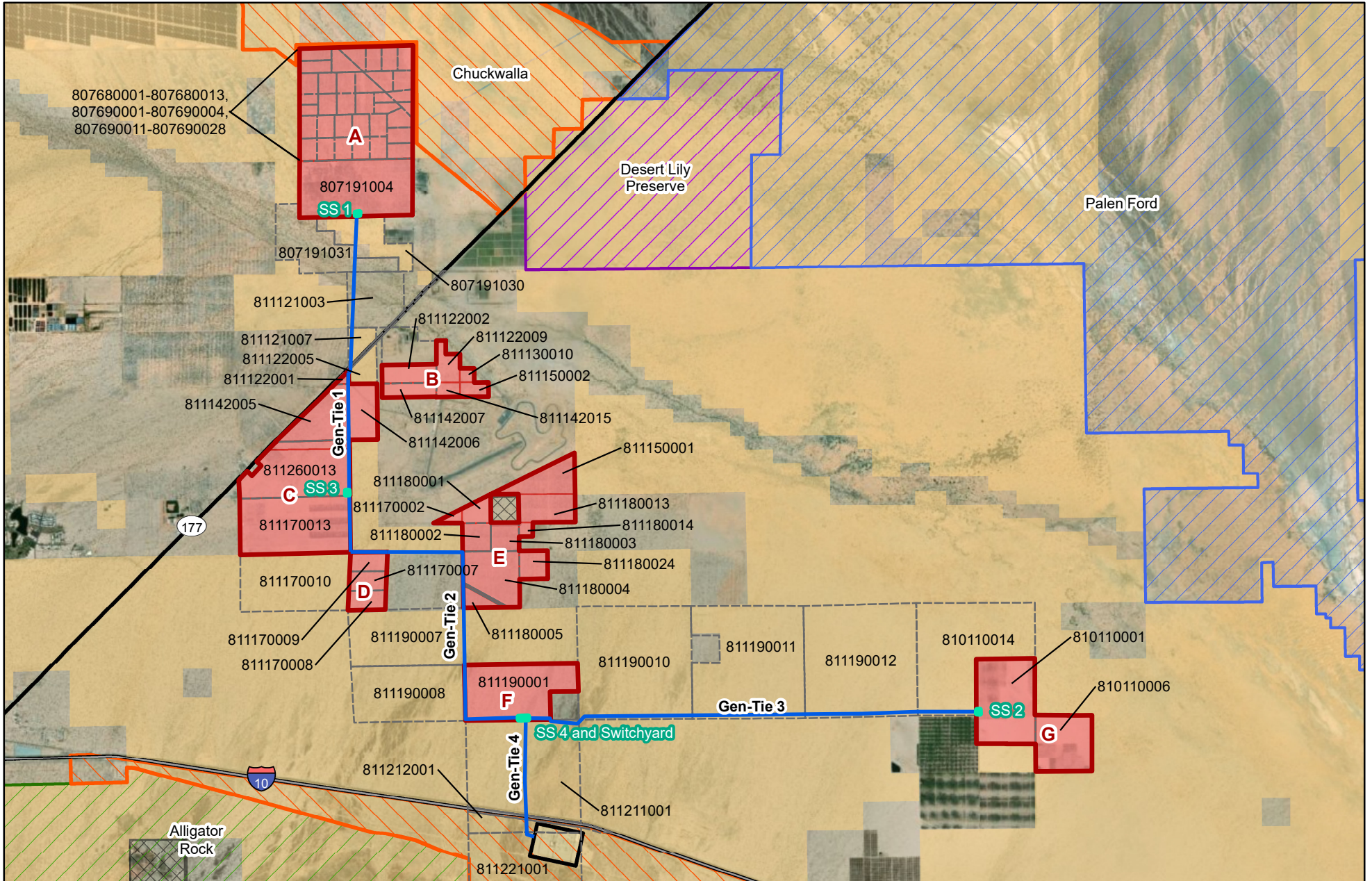
2.9.6 Conservation and Demand-Side Management

This alternative is not technically feasible as a replacement for the proposed Project, because California utilities are required to achieve aggressive energy efficiency goals. Affecting consumer choice to the extent that would be necessary for a conservation and demand-side management solution would be beyond the County, BLM and/or the Applicant's control. Even if additional energy efficiency beyond that occurring in the baseline condition may be technically possible, it is speculative to assume that energy efficiency alone would achieve the necessary greenhouse gas reduction goals. With population growth and increasing demand for energy, conservation and demand management alone is not sufficient to address all of California's energy needs. Furthermore, conservation and demand-side management would not by themselves provide the renewable energy required to meet the California renewable energy goals, a stated Project objective. Therefore, conservation and demand-side management has been eliminated from detailed analysis because it is considered remote or speculative and would not meet the stated Project objectives.



- Proposed Gen-Tie
- Solar Facility
- Red Bluff Substation
- BLM Land

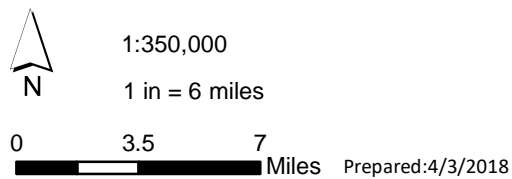
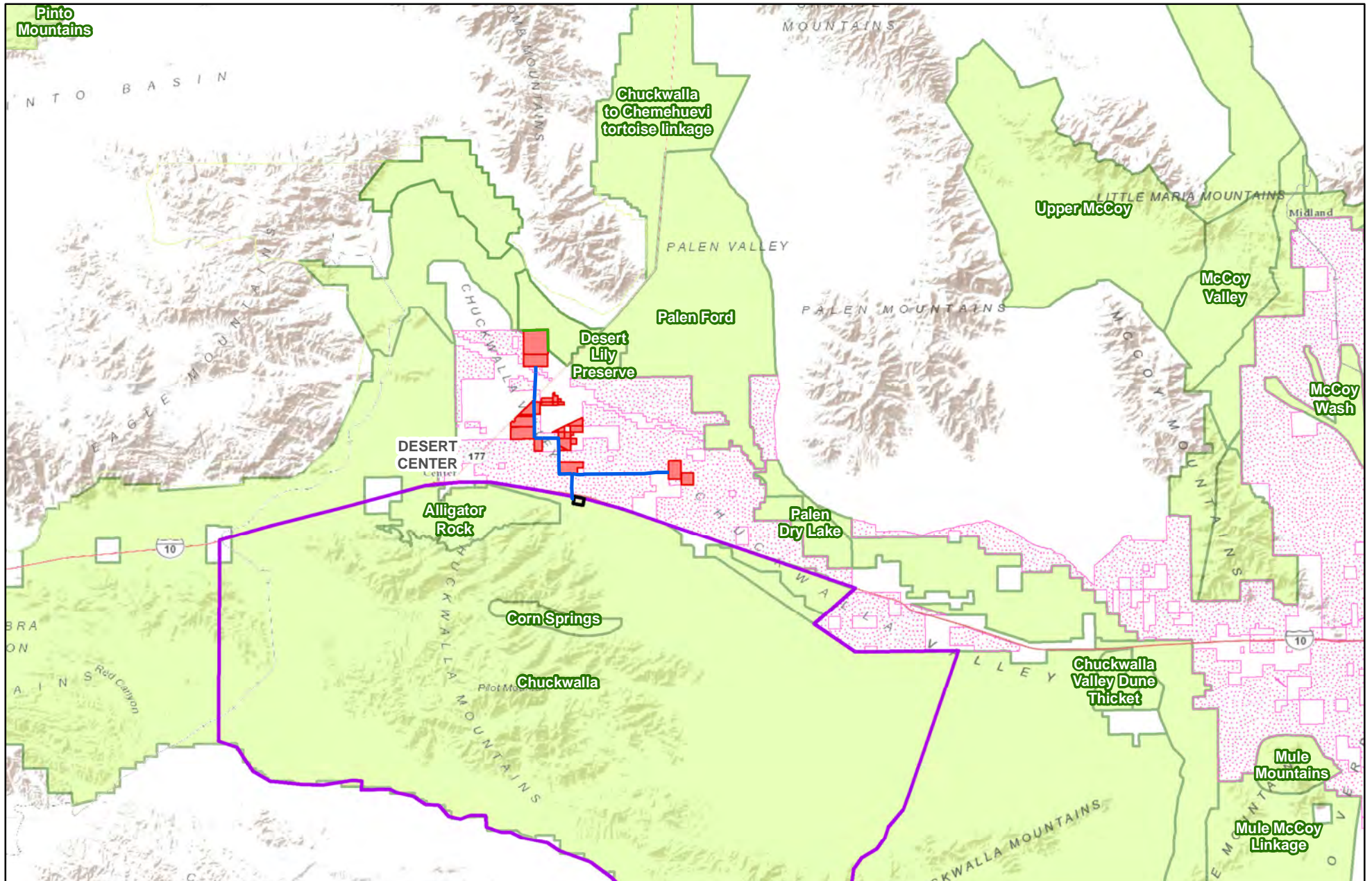
Figure 2-1
Project Vicinity



Prepared: 8/16/2018

- | | | |
|-------------------------------|---------------------------|------------------------------------|
| Proposed Gen-Tie | Red Bluff Substation | Alligator Rock ACEC |
| Substation | Bureau of Land Management | Chuckwalla ACEC (on BLM Land only) |
| Solar Facility (Private Land) | CA State Lands Commission | Desert Lily Preserve |
| Parcel Groups | Parcel Line | Palen Ford ACEC |

Figure 2-2
Project Area



- Proposed Gen-Tie
- Solar Facility
- Red Bluff Substation
- Chuckwalla Special Recreation Management Area (SRMA)
- DRECP Development Focus Areas (DFA)
- ACEC Designated Polygons

Figure 2-3

DRECP Context

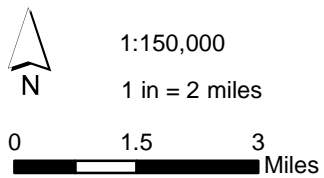
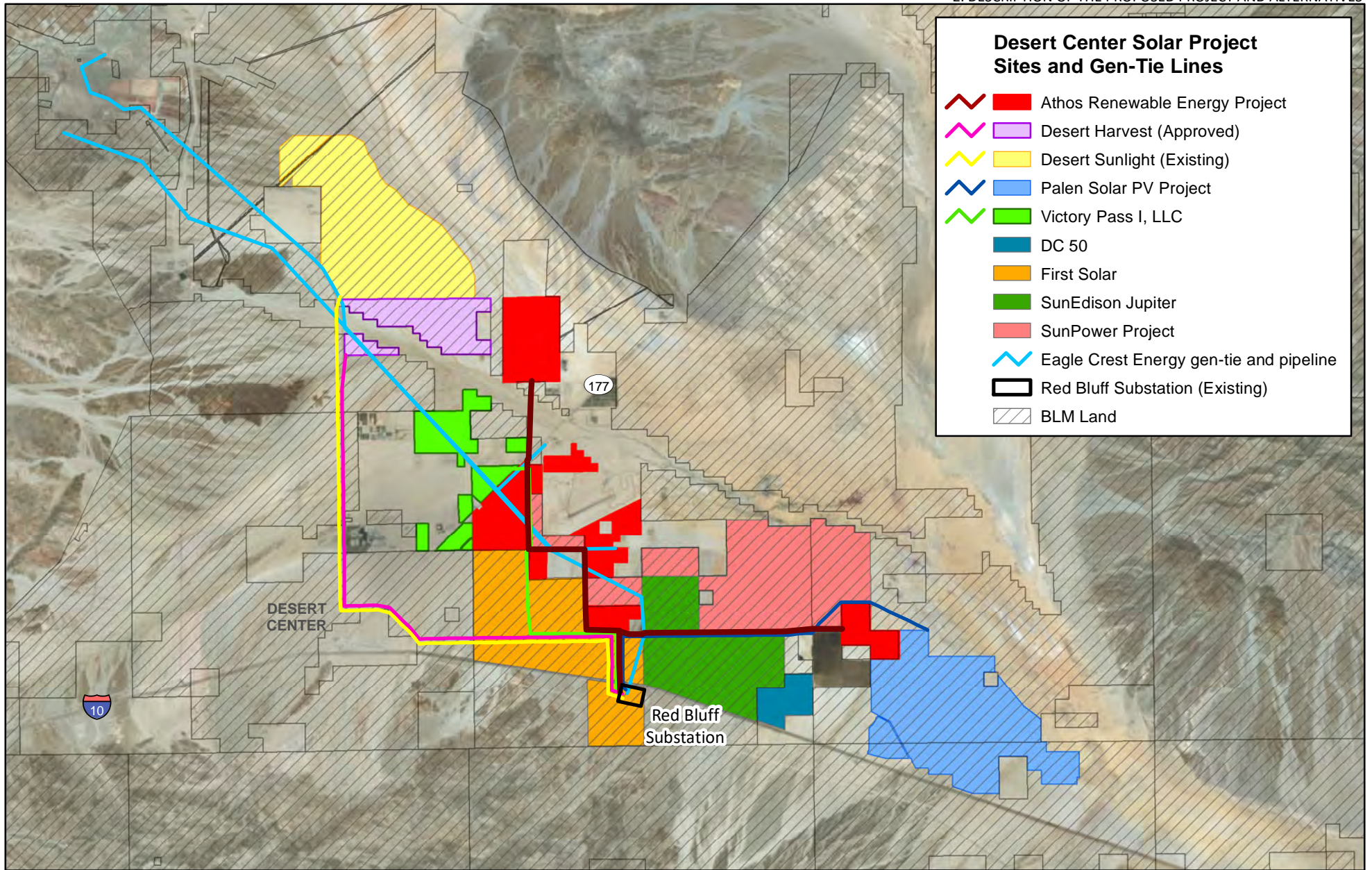
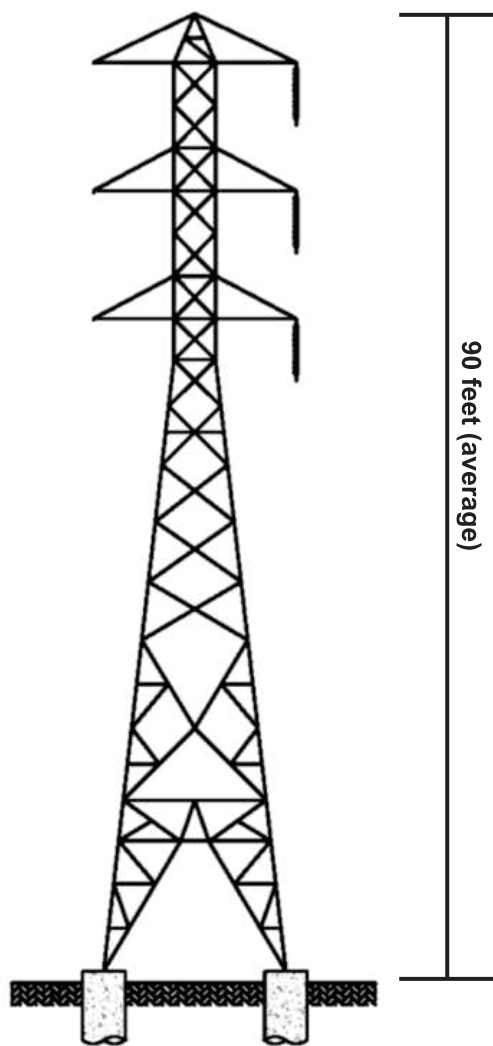
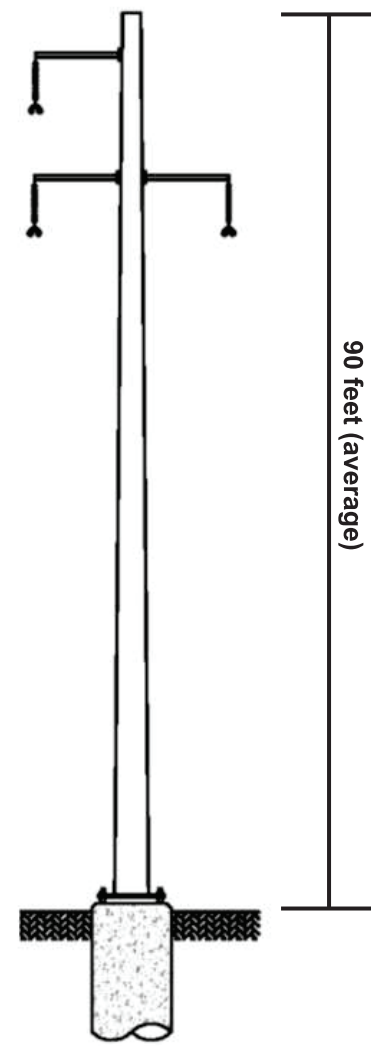


Figure 2-4

Desert Center Area Solar Projects



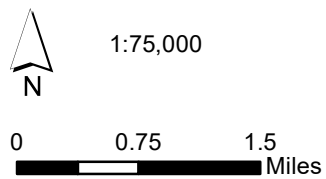
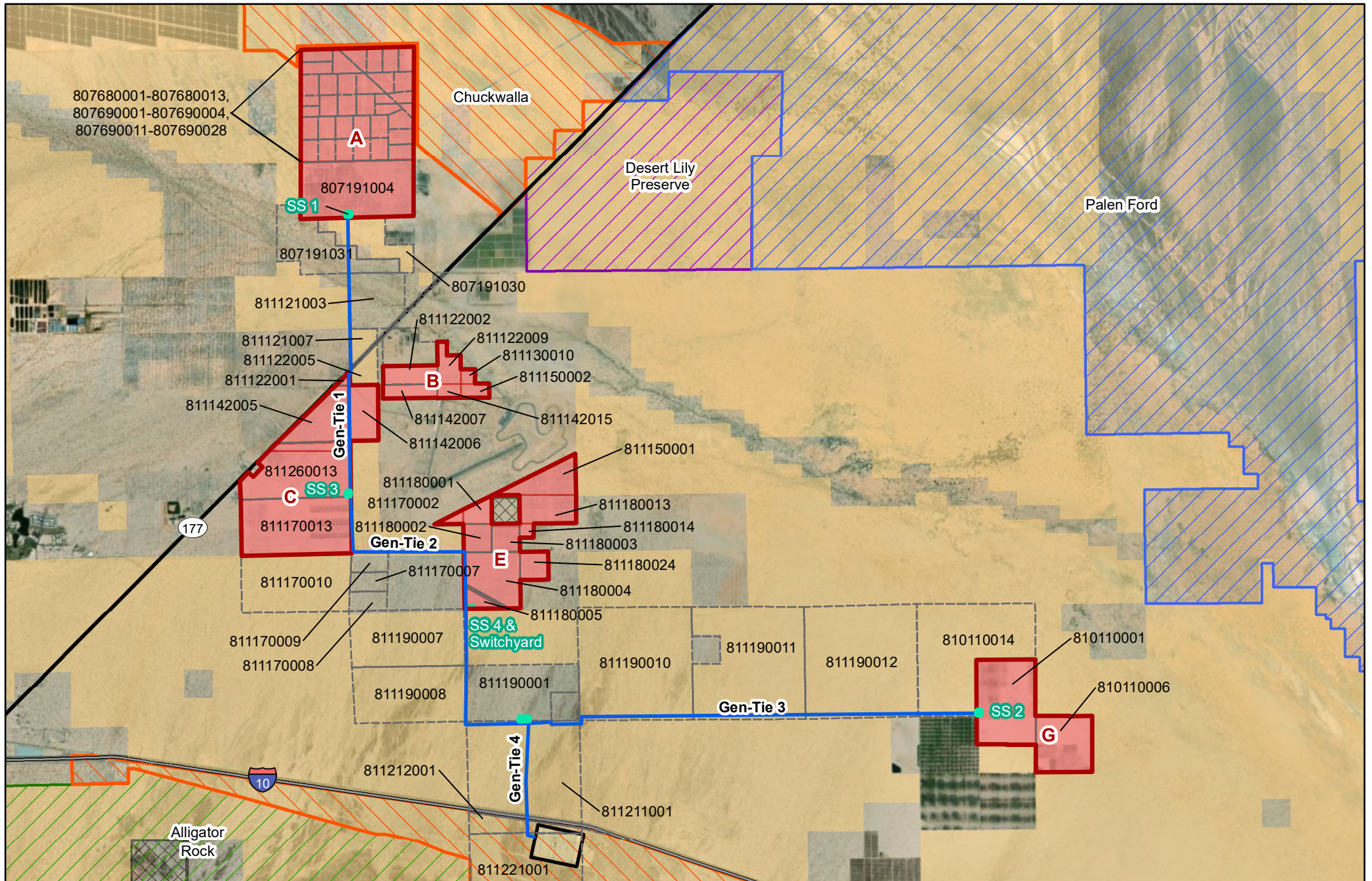
Typical 220 kV Single-Circuit Lattice Tower



Typical 220 kV Single-Circuit Monopole

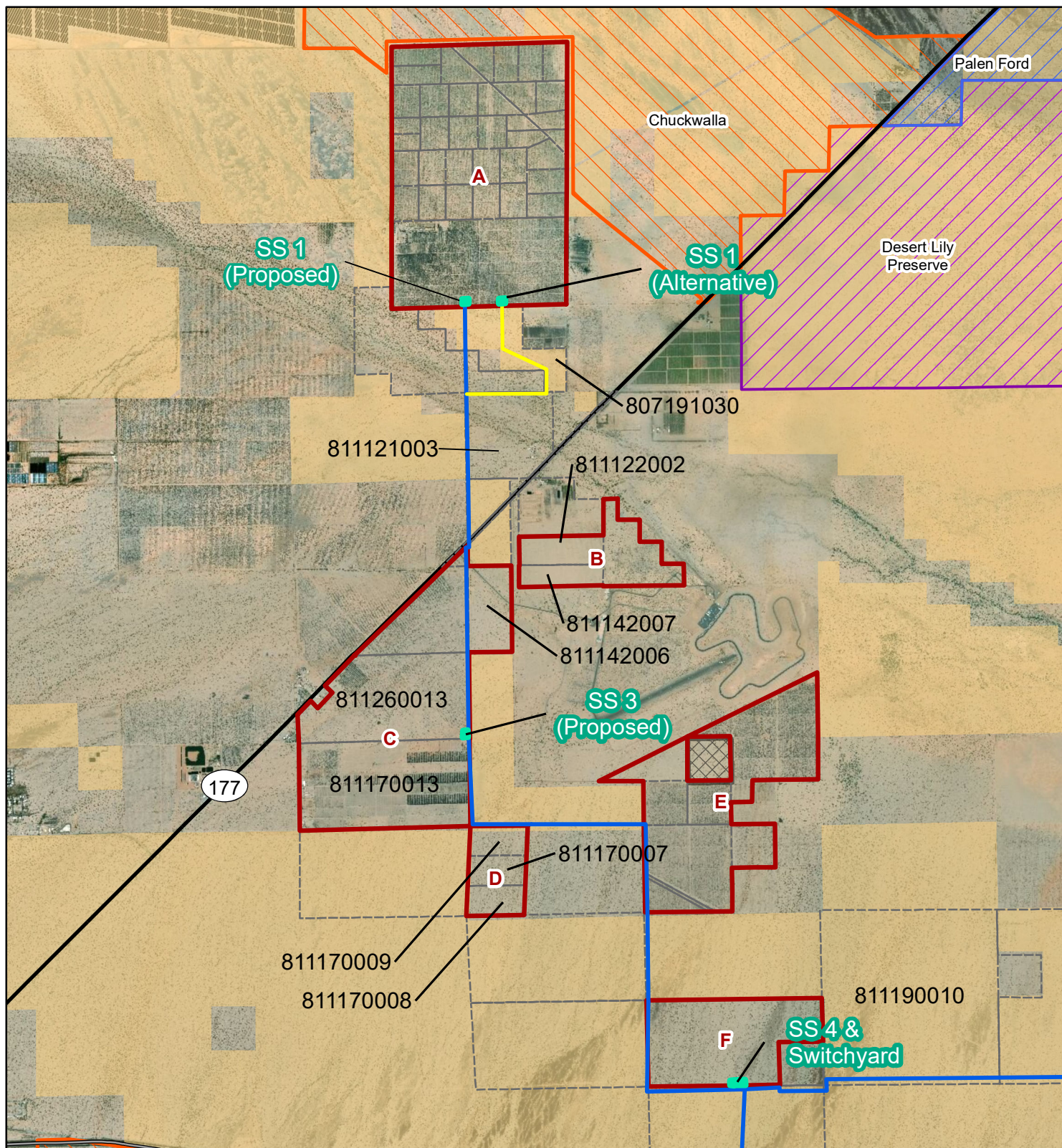
Figure 2-5

Typical 220 kV Gen-Tie Line Structures



- | | | |
|-------------------------------|---------------------------|------------------------------------|
| Proposed Gen-Tie | Red Bluff Substation | Alligator Rock ACEC |
| Substation | Bureau of Land Management | Chuckwalla ACEC (on BLM Land only) |
| Solar Facility (Private Land) | CA State Lands Commission | Desert Lily Preserve |
| Parcel Groups | Parcel Line | Palen Ford ACEC |

Figure 2-6
Reduced Footprint Alternative



- | | | |
|---------------------------|-------------------------------|------------------------------------|
| Proposed Route | Substation | Chuckwalla ACEC (on BLM Land only) |
| Alternative Gen-Tie Route | Solar Facility (Private Land) | Desert Lily Preserve |
| | Parcel Groups | Palen Ford ACEC |
| | Bureau of Land Management | |
| | CA State Lands Commission | |
| | Parcel Line | |

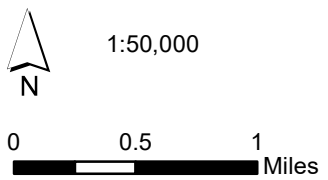


Figure 2-7
Gen-Tie Segment #1
Alternative
Route Option

3. Environmental Setting, Impacts, and Mitigation Measures

3.1 Introduction to Environmental Analysis

This Chapter 3 identifies the impacts of the proposed Project on the existing environment, in accordance with CEQA Guidelines Sections 15125 and 15143. It also presents and applies criteria used to determine whether an adverse impact is significant under CEQA describes feasible mitigation measures, if any, that could minimize each significant adverse impact to a level of insignificance.

3.1.1 Introduction to Impact Analysis

This section provides an analysis of potential impacts on resource areas that the County has determined could result in “significant impacts” based on the scoping activities undertaken in advance of preparing this EIR. Specifically, the environmental issue areas identified for further discussion include the following:

- Aesthetics
- Agriculture and Forestry Resources
- Air Quality
- Biological Resources
- Cultural Resources and Tribal Cultural Resources
- Energy
- Geology, Soils, and Mineral Resources
- Greenhouse Gas Emissions
- Hazards and Hazardous Materials, including Wildfire
- Hydrology and Water Quality
- Land Use and Planning
- Noise
- Paleontological Resources
- Population and Housing
- Public Services and Utilities
- Recreation
- Transportation

Sections 3.1 through 3.18 discuss the environmental impacts that may result with approval and implementation of the Project, and where significant impacts are identified, recommends mitigation measures that, when implemented, would reduce those impacts to a level less than significant. Additional issues to be addressed for each environmental issue area identified above include the following:

Environmental Setting

This subsection presents the existing environmental conditions at the site and in the surrounding area as appropriate (the “baseline”) that are relevant to the issues under evaluation, in accordance with Section 15125 of the CEQA Guidelines. The baseline conditions reflect the conditions around the time of the issuance of the NOP and are used for comparison to establish the type and extent of the potential environmental impacts. For purposes of these discussions, the terms “Project area” and “Athos area” refer to the proposed 500 MW solar PV facility and 230 kV gen-tie line interconnecting to the SCE Red Bluff Substation that would occupy approximately 3,400 acres across a group of seven non-contiguous parcels, shown on Figure 2-2.

The information and data used to prepare the Environmental Setting were obtained from several sources including the Desert Center Area Plan, County of Riverside General Plan, and California Desert Conservation Area (CDCA) Plan, as Amended. In addition, information was obtained from various BLM planning documents, research publications prepared by various federal and State agencies, and private sources pertaining to key resource conditions found within the Project area. The discussions in this chapter were also informed by the surveys and studies conducted for the Project, as noted throughout this chapter.

Regulatory Framework

This subsection presents information on the laws, regulations, plans, and policies that relate to the issue area being discussed. Regulations originating from local, state, and federal levels are discussed as appropriate.

The information and data used to prepare the Regulatory Background were obtained from the same sources listed above under Environmental Setting. A compilation of the regulatory setting for all issue areas is also included as EIR Appendix N (Regulatory Framework).

Methodology for Analysis

The Methodology for Analysis sections describe the process of analyzing the effects of the Project. In assessing impacts, this EIR presumes that existing regulations and other public agency requirements that have been incorporated into the Project will be implemented.

Application of CEQA Significance Thresholds

The CEQA Significance Criteria section describes the criteria used to determine which impacts should be considered potentially significant. Significance thresholds are based on criteria identified in Appendix G of the CEQA Guidelines (California Code of Regulations, Title 14, Division 6, Chapter 3, Sections 1500-15387). Other federal, State, or local standards — in particular, the significance criteria from the County of Riverside's Environmental Assessment form — are also taken into account when defining significance thresholds.

Impact Analysis

The Impact Analysis section presents an assessment of the identified direct and indirect impacts and discloses the level of significance for each impact. A significant impact is defined under CEQA as “a substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project” (CEQA Guidelines Section 15382). The CEQA Guidelines define direct impacts as those impacts that result from the project and occur at the same time and place. Indirect impacts are caused by the project but can occur later in time or farther removed in distance and are still reasonably foreseeable and related to the operation of the project.

A significant impact is a substantial or potentially substantial adverse change in the environment. A less than significant impact with mitigation applies where the incorporation of mitigation measures has reduced an effect from potentially significant to less than significant. A less than significant impact means that the project would not cause a potentially substantial adverse effect on the environment for that resource. No impact indicates that the impact does not apply to the project.

Significance After Mitigation

The Significance after Mitigation section indicates the significance of the impact and whether impacts would remain even after application of the proposed mitigation measures. Any impacts that cannot be eliminated or reduced to a level of less than significant are considered residual impacts of the proposed Project.

Cumulative Impacts

The Cumulative Impacts section describes effects that may be individually limited but cumulatively considerable when measured along with other approved, proposed, or reasonably foreseeable future projects. Please refer to Section 3.1.2 for a detailed discussion regarding the cumulative impact approach and scenario.

Mitigation Measures

The Mitigation Measures section identifies the actions to eliminate, or reduce to a less than significant level, potentially significant impacts of the proposed Project. Existing regulations and other public agency requirements, BMPs, and procedures that apply to similar projects are considered in determining what additional Project-specific mitigation may be required to reduce or eliminate impacts.

3.1.2 Cumulative Impact Scenario

Within the framework identified above, the cumulative impacts scenario requires special consideration. This analysis takes into account a variety of parameters that the EIR must establish and further explain the reasons for selecting certain parameters (scope of the impact area, etc.). The following discussion explains the factors relied on to frame the cumulative impacts analysis in this EIR.

CEQA Requirements for Cumulative Impact Analysis

CEQA defines cumulative impacts as “two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts.” (CEQA Guidelines, Section 15355; see also Pub. Resources Code, Section 21083, subd. (b).) Stated another way, “a cumulative impact consists of an impact which is created as a result of the combination of the project evaluated in the EIR together with other projects causing related impacts.” (CEQA Guidelines, Section 15130, subd. (a)(1).)

CEQA Guidelines Section 15130 requires that an EIR discuss cumulative impacts of a project when the project’s incremental effect is “cumulatively considerable.” The definition of cumulatively considerable, provided in Section 15065(a)(3), 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.

According to Section 15130(b) of the CEQA Guidelines: [t]he discussion of cumulative impacts shall reflect the severity of the impacts and their likelihood of occurrence, but the discussion need not provide as great detail as is provided for the effects attributable to the Project alone. The discussion should be guided by standards of practicality and reasonableness, and should focus on the cumulative impact to which the identified other projects contribute rather than the attributes of other projects which do not contribute to the cumulative impact.

For purposes of this DEIR, the proposed Project would cause a cumulatively considerable and therefore significant contribution to a cumulative impact if:

- The cumulative effects of other past, current, and probable future projects without the Project are not significant and the Project’s incremental impact is substantial enough, when added to the cumulative effects, to result in a significant cumulative impact; or
- The cumulative effects of other past, current, and probable future projects without the Project are already significant and the Project would result in a cumulatively considerable contribution to the already significant effect. The standards used herein to determine whether the contribution is cumulatively considerable include the existing baseline environmental conditions, and whether the Project would cause a substantial increase in impacts, or otherwise exceed an established threshold of significance.

Methodology for Cumulative Impact Analysis

CEQA Guidelines Section 15130 provides that the following approaches can be used to adequately address cumulative impacts:

- **List Method** — 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.
- **Regional Growth Projections Method** — 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; or

The DEIR uses the list method.

Consistent with CEQA, the cumulative analysis uses a two-step approach. The first step determines whether the combined effects from the proposed Project and other projects would be cumulatively significant. This was done by adding the proposed Project's incremental impact to the anticipated impacts of other probable future projects and/or reasonably foreseeable development. Where the analysis determines that the combined effect of the projects and/or projected development would result in a significant cumulative effect, the second step evaluates whether the proposed Project's incremental contribution to the combined significant cumulative impact would be cumulatively considerable as required by CEQA Guidelines Section 15130, subdivision (a).

CEQA Guidelines Section 15064, subdivision (h)(4) states that "[t]he mere existence of significant cumulative impacts caused by other projects alone shall not constitute substantial evidence that the proposed project's incremental effects are cumulatively considerable." Therefore, it is not necessarily true that, even where cumulative impacts are significant, any level of incremental contribution must be deemed cumulatively considerable by the lead agency. If the proposed project's individual impact is less than significant, however, its contribution to a significant cumulative impact could be deemed cumulatively considerable depending on the nature of the impact and the existing environmental setting. If, for example, a proposed project is located in an air basin determined to be in extreme or severe nonattainment for a particular criteria pollutant, a project's relatively small contribution of the same pollutant could be found to be cumulatively considerable. Thus, depending on the circumstances, an impact that is less than significant when considered individually may still be cumulatively considerable in light of the impact caused by all projects considered in the analysis.

Cumulative Scenario

Geographic Scope

The geographic area affected by the Project and its potential to contribute to cumulative impacts varies based on the environmental resource under consideration. Generally, the geographic area associated with the environmental effects of the Project defines the boundaries of the area used for compiling the list of past, present and reasonably foreseeable future related projects considered in the cumulative impact analysis. The geographic scope of each analysis is based on the topography surrounding the Project area and the natural boundaries of the resource affected, rather than jurisdictional boundaries. The geographic scope of cumulative effects will often extend beyond the scope of the direct effects of a proposed project, but not beyond the scope of the direct and indirect effects of that proposed project. For example, the air quality analysis includes consideration of regional air emissions (e.g., reactive organic gases [ROG]/nitrogen

oxides [NO_x] and particulate matter [PM]) and therefore includes the entire air basin. Conversely, in the case of noise impacts, given the localized impact, a smaller area surrounding the immediate site is appropriate for consideration. The geographic areas included within this analysis for purposes of determining whether the Project's contribution to a particular impact would be cumulatively considerable and therefore significant are:

- **Aesthetics:** One-mile area around the perimeter of the solar facilities and gen-tie lines
- **Agriculture and Forestry Resources:** Desert Center area
- **Air Quality:** Mojave Desert Air Basin
- **Biological Resources:** A large portion eastern Riverside County that consists of similar habitat areas as found in the Project site area
- **Cultural Resources:** Desert Center area
- **Energy:** Global
- **Geology, Soils, and Mineral Resources:** Eastern Riverside County
- **Greenhouse Gas Emissions:** Global
- **Hazards and Hazardous Materials, including Wildfire:** Areas extending one mile from the boundary of the Project site
- **Hydrology and Water Quality:** Hydrologic Sub-Area (HSA) 717, Chuckwalla Hydrologic Unit
- **Land Use and Planning:** Eastern Riverside County
- **Noise:** Areas extending 0.5 miles from the boundary of the Project site for noise and 200 feet from the boundary of the Project site for vibration
- **Paleontological Resources:** All projects on the same geologic units within Eastern Riverside County, including Holocene alluvium, Pleistocene alluvium, and dry desert washes
- **Population and Housing:** Areas within a 2-hour commute to the Project site
- **Public Services and Utilities:** The service areas of each of the providers serving the Project
- **Recreation:** 20-mile area around the perimeter of the solar facility
- **Traffic and Circulation:** The study roadways and intersections and I-10. For aviation safety, the geographic study area is 20,000 feet, because that is the area where there would be potential impacts to the Desert Center Airport.

Temporal Scope

This cumulative impact analysis considers other projects that have been recently completed, are currently under construction, or are reasonably foreseeable (e.g., for which an application has been submitted). Both short-term and long-term cumulative impacts of the proposed Project, in conjunction with other cumulative projects in the area, are evaluated in this chapter of the EIR.

The schedule and timing of the proposed Project and other cumulative projects is relevant to the consideration of cumulative impacts. Each project in a region will have its own implementation schedule, which may or may not coincide or overlap with the construction schedule for Athos. This is a consideration for short-term impacts from the proposed Project. However, to be conservative, the cumulative analysis assumes that all projects in the cumulative scenario are built and operating during the operating lifetime of the proposed Project.

Cumulative Projects

Desert Center Area Plan

As part of the Riverside County General Plan Update (2015), the County updated the Desert Center Area Plan. The Desert Center Land Use Plan reflects the limited development potential in this region. The Area Plan designates most of the area Open Space-Rural, with some Agriculture, rural residential, and other low-density residential and commercial opportunities. The Area Plan notes that future development on the private land should focus on infill and contiguous expansion of the existing communities at Desert Center and Lake Tamarisk but is likely to be limited (Riverside County, 2015a). This information was taken into consideration by the authors when drafting the cumulative analysis as it indicates limited development on private land.

Tables 3.1-1 and 3.1-2 include the list of cumulative projects in the Desert Center and Blythe region. These projects are shown on Figure 3.1-1.

Table 3.1-1. Past and Present Projects or Programs in the Project Area

ID	Project Name; Agency ID	Location	Ownership	Status	Acres	Project Description
1	West-wide Section 368 Energy Corridors	Riverside County, parallel to the I-10	BLM, DOE, U.S. Forest Service	Approved by BLM and U.S. Forest Service, additional review of Region 1 ongoing	N/A	Designation of corridors on federal land in the 11 western states, including California, for oil, gas, and hydrogen pipelines and electricity transmission and distribution facilities (energy corridors). One of the corridors runs along the southern portion of Riverside County.
2	Blythe PV Project	Blythe	NRG Energy	Operational	200	21 MW solar PV project located on 200 acres outside of Blythe.
3	McCoy Solar Project	Blythe	NextEra	Operational	8,100	An up to 750 MW solar PV project located primarily on BLM administered land about 13 miles north of Blythe. The Project includes a 16-mile gen-tie line. The first 250 MW began commercial operation in June 2016 but it does not have a schedule for the remaining 500 MW.
4	Genesis Solar Energy Project	North of I-10, 25 miles west of Blythe and 27 miles east of Desert Center	NextEra	Operational	1,950	250 MW solar trough project on 4,640 acres north of the Ford Dry Lake. Project includes six-mile natural gas pipeline and a 5.5-mile gen-tie line to the Blythe Energy Center to Julian Hinds Transmission Line, then travel east on shared transmission poles to the Colorado River Substation.
5	Blythe Solar Power Project	Blythe	NextEra	Operational	4,100	A 485 MW solar PV project located 2 miles north of I-10 and 8 miles west of the City of Blythe on BLM land. A 230 kV gen-tie line will connect the solar energy generating facility to the SCE Colorado River Substation.
6	Desert Sunlight Solar Project	6 miles north of Desert Center	NextEra	Operational	4,400	A 550 MW solar PV project located on BLM land. The project includes a 230 kV transmission line that extends south from the Solar Farm site to interconnect with the Red Bluff Substation
7	SCE Red Bluff Substation	Southeast of Desert Center	SCE	Operational	75	220/500 kV substation to interconnect renewable projects near Desert Center to the DPV transmission line.

Table 3.1-1. Past and Present Projects or Programs in the Project Area

ID	Project Name; Agency ID	Location	Ownership	Status	Acres	Project Description
8	Devers–Palo Verde 1 Transmission Line	From Palo Verde, Arizona, to Devers Substation near Palm Springs	SCE	Operational	N/A	Existing 500 kV transmission line parallel to I-10 from Arizona to the SCE Devers Substation, near Palm Springs. DPV1 loops into the SCE Colorado River Substation which is located 10 miles southwest of Blythe.
9	Devers–Palo Verde 2 Transmission Line (Also called Devers-Colorado River Transmission Line)	From Blythe to Devers Substation near Palm Springs	SCE	Operational	N/A	Existing 500 kV transmission line parallel to the I-10 from the SCE Colorado River Substation to the Devers Substation. ROW requires 130 feet on federal, State, and private land.
10	Blythe Energy Project Transmission Line	From Blythe to Julian Hinds Substation	Blythe Energy, LLC	Operational	N/A	Existing 230 kV transmission line.
11	SCE Colorado River Substation	Blythe	SCE	Operational	90	A 500/230 kV substation located east of Blythe. The 500 kV switching station includes buses, circuit breakers, and disconnect switches. The switchyard is equipped with 108-foot-high dead-end structures. Outdoor night lighting is designed to illuminate the switchrack when manually switched on.
12	Desert Renewable Energy Conservation Plan ¹	California Desert District	BLM	Existing	10 million	The DRECP LUPA is an amendment to the CDCA for all BLM-administered public lands in the CDCA region. The plan will help provide effective protection and conservation of desert ecosystems while allowing for the appropriate development of solar, wind and geothermal energy projects. The DRECP designates 148,000 acres of Development Focus Areas in Riverside County.
13	NRG Blythe II	Blythe	NRG	Operational	150	20 MW solar PV facility next to the NRG's 21 MW Blythe Project that came online in spring 2017.

1 - The data shown on Figure 3.1-1 for the Development Focus Areas, ACECs, and NLCS was taken from the DRECP Final EIS.

2 - Project location information is not available and not depicted on the map in Figure 3.1-1 but all projects would be located on private land in the Blythe area.

Source: NextEra, no date; CEC, 2018; DOE, 2018; BLM, 2018a; BLM, 2015; NRG, 2018.

Table 3.1-2. Probable Future Projects in the Project Area

ID	Project Name; Agency ID	Location	Ownership	Status	Acres	Project Description
A	Desert Southwest Transmission Line	118 miles primarily parallel to the Devers-Palo Verde 500 kV line	Imperial Irrigation District	Final EIR/EIS prepared in 2005, approved by the BLM in 2006	N/A	Approximately 118-mile 500 kV transmission line from a new substation/switching station near the Blythe Energy Project to the existing Devers Substation located approximately 10 miles north of Palm Springs, California.
B	Palo Verde Mesa Solar Project	East of Blythe in the, near the Neighbors Boulevard	Renewable Resources Group	Approved by Riverside County in August 2017	3,250	A 465 MW PV solar plant on 50 parcels totaling 3,250 acres, primarily on agriculture land. Gen-tie line is approximately 11.8 miles to the Colorado River Substation.
C	Eagle Mountain Pumped Storage Project	Eagle Mountain iron ore mine, north of Desert Center	Eagle Crest Energy Company	Deadline to begin construction expired in June 2018, legislation pending that would allow for additional extensions of FERC License issued June 2014	90	1,300 MW pumped storage project designed to store off-peak energy to use during peak hours. The captured off-peak energy would be used to pump water to an upper reservoir. When the water is released to a lower reservoir through an underground electrical generating facility the stored energy would be added into the Southwestern grid during "high demand peak" times, primarily weekdays.
D	Rice Solar Energy Project	Rice Valley, Eastern Riverside County	Rice Solar Energy, LLC (Solar Reserve, LLC)	Approved by Energy Commission, BLM, and WAPA in 2010. Construction still not started.	1,410	150 MW solar power tower project with liquid salt storage. Project is located on approximately 1,410 acres and includes a power tower approximately 650 feet tall and a 10-mile-long interconnection with the WAPA Parker-Blythe transmission line.
E	Desert Quartzite Solar	South of I-10, 8 miles southwest of Blythe	Desert Quartzite LLC (First Solar)	Under environmental review (Draft EIS/EIR issued August 10, 2018)	3,770	A 450 MW solar PV facility with a project substation, access road, and transmission line, all located on BLM land.
F	Crimson Solar	South of I-10, 8 miles southwest of Blythe	Sonoran West Solar Holdings, LLC (Recurrent Energy)	Scoping complete May 2018	2,500	An up to 350 MW solar PV project located on BLM land. The project would interconnect to the SCE Colorado River Substation.
G	Blythe Mesa Solar Project	East of Blythe	Renewable Resources Group	Approved by Riverside County in May 2015. Gen-tie approved by BLM in August 2015. Construction still not started.	3,600	Up to 485 MW solar PV project located outside Blythe on private land. The gen-tie line would cross BLM land to reach the SCE Colorado River Substation.

Table 3.1-2. Probable Future Projects in the Project Area

ID	Project Name; Agency ID	Location	Ownership	Status	Acres	Project Description
H	Desert Harvest Solar Project	North of Desert Center	EDF-RE	Approved by the BLM and Riverside County in 2013. Construction still not started.	1,208	A 150 MW solar PV project located immediately south of the Desert Sunlight project. The gen-tie route would parallel the existing Desert Sunlight line to interconnect with the existing SCE Red Bluff Substation.
I	DC 50 Solar Project	East of Desert Center	NRG Solar Desert Center, LLC	SF299 and POD submitted to BLM in November 2012	450	A solar PV project located on 450 acres of private agriculture land, adjacent to the Palen Solar Project. Gen-tie line would cross BLM land to reach the SCE Red Bluff Substation
J	California Jupiter, LLC Jupiter solar application (CACA 56477)	East of Desert Center	California Jupiter, LLC	SF299 form submitted to BLM in October 2014	1,800	A solar PV project located on 1,800 acres of land administered by the BLM. Project would use single access tracking and would interconnect with the SCE Red Bluff Substation.
K	IO Solar Project (CACA 56782)	East of Desert Center	First Solar	SF299 form submitted to BLM in May 2016	3,500	A solar PV project located on 3,500 acres of land administered by the BLM with a gen-tie line inter-connection to the SCE Red Bluff Substation
L	SunPower Project	East of Desert Center	SunPower	SF299 form submitted to BLM in July 2016	2,000	An up to 400 MW solar PV project located on up to 2,000 acres of land administered by the BLM. Project would interconnect with the SCE Red Bluff Substation. Construction would take up to 24 months and would likely occur between 2019 and 2021.
M	Victory Pass I, LLC	East of Desert Center	SunPower	CUP submitted to Riverside County	1,200	A 200 MW solar PV project and storage facility in the Chuckwalla Valley, entirely on private land.
N	Palen Solar Project	East of Desert Center	EDF Renewable Energy	Final SEIS/EIR published in May 2018. Approved by BLM in November 2018.	3,400	A 500 MW PV project located 11 miles east of Desert Center on BLM land. Includes a 6-mile gen-tie line into the Red Bluff Substation.
— ¹	(eligible) Renewable Energy Development Program	Riverside County	Riverside County	In process	N/A	In 2014, the County initiated the eRED Planning program with funding from the Energy Commission. The purpose of the program is to coordinate and encourage eligible renewable energy resource development at the General Plan level including a General Plan Amendment.

Table 3.1-2. Probable Future Projects in the Project Area

ID	Project Name; Agency ID	Location	Ownership	Status	Acres	Project Description
— ²	Paradise Valley Development – Specific Plan No. 339	Approximately 30 miles west of Desert Center (8 miles east of the city of Coachella)	GLC Enterprises, LLC	Under environmental review – Notice of Preparation of a Draft EIR published in October 2015.	5,000 (development footprint is 1,800 acres)	Project is a Specific Plan that would define and provide development standards and implementation measures for the planning community, or new town, of Paradise Valley. The project would develop approximately 1,800 acres of an approximately 5,000-acre site providing for 8,500 residential units, about 1.38 million square feet of non-residential land uses (commercial office, retail, hotels, light industrial and public facilities) and 110 acres of recreational trails and parks.
	Ten West Link Transmission Line	From the Colorado River Substation in Blythe California west to Tonopah Arizona	Abengoa Transmission & Infrastructure, LLC, and Starwood Energy Group Global, Inc.	Under environmental review – Notice of Intent to prepare an EIS published in March 2016	N/A	The proposal is to build a 500 kV transmission line from Tonopah, Arizona, to Blythe, California. It would span 114 miles, with 83 miles of it on public lands managed by the BLM. All but 17 miles of the line would be in the Arizona counties of Maricopa and La Paz with the remainder in Riverside County, California.

1 - Project does not include specific locations at this time.

2 - Project would be west of the region shown on Figure 3.1-1.

Source: BLM, 2018b; BLM, 2018c; BLM, 2018a; Roth, 2018

Figure 3.1-1. Cumulative Projects

3.2 Aesthetics

Aesthetics refers to the elements of the landscape that contribute to the aesthetic and/or scenic character and quality of the environment. These elements can be either natural or human-made. This section describes the environmental setting, regulatory framework, and aesthetic impacts associated with the proposed Project and alternatives. This section also identifies the mitigation measures necessary to avoid or reduce any adverse aesthetic impacts that result from Project implementation. All figures referenced in this section are presented in sequence in the *Aesthetics & Glare Analysis Report* contained in EIR Appendix J.

The following paragraphs review some of the key terms used in this section.

The term ***Aesthetics*** (as defined above) is generally considered interchangeable with the term ***Visual Resources***. Throughout this section, the use of the term *Aesthetics* will generally be adhered to though, in a few cases, the term *visual resources* is also used for greater specificity. The reader can view these terms as interchangeable and equal.

The title of the project being analyzed is ***IP Athos Renewable Energy Project*** and includes the various, non-contiguous parcel groups on which the solar facilities would be constructed and the linear routes where the interconnecting generation tie (gen-tie) line would be located. In the *Aesthetics* section, the title is shortened to ***Project*** (typically used) or ***proposed Project*** (occasionally used) and are distinct from references to the alternatives. Again, the reader can view the terms *Project* or *proposed Project* as interchangeable and equal.

There are several locational or area terms that are used throughout the Aesthetics section. ***Regional landscape*** generally refers to the arid desert of southeastern California within which the Chuckwalla Valley and surrounding mountains are located. This is the largest geographic area referenced in the section. The term ***viewshed*** is discussed in greater detail in Section 3.2.1 but generally refers to all areas from which some component of the Project may be seen. For the present Project, this generally means the central and northern portions of the Chuckwalla Valley and the surrounding, Project-facing mountain slopes and ridges.

The terms ***Project area*** or ***area*** are imprecise references to the land area from which the Project would typically be viewed. In the present case, the *Project Area* or *area* would generally consist of the broader central and northern portions of the Chuckwalla Valley where the Project would be located. The term ***northern Project area*** generally refers to Parcel Group A (see below) and the associated portion of Gen-Tie Segment #1. The term ***central Project area*** generally refers to Parcel Groups B through F and the associated portions of Gen-Tie Segments #1 through #4. And the term ***eastern or easternmost Project area*** generally refers to Parcel Group G and associated portion of Gen-Tie Segment #3. The term ***immediate Project area*** simply refers to the area(s) in close proximity or adjacent to the Project facilities.

The terms ***Project site*** or ***site*** refer to the collective location of the various land parcels and routes where Project facilities would be situated. These terms are interchangeable and equal. ***Project sites*** is primarily used to acknowledge the fact that the Project is actually located on several non-contiguous groups of parcels and routes. Secondly, the term is used interchangeably with *Project Site* to refer to the precise land area(s) where the Project facilities would be located. The terms ***parcel group(s)***, ***private parcel groups***, or ***private lands*** refer to one or more of the seven groups of private parcels (designated A through G) that comprise the locations for the proposed solar facilities and a portion of the gen-tie line (see Figure 2-2 in Section 2). While the individual parcels making up a group are contiguous, four of the seven groups are not contiguous with the other groups. These terms are interchangeable and equal.

The terms ***solar facilities***, ***solar arrays***, or ***array field(s)*** are used to refer to the collective locations of solar panels and associated facilities (but not the gen-tie line). These terms are interchangeable and equal.

3.2.1 Environmental Setting

Regional Landscape

The Project landscape is part of the Great Basin section of the Basin and Range physiographic province, a vast desert area of the western U.S. extending from eastern Oregon to western Texas, characterized by periodic north-south trending, highly eroded mountain ranges that rise sharply from, and are separated by, broad, flat desert valleys. The topography of the basin is relatively flat with occasional desert washes. The Project region marks the transition zone between the high elevation Mojave Desert to the north and the arid, lower elevation Sonoran Desert to the south and east. The Project is located in Chuckwalla Valley in eastern Riverside County. The Chuckwalla Valley is a broad, flat desert plain that includes scattered dry lakes and rolling sand dunes and is bordered by a number of rugged mountain ranges including the Eagle Mountains to the west and north, the Coxcomb and Granite mountains to the north, the Palen Mountains to the northeast, and the Chuckwalla Mountains to the south. The rugged ridges, angular forms and bluish hue of the surrounding mountains provide a contrast of visual interest to the flat, light-colored, horizontal landform of the Chuckwalla Valley floor and Project site. Views within Chuckwalla Valley tend to be expansive in scope and capture a landscape that appears relatively visually intact though a number of dispersed energy facilities are visible.

Project Site

The Project site consists of seven groups of private parcels (for the solar facilities) and four interconnecting gen-tie routes on both private and public lands, collectively situated on both sides of State Route 177 (SR-177), north of Interstate 10 (I-10), and beginning approximately 2.5 miles northeast of Desert Center. The area surrounding the Project site is very lightly populated and most of the lands making up the Project site are presently undeveloped, consisting mainly of desert scrub (largely scattered creosote bushes), lakebed, and dune landscapes that are predominantly intact on the broad Chuckwalla Valley floor (ranging in elevation from 495 feet to 797 feet above mean sea level). There are several desert washes that pass through or adjacent to the Project site, indicated primarily by associated vegetation (e.g., desert dry wash woodlands). While all lands have scenic value, areas with the most variety and most harmonious composition have the greatest scenic value. The relatively flat desert landscape of the Project site has a low level of variety and distinctiveness, exhibiting limited variation in form, line, color palette, and texture that is common to the region.

The vegetation on the Project site and in the Project area appears relatively non-descript and subdued in color. Although the distant mountain ranges that surround the Chuckwalla Valley provide backdrops of visual interest, the Project site's landscape is generally lacking in visual variety and scenic quality and is substantially influenced by the abundance of cultural modifications in the Project area including three transmission lines, Red Bluff Substation, and I-10 to the south; the Desert Sunlight gen-tie line with its Corten tubular steel poles to the west and south; the Lake Tamarisk Desert Resort to the west; the Desert Sunlight Solar Project to the northwest; the Genesis Solar Electric Project to the east; scattered residences and built structures, 4-wheel drive tracks, and access roads throughout the area; and SR-177 that passes through the Project site. Overall, the existing scenic quality of the Project site appears common to the region and would correspond to the Bureau of Land Management (BLM) Visual Resource Management (VRM) Scenic Quality Classification C (low scenic value).

The BLM-administered public lands that would be crossed by the gen-tie line are located within a Development Focus Area (DFA) per the 2016 Desert Renewable Energy Conservation Plan (DRECP) Land Use Plan Amendment (LUPA), which allows activities associated with solar, wind, and geothermal development,

operation and decommissioning (BLM, 2016). Therefore, the public lands crossed by the gen-tie line have been assigned VRM Class IV under the BLM's VRM System since the LUPA assigns VRM Class IV to DFAs.

As defined in BLM Manual H-8410-1 Visual Resource Inventory (BLM, 1986a), the **VRM Class IV** management objective is:

"...to provide for management activities, which require major modification of the existing character of the landscape. The level of change to the characteristic landscape can be high. These management activities may dominate the view and be the major focus of viewer attention. However, every attempt should be made to minimize the impact of these activities through careful location, minimal disturbance, and repeating the basic elements in the predominant natural features of the characteristic landscape."

Viewshed and Potentially Affected Viewers

The viewshed or area of potential visual effect (the area within which the Project could potentially be seen) is extensive and encompasses much of Chuckwalla Valley and the Project site-facing slopes and ridgelines of the surrounding mountains. Figures 3.2-1A and 1B illustrate the visibility of the proposed gen-tie line and solar facilities respectively. However, these viewshed maps are based solely on "line-of-site" terrain models that do not account for possible vegetation or structural screening. A notable feature of this flat desert landscape is the potential for large projects to be seen over great distances. This is due to the large, open areas of level topography and absence of intervening landscape features. However, due to the relatively low profile of the solar panels and the flat topographic character of Chuckwalla Valley, the majority of viewers would be located at elevations similar to that of the Project and would typically be limited to views of the edges of the solar fields, particularly along SR-177. Views from greater distances with some elevational change (generally along I-10), however, can provide visual access to the central portions of the array fields. The distance zone for all portions of the Project is foreground/middleground (under 5 miles) due to the relatively close proximity of either I-10 and SR-177 to the Project facilities.

There are a number of sensitive land uses and protected areas within the expansive Project viewshed including: Desert Lily Sanctuary Area of Critical Environmental Concern (ACEC), Palen Dry Lake and Sand Dunes Area, and Palen-McCoy Wilderness to the northeast; Palen Dry Lake ACEC and Ford Dry Lake Off-highway Vehicle Area to the east; Chuckwalla Mountains Wilderness to the south; Alligator Rock ACEC and Desert Center to the southwest; Lake Tamarisk Desert Resort to the west; and Joshua Tree Wilderness to the northwest.

Potentially affected viewers within the Project area include residential viewers in Lake Tamarisk Desert Resort and dispersed rural residences; recreational visitors to ACECs, Wilderness Areas, and open public lands; and travelers along the main transportation corridors (I-10 and SR-177). All three viewing groups are considered to have generally high visual sensitivity with high expectations for maintaining the existing landscape conditions. The introduction of new features exhibiting industrial character would typically be perceived as an adverse visual change.

3.2.2 Regulatory Framework

Federal

Federal Land Policy and Management Act

Section 102(a) of the Federal Land Policy and Management Act of 1976 (BLM, 1976) states that "...the public lands are to be managed in a manner that will protect the quality of scientific, scenic, historical, ecological, environmental, air and atmospheric, water resource, and archeological values." Section 103(c) identifies "scenic values" as one of the resources for which public land should be managed. Section 201(a)

states, “the Secretary shall prepare and maintain on a continuing basis an inventory of all public lands and their resources and other values (including scenic values).” Section 505(a) requires that “each ROW shall contain terms and conditions which will ...minimize damage to the scenic and esthetic values.”

BLM Visual Resource Management (VRM) System

BLM uses the VRM System to inventory and manage scenic values on lands under its jurisdiction. Guidelines for applying the system are described in the BLM Manual Section 8400 et seq. (BLM, 1984). VRM classes are assigned through Resource Management Plans (RMPs). The assignment of VRM classes is based on the management decisions made in the RMPs. As noted above, the 2016 DRECP LUPA assigned a VRM Class IV to the DFA that contains the Project site.

California Desert Conservation Area (CDCA) Plan and Northern and Eastern Colorado Desert Coordination Management Plan

The Recreation Element of the CDCA Plan specifies that VRM objectives and the contrast rating procedure be used to manage visual resources (BLM, 1980). VRM objectives provide the visual management standards for future projects and for rehabilitation of existing projects. Activities within the landscape are designed or evaluated using contrast ratings (BLM, 1986b).

Local

The Project would be subject to visual policies from the Riverside County General Plan.

Riverside County General Plan

The Riverside County General Plan is applicable to all unincorporated lands within Riverside County (County). The following are the County-wide policies that seek to preserve visual quality; they are located in the Riverside County General Plan Land Use Element (Riverside County, 2017), Multipurpose Open Space Element (Riverside County, 2015a), Circulation Element (Riverside County, 2015b), and Desert Center Area Plan (Riverside County, 2015c).

Land Use Element (LU)

I-10 is not a State- or County-designated scenic highway; however, it has been identified by the County in its Circulation Element as eligible for designation as a scenic corridor. The County has indicated in its General Plan Land Use Element that I-10 should be designated a scenic highway and has developed General Plan scenic corridor policies. These policies seek to maintain resources in corridors along scenic highways; these policies include:

- ***Policy LU 4.1.*** *Require that new developments be located and designed to visually enhance, not degrade the character of the surrounding area through consideration of the following concepts:*
 - a. *Compliance with the design standards of the appropriate area plan land use category.*
 - b. *Require that structures be constructed in accordance with the requirements of Riverside County’s zoning, building, and other pertinent codes and regulations.*
 - c. *Require that an appropriate landscape plan be submitted and implemented for development projects subject to discretionary review...*
 - f. *Incorporate water conservation techniques, such as groundwater recharge basins, use of porous pavement, drought tolerant landscaping, and water recycling, as appropriate...*

- k. *Locate site entries and storage bays to minimize conflicts with adjacent residential neighbor-hoods.*
 - l. *Mitigate noise, odor, lighting, and other impacts on surrounding properties...*
 - o. *Preserve natural features, such as unique natural terrain, arroyos, canyons, and other drainage ways, and native vegetation, wherever possible, particularly where they provide continuity with more extensive regional systems.*
- **Policy LU 7.4.** *Retain and enhance the integrity of existing residential, employment, agricultural, and open space areas by protecting them from encroachment of land uses that would result in impacts from noise, noxious fumes, glare, shadowing, and traffic.*
 - **Policy LU 9.1.** *Provide for permanent preservation of open space lands that contain important natural resources, cultural resources, hazards, water features, watercourses including arroyos and canyons, and scenic and recreational values.*
 - **Policy LU 14.1.** *Preserve and protect outstanding scenic vistas and visual features for the enjoyment of the traveling public.*
 - **Policy LU 14.2.** *Incorporate riding, hiking, and bicycle trails and other compatible public recreational facilities within scenic corridors.*
 - **Policy LU 14.3.** *Ensure that the design and appearance of new landscaping, structures, equipment, signs or grading within Designated and Eligible State and County Scenic Highways corridors are compatible with the surrounding scenic setting or environment.*
 - **Policy LU 14.4.** *Maintain at least a 50-foot setback from the edge of the right-of-way for new development adjacent to Designated and Eligible State and County Scenic Highways.*
 - **Policy LU 14.5.** *Requires “new or relocated electric or communication distribution lines, which would be visible from Designated and Eligible State and County Scenic Highways, to be placed underground.”*
 - **Policy LU 14.6.** *Prohibit off-site outdoor advertising displays that are visible from Designated and Eligible State and County Scenic Highways.*
 - **Policy LU 14.7.** *Require that the size, height, and type of on-premise signs visible from Designated and Eligible State and County Scenic Highways be the minimum necessary for identification. The design, materials, color, and location of the signs shall blend with the environment, utilizing natural materials where possible.*
 - **Policy LU 14.8.** *Avoid the blocking of public views by solid walls.*
 - **Policy LU 30.8.** *Require that industrial development be designed to consider the surroundings and visually enhance, not degrade the character of the surrounding area.*
 - **Policy LU-31.5.** *Requires that “public facilities be designed to consider their surroundings and visually enhance, not degrade the character of the surrounding area.”*

Multipurpose Open Space (OS) Element

- **Policy OS-20.2** *Prevent unnecessary extension of public facilities, services, and utilities, for urban uses, into Open Space-Conservation designated areas.*
- **Policy OS-21.1.** *Identify and conserve the skylines, view corridors, and outstanding scenic vistas within Riverside County.*

Circulation Element

Policies that seek to protect and maintain resources along scenic highways are incorporated into the Circulation Element; these include the following:

- **Policy C-19.1.** *Preserve scenic routes that have exceptional or unique visual features in accordance with Caltrans' (the California Department of Transportation's) Scenic Highways Plan.*
- **Policy C-25.2.** *Locate new and relocated utilities underground when possible and feasible. All remaining utilities shall be located or screened in a manner that minimizes their visibility by the public*

Desert Center Area Plan

- **Policy DCAP 4.1** *When outdoor lighting is used, require the use of fixtures that would minimize effects on the nighttime sky and wildlife habitat areas, except as necessary for security reasons.*
- **Policy DCAP 8.1** *Protect the scenic highways within the Desert Center Area Plan from change that would diminish the aesthetic value of adjacent properties through adherence to the policies found in the Scenic Corridors sections of the General Plan Land Use, Multipurpose Open Space, and Circulation Elements.*

3.2.3 Methodology for Analysis

This section provides a discussion of the methodology used to assess impacts to aesthetic resources that could occur as a result of construction, operation, and decommissioning of the Project. The potential aesthetic, light, and glare impacts are evaluated on a qualitative basis. The methodology used to assess the potential Project effects is derived from the BLM's VRM System. Under the VRM System's visual contrast rating (VCR) method (BLM, 1986b and 1984), a project (and alternatives) is analyzed for its effects on aesthetic or visual resources by comparing the landscape characteristics that would be created by the project to the existing landscape characteristics and arriving at an assessment of visual contrast that would result from changes in landforms and water, vegetation, and structures. The degree of contrast can range from None to Strong and essentially evaluates a project's consistency with the visual elements of form, line, color, and texture already established in the landscape. In a sense, visual contrast indirectly indicates a particular landscape's ability to absorb a project's components and location without resulting in an uncharacteristic appearance. In other words, the amount of visual contrast between a project and the existing landscape character directly determines the degree to which a project would adversely affect the visual quality of an existing landscape.

Other elements that are considered in evaluating visual contrast include the degree of natural screening by vegetation and landforms; placement of structures relative to existing vegetation, landforms, and other structures; observer's angle of view relative to the project; distance from the point of observation; viewing duration/spatial relationships; atmospheric conditions; season of use; lighting conditions; and relative size or scale of a project. These contrast determinations are made from representative viewing locations or Key Observation Points (KOPs).

Once the degree of anticipated contrast is determined, a conclusion on the overall level of change is made (ranging from Very Low to High) and either:

- (a) compared to the applicable VRM Classification to determine conformance with the established VRM class Management objectives (for lands administered by the BLM, which in the present case, is limited to portions of the gen-tie routes that connect the Project to Red Bluff Substation on the south side of I-10), or
- (b) considered within the context of the existing landscape's Overall Visual Sensitivity to arrive at an impact significance conclusion for the facilities on private lands not administered by the BLM (the

seven private parcel groups). These Impact significance conclusions for private lands are based on the CEQA impact significance criteria presented in Section 3.2.4. The overall visual sensitivity of the private lands is determined as a summation of the three contributing and equally weighted factors of visual quality, viewer concern, and overall viewer exposure (which itself is a summation of visibility, distance zone, number of viewers, and duration of view).

Selection of KOPs

KOPs are representative, stationary viewing locations selected for the purpose of analyzing and describing existing visual resources in the Project area and for preparing visual simulations and contrast rating analyses. KOPs were generally selected to be representative of the most critical or typical public viewing locations from which the Project would be seen. KOPs were located based on their usefulness in evaluating existing landscapes and potential impacts on the affected viewing populations, and from various vantage points. Typical KOP locations for the Project include: (1) major or significant travel corridors or points of visual access; (2) residential areas; (3) significant recreation areas; (4) locations that capture both the solar arrays and the gen-tie line; and (5) locations that capture different viewing distances and view orientation. At each KOP, the existing landscape was characterized and photographed. Photographs are presented as 11" x 17" color images at "life-size scale" when viewed at a standard reading/viewing distance of 18 inches (i.e., when the image is held at a distance of 18 inches from the eye, all landscape features in the images would appear to be the same scale and size as they would appear in the field at the viewpoint location). Six KOPs were selected to characterize the local setting and the visual contrast caused by the Project. One KOP (#7) was selected to provide a cumulative assessment of the reasonably foreseeable solar projects. KOP locations and view directions are shown on the KOP map presented as Figure 3.2-2 and are listed below.

- **KOP 1: Eastbound I-10**, approximately one mile east of the Desert Center/SR-177 overpass. This view captures the central portion of the Project in the vicinity of SR-177 (see Figures 3.2-3A/3B).
- **KOP 2: Northbound SR-177**, approximately 1.5 miles northeast of Desert Center and approximately 1.5 miles southwest of the proposed Project. This view captures a central portion of Chuckwalla Valley where the solar arrays and gen-tie line would be located on both sides of SR-177 (see Figures 3.2-4A/4B).
- **KOP 3: Lake Tamarisk Desert Resort**, at the east end of the residential development. This view to the east captures a partially screened (by vegetation) view of the central portion of the Project adjacent to SR-177 (see Figures 3.2-5A/5B).
- **KOP 4: Northbound SR-177**, approximately 4 miles northeast of Desert Center. This location provides an immediate foreground view of a central portion of the Project adjacent to the east side of SR-177 (see Figures 3.2-6A/6B).
- **KOP 5: Northbound SR-177**, approximately 4.7 miles northeast of Desert Center. This view focusses on the northernmost parcel group A, located west of SR-177, and a portion of the connecting Gen-Tie Segment #1 (see Figures 3.2-7A/7B).
- **KOP 6: Northbound Corn Springs Road**, approximately 1.1 miles south of Chuckwalla Valley Road. This view would capture the easternmost array fields of the Project and the eastern extension of the connecting Gen-Tie Segment #3, as viewed from Corn Spring Road, which is the primary entry to the Corn Springs campground and Chuckwalla Wilderness (see Figures 3.2-8A/8B).
- **KOP 7: Westbound I-10**, approximately 5.3 miles east of Desert Center at Palen Ditch. This cumulative project view to the northwest would capture portions of various proposed solar projects and the associated gen-tie lines (see Figures 3.2-9A/9B).

Linear Viewpoints

In contrast to the stationary views at site-specific KOPs, transient views along segments of roadway (linear viewpoints or LVPs) are variable and can range from unobstructed to completely screened (typically by roadside vegetation or structures). As a result, LVPs can provide greater visual context for the site-specific, single-view visual assessments developed for KOPs. LVP analyses of the Project were prepared for the two important roadways in the Project area including eastbound and westbound I-10 and northbound and southbound SR-177. The linear viewpoint analyses (presented in Section 3.2.5) are based on actual field verification of travel views and distances and consider views up to 90 degrees off the direction of travel. As shown in the LVP Map presented as Figure 3.2-10, Project visibility along each of the roads was classified into one of five, color-coded view categories that pertain to the Project and include road segments where:

- The Project would be only intermittently visible;
- The Project would be visually noticeable;
- The Project would be visually prominent;
- The Project would be visually co-dominant (with other existing landscape features); or
- The Project would be visually dominant.

It should be noted that where the Project would be located adjacent to existing facilities (e.g., Desert Sunlight gen-tie line), it is the incremental difference between what is currently visible in the field of view and what would be visible in the field of view upon Project implementation that is considered.

Visual Simulations

Digital techniques were used to produce simulations of the Project as it would appear from each of the six representative Project KOPs (Nos. 1 through 6). The simulations were compared to “pre-Project” photographs in order to predict future visual effects of the Project for each KOP and were utilized in the completion of contrast rating forms. The paired images (existing view and visual simulation) for each of the six KOPs are presented in Appendix J.

Assessment of Visual Contrast

As previously discussed, the degree of visual contrast that could result from changes in landforms and water, vegetation, and structures can be None, Weak, Moderate, or Strong and essentially evaluates a project’s consistency with the visual elements of form, line, color, and texture already established in the landscape. Since there are no notable water features affected by the Project, this factor is not considered further. The visual contrast ratings are generally defined as follows:

- **None** – The element of contrast is not visible or perceived;
- **Weak** – The element of contrast can be seen but does not attract attention;
- **Moderate** – The element of contrast begins to attract attention and begins to dominate the characteristic landscape; and
- **Strong** – The element of contrast demands the viewer’s attention and cannot be overlooked.

The assessment of visual contrast was done in the field from six representative KOPs as shown in Figure 3.2-2. To aid the analysis, a visual simulation was prepared for each KOP. The six Visual Contrast Rating Data Sheets are presented in Appendix J, and the major components of the Contrast Rating Data Sheets are summarized in the following paragraphs.

Landform Contrast

Landform contrast is the contrast that ground-disturbing activities would create with the existing landscape. Soil exposure and grading, blading roads, and other activities that alter the ground or landform create changes in color, shape, and slope that can contrast with the existing landscape. For example, depending on baseline conditions, even minimal grading on a flat site can expose soil and create a noticeable level of color contrast.

Vegetation Contrast

Vegetation contrast is the contrast that vegetation clearing would create with the vegetation in the existing landscape. Vegetation contrast considers just the change in vegetation and does not consider structures that are part of the Project. Depending on baseline conditions, removal of, or damage to, sparse vegetation or vegetation that is low-growing and/or has a high level of recoverability, such as agricultural land, disturbed bare ground, and grasslands, would typically result in a weak level of contrast with the existing landscape. Removal of low, woody vegetation (brush or bushes) would typically result in a moderate level of contrast with the existing landscape, and removal of overstory vegetation (trees) would typically result in a strong level of contrast with the existing landscape. In an arid/desert landscape, unnatural lines of demarcation in vegetation resulting from grading or removal can cause visual contrast that persists over years due to the slow pace of recovery that is typical of desert vegetation.

Structure Contrast

Structure contrast is the contrast of the built or structural components of a project with the existing landscape. A strong level of contrast typically results from building a project where no similar structures of a similar scale to the project structures are nearby (or parallel to linear structures, such as transmission lines). A moderate level of contrast typically exists when new structures are built near similar but smaller existing structures. A weak level of contrast typically exists when structures are built near similar structures of a similar or larger scale.

Project Dominance and View Blockage or Impairment

Two additional factors that contribute to the contrast determinations are Project Dominance and View Blockage or Impairment. Project dominance is a measure of a project feature's apparent size relative to other visible landscape features in the viewshed or seen area. A feature's dominance is affected by its relative location in the viewshed and the distance between the viewer and feature. The level of dominance can range from subordinate to dominant. View blockage or impairment is a measure of the degree to which a project would obstruct or block views to higher value and previously visible landscape features due to the project's position and/or scale. Blockage of aesthetic landscape features or views can cause adverse aesthetic/visual impacts.

Determining Overall Visual Change and Visual Impact Significance

Once the degree of anticipated contrast (for landform, vegetation, and structures) is determined by comparing the post-project landscape characteristics with the existing landscape characteristics and is documented in the contrast matrix of the Visual Contrast Rating Data Sheet for each KOP (see Appendix J), the overall visual change can be qualitatively determined (ranging from very low to high). Under the VRM System for the gen-tie line on BLM-administered lands, the overall visual change conclusion enables a consistency determination with the applicable VRM Class management objective (Class IV in this case and as defined above in Section 3.2.1).

For the solar fields and gen-tie line on private lands, the overall visual change conclusion is combined with determinations of overall visual sensitivity at each KOP to arrive at visual impact significance conclusions (which is required under CEQA but not NEPA) as presented in Table 3.2-1 and defined as follows:

- **Minor and Less than Significant** impacts may or may not be perceptible but are considered minor in the context of existing landscape characteristics and view opportunity.
- **Adverse but Less than Significant** impacts are perceived as negative but do not exceed environmental thresholds.
- **Adverse and Potentially Significant** impacts are perceived as negative and may exceed environmental thresholds depending on project- and site-specific circumstances. However, with feasible mitigation, significant impacts may be reduced to less-than-significant levels or avoided altogether.
- **Significant** impacts are perceived as negative and exceed environmental thresholds; however, with feasible mitigation, significant impacts may be reduced to less-than-significant levels or avoided altogether. Without mitigation or avoidance measures, significant impacts would exceed environmental thresholds.

While the interrelationships presented in Table 3.2-1 are intended as guidance only, it is reasonable to conclude that lower visual sensitivity ratings paired with lower visual change ratings will generally correlate well with lower degrees of impact significance. Conversely, higher visual sensitivity ratings paired with higher visual change ratings will tend to result in higher degrees of visual impact.

Implicit in this rating methodology is the acknowledgment that for a visual impact to be considered significant, two conditions generally exist: (1) the existing landscape is of reasonably high quality and is relatively valued by viewers, and (2) the perceived incompatibility of one or more project elements or characteristics tends toward the higher extreme, leading to a substantial reduction in visual quality.

Table 3.2-1. General Guidance for Determining Impact Significance Under CEQA

OVERALL VISUAL SENSITIVITY	OVERALL VISUAL CHANGE				
	Low	Low-to-Moderate	Moderate	Moderate-to-High	High
Low	Minor and Less than Significant	Minor and Less than Significant	Adverse but Less than Significant	Adverse but Less than Significant	Adverse but Less than Significant
Low-to-Moderate	Minor and Less than Significant	Adverse but Less than Significant	Adverse but Less than Significant	Adverse but Less than Significant	Adverse and Potentially Significant
Moderate	Adverse but Less than Significant	Adverse but Less than Significant	Adverse but Less than Significant	Adverse and Potentially Significant	Adverse and Potentially Significant
Moderate-to-High	Adverse but Less than Significant	Adverse but Less than Significant	Adverse and Potentially Significant	Adverse and Potentially Significant	Significant
High	Adverse but Less than Significant	Adverse and Potentially Significant	Adverse and Potentially Significant	Significant	Significant

Light and Glare

Solar photovoltaic (PV) panels are designed to absorb approximately 70 percent of solar energy and convert it directly to electricity. The glare and reflectance levels from a given PV system are decisively lower than the glare and reflectance generated by standard glass and other common reflective surfaces, such as glass and metal in rural environments and water.

For the proposed Project, glare was modeled using ForgeSolar (2018) glare analysis tools. The exact type of PV panels to be used in the Project are not known; therefore, assumptions were used to run the model to predict any potential impacts to airplanes, vehicles, or people in the Project area in eastern Riverside County. The model assumed the use of single-axis rotation tracking solar PV panels made of smooth glass without anti-reflective coating, and it used default direct normal irradiance (DNI), which varies and peaks at 1,000 Watts per square-meter (W/m^2). In addition, the model considered variations in panel reflectivity with respect to the position of the sun.

The following assumptions regarding the solar panel configuration for all PV panel arrays analyzed were also used:

- Tracking axis orientation: 180.0 degrees
- Tracking axis tilt: 90.0 degrees
- Tracking axis panel offset: 0.0 degrees
- Maximum tracking angle: 60.0 degrees
- Resting angle: 60.0 degrees

Default observer eye characteristics were used for glare analysis, as follows:

- Analysis time interval: 1 minute
- Ocular transmission coefficient: 0.5
- Pupil diameter: 0.002 meters
- Eye focal length: 0.017 meters
- Sun subtended angle: 9.3 milliradians

Green glare is defined as glare with a low potential to cause an after-image, or flash blindness, when observed prior to a typical blink response time. Yellow glare is defined as glare with a potential to cause an after-image when observed prior to a typical blink response time.

3.2.4 CEQA Significance Criteria

The significance criteria for aesthetics listed in the CEQA Environmental Checklist, Appendix G of the State CEQA Guidelines, were used to assess the significance of visual impacts resulting from the Project. These thresholds indicate that a project could have potentially significant impact if it would:

- *Have a substantial adverse effect on a scenic vista (see Effects Found Not to Be Significant below).*
- *Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway (see Effects Found Not to Be Significant below).*
- *In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings. (Public views are those that are experienced from publicly accessible vantage point). If the project is in an urbanized area, conflict with applicable zoning and other regulations governing scenic quality (see Impact AES-2).*

- *Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area (see Impact AES-3).*

The County of Riverside's Environmental Assessment Form includes additional significance criteria, which were also used in the analysis. The additional criteria indicate that a project could have potentially significant impacts if it would:

- *Result in the creation of an aesthetically offensive site open to public view (see Impact AES-4).*
- *Interfere with nighttime use of the Mt. Palomar Observatory, as protected through Riverside County Ordinance No. 655 (see Effects Found Not to Be Significant below).*
- *Expose residential property to unacceptable light levels (see Impact AES-5).*

Two additional impact significance criteria used in the analysis include:

- *Would Project construction, operation, or decommissioning result in an inconsistency with regulatory plans, policies, and standards applicable to the protection of aesthetics (see Impact AES-6)?*
- *Would Project decommissioning result in a short-term and/or long-term aesthetic effects resulting from increased visual contrast (see Impact AES-7)?*

Effects Found Not to Be Significant

It has been determined that the Project would not result in impacts under the following significance criteria.

- *Have a substantial adverse effect on a scenic vista.*

The Riverside County General Plan does not designate the Project area as an important visual resource, and no scenic vistas were identified in the aesthetics/visual resources Project area. Therefore, no impacts would occur under this criterion. Impacts to views from I-10, which has been identified by the County of Riverside as eligible for designation as a scenic corridor, are addressed under Impact AES-2.

- *Substantially damage scenic resources, including but not limited to trees, rock outcroppings, and historic buildings within a state scenic highway.*

There are no scenic resources at the Project sites and there are no designated state scenic highways in the Project area. Therefore, no impacts would occur under this criterion. Impacts to views from I-10, which has been identified by the County of Riverside as eligible for designation as a scenic corridor, are addressed under Impact AES-2.

- *Interfere with nighttime use of the Mt. Palomar Observatory, as protected through Riverside County Ordinance No. 655.*

The proposed Project area is located approximately 89 miles east of the Mt. Palomar Observatory, which far exceeds the distance to the Observatory's areas of sensitivity (Zone A at a 15-mile radius and Zone B at a 45-mile radius from the Observatory). The Project is expected to use minimal nighttime lighting during construction and operation; however, such uses would be limited, and based on the Project area's distance to the Observatory, would result in no impacts to astronomical observation and research at the Mt. Palomar Observatory.

3.2.5 Proposed Project Impact Analysis

This section presents the findings of the impact analysis of the proposed Project. The impact discussions are organized under the headings: Construction, Operation, and Decommissioning. The effects on aesthetics/visual resources are almost always direct. Two exceptions to this, however, include the indirect effects of increased traffic on roadways beyond the Project area during construction and perceptions of (visible) regional industrialization. Increased traffic associated with construction is addressed in the subsection titled Increased Vehicle Traffic on Roadways Beyond the Immediate Project Area, under the heading Construction below. Perceptions of regional industrialization are addressed in Section 3.2.9, Cumulative Impacts.

During scoping, concerns were raised by the public about visual impacts to the area from the Project and at properties surrounded by solar panels. Additionally, the Twenty-nine Palm Band of Mission Indians recommended a comprehensive Visual Impact Assessment emphasizing the visual effects that may compromise the integrity of cultural resources and tribal cultural resources (TCRs). Potential direct and indirect impacts, including visual, to cultural resources and TCRs are addressed under Cultural Resources (see Section 3.6) and through the Assembly Bill 52 tribal consultation process.

Construction

Impact AES-1. Project construction activities and associated industrial character could cause short-term aesthetic effects resulting from increased visual contrast.

Construction is anticipated to occur over a 30-month period with construction activities occurring simultaneously, though the Project may be phased. Construction activities could cause short-term direct and indirect aesthetic impacts from the visible presence of equipment, materials, vehicles, and workforce at the solar facility sites and along the gen-tie right-of-way; from visible contrast associated with vegetation removal; from visible fugitive dust; from construction night lighting (on an occasional basis); and from increased vehicle traffic on roadways beyond the immediate Project area (indirect effect).

The aesthetic effects caused by the temporary presence of equipment, materials, and workforce would occur throughout the Project sites (solar facilities and gen-tie line). Construction would involve the use of cranes, heavy equipment, temporary storage and office facilities, and temporary laydown/staging areas. Construction activities would include site clearing and grading, assembly of panel arrays, erection of structures, conductor stringing and pulling, and site cleanup and restoration. These activities would be visible from I-10, SR-177, Desert Center, the Lake Tamarisk Resort residential area, the few rural residences in the area, and the surrounding wilderness areas. Throughout the construction period, the industrial character of the activities would cause visual contrast and visual change, which would constitute adverse aesthetic effects when viewed by the general public. However, since the construction activities would be temporary in nature, they would not result in a substantial long-term visual effect. No mitigation is recommended.

Areas of ground surface disturbance and vegetation removal (characterized by high color, line, and texture contrasts) could remain visible from various vantage points for an extended period after the conclusion of construction activities because revegetation of areas in the desert region where the Project would be located is difficult and generally of limited success. However, the vast majority of the areas of ground disturbance will be occupied by permanent facilities, and since most foreground/midground views of the disturbed areas would be at similar elevations (at grade), much of the contrast associated with unnatural vegetative patterns and/or lines would be screened from view by intervening vegetation. This longer-term visual contrast could appear prominent from some viewing locations and cause moderate to high levels of visual change, which, although would still be consistent with the VRM Class IV management

objective (along the gen-tie routes), could result in a significant aesthetic/visual impact under CEQA (from construction of the solar facilities) if not successfully mitigated.

Grading activities for the construction of the solar facilities and access roads, and vehicle travel on unpaved surfaces have the potential to generate short-term dust clouds, which can cause moderate levels of visual contrast and moderate overall visual change, as well as be visually distracting. Although this occurrence would be consistent with the VRM Class IV management objective (along the gen-tie line), it could result in a significant aesthetic/visual impact under CEQA (from construction of the solar facilities) if not controlled properly.

It is anticipated that some construction activity could occasionally take place at night, which could result in substantial adverse night lighting visual effects (contrast) given the general lack of any significant night lighting at the Project sites. The resulting moderate visual contrast would be consistent with the VRM Class IV management objective (along the gen-tie line) but could result in a significant aesthetic/visual impact under CEQA (from construction of the solar facilities) if not controlled properly.

In addition to the direct visual resource effects, construction of the Project would also result in the indirect visual effect of increased vehicle traffic. Although there would be an increase in vehicle trips on regional roads (I-10 and SR-177) associated with construction-related vehicles, it is not expected that in the context of existing non-Project-related traffic, the increased traffic would be noticed by the casual observer, particularly in the major travel corridors (I-10 and SR-177) outside of the immediate construction area. To the extent that a casual observer or local resident perceives any increase in traffic, the duration of the effects would be short-term. Therefore, the resulting visual effect would be less than substantial, and no mitigation is proposed.

Mitigation Measures for Impact AES-1

The Project's visible contrast associated with temporary ground disturbance and vegetation removal can be reduced to levels that would be less than significant through the implementation of Biological Resources Mitigation Measure BIO-5 (Vegetation Resources Management Plan) presented in Section 3.5.10. The significance level would be reduced because the revegetation plan would ensure that much of the vegetation removed during ground disturbance and construction would be replaced.

The Project's visible contrast associated with temporary fugitive dust during construction can be reduced to levels that would be less than significant through the implementation of Air Quality Mitigation Measure AQ-1 (Fugitive Dust Control Plan) presented in Section 3.4.10. The significance level would be reduced because the application of dust control palliatives (e.g., water) would substantially limit the generation of fugitive dust.

The Project's visible contrast associated with temporary uncontrolled night lighting during construction can be reduced to levels that would be less than significant through the implementation of Aesthetics Mitigation Measure AES-1 (Night Lighting Management Plan), presented in Section 3.2.10, which would include the use of downward-directed, fully shielded lights that would prevent the emission of light above the horizontal. Lights would also have the minimum necessary brightness consistent with operational safety and security.

Significance After Mitigation

This construction impact would be less than significant with implementation of Mitigation Measures BIO-5 (Vegetation Resources Management Plan), AQ-1 (Fugitive Dust Control Plan), and AES-1 (Night Lighting Management Plan) as discussed above.

Operation

Impact AES-2. The Project could substantially degrade the existing visual character or quality of public views of the site and its surroundings.

The majority of Project impacts fall into this category. Degradation of visual character or quality results from the introduction of noticeable visual contrast, which relates to spatial characteristics, visual scale, form, line, color, and texture. Degradation also results from Project dominance and the blockage of views to higher value landscape features (e.g., mountains and ridgelines).

As discussed in Section 3.11 (Land Use and Planning), a variance will be necessary for all structures, such as the gen-tie line and/or collector poles, that would be located within the N-A zone exceeding 20 feet in height and/or located in the W-2 zone exceeding 105 feet. Although a variance, may be required for portions of the proposed gen-tie line, there are existing transmission structures in the Project viewshed and electric power lines are considered a utility that would be anticipated to support a solar generation facility. With approval of the CUP and a variance, the Project would be an allowable use under these zones. Impacts of the gen-tie structures from individual KOPs are discussed as follow.

As described in Section 3.2.3 and depicted in Figure 3.2-2, six representative KOPs were selected from the identified sensitive viewpoints and corridors to assess the Project's impact on the existing visual character and scenic quality of the landscape. Additionally, two LVPs (one for I-10 and one for SR-177) were established to provide greater visual context for traveler views than is possible with static viewpoints. The results of the analysis of these views are provided in the following paragraphs.

KOP 1 – Eastbound I-10

This viewpoint is representative of Project views from I-10, which is a County Eligible Scenic Corridor. Figure 3.2-3A presents the existing view to the northeast from KOP 1, which is located approximately one mile east of the Desert Center/SR-177 overpass. The view presented in Figure 3.2-3A captures the central portion of Chuckwalla Valley and the Project area in the vicinity of SR-177, backdropped by the rugged, angular forms of the Coxcomb, Granite, and Palen Mountains, features that contribute visual interest to the views from I-10. Landform colors range from light-tan to lavender and bluish hues at distance. Landform textures appear smooth to granular and coarse. Vegetation appears as patchy clumps to irregular and continuous forms at distance. Vegetation colors include tans and pale to golden yellow for grasses with muted greens, tans and some reddish hues for shrubs. The most prominent structures in this view, beyond the linear, horizontal form of I-10 are the prominent vertical, dark rust-colored, tubular corten steel poles of the Desert Sunlight gen-tie transmission line that parallels and then converges on I-10 to span the freeway to Red Bluff Substation on the south side of I-10. The distant, scattered, white specks on the valley floor indicate the relatively few residential, commercial, agricultural, and abandoned structures along SR-177 and are barely discernable in the middleground of the image. The landscape of the Project site is rather non-descript and generally lacking in visual variety. The overall visual quality is low-to-moderate and common to the greater Chuckwalla Valley, though the adjacent scenery (surrounding mountains) enhances the broader landscape scenic quality.

While motorists on I-10 heading east would enjoy scenic desert views across the western Chuckwalla Valley, upon approach to the Project area, motorist views and sensitivity would be somewhat tempered by the Project's viewing context, which would include the discordant features of dilapidated structures at Desert Center, the existing Desert Sunlight solar facilities to the north of I-10, the Desert Sunlight gen-tie transmission line adjacent to the north side of I-10, and the adjacent utility poles on the south side of I-10. The resulting visual concern would be moderate-to-high. Viewer exposure would be moderate-to-high given

the moderate-to-high visibility of the Project facilities in the foreground/midground viewing distance zone, high volumes of travelers on I-10, and moderate-to-extended duration of view of the Project site. Overall visual sensitivity is classified as moderate given the low-to-moderate visual quality, moderate-to-high viewer concern, and moderate-to-high viewer exposure.

Solar Facility. As shown in the visual simulation presented in Figure 3.2-3B, the Project would result in the introduction of visually prominent facilities into a predominantly natural-appearing, rural desert landscape, though the Desert Sunlight solar facility would be visible farther to the north in the vicinity of the northernmost proposed array field (Parcel Group A) of the proposed Project. Portions of the low-profile solar arrays would be visible as light to dark gray areal masses on the valley floor, partially screened from I-10 views by intervening vegetation. Due to their distance and dispersed locations within the solar arrays, the power block facilities would appear as subordinate features in the larger structure massing. In the context of the existing landscape, the industrial forms of the solar facilities within the foreground to midground would exhibit moderate visual contrast, primarily arising from the horizontal forms and industrial character of the arrays. As a result, the Project would constitute a foreground/midground, visually co-dominant feature in the landscape. The Project would attract the attention of the casual observer, and view blockage of higher value landscape features (e.g., valley floor and vegetation) would be moderate. The overall visual change would be moderate, and in the context of the existing landscape's moderate visual sensitivity, the resulting visual effect would be adverse but less than significant under this criterion. However, implementation of Mitigation Measures AES-2 (Surface Treatment of Project Structures and Buildings) and AES-3 (Project Design) are recommended as they would reduce the visual contrast associated with visually discordant structural features and industrial character.

Gen-tie Line. As shown in the visual simulation depicted in Figure 3.2-3B, the proposed gen-tie line would be only barely discernable from KOP 1 as a series of light-gray, vertical structures along the Chuckwalla Valley floor just beyond the proposed solar fields illustrated in the figure. The structures would be backdropped by the valley floor, and the color of the poles would effectively blend with the background, only becoming slightly noticeable when backdropped by the lightest soils of Palen Dry Lake. From this vantage point, at no time would the poles block or impair views of the mountains beyond. The gen-tie line would cause no visual contrast in terms of modification to landforms or vegetation. The resulting structural contrast for form, line, color, and texture would all be weak. The overall resulting low level of visual change would be consistent with the applicable VRM Class IV management objective, which allows for high levels of change to the characteristic landscape (see KOP 1 Contrast Rating Data Sheet in Appendix J). Also, the resulting impact would be less than significant under the CEQA AES-2 impact criterion. However, implementation of Mitigation Measures AES-2 (Surface Treatment of Project Structures and Buildings) and AES-3 (Project Design) are recommended as they would reduce the visual contrast associated with visually discordant structural features and industrial character.

KOP 2 – Northbound SR-177

KOP 2 is located approximately mid-way between Desert Center and the proposed Project and is representative of Project views from northbound SR-177 approaching the Project from Desert Center. Figure 3.2-4A presents the existing view to the northeast from KOP 2 and captures the central portion of Chuckwalla Valley along SR-177. The flat valley floor is generally lacking in visual variety, though the background angular forms of the Coxcomb, Granite, and Palen Mountains provide features of visual interest. Landform colors range from light-tan to lavender and bluish hues at distance. Landform textures appear smooth to granular and coarse. Vegetation appears as patchy clumps to irregular and continuous forms at distance. Vegetation colors include tans and pale to golden yellow for grasses with muted greens, tans, and some reddish hues for shrubs. The most prominent structures in this view, beyond the linear form of SR-177, is

the prominent vertical, dark-brown wood poles of a roadside utility line. Further to the west, beyond the frame of view in this image, is the existing Desert Sunlight solar project. The visual quality of the Project site and surrounding area is low-to-moderate and common to the greater Chuckwalla Valley, though the adjacent scenery (surrounding mountains) improves the broader landscape appearance. The viewer sensitivity of travelers heading north on SR-177 would be somewhat tempered by the Project's broader viewing context, some of which the traveler would have just passed, and would include the discordant features of dilapidated structures at Desert Center; the roadside utility line; existing residential, commercial, and abandoned buildings along SR-177; the existing Desert Sunlight solar facilities to the west of SR-177; and the Desert Sunlight gen-tie transmission line that converges on and then spans SR-177. The resulting visual concern would be moderate-to-high. Viewer exposure would be moderate-to-high given the moderate visibility of the Project, which is partially screened by intervening vegetation; the relatively high volumes of travelers on SR-177 with moderate-to-extended duration of views; and the foreground/midground viewing distance. Overall visual sensitivity is classified as moderate given the low-to-moderate visual quality, moderate-to-high viewer concern, and moderate-to-high viewer exposure.

Solar Facility. As shown in the visual simulation presented in Figure 3.2-4B, the Project would result in the introduction of visually prominent facilities into a predominantly natural-appearing, rural desert landscape, with the exception of the roadside utility infrastructure and residential and commercial structures. Portions of the low-profile solar arrays would be visible on both sides of SR-177 as light to dark gray, areal masses on the valley floor, though partially screened by roadside and intervening vegetation. Due to their distance and dispersed locations within the solar fields, the power block facilities would appear as subordinate features in the larger structure massing. In the context of the existing landscape, the industrial forms of the solar facilities within the foreground to middleground would exhibit moderate visual contrast, primarily arising from the horizontal forms and industrial character of the arrays. As a result, the Project would constitute a foreground/midground, visually co-dominant feature in the landscape. The Project would attract the attention of the casual observer, and view blockage of higher value landscape features (e.g., valley floor and vegetation) would be moderate. The overall visual change would be moderate, and in the context of the existing landscape's moderate visual sensitivity, the resulting visual effect would be adverse but less than significant under this criterion. However, implementation of Mitigation Measures AES-2 (Surface Treatment of Project Structures and Buildings), AES-3 (Project Design), and AES-4 (Retention of Roadside Vegetation) are recommended as they would reduce the visual contrast associated with visually discordant structural features and industrial character.

Gen-tie Line. As shown in the visual simulation depicted in Figure 3.2-4B, the proposed gen-tie line would be only barely discernable from KOP 2 as a series of light-gray, vertical structures along the Chuckwalla Valley floor, converging on and then spanning SR-177. The structures would be backdropped by the valley floor and low elevation alluvial fans of the surrounding mountains. The lighter color of the poles would contrast slightly with the darker background landforms. From this vantage point, at no time would the poles block or impair views of the mountains beyond. The gen-tie line would cause no visual contrast in terms of modification to landforms or vegetation. The resulting structural contrast for form, line, color, and texture would all be weak. The overall resulting low level of visual change would be consistent with the applicable VRM Class IV management objective, which allows for high levels of change to the characteristic landscape (see KOP 2 Contrast Rating Data Sheet in Appendix J). Also, the resulting impact would be less than significant under the CEQA AES-2 impact criterion. However, implementation of Mitigation Measures AES-2 (Surface Treatment of Project Structures and Buildings), AES-3 (Project Design), and AES-4 (Retention of Roadside Vegetation) are recommended as they would reduce the visual contrast associated with visually discordant structural features and industrial character.

KOP 3 – Lake Tamarisk Desert Resort

KOP 3 is representative of Project views from the east side of the Lake Tamarisk Desert Resort residential area. Figure 3.2-5A presents the existing view to the east toward the central portion of the Project site in the vicinity of SR-177. The flat valley floor is generally lacking in visual variety, though the background angular form of the Palen Mountains provides a feature of visual interest. Landform colors range from light-tan to lavender and bluish hues at distance. Landform textures appear smooth to granular and coarse. Vegetation appears as patchy clumps to irregular and continuous forms at distance. Vegetation colors include tans and pale to golden yellow and green for grasses with muted greens, tans, and some reddish hues for shrubs. A few scattered structures along SR-177 are partially visible in the distance. Overall site visibility from Lake Tamarisk is limited due to the screening provided by intervening vegetation and structures along SR-177. The visual quality of the Project site and surrounding area is low-to-moderate and common to the greater Chuckwalla Valley, though the adjacent scenery (background Palen Mountains) provides visual interest. The viewer concern of the Lake Tamarisk residents would be high given that existing views to the northeast and east toward the distant mountain ranges are open and relatively unobstructed. Viewer exposure would be moderate given the low-to-moderate visibility of the Project site, the foreground/midground distance zone, relatively low numbers of viewers, but relatively long duration of views. Overall visual sensitivity is classified as moderate given the low-to-moderate visual quality, high viewer concern, and moderate viewer exposure.

Solar Facility. As shown in the visual simulation presented in Figure 3.2-5B, the low-profile Project would have limited visibility from the ground-level views available at Lake Tamarisk due to the substantial screening that occurs from intervening vegetation between KOP 3 and the Project. Portions of the low-profile solar arrays would be visible to the east of SR-177 as light to dark gray horizontal linear features along the valley floor. In the context of the existing landscape, the industrial forms of the solar facilities within the foreground to middleground would exhibit low-to-moderate visual contrast, primarily arising from the somewhat noticeable horizontal line of the arrays and the weak to moderate color contrast of the structures with the background landforms. As a result, the Project would constitute a foreground/midground, visually subordinate feature in the landscape. While the Project would be intermittently visible from Lake Tamarisk, it would not attract the attention of the casual observer, and view blockage of higher value landscape features (e.g., valley floor, vegetation, and background mountains) would be low. The overall visual change would be low, and in the context of the existing landscape's moderate visual sensitivity, the resulting visual effect would be adverse but less than significant under the CEQA AES-2 impact criterion. However, implementation of Mitigation Measures AES-2 (Surface Treatment of Project Structures and Buildings), AES-3 (Project Design), and AES-4 (Retention of Roadside Vegetation) are recommended as they would reduce the visual contrast associated with visually discordant structural features and industrial character.

Gen-tie Line. As shown in the visual simulation depicted in Figure 3.2-5B, the proposed gen-tie line would be only barely discernable from KOP 3 as a series of light-gray, vertical structures along the Chuckwalla Valley floor. The structures would be backdropped by the low elevation alluvial fans and foothills of the Palen Mountains. The lighter color of the poles would contrast slightly with the darker background landforms, especially when the background appears darker from cloud shadow (as is the case in the simulation). From this vantage point, at no time would the poles substantially block or impair views of the mountains beyond. The gen-tie line would cause no visual contrast in terms of modification to landforms or vegetation. The resulting structural contrast for form, line, color, and texture would all be weak. The overall resulting low level of visual change would be consistent with the applicable VRM Class IV management objective, which allows for high levels of change to the characteristic landscape (see KOP 3 Contrast Rating Data Sheet in Appendix J). Also, the resulting impact would be less than significant under the CEQA AES-2 impact criterion. However, implementation of Mitigation Measures AES-2 (Surface Treatment of Project

Structures and Buildings), AES-3 (Project Design), and AES-4 (Retention of Roadside Vegetation) are recommended as they would reduce the visual contrast associated with visually discordant structural features and industrial character.

KOP 4 – Northbound SR-177 (South)

This viewpoint is representative of immediate foreground views of the central Project area from SR-177. Figure 3.2-6A presents the existing view to the northeast from KOP 4, which is located immediately adjacent to the Project on northbound SR-177, approximately 4 miles northeast of Desert Center. The view presented in Figure 3.2-6A primarily captures a central portion of Chuckwalla Valley and the Project area east of SR-177. The flat, horizontal, and rather non-descript form of the valley floor is generally lacking in visual variety though it is backdropped by the rugged, angular forms of the Granite and Palen Mountains, which are features that contribute visual interest to the view. Landform colors range from light-tan to lavender and bluish hues at distance. Landform textures appear smooth to granular and coarse. Vegetation appears as patchy clumps to irregular and continuous forms at distance. Vegetation colors include tans and pale to golden yellow for grasses with muted greens, tans, and some reddish hues for shrubs. The most prominent structures in this view beyond the linear form of SR-177 is a wood pole utility line paralleling the west side of SR-177 and a communications tower on the east side of SR-177. The visual quality of the Project site is low-to-moderate and common to the greater Chuckwalla Valley, though the visual quality of the adjacent scenery (distant mountains) appears moderate. Travelers on SR-177 experience a predominantly natural desert landscape, though visually discordant, dispersed, cultural modifications are apparent as a few scattered rural residences and roadside commercial buildings, wood pole utility lines, the adjacent communications tower, a few agricultural properties, and the existing Desert Sunlight solar project to the northwest of KOP 4 (beyond the frame of view in this image). As a result, the somewhat tempered viewer concern would be moderate-to-high. Viewer exposure would be high given the high visibility of the Project in the immediate foreground of views from SR-177 and the relatively high volumes of travelers on SR-177 with moderate-to-extended duration of views. Overall visual sensitivity is classified as moderate-to-high given the low-to-moderate visual quality, moderate-to-high viewer concern, and high viewer exposure.

Solar Facility. As shown in the visual simulation presented in Figure 3.2-6B, the Project would result in the introduction of visually dominant facilities with substantial industrial character, into a predominantly natural-appearing, rural desert landscape lacking such features. The solar arrays, fencing, and gen-tie line would be visible in the immediate foreground, though they would be partially screened by roadside vegetation. In the context of the existing landscape characteristics, the prominent horizontal form and line, industrial character, and darker color of the solar panels would exhibit high visual contrast. The noticeable vertical poles of the gen-tie line (which spans SR-177 in this image) would exhibit moderate visual contrast. The Project would appear as a visually dominant feature in the landscape and would attract the attention of the casual observer. View blockage of the valley floor and Palen Mountains to the east would be high. The overall visual change would be high, and in the context of the existing landscape's moderate-to-high visual sensitivity, the resulting visual effect would be significant under this criterion. Implementation of Mitigation Measures AES-2 (Surface Treatment of Project Structures and Buildings), AES-3 (Project Design), and AES-4 (Retention of Roadside Vegetation) are recommended as they would reduce the visual contrast associated with visually discordant structural features and industrial character, though not sufficiently to reduce the aesthetic impact to a level that would be less than significant. Therefore, the resulting visual change would remain adverse and unavoidable. However, as discussed below in the SR-177 Linear Viewpoint Analysis and illustrated in the Linear Viewpoint Map presented as Figure 3.2-10 in the broader context of all Project views along SR-177, the extent of the impact's significance is limited and would occur only along that portion of SR-177 (northbound and southbound) located immediately

adjacent to Parcel Group C, which represents only 13 percent of the combined northbound and southbound affected travel distance along SR-177 (see Table 3.2-3).

Gen-tie Line. As shown in the visual simulation depicted in Figure 3.2-6B, the proposed gen-tie line would be prominently visible as it spans SR-177 north of this viewpoint and then parallels the east side of the central Project area. The light-gray, vertical structures of the gen-tie line would be noticeably visible depending on backdrop (Granite and Palen Mountains) and extent of visible skylining (extending above the horizon). From this vantage point, the gen-tie line would partially block or impair views of both the Granite Mountains to the northeast and the Palen Mountains to the east. The gen-tie line would cause no visual contrast in terms of modification to landforms or vegetation. However, the resulting structural contrast for form and line would be moderate, while the color contrast would be weak-to-moderate, and the texture contrast would be weak. The overall resulting moderate level of visual change would be consistent with the applicable VRM Class IV management objective, which allows for high levels of change to the characteristic landscape (see KOP 4 Contrast Rating Data Sheet in Appendix J). However, the resulting visual impact would be significant under the CEQA AES-2 impact criterion. Implementation of Mitigation Measures AES-2 (Surface Treatment of Project Structures and Buildings), AES-3 (Project Design), and AES-4 (Retention of Roadside Vegetation) are recommended as they would reduce the visual contrast associated with visually discordant structural features and industrial character, though not sufficiently to reduce the aesthetic impact to a level that would be less than significant. Therefore, the resulting visual change would remain adverse and unavoidable. As discussed above for the solar facility, the extent of the impact's significance is limited and would occur only along that portion of SR-177 (northbound and southbound) located in the vicinity of the span of SR-177.

KOP 5 – Northbound SR-177 (North)

This viewpoint is representative of SR-177 views to the north toward the northernmost solar arrays (Parcel Group A) on the west side of SR-177. Figure 3.2-7A presents the existing view to the north from KOP 5, which is located just north of the gen-tie span of SR-177, approximately 4.7 miles northeast of Desert Center. The view presented in Figure 3.2-7A primarily captures a portion of the northern Chuckwalla Valley. The flat, horizontal, and rather non-descript form of the valley floor is generally lacking in visual variety though it is backdropped by the rugged, angular forms of the Coxcomb Mountains, which are features that contribute visual interest to the view. Landform colors range from light-tan to lavender and bluish hues at distance. Landform textures appear smooth to granular and coarse. Vegetation appears as patchy clumps to irregular and continuous forms at distance. Vegetation colors include tans and pale to golden yellow for grasses with muted greens, tans, and some reddish hues for shrubs. There are no noticeable structures in this view, though the existing Desert Sunlight solar project is partially visible just beyond the frame of view to the west (left). The visual quality of the predominantly natural appearing Project site is low-to-moderate and common to the greater Chuckwalla Valley floor. However, in combination with the higher value adjacent scenery (distant mountains), visual quality is elevated to a moderate-to-high appearance. Travelers on northbound SR-177 experience a predominantly natural desert landscape, though visually discordant, dispersed, cultural modifications are apparent in the surrounding landscape as a few scattered, rural residences and roadside commercial buildings, wood pole utility lines, communications facilities, a few agricultural properties, and the existing Desert Sunlight solar project to the northwest of KOP 5. As a result, the somewhat tempered viewer concern would be moderate to moderate-to-high. Viewer exposure would be moderate-to-high given the high visibility of the foreground gen-tie right-of-way and moderate visibility of the foreground/middleground solar facility, which is partially screened by intervening vegetation, and the relatively high volumes of travelers on SR-177 with moderate-to-extended duration of views. Overall visual sensitivity is classified as moderate given the low-to-moderate visual quality, moderate-to-high viewer concern, and moderate-to-high viewer exposure.

Solar Facility. As shown in the visual simulation presented in Figure 3.2-7B, the solar facility on Parcel Group A would result in the introduction of visually prominent facilities, into a predominantly natural-appearing, rural desert landscape lacking such features. Portions of the low-profile solar arrays would be visible as a light to dark gray areal mass on the valley floor, though they would be partially screened by roadside and intervening vegetation. Due to their distance and dispersed locations within the solar fields, the power block facilities would appear as subordinate features in the larger structural mass. In the context of the existing landscape, the linear form, horizontal line, and structural color and shadowing of the solar facilities would exhibit moderate visual contrast. The Project would constitute a foreground/mid-ground, visually subordinate to co-dominant feature in the landscape and would attract the attention of the casual observer. View blockage of the valley floor and background Eagle and Coxcomb mountains would be low. The overall visual change would be low-to-moderate, and in the context of the existing landscape's moderate-to-high visual sensitivity, the resulting visual effect would be adverse but less than significant under this criterion. However, implementation of Mitigation Measures AES-2 (Surface Treatment of Project Structures and Buildings), AES-3 (Project Design), and AES-4 (Retention of Roadside Vegetation) are recommended as they would reduce the visual contrast associated with the visually discordant structural features and industrial character.

Gen-tie Line. As shown in the visual simulation depicted in Figure 3.2-7B, the proposed gen-tie line would be prominently visible as it converges on SR-177. The light-gray, vertical structures of the gen-tie line would be prominently visible in the foreground/mid-ground and would exhibit considerable skylining for the closer portion of the line. From this vantage point, the gen-tie line would partially block or impair views of the background Eagle and Coxcomb mountains. The gen-tie line would cause no visual contrast in terms of modification to landforms or vegetation. However, the resulting structural contrast for form and line would be moderate-to-strong, while the color contrast would be weak-to-moderate, and texture contrast would be weak. The overall resulting moderate-to-high level of visual change would be consistent with the applicable VRM Class IV management objective, which allows for high levels of change to the characteristic landscape (see KOP 5 Contrast Rating Data Sheet in Appendix J). However, the resulting visual impact would be significant under the CEQA AES-2 impact criterion. Implementation of Mitigation Measures AES-2 (Surface Treatment of Project Structures and Buildings), AES-3 (Project Design), and AES-4 (Retention of Roadside Vegetation) are recommended as they would reduce the visual contrast associated with the visually discordant structural features and industrial character, though not sufficiently to reduce the aesthetic impact to a level that would be less than significant. Therefore, the resulting visual change would remain adverse and unavoidable. However, as discussed below in the SR-177 LVP Analysis and illustrated in the LVP Map presented as Figure 3.2-10, in the broader context of all Project views along SR-177, the extent of the impact's significance is limited and would occur only along that portion of SR-177 (northbound and southbound) located in the immediate vicinity of the gen-tie span of SR-177 and immediately adjacent to Parcel Group C, which represents only 13 percent of the combined northbound and southbound affected travel distance along SR-177 (see Table 3.2-3).

KOP 6 – Corn Springs Road

This viewpoint is representative of Project views from Corn Springs Road, which is a primary access to the Chuckwalla Mountains Wilderness. Figure 3.2-8A presents the existing view to the north from KOP 6, on Chuckwalla Valley Road, approximately 1.1 miles south of Chuckwalla Valley Road. The view presented in Figure 3.2-8A captures a central portion of Chuckwalla Valley and the easternmost solar arrays and gen-tie extension. The eastern Project site is backdropped by the rugged, angular forms of the Coxcomb Mountains to the north and the more distant Granite Mountains to the north-northeast, which are features that contribute visual interest to the view from Corn Springs Road. Landform colors range from light-tan to

lavender and bluish hues at distance. Landform textures appear smooth to granular and coarse. Vegetation appears as patchy clumps to irregular and continuous forms at distance. Vegetation colors include tans and pale to golden yellow for grasses with muted greens, tans, and some reddish hues for shrubs. The most prominent structures in this view are a series tubular steel pole and lattice structure transmission lines and two communications towers. The landscape of the easternmost Project site (Parcel Group G) is rather non-descript and generally lacking in visual variety, though the panoramic views incorporating adjacent scenery (surrounding mountains) experience a higher scenic quality of the broader landscape. The overall visual quality is low-to-moderate and common to the greater Chuckwalla Valley.

Travelers on Corn Springs Road heading north would enjoy panoramic views across the central Chuckwalla Valley. However, travelers' sensitivity would be somewhat tempered by the viewing context for the eastern Project area, which would include the prominent transmission line facilities and communication towers in the utility corridor that parallels the south side of I-10. The viewers on Corn Springs Road would need to look through and beyond these discordant features to see the easternmost Project site and connecting gen-tie line to the north of I-10. The resulting visual concern would be moderate-to-high. Viewer exposure would be moderate given the moderate-to-high visibility of the Project facilities (which would be partially screened by the existing utility facilities and intervening terrain and vegetation), the foreground/midground viewing distance, low volume of travelers on Corn Springs Road, and extended duration of view (due to relatively slow speed of travel). Overall visual sensitivity is classified as moderate given the low-to-moderate visual quality, moderate-to-high viewer concern, and moderate viewer exposure.

Solar Facility. As shown in the visual simulation presented in Figure 3.2-8B, the Project would result in the introduction of visually noticeable facilities into a rural desert landscape already containing other energy and telecommunications infrastructure manifesting industrial character. The easternmost low-profile solar arrays would be visible as a dark-gray, linear, horizontal mass on the valley floor, though partially obscured by intervening transmission structures and vegetation. In the context of the existing landscape, the solar facilities would exhibit weak-to-moderate visual contrast, primarily arising from the noticeable horizontal line and darker color relative to the light tan color of the background valley soils. The Project would appear as a visually subordinate-to-co-dominant feature in the landscape. The Project would attract the attention of the casual observer, and view blockage of higher value landscape features (e.g., valley floor and vegetation) would be low-to-moderate. The overall visual change would be low-to-moderate, and in the context of the existing landscape's moderate visual sensitivity, the resulting visual effect would be adverse but less than significant under the CEQA AES-2 impact criterion. However, implementation of Mitigation Measures AES-2 (Surface Treatment of Project Structures and Buildings) and AES-3 (Project Design) are recommended as they would reduce the visual contrast associated with visually discordant structural features and industrial character.

Gen-tie Line. As shown in the visual simulation depicted in Figure 3.2-8B, the proposed gen-tie line would be only barely discernable from KOP 6 as a series of gray, vertical structures along the Chuckwalla Valley floor, extending west (left) of the solar fields illustrated in the figure. The structures would be backdropped by the valley floor and alluvial fans of the background Coxcomb Mountains. The gray color of the poles would blend more effectively with darker background soils and vegetation of the alluvial fans and would be more visually prominent viewed against lighter, sandy, valley soils. From this vantage point, at no time would the poles block or impair views of the mountains beyond. The gen-tie line would cause no visual contrast in terms of modification to landforms or vegetation. The resulting structural contrast for form would be weak, while line and color contrast would be weak-to-moderate. There would be no texture contrast. The overall resulting low-to-moderate level of visual change would be consistent with

the applicable VRM Class IV management objective, which allows for high levels of change to the characteristic landscape (see KOP 6 Contrast Rating Data Sheet in Appendix J). Also, the resulting impact would be less than significant under the CEQA AES-2 impact criterion. However, implementation of Mitigation Measures AES-2 (Surface Treatment of Project Structures and Buildings) and AES-3 (Project Design) are recommended as they would reduce the visual contrast associated with visually discordant structural features and industrial character.

Linear Viewpoint Analysis

As previously stated in Section 3.2.3, a LVP analysis of the Project was conducted for the two important roadways in the Project area – I-10 and SR-177. The results of that analysis are illustrated on the LVP Map presented as Figure 3.2-10 and discussed below. As shown in Figure 3.2-10, the views of the Project are color-coded for each roadway and travel direction and include views up to 90 degrees off the direction of travel. Project visibility is not considered when the angle of view exceeds 90 degrees. The five color-coded viewing categories shown in Figure 3.2-10 indicate changes in Project visibility for each travel direction ranging from Intermittently Visible to Visually Dominant. These results are based on actual field verification of travel views and distances and not on a theoretical digital terrain analysis that does not account for screening by roadside or intervening vegetation and structures nor atmospheric conditions such as haze.

Tables 3.2-2 and 3.2-3 quantify the five viewing categories for each roadway and each direction of travel, as well as for both directions of travel combined. What is clear from the figure and tables is that while the Project's overall visibility from these key roadways is relatively extensive given the open, relatively unobstructed views and flat terrain, road segments where Project components would appear visually dominant are limited to two short segments of SR-177 where the central array field (Parcel Group C) abuts the roadway and where Gen-Tie Segment 1 spans SR-177. These limited segments of visual dominance coincide with the only occurrences of significant visual impacts. The following paragraphs briefly describe the key findings of the I-10 and SR-177 LVP analyses.

Interstate 10. The LVP analysis covered an approximately 15-mile stretch of I-10 in Chuckwalla Valley extending from an initial point of eastbound visibility, approximately 4.75 miles west of Desert Center, to the initial point of westbound visibility, approximately 10.25 miles east of Desert Center and one mile east of the Corn Springs Road overpass. What is clear from Figure 3.2-10 and Table 3.2-2 is that the Project would have a slightly greater effect on views from eastbound I-10 compared to westbound I-10 given the greater affected travel distance (approximately 14 miles eastbound compared to approximately 8.4 miles westbound) and higher percentage of co-dominant appearance (28 percent for eastbound versus eight percent for westbound). Dominance is a qualitative assessment of a feature's (natural or built) apparent size relative to other visible landscape features and the total field of view. A dominant feature (e.g., mountain range, transmission line, or solar facility) is the singularly most noticeable feature in the landscape and can define the visual character of a given landscape. A co-dominant feature (such as the proposed Project in this case) is equally dominant with, or as noticeable as, the other most noticeable feature(s) in the landscape. In the present analysis for I-10, the greater Project visibility for westbound travelers is a result of terrain variation, elevational differences, vegetative and structural screening, and angle of view.

Traveling ***eastbound on I-10***, there is considerable Project viewing opportunity as the viewer approaches the vicinity of Desert Center and then passes east in closer proximity to the central and eastern array fields. The combination of array visibility and proximity to the gen-tie span of I-10 causes the Project to appear Prominent for approximately 46 percent of the approximately 14 affected miles of eastbound travel. More proximal viewers would experience the Project as a co-dominant feature with other landscape features for approximately 28 percent of the eastbound travel distance, which would be traveled

in 3.3 minutes at the posted speed limit. KOP 1 (Figure 3.2-3B) is representative of these co-dominant appearing views. At no time would the Project appear visibly dominant to eastbound travelers, and the resulting visual change would be consistent with the applicable VRM Class IV management objective. Further, eastbound I-10 views would not be significantly impacted under CEQA.

Traveling **westbound on I-10**, it is not until approximately one mile east of the Corn Springs Road overcrossing that the Project becomes visually noticeable. This is due to the visual impairment of views from I-10 by intervening vegetation, atmospheric haze, and terrain variation. Continuing west from Corn Springs Road, the Project remains visually prominent except for a brief segment of visual co-dominance in the immediate vicinity of the gen-tie span of I-10. Of the approximately 8.4 miles of westbound I-10 views, the Project would appear as a prominent landscape feature for approximately 80 percent of those views, and a co-dominant landscape feature for approximately eight percent of those views, which would be traveled in approximately 0.6 minutes. At no time would the Project appear visibly dominant to westbound travelers and the resulting visual change would be consistent with the applicable VRM Class IV management objective. Further, westbound I-10 views would not be significantly impacted under CEQA.

Table 3.2-2. I-10 Linear Viewpoint Analysis*

Travel Direction and Category of Visibility	Affected Travel Distance (miles)	Percent of Total Affected Travel Distance	View Duration (based on posted travel speed) (minutes)
EASTBOUND I-10			
1. Intermittently Visible	—	—	—
2. Noticeable but Not Prominent	3.71	26%	3.2
3. Prominent but Not Dominant	6.42	46%	5.5
4. Co-Dominant but Not Dominant	3.85	28%	3.3
5. Visibly Dominant	—	—	—
Eastbound Subtotal	13.98	100%	12
WESTBOUND I-10			
1. Intermittently Visible	—	—	—
2. Noticeable but Not Prominent	1.0	12%	0.8
3. Prominent but Not Dominant	6.68	80%	5.7
4. Co-Dominant but Not Dominant	0.68	8%	0.6
5. Visibly Dominant	—	—	—
Westbound Subtotal	8.36	100%	7.1
TOTAL BOTH DIRECTIONS			
1. Intermittently Visible	—	—	—
2. Noticeable but Not Prominent	4.71	21%	4.0
3. Prominent but Not Dominant	13.1	59%	11.2
4. Co-Dominant but Not Dominant	4.53	20%	3.9
5. Visibly Dominant	—	—	—
Total for Both Directions	22.34	100%	19.1

*See Figure 3.2-10 in Appendix J for a Linear Viewpoint Map of I-10.

State Route 177. The linear viewpoint analysis evaluated an approximately 18-mile stretch of SR-177 in Chuckwalla and Palen valleys extending from Desert Center in Chuckwalla Valley to the initial point of southbound visibility approximately 18 miles northeast of Desert Center in Palen Valley. As illustrated in Figure 3.2-10 and Table 3.2-3, the Project would be more visible to southbound views (approximately 15 affected miles) compared to northbound views (approximately seven affected miles) due to the substantially longer approach visibility afforded to southbound views of the eastern solar fields (Parcel Group G) from Palen Valley. However, the nature of the visual impact would be similar for both directions of travel with 27 percent of the northbound travel distance capturing the appearance of a visually co-dominant to dominant Project, while approximately 26 percent of the southbound travel distance would capture a visually co-dominant to dominant Project appearance.

Traveling **northbound on SR-177** from Desert Center, the central Project area would initially appear partially screened by roadside vegetation but quickly becomes visually prominent approximately 0.5 miles northeast of Desert Center. KOP 2 (Figure 3.2-4B) is representative of these prominent appearing views. However, as illustrated in Figure 3.2-10, it is not until the northbound traveler reaches close proximity to the adjacent array fields and the Gen-Tie Segment 1 span that the Project transitions from visual prominence to co-dominance and then visual dominance, as illustrated in the visual simulations for KOPs 4 and 5 (Figures 3.2-6B and 7B respectively). The Project would remain the dominant landscape feature in northbound views until just north of the gen-tie span of SR-177, a distance of visual dominance extending for approximately 1.2 miles or 18 percent of the total affected southbound travel distance (see Table 3.2-3), which would be traveled in approximately 1.1 minutes. It is along this relatively short (and mostly overlapping with southbound) road segment of visual dominance that the resulting visual change would cause a significant visual impact under the CEQA AES-2 impact criterion (though the gen-tie impact would still be consistent with the applicable VRM Class IV management objective that allows for a high degree of visual change).

Traveling **southbound on SR-177**, the easternmost solar arrays and eastern extent of the Gen-Tie Segment #3 become a noticeable landscape feature at a southbound viewing distance of approximately 14 miles due to the open nature of the flat valley floor. However, given the greater distance of these views, this portion of the Project would appear as a noticeable but not prominent landscape feature for about 6.7 miles of travel distance. It is not until the traveler reaches the road segment adjacent to the southern end of the Coxcomb Mountains that views to the southwest toward the majority of the Project features become available. As shown in Figure 3.2-10, the Project is the visually dominant landscape feature in southbound views from just north of the gen-tie span of SR-177 to the point where the central array fields cease to border SR-177 on the east side of the road, a distance of approximately 1.7 miles or 11 percent of the total affected southbound travel distance, which would be traveled in approximately 1.6 minutes. It is along this relatively short (and mostly overlapping with northbound) road segment of visual dominance that the resulting visual change would cause a significant visual impact under the CEQA AES-2 impact criterion (though the gen-tie impact would still be consistent with the applicable VRM Class IV management objective that allows for a high degree of visual change).

Combining both directions of travel, the Project would appear co-dominant or dominant in the landscape for approximately 5.9 miles (26 percent) of the total 22 miles of affected travel distance. The Project would be only intermittently visible or noticeable but not prominent for approximately 38 percent of the total travel distance, while the Project would appear prominent but not co-dominant or dominant for 36 percent of the total travel distance.

Table 3.2-3. SR-177 Linear Viewpoint Analysis*

Travel Direction and Category of Visibility	Affected Travel Distance (miles)	Percent of Total Affected Travel Distance	View Duration (based on posted travel speed) (minutes)
NORTHBOUND SR-177			
1. Intermittently Visible	0.91	13%	0.8
2. Noticeable but Not Prominent	0.64	9%	0.6
3. Prominent but Not Dominant	3.58	51%	3.3
4. Co-Dominant but Not Dominant	0.62	9%	0.6
5. Visibly Dominant	1.23	18%	1.1
Northbound Subtotal	6.98	100%	6.4
SOUTHBOUND SR-177			
1. Intermittently Visible	-	-	-
2. Noticeable but Not Prominent	6.72	45%	6.2
3. Prominent but Not Dominant	4.29	29%	4.0
4. Co-Dominant but Not Dominant	2.31	15%	2.1
5. Visibly Dominant	1.73	11%	1.6
Southbound Subtotal	15.05	100%	13.9
TOTAL BOTH DIRECTIONS			
1. Intermittently Visible	0.91	4%	0.8
2. Noticeable but Not Prominent	7.36	34%	6.8
3. Prominent but Not Dominant	7.87	36%	7.3
4. Co-Dominant but Not Dominant	2.93	13%	2.7
5. Visibly Dominant	2.96	13%	2.7
Total for Both Directions	22.03	100%	20.3

* See Figure 3.2-10 in Appendix J for a Linear Viewpoint Map of SR 247.

Mitigation Measures for Impact AES-2

The Project’s visible contrast associated with visually discordant structural features and industrial character can be reduced through the implementation of Aesthetics Mitigation Measure AES-2 (Surface Treatment of Project Structures and Buildings), which would ensure that the color of structures and buildings minimize visual intrusion and contrast by blending with the existing landscape colors. Mitigation Measure AES-3 (Project Design) would help to reduce this impact by minimizing the visual contrast associated with structure visibility and land disturbance. Mitigation Measure AES-4 (Retention of Roadside Vegetation) would also help to reduce this impact by retaining the visual screening provided by the SR-177 roadside vegetation, thereby limiting the visibility of the Project features. These three mitigation measures are presented in Section 3.2.10.

Significance After Mitigation

With the exception of the area along SR-177 that is located in the immediate vicinity of the gen-tie span of SR-177 and immediately adjacent to Parcel Group C, which would be significant even with implementation of mitigation, this impact would be less than significant with implementation of Mitigation Measures

AES-2 (Surface Treatment of Project Structures and Buildings), AES-3 (Project Design), and AES-4 (Retention of Roadside Vegetation) as discussed above.

Impact AES-3. The Project could create a new source of substantial light or glare which would adversely affect day or nighttime views in the area.

Visible Night Lighting

The Project would be located in an area with few existing structures, and the use of uncontrolled or excessive lighting would be noticeable to nearby motorists on I-10 and SR-177 and residents of Desert Center and Lake Tamarisk. Nighttime lighting would also affect the nighttime experience for dispersed recreational users in the surrounding wilderness. Project operations would require on-site nighttime lighting for safety and security. As described in Section 2.2.3, motion sensitive, directional security lights would be installed to provide adequate illumination around the substation areas, each inverter cluster, at gates, and along perimeter fencing. All lighting would be shielded and directed downward to minimize the potential for glare or spillover onto adjacent properties. Exterior lighting would be required to comply with current Title 24 regulations from the State of California and would be coordinated with the California Department of Transportation (Caltrans) to comply with exterior lighting regulations along I-10.

As described in Mitigation Measure AES-1 (Night Lighting Management Plan), to reduce potential off-site lighting impacts, lighting at the facility would be restricted to areas required for safety, security, and operation. Exterior lights would be hooded, and lights would be directed on site so that light or glare would be minimized. Low-pressure sodium lamps and fixtures of a non-glare type would be specified. Switched lighting would be provided for areas where continuous lighting would not be required for normal operation, safety, or security. The implementation of these measures would minimize the amount of lighting potentially visible to viewers of the site at night.

However, adverse effects of facility lighting are not necessarily limited to views of the site itself. Excessive lighting can also cause an adverse effect to viewers of the night sky via sky glow, which diminishes the visibility of the nighttime sky and stars. Prevention of off-site light spillage for ground observers does not necessarily prevent back-reflected light (i.e., light reflected off the ground and/or structures from down-directed lamps) from diminishing the visibility of the night sky. Normally, the contribution of project-related lighting is negligible when in an environment with abundant light sources; however, the Project area is highly valued in terms of the quality of its nighttime skies. This is attributable to the scarce and scattered nature of existing light sources in the surrounding area and the prevalence of federally administered land in the region, which limits opportunities for development. While the level of use in the surrounding wilderness is considered to be low, the high visibility of the nighttime sky and stars is an important component of the wilderness experience for many backcountry users and is highly valued by residents of the area.

As discussed in Section 3.2.4 under Effects Found Not to Be Significant, the Project would not interfere with nighttime use of the Mt. Palomar Observatory, as protected through Riverside County Ordinance No. 655. The Project would be located approximately 89 miles east of the Observatory, which far exceeds the distance of the Observatory's areas of sensitivity (Zone A at a 15-mile radius and Zone B at a 45-mile radius from the Observatory).

Joshua Tree National Park (JTNP), which is slightly over one mile to the northeast of the northernmost array field (Parcel Group A) is known throughout the National Park System (NPS) for its significant Dark Sky resource. To serve a substantial public interest in Dark Sky observation, JTNP offers a variety of Night Sky Programs. In the immediate Project area, Dark Sky visitors access the east end of the Pinto Basin at an

access gate at the north end of Chuckwalla Valley. Although some dark sky viewing locations in the Pinto Basin are screened from direct line-of-site by intervening terrain, there are portions of the Pinto Basin, particularly in the northeast of the Basin with slightly higher elevations that do have direct line-of-sight to some of the proposed Project sites. Because any light source in the desert contributes to ambient light pollution, and all light sources are adversely cumulative in terms of the impact on human dark adaptation and the dwindling availability of Dark Sky observation areas, it is essential that substantial steps be taken to ensure that additional night sky light pollution does not occur from implementation of the Project or action alternatives.

It is nonetheless estimated that the contribution of the Project's lighting requirements to sky glow would be minor. Light sources currently include motorists on I-10; street lamps, residences, and other commercial/service land uses in the communities of Desert Center and Lake Tamarisk; lighting associated with the former Desert Center Airport (now a private, special-use airport); motorists on local roads; and widely scattered homesteads on private land in the region. Despite the presence of these existing light sources, the area remains highly valued for the quality of its night sky. Because permanent lighting would not be required for the arrays of photovoltaic panels, operational lighting would be confined to a small portion of the Project site that contains O&M facilities and the switchyard and is unlikely to be totally out of character with other existing lighting sources found scattered throughout the Chuckwalla Valley. Further, Mitigation Measure AES-1 (Night Lighting Management Plan) includes standards that light intensity must be the minimum necessary to ensure worker safety and facility security, that direct lighting not illuminate the nighttime sky, and that Project night lighting does not adversely affect the dark sky viewing program at JTNP because it requires review and approval of the Project Lighting Mitigation Plan prepared under Mitigation Measure AES-1 by the NPS Night Sky Program Manager. This review would ensure that the Project meets the stricter night lighting specifications of the NPS Night Sky Viewing Program and that lighting exposure levels (based on a Lumen Analysis) do not exceed the action threshold for NPS lands nor adversely affect JTNP's Night Sky Viewing Program. Because the impacts associated with nighttime lighting would be limited in nature and reduced by Mitigation Measure AES-1, the night lighting impact is considered significant but mitigable under the CEQA AES-3 criterion.

Daytime Glare

Daytime glare from Project facilities could adversely affect travelers on I-10 and SR-177, a low number of residents at Desert Center and Lake Tamarisk, and users of nearby designated wilderness and ACECs. However, it is expected that such glare impacts would be substantially less than that associated with other solar technologies because photovoltaic panels are normally textured receivers that are less reflective than polished surfaces, like smooth glass or mirrors.

Overall, there is a possibility of green glare that could result from the Project PV arrays. However, there is no yellow glare that would result from the solar panels. Modeled observation points included two flight paths for the private airstrip adjacent to Project parcels and four ground point receptors along nearby highways. According to the model results, no flight path receptors would be impacted by glare from the solar panels; however, some ground receptors have a low potential of being impacted by any glare. Green glare is predicted for the point receptor along SR-177 from the Project PV arrays adjacent to and south of SR-177 for 1,274 minutes of the year. Similarly, green glare is predicted for the point receptor along I-10 from Project PV arrays south of SR-177 for 52 minutes of the year. Any potential glare impacts would occur during the months of January through mid-February and mid-October through December. Actual impacts will vary from these representative model results depending on the final types of PV arrays selected and their configurations within the Project parcels.

Given the relatively limited potential for occurrence and duration of daytime glare from solar panels, the likely low level of visual change would be consistent with the VRM Class IV management objective, which allows for a high level of visual change. The resulting visual impact would be considered adverse but less than significant under the CEQA AES-3 impact criterion.

Any glare that does result from Project facilities and the high-voltage gen-tie line would be reduced by applying Mitigation Measure AES-2 (Surface Treatment of Project Structures and Buildings). This would require that the gen-tie facilities be finished with non-specular and non-reflective material and that the insulators to be non-reflective and non-refractive. Building and structure paints and finishes would be selected to blend with the landscape. These measures would prevent glare or reduce glare from structural (not panel) surfaces to minimal levels that would not be noticeable or distracting to potential viewers.

Mitigation Measures for Impact AES-3

The Project's visible contrast associated with uncontrolled night lighting during operation can be reduced through the implementation of Aesthetics Mitigation Measure AES-1 (Night Lighting Management Plan), which would include measures to prevent the visibility of lamps and reflectors from beyond the Project site, eliminate excessive reflected glare, prevent illumination of the nighttime sky, and minimize the illumination of the Project and its immediate area.

The Project's visible contrast associated with daytime structural glare can be reduced through the implementation of Aesthetics Mitigation Measure AES-2 (Surface Treatment of Project Structures and Buildings), which would require the treatment of structure surfaces to prevent excessive glare and the use of non-specular and non-reflective transmission line conductors and non-reflective and non-refractive transmission line insulators. Mitigation Measure AES-4 (Retention of Roadside Vegetation) would also help to reduce the visible contrast associated with daytime structural glare because the retention of the roadside vegetation (along SR-177) would limit the visibility of Project features, and thus, the associated structural glare. These three mitigation measures are presented in Section 3.2.10.

Significance After Mitigation

This impact would be less than significant with implementation of Mitigation Measures AES-1 (Night Lighting Management Plan), AES-2 (Surface Treatment of Project Structures and Buildings), and AES-4 (Retention of Roadside Vegetation) as discussed above.

Impact AES-4. The Project could result in the creation of an aesthetically offensive site open to public view.

As described under Impact AES-1, construction of the Project would cause temporary visual impacts due to the presence of equipment, materials, and workers. Construction would also cause ground disturbance and loss of vegetation, though much of these disturbed areas would ultimately be occupied by Project facilities. Ground disturbance and grading would also result in temporary fugitive dust emissions, and temporary night lighting may also be required during the construction period. These short-term impacts would occur throughout the Project sites and along the gen-tie right-of-way over the course of construction. All of these temporary impacts could cause the Project sites to appear aesthetically offensive when viewed from public vantage points. However, Mitigation Measures BIO-5 (Vegetation Resources Management Plan), AQ-1 (Fugitive Dust Control Plan), AES-1 (Night Lighting Management Plan), and AES-4 (Retention of Roadside Vegetation) would reduce the severity of the short-term construction-related visual impacts.

As described under Impact AES-2, operation of the Project would cause a change in the existing visual character of the site from a predominantly natural desert setting to that of a solar energy facility with considerable industrial character. Also, as described under Impact AES-3 the use of facility night lighting would be visible from nearby public vantage points. Both of these long-term impacts could cause the Project sites to appear aesthetically offensive to the public. Although Mitigation Measures AES-1 (Night Lighting Management Plan), AES-2 (Surface Treatment of Project Structures and Buildings), AES-3 (Project Design), and AES-4 (Retention of Roadside Vegetation) would reduce the severity of the long-term operation-related visual impacts, it is likely that the public would still view the Project sites as aesthetically offensive. These impacts would be less than significant with implementation of mitigation, *except* for the portion of SR-177 that is located in the immediate vicinity of the gen-tie span of SR-177 and immediately adjacent to Parcel Group C, which would be significant under the CEQA AES-2 impact criterion, even with implementation of the above mitigation measures.

Mitigation Measures for AES-4

The Project's visible contrast associated with vegetation removal can be reduced through the implementation of Biological Resources Mitigation Measure BIO-5 (Vegetation Resources Management Plan) presented in Section 3.5.10 since the revegetation plan would ensure that much of the vegetation removed during ground disturbance and construction would be replaced. Aesthetics Mitigation Measure AES-4 (Retention of Roadside Vegetation) presented in Section 3.2.10 would also help to mitigate this impact by retaining the roadside vegetation along SR-177. This would not only prevent additional visual contrast associated with the removal of roadside vegetation but by retaining the screening vegetation, would reduce visibility of other impacted areas of vegetation.

The Project's visible contrast associated with fugitive dust can be reduced through the implementation of Air Quality Mitigation Measure AQ-1 (Fugitive Dust Control Plan) presented in Section 3.4.10 since the application of dust control palliatives (e.g., water) would substantially limit the generation of fugitive dust.

The Project's visible contrast associated with uncontrolled night lighting during construction can be reduced through the implementation of Aesthetics Mitigation Measure AES-1 (Night Lighting Management Plan) presented in Section 3.2.10, which would include the use of downward-directed, fully shielded lights that would prevent the emission of light above the horizontal. Lights would also have the minimum necessary brightness consistent with operational safety and security.

The Project's visible contrast associated with the change in visual character during operation can be reduced through the implementation of Aesthetics Mitigation Measures AES-1 (Night Lighting Management Plan) that requires measures to prevent the visibility of lamps and reflectors from beyond the Project site, eliminate excessive reflected glare, prevent illumination of the nighttime sky, and minimize the illumination of the Project and its immediate area. The visible contrast can also be reduced through implementation of MM AES-2 (Surface Treatment of Project Structures and Buildings) that requires the treatment of structure surfaces to prevent excessive glare, the use of non-specular and non-reflective transmission line conductors, and the use of non-reflective and non-refractive transmission line insulators. Implementation of MM AES-3 (Project Design) would help to minimize the visual contrast associated with structure visibility and land disturbance. Implementation of MM AES-4 (Retention of Roadside Vegetation) would help to minimize the visual contrast by requiring the retention of the visual screening provided by the SR-177 roadside vegetation, thereby limiting the visibility of the Project features. These four mitigation measures are presented in Section 3.2.10.

Significance After Mitigation

With the exception of the area along SR-177 that is located in the immediate vicinity of the gen-tie span of SR-177 and immediately adjacent to Parcel Group C (which would be significant even with implementation of mitigation), the visible contrast associated with the change in visual character during operation would result in an impact that would be less than significant with implementation of Mitigation Measures BIO-5 (Vegetation Resources Management Plan), AQ-1 (Fugitive Dust Control Plan), AES-1 (Night Lighting Management Plan), AES-2 (Surface Treatment of Project Structures and Buildings), AES-3 (Project Design), and AES-4 (Retention of Roadside Vegetation) as discussed above.

Impact AES-5. The Project could expose residential property to unacceptable light levels.

The proposed Project would be visible from residences at the east end of the Lake Tamarisk Resort residential area as illustrated in Figure 3.2-4B for KOP 3, which is approximately 1.6 miles west of the central Project area, and from a few scattered residences near the Project sites. The nearest residence is located approximately 100 feet east of Parcel Group A.

As described in the discussions under Impacts AES-1 and AES-3, construction and operation of the Project would use minimal lighting and would be designed to provide the minimum illumination needed to achieve safety and security objectives. All construction lighting shall be directed downward and shielded to focus illumination on the desired areas only and avoid light spillage onto adjacent property. Lenses and bulbs shall not extend below the shields. Also, as described under Decommissioning, the types of equipment used, and activities required for decommissioning would be similar to those of construction; therefore, night lighting impacts from decommissioning of the Project would be similar to those of construction. The resulting night lighting impacts would be adverse but less than significant. With effective implementation of Mitigation Measure AES-1 (Night Lighting Management Plan) presented in Section 3.2.9, the night lighting impacts would be further reduced, and the Project would not expose residential properties to unacceptable light levels.

Mitigation Measures for Impact AES-5

The Project's visible contrast associated with uncontrolled night lighting during construction can be reduced through the implementation of Aesthetics Mitigation Measure AES-1 (Night Lighting Management Plan), presented in Section 3.2.10, which would include the use of downward-directed, fully shielded lights that would prevent the emission of light above the horizontal. Lights would also have the minimum necessary brightness consistent with operational safety and security.

Significance After Mitigation

This impact would be less than significant with implementation of Mitigation Measure AES-1 (Night Lighting Management Plan) as discussed above.

Impact AES-6. The Project could result in an inconsistency with regulatory plans, policies, and standards applicable to the protection of aesthetics.

As presented in Section 3.2.2, Regulatory Framework, the Project would be subject to federal and local regulatory plans, policies, and standards applicable to the protection of aesthetics. Table 3.2-4, Consistency with Regulatory Plans, Policies, and Standards; describes the Project's consistency with applicable regulatory requirements.

Table 3.2-4. Consistency with Regulatory Plans, Policies, and Standards

Plans/Policies/ Standards	Description	Consistency Analysis
Federal Land Policy and Management Act / CDCA Plan / BLM VRM System – Gen-Tie Line		
	Scenic values are to be considered in management actions and VRM objectives and Contrast Rating procedures are to be used to manage visual resources.	Consistent. Contrast Rating data sheets were prepared for each KOP used to evaluate the gen-tie line segments on BLM-administered public lands. In all cases, the levels of change were found to be consistent with the high (or lower) levels of change allowed by the applicable VRM Class IV management objective.
Riverside County General Plan Land Use Element (LU)		
LU 4.1	Requires new developments to be located and designed to visually enhance, not degrade the character of the surrounding area through consideration of the following concepts: l. Mitigate noise, odor, lighting, and other impacts on surrounding properties. o. Preserve natural features, such as unique natural terrain, arroyos, canyons, and other drainage ways, and native vegetation, wherever possible, particularly where they provide continuity with more extensive regional systems.	Consistent. The Project would include facilities that would require night lighting with the potential to impact surrounding areas. However, with implementation of Mitigation Measure AES-1, night lighting impacts would be mitigated to a level that would be less than significant. Although the Project would result in the visible disturbance of large land areas along the Chuckwalla Valley floor, there are no unique natural features or unique terrain at the Project sites, and the overall visual quality is common to the broader Chuckwalla Valley.
LU 7.4	Requires new developments to enhance the integrity of existing residential, employment, agricultural, and open space areas by protecting them from encroachment of land uses that would result in impacts from noise, noxious fumes, glare, shadowing, and traffic.	Consistent. The Project would include facilities that might cause daytime glare and night lighting impacts on surrounding areas. However, with implementation of Mitigation Measures AES-1, AES-2, and AES-4, glare and night lighting impacts would be kept to levels that would be less than significant.
LU 9.1	Provide for permanent preservation of open space lands that contain important natural resources, cultural resources, hazards, water features, watercourses including arroyos and canyons, and scenic and recreational values.	Consistent. The Project is not within an area with important scenic values.
LU 14.1	Preserve and protect outstanding scenic vistas and visual features for the enjoyment of the traveling public	Consistent. There are no outstanding scenic vistas in the general Project area and there are no outstanding visual features on the Project sites. The relatively flat desert landscape of the Project sites has a low level of visual variety and distinctiveness, exhibiting a limited variation in form, line, color palette, and texture that is common to the broader Chuckwalla Valley. The adjacent landscape includes an existing solar project and electric transmission facilities.
LU 14.3	Ensure that the design and appearance of new landscaping, structures, equipment, signs or grading within Designated and Eligible State and County Scenic Highways corridors are compatible with the surrounding scenic setting or environment.	Consistent. The Project would be visible from I-10, which is a County Eligible Scenic Highway Corridor. However, the visual characteristics of the proposed solar facilities and gen-tie line are consistent with the existing Desert Sunlight Solar Project, approved Desert Harvest Solar Project, and existing gen-tie and high-voltage transmission lines and substations in the vicinity of I-10.
LU 14.4	Maintain at least a 50-foot setback from the edge of the right-of-way for new development adjacent to Designated and Eligible State and County Scenic Highways.	Consistent. At its closest point, the Project would be approximately 0.75 miles from the I-10 right-of-way. It should be noted that Policy LU 14.4 is being clarified and this Consistency Analysis will need to be updated to reflect the general plan amendment to change this policy once it is approved and adopted.

Table 3.2-4. Consistency with Regulatory Plans, Policies, and Standards

Plans/Policies/ Standards	Description	Consistency Analysis
LU 14.5	Require new or relocated electric or communication distribution lines, which would be visible from Designated and Eligible State and County Scenic Highways, to be placed underground	Partially Consistent. The Project's gen-tie line, connecting the Project to Red Bluff Substation on the south side of I-10 would be an overhead line, which would be inconsistent with Policy LU 14.5. However, the overhead connection to Red Bluff Substation is vital to the Project and unavoidable. Furthermore, this potential inconsistency is not considered significant because the visual characteristics of the Project would be consistent with the numerous overhead gen-tie, distribution, and bulk transmission lines that have already resulted in visual degradation in the Desert Center area.
LU 14.6	Prohibit off-site outdoor advertising displays that are visible from Designated and Eligible State and County Scenic Highways.	Consistent. The Project would not utilize outdoor advertising displays.
LU 14.7	Require that the size, height, and type of on-premise signs visible from Designated and Eligible State and County Scenic Highways be the minimum necessary for identification. The design, materials, color, and location of the signs shall blend with the environment, utilizing natural materials where possible.	Consistent. No on-premise signs associated with the Project would be visible from I-10.
LU 14.8	Avoid the blocking of public views by solid walls.	Consistent. No solid walls are proposed as part of the Project.
LU 21.1	Require that grading be designed to blend with undeveloped natural contours of the site and avoid an unvaried, unnatural, or manufactured appearance.	Partially Consistent. Given the level nature of the Project sites, any necessary grading would be consistent with the existing natural contours. However, with Project buildout, the solar facilities would exhibit a manufactured appearance when viewed from certain locations. This inconsistency is not considered significant because the Project features would be visually consistent with other existing solar generation and electric transmission facilities in the immediate Project area.
LU 21.3	Ensure that development does not adversely impact the open space and rural character of the surrounding area.	Not Consistent. Although the Project would be located in an area that contains existing solar facilities of similar design and is planned to receive more solar facilities, the Project would still exhibit an industrial, manufactured appearance and cause adverse visual impacts to the existing open space and rural character of the surrounding area when viewed from certain locations. However, this inconsistency is not considered significant given the renewable energy development and energy infrastructure trends already established in the Chuckwalla Valley. Also, the Project features would be visually consistent with other existing solar generation and electric transmission facilities in the immediate Project area.
LU 23.2	Require that structures be designed to maintain the environmental character in which they are located.	Consistent. The Project features would be visually consistent with other existing solar generation and electric transmission facilities in the immediate Project area.

Table 3.2-4. Consistency with Regulatory Plans, Policies, and Standards

Plans/Policies/ Standards	Description	Consistency Analysis
LU 26.1	Require that development be designed to blend with undeveloped natural contours of the site and avoid an unvaried, unnatural, or manufactured appearance.	Partially Consistent. Given the level nature of the Project sites, any necessary grading would be consistent with the existing natural contours. However, with Project buildout, the solar facilities would exhibit a manufactured appearance when viewed from certain locations. This inconsistency is not considered significant because the Project features would be visually consistent with other existing solar generation and electric transmission facilities in the immediate Project area.
LU 26.3	Ensure that development does not adversely impact the open space and rural character of the surrounding area.	Not Consistent. Although the Project would be located in an area that contains existing solar facilities of similar design and is planned to receive more solar facilities, the Project would still exhibit an industrial, manufactured appearance and cause adverse visual impacts to the existing open space and rural character of the surrounding area when viewed from certain locations. However, this inconsistency is not considered significant given the renewable energy development and energy infrastructure trends already established in the Chuckwalla Valley. Also, the Project features would be visually consistent with other existing solar generation and electric transmission facilities in the immediate Project area.
Multi-Purpose Open Space Element		
OS 22.1	Design developments within designated scenic highway corridors to balance the objectives of maintaining scenic resources with accommodating compatible land uses.	Consistent. The Project would not be located within a designated scenic highway corridor. I-10 in the vicinity of the Project is an Eligible (but not Designated) County Scenic Highway. Also, the Project features would be visually consistent with other existing solar generation and electric transmission facilities in the immediate Project area.
Desert Center Area Plan		
(DCAP) 4.1	When outdoor lighting is used, require the use of fixtures that would minimize effects on the nighttime sky and wildlife habitat areas, except as necessary for security reasons.	Consistent. Security lights around the substation, inverters, gates, and along the perimeter fencing would be motion sensitive and directional. All lighting would be shielded and directed downward to minimize the potential for glare or spillover onto adjacent properties. Further, with implementation of Mitigation Measures AES-1 and AES-2, glare and night lighting impacts would be kept to levels that would be less than significant.
DCAP 8.1	Protect the scenic highways within the Desert Center Area Plan from change that would diminish the aesthetic value of adjacent properties through adherence to the policies found in the Scenic Corridors sections of the General Plan Land Use, Multipurpose Open Space, and Circulation Elements.	Consistent. Although the Project would not be located with the viewshed of a designated scenic highway corridor, it would be visible from I-10, which is a County Eligible Scenic Highway Corridor. However, the Project features would be visually consistent with other existing solar generation and electric transmission facilities in the immediate Project area.

Mitigation Measures for Impact AES-6

Effective implementation of the following mitigation measures would ensure the Project's consistency with Riverside County General Plan Land Use Element Policies LU 4.1 and LU 7.4, as well as Desert Center Area Plan Policy DCAP 4.1.

The Project's visible contrast associated with night lighting during construction and operation would be reduced with the implementation of Mitigation Measure AES-1 (Night Lighting Management Plan), which would include the use of downward-directed, fully shielded lights that would prevent the emission of light above the horizontal. AES-1 would also require measures to prevent the visibility of lamps and reflectors from beyond the Project site, eliminate excessive reflective glare, prevent illumination of the nighttime sky, and minimize the illumination of the Project and its immediate area. The Project's visible contrast associated with daytime structural glare would be reduced with the implementation of Mitigation Measure AES-2 (Surface Treatment of Project Structures and Buildings), which would require the treatment of structure surfaces to prevent excessive glare, use of non-specular and non-reflective transmission line conductors, and use of non-reflective and non-refractive transmission line insulators. Mitigation Measure AES-4 (Retention of Roadside Vegetation) would require the retention of the visual screening provided by the SR-177 roadside vegetation, thereby limiting the visibility of the Project features and associated glare and night lighting. These four mitigation measures are presented in Section 3.2.10.

Significance After Mitigation

This impact would be less than significant with implementation of Mitigation Measures AES-1 (Night Lighting Management Plan), AES-2 (Surface Treatment of Project Structures and Buildings), and AES-4 (Retention of Roadside Vegetation) as discussed above.

Decommissioning

Impact AES-7. Project decommissioning activities and associated industrial character could cause short-term and/or and long-term aesthetic effects resulting from increased visual contrast.

After the end of the solar facility's useful life, it would require decommissioning with the intent of returning the Project sites to pre-project conditions. However, as of the date of this visual analysis, no Decommissioning Plan has been approved. Short-term, deconstruction activities would result in visual impacts similar to construction with the visible intrusion of equipment, materials, deconstruction activities, and increased road traffic. The reader is referred to the discussion of construction impacts above.

Longer-term, the complete removal of the facility would leave a very prominent visual effect over the sites due to the strong color and line contrast created between graded, disturbed soil areas and undisturbed soil and vegetated areas absent such unnatural lines of demarcation and color contrasts. In addition, revegetation in this desert region is difficult and generally of limited success. Therefore, visual recovery from land disturbance associated with closure and decommissioning activities would likely occur only over a long period of time. While Mitigation Measure BIO-5 (Vegetation Resources Management Plan) requires the implementation of several steps to address temporarily impacted sites, the long term required for any meaningful vegetation recovery and reduction in visual contrast would result in an adverse and significant visual impact that cannot be mitigated to a level that would be less than significant.

Mitigation Measures for Impact AES-7

The Project's visible contrast associated with long-term ground disturbance and vegetation removal associated with decommissioning can be reduced through the implementation of Biological Resources

Mitigation Measure BIO-5 (Vegetation Resources Management Plan) since the revegetation plan would ensure that much of the vegetation removed during operation would be replaced. However, this impact would not be reduced to levels that would be less than significant. This measure is presented in Section 3.5.10.

The Project's visible contrast associated with temporary fugitive dust during decommissioning can be reduced to levels that would be less than significant through the implementation of Air Quality Mitigation Measure AQ-1 (Fugitive Dust Control Plan), presented in Section 3.4.10, since the application of dust control palliatives (e.g., water) would substantially limit the generation of fugitive dust.

The Project's visible contrast associated with temporary uncontrolled night lighting during decommissioning can be reduced to levels that would be less than significant through the implementation of Aesthetics Mitigation Measure AES-1 (Night Lighting Management Plan), presented in Section 3.2.10, which would include the use of downward-directed, fully shielded lights that would prevent the emission of light above the horizontal. Lights would also have the minimum necessary brightness consistent with operational safety and security.

Significance After Mitigation

As discussed above, the visible contrast associated with long-term ground disturbance and vegetation removal would be reduced with implementation of Mitigation Measure BIO-5 (Vegetation Resources Management Plan), though it would still remain a significant aesthetic impact. Also as discussed above, the aesthetic impacts resulting from temporary fugitive dust and temporary night lighting would be less than significant following implementation of Mitigation Measures AQ-1 (Fugitive Dust Control Plan) and AES-1 (Night Lighting Management Plan), respectively.

3.2.6 Alternative 1: No Project Alternative

The No Project Alternative would not develop the solar facility and gen-tie line or require new construction and/or operational activities. It would not conflict with any existing or future land use plans or zoning, nor would it conflict with the applicable VRM Class IV management objective, which allows for a high level of visual change. The No Project Alternative would avoid the significant visual impacts (under CEQA) that would occur at SR-177 viewing locations located immediately adjacent to the central development area and the gen-tie span of SR-177 as documented in the analysis for KOPs 4 and 5. Therefore the No Project Alternative would not cause impacts to aesthetics.

3.2.7 Alternative 2: Reduced Footprint Alternative

The Reduced Footprint Alternative would not develop Parcel Groups D and F. The remaining Parcel Groups (A, B, C, E, and G) would be developed as for the Project. Eliminating development of Parcel Group D would have minimal effect on the Project visual change given the proximity of other Parcel Groups (Group C and Group E). However, eliminating development of Parcel Group F would reduce the visual effects on views from I-10 because Parcel Group F is the closest Project site to I-10. While the visual impact of the Project would be slightly reduced, it would not change the overall assignment of an adverse but less than significant visual impact on views from I-10. Also, this alternative would *not* eliminate the significant visual impacts that would occur along SR-177 as discussed for KOP 4 (viewing Parcel Group C) and KOP 5 (viewing the Gen-Tie Segment #1 approach to SR-177). Therefore, the overall visual impacts of Alternative 2 would be slightly reduced, but still similar to those of the proposed Project.

The overall resulting level of visual change would be moderate, and in the context of the existing landscape's moderate visual sensitivity, the resulting visual effect would be adverse but less than significant under the CEQA Impact Criterion AES-2 (*The Project could substantially degrade the existing visual character or quality of the site and its surroundings*). This conclusion is the same as for the proposed Project. Also, the moderate level of visual change attributable to Alternative 2, would be consistent with the applicable VRM Class IV management objective, which allows for high levels of visual change to the characteristic landscape. However, implementation of Mitigation Measures AES-2 (Surface Treatment of Project Structures and Buildings) and AES-3 (Project Design) are still recommended as they would reduce the visual contrast associated with visually discordant structural features and industrial character.

3.2.8 Gen-Tie Segment #1 Alternative Route Option

The Gen-Tie Segment 1 Alternative Route Option that would connect to the northernmost solar arrays (Parcel Group A), would diverge from the proposed Segment 1 route approximately 0.5 miles south of the solar facilities. The Gen-Tie Segment #1 Alternative Route Option would follow a more circuitous alignment heading east, north, northwest, and then north again to connect to an alternative onsite substation (SS1) location approximately 0.2 miles east of its currently proposed location on Parcel Group A. The Alternative Route would add approximately 0.65 miles of additional gen-tie line, which would increase the structural complexity and form and line visual contrast visible to travelers on SR-177 (see the discussion of KOP 5 (Northbound SR-177-North) in Section 3.2.5). The increased visual contrast caused by the Alternative Route would be apparent to both northbound and southbound travelers. Additionally, the overlapping alignment would result in increased view blockage of the lower elevations and alluvial fans of the background Coxcomb Mountains when viewed from northbound SR-177 in the vicinity of KOP 5. The resulting visual effect would be slightly more adverse compared to the proposed Route. However, the overall visual change would still be moderate-to-high and would still be consistent with the applicable VRM Class IV management objective, which allows for high levels of change to the characteristic landscape. Also, similar to the proposed Route, the resulting visual impact would be significant under the CEQA AES-2 impact criterion.

Implementation of Mitigation Measures AES-2 (Surface Treatment of Project Structures and Buildings), AES-3 (Project Design), and AES-4 (Retention of Roadside Vegetation) are still recommended as they would reduce the visual contrast associated with the visually discordant structural features and industrial character, though not sufficiently to reduce the aesthetic impact to a level that would be less than significant. Therefore, as for the proposed Project, the resulting visual change associated with the Alternative Route would remain adverse and unavoidable. Also, similar to the SR-177 LVP Analysis for the proposed Project, in the broader context of all Route Alternative views along SR-177, the extent of the impact's significance would be limited to that portion of SR-177 (northbound and southbound) located in the vicinity of the Segment 1 Route Alternative.

3.2.9 Cumulative Impacts

Geographic Scope

Impacts resulting from construction, operation, and decommissioning of the Project would result in a cumulative effect on visual resources with other past, present, or reasonably foreseeable future actions. The geographic scope of the cumulative effects analysis for aesthetics consists of the I-10 corridor, the greater Chuckwalla Valley, and the Project-facing slopes and ridges of the surrounding mountains and is based primarily on the natural boundaries of the affected resource where direct effects would occur (i.e., shared viewsheds). Secondly, the geographic scope also considers the indirect effect of the perceived

industrialization of the I-10 corridor, which is associated with the proliferation of energy facilities across the landscape visible to travelers on I-10. Therefore, for the purposes of this analysis, the area of direct effect generally extends from the proposed Eagle Mountain Pumped Storage Project (northwest of the existing Desert Sunlight solar project) southeast to the easternmost boundary of the proposed Palen Solar Project, adjacent to the easternmost Project site (Parcel Group G). The area of indirect effect extends along I-10 from the point approximately 5 miles west of Desert Center where the Project first becomes noticeable to Ford Dry Lake Road overpass, which is just under 12 miles east of the proposed Palen Solar Project and approximately 3 miles south of the existing Genesis Solar Energy Project. Also visible from this location are the existing Devers–Palo Verde 1 and 2 transmission lines, the existing Blythe Energy Project Transmission Line, and the foreseeable Desert Southwest Transmission Line, all paralleling the south side of I-10.

Existing and probable foreseeable future actions making up the cumulative scenario for Aesthetics are listed below and in Table 3.1-1, and mapped in Figure 3.1-1 in Section 3.1:

- West-wide Section 368 Energy Corridors
- Desert Sunlight Solar Project
- SCE Red Bluff Substation
- Devers–Palo Verde 1 Transmission Line
- Devers–Palo Verde 2 Transmission Line
- Blythe Energy Project Transmission Line
- Desert Southwest Transmission Line
- Eagle Mountain Pumped Storage Project
- Desert Harvest Solar Project
- DC50 Solar Project
- California Jupiter Solar Project (CACA 56477)
- IO Solar Project (CACA 56782)
- SunPower Project
- Victory Pass Solar Project I, LLC
- Palen Solar Project

These actions include six local, existing (past and present) energy projects and nine local reasonably foreseeable future energy projects. These projects would all be within the field of view of at least portions of the proposed Project and are expected to result in cumulative visual impacts for travelers along I-10 and SR-177 as well as residents and dispersed recreational users in the surrounding areas.

An additional regional project would not be within the same field of view as the Project but would contribute to the indirect cumulative sense of industrialization along the I-10 corridor:

- Genesis Solar Energy Project

Cumulative Impact Analysis

Although numerous existing cultural modifications are visible along the I-10 corridor and in the Desert Center area of the Chuckwalla Valley (transmission lines; substations; pipelines; solar projects; 4-wheel drive tracks; widely scattered commercial buildings, dilapidated structures, and roadside signs; and a few agricultural operations), the grand scale of the open desert panoramas impart an overall general impression of a relatively unimpaired, isolated desert landscapes. The cumulative scenario includes many large-scale solar plants and transmission lines whose scale and pervasiveness would have adverse cumulative effects. If all the projects were implemented, they would substantially degrade the visual character and general scenic appeal of the existing landscape, resulting in the conversion of a relatively undeveloped desert landscape into a more industrialized appearance.

In some viewing cases, the visibility and apparent scale of the projects would be diminished somewhat by favorable topographic relationships and vegetative screening. For other viewing opportunities, some projects would appear reduced in visual prominence due to their viewing distances and low angle of view. In still other cases, projects would blend in with the vegetation or horizon line of the valley floor, and the rugged mountains would remain the dominant visual features in the landscape.

As a result, either the proposed Project or Reduced Footprint Alternative in combination with the 15 local energy projects and one regional energy project would result in significant cumulative visual impacts when viewed by sensitive viewing populations along I-10 and SR-177, from nearby residences, and in the surrounding mountains and wilderness. Impacts would result from the introduction of substantial visual contrast associated with discordant geometric patterns in the landscape; large-scale, built facilities with prominent industrial character; un-natural lines of demarcation in the valley floor landscape; inconsistent color contrasts; and visible night lighting within the broader Chuckwalla Valley. For many travelers along I-10, the scenic experience would be substantially degraded due to the perceived “industrialization” of the landscape.

Figure 3.2-9A presents the existing view to the northwest from KOP 7 on westbound I-10 at Palen Ditch, approximately 5.3 miles east of Desert Center. This view encompasses a central portion of Chuckwalla Valley, northeast of Desert Center. The existing Desert Sunlight solar project is visible as a distant, dark-gray, horizontal feature along the valley floor, backdropped by the Eagle Mountains. A portion of the Desert Sunlight single-circuit gen-tie line with its dark, rust-colored, Corten steel poles is also visible as the gen-tie line parallels and then converges on I-10. Figure 3.2-9B presents a visual simulation of the cumulative scenario as viewed from KOP 7. The simulation must be considered conceptual since the design details of the reasonably foreseeable projects are unknown at this time. This simulation illustrates portions of the following solar projects and/or their gen-tie lines: Athos, Desert Harvest, IO, Victory Pass, California Jupiter, DC 50, and Palen. Also illustrated is the proposed Eagle Mountain Pumped Storage Project 500 kV Transmission Line (lattice structures). The IO solar panels in the immediate foreground and adjacent to I-10 are effectively at grade with KOP 7 on I-10, and the first few panel arrays screen much of the valley floor and solar facilities beyond these arrays to the north and northwest. However, the structural prominence of the arrays imparts substantial visual contrast and industrial character to the views from I-10.

Mitigation Measures for Cumulative Impacts

Effective implementation of Mitigation Measures AES-1 (Night Lighting Management Plan), AES-2 (Surface Treatment of Project Structures and Buildings), AES-3 (Project Design), AES-4 (Retention of Roadside Vegetation), and BIO-5 (Vegetation Resources Management Plan), all discussed above under the Section 3.2.5 Proposed Project Impact Analysis, would reduce the severity of the cumulative visual effects, though not to levels that would be less than significant.

Significance After Mitigation

Even with implementation of the above mitigation measures, there would be significant cumulative visual impacts when viewed by sensitive viewing populations along I 10 and SR-177, from nearby residences, and in the surrounding mountains and wilderness.

3.2.10 Mitigation Measures

MM AQ-1 Fugitive Dust Control Plan. *See full text in Section 3.4, Air Quality.*

MM AES-1 Night Lighting Management Plan. To the extent feasible, consistent with safety and security considerations, the Project owner shall design and install all permanent exterior lighting and all temporary construction lighting such that (a) lamps and reflectors are not visible from beyond the Project site, including any off-site security buffer areas; (b) lighting does not cause excessive reflected glare; (c) direct lighting does not illuminate the nighttime sky, except for required FAA aircraft safety lighting (which should be an on-demand, audio-

visual warning system that is triggered by radar technology); (d) illumination of the Project and its immediate area is minimized, and (e) the plan complies with local policies and ordinances.

The Project owner shall also consult with the NPS Night Sky Program Manager in the development of the Night Lighting Management Plan and comply with stricter standards for light intensity. All permanent light sources shall be below 3,500 Kelvin color temperature (warm white) and shall have cutoff angles not to exceed 45 degrees of nadir. The use of LED lighting with a Correlated Color Temperature (CCT) above 2,700 would introduce blue light into the environment that would have negative impacts on the night skies and wildlife of that area. If LED light bulbs are used, they will have a CCT of 2,700 or less. A CCT above 2,700 would increase blue light into the environment that would impact wildlife and visors and increase light pollution. All lights, temporary and permanent, are to be fully shielded such that the emission of light above the horizontal will be prevented. Prior to construction, the Applicant shall submit to Riverside County, BLM and NPS JTNP for review, and for approval by Riverside County, a Night Lighting Management Plan that includes the following:

- A. Location and direction of light fixtures shall take the lighting mitigation requirements into account;
- B. Lighting design shall consider setbacks of Project features from the site boundary to aid in satisfying the lighting mitigation requirements;
- C. Lighting shall incorporate fixture hoods/shielding, with light directed downward or toward the area to be illuminated;
- D. Light fixtures that are visible from beyond the Project boundary shall have cutoff angles that are sufficient to prevent lamps and reflectors from being visible beyond the Project boundary, except where necessary for security;
- E. All lighting shall be of minimum necessary brightness consistent with operational safety and security;
- F. Lights in high illumination areas not occupied on a continuous basis (such as maintenance platforms) shall have (in addition to hoods) switches, timer switches, or motion detectors so that the lights operate only when the area is occupied;
- G. Specification that LPS or amber LED lighting will be emphasized, and that white lighting (metal halide) would (a) only be used when necessitated by specific work tasks, (b) not be used for dusk-to-dawn lighting, and (c) would be less than 3500 Kelvin color temperature;
- H. Specification and map of all lamp locations, orientations, and intensities, including security, roadway, and task lighting;
- I. Specification of each light fixture and each light shield;
- J. Total estimated outdoor lighting footprint expressed as lumens or lumens per acre;
- K. Definition of the threshold for substantial contribution to light pollution in JTNP, in coordination with the Night Sky Program Manager (see below);
- L. Specifications on the use of portable truck-mounted lighting;

- M. Specification of motion sensors and other controls to be used, especially for security lighting;
- N. Surface treatment specification that will be employed to minimize glare and skyglow;
- O. Results of a Lumen Analysis (based on final lighting plans), in consultation with the NPS Night Sky Program Manager, in order to determine the extent of night lighting exposures in the surrounding NPS lands. If the lighting exposure on NPS lands exceeds the allowable threshold (which is to be determined in consultation with the NPS Night Sky Program Manager), additional control measures will be instituted to reduce the lighting exposures to levels below the action threshold; and
- P. Documentation that the necessary coordination with the NPS Night Sky Program Manager has occurred.

MM AES-2

Surface Treatment of Project Structures and Buildings. To the extent commercially feasible, the Project owner shall treat the surfaces of all non-temporary large Project structures and buildings (O&M building, inverters, electrical enclosures, gen-tie poles and conductors) visible to the public such that (a) their colors minimize visual intrusion and contrast by blending with (matching) the existing characteristic landscape colors; (b) their colors and finishes do not create excessive glare; and (c) their colors and finishes are consistent with local policies and ordinances. The transmission line conductors shall be non-specular and non-reflective, and the insulators shall be non-reflective and non-refractive.

Following consultation with the Riverside County Visual Resources specialist (for solar and gen-tie facilities on non-BLM lands) and the BLM Visual Resources specialist (for gen-tie facilities on BLM lands) and other representatives as deemed necessary, the Project owner shall submit for the County's (for solar and gen-tie facilities on non-BLM lands) and BLM's (for gen-tie facilities on BLM lands) review and approval, a specific Surface Treatment Plan that will satisfy these requirements. The consultation would be in-field at the agencies' election, or desktop review if preferred by the agencies. The treatment plan shall include:

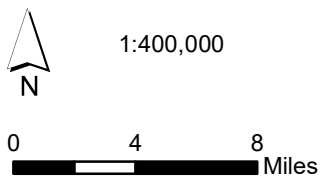
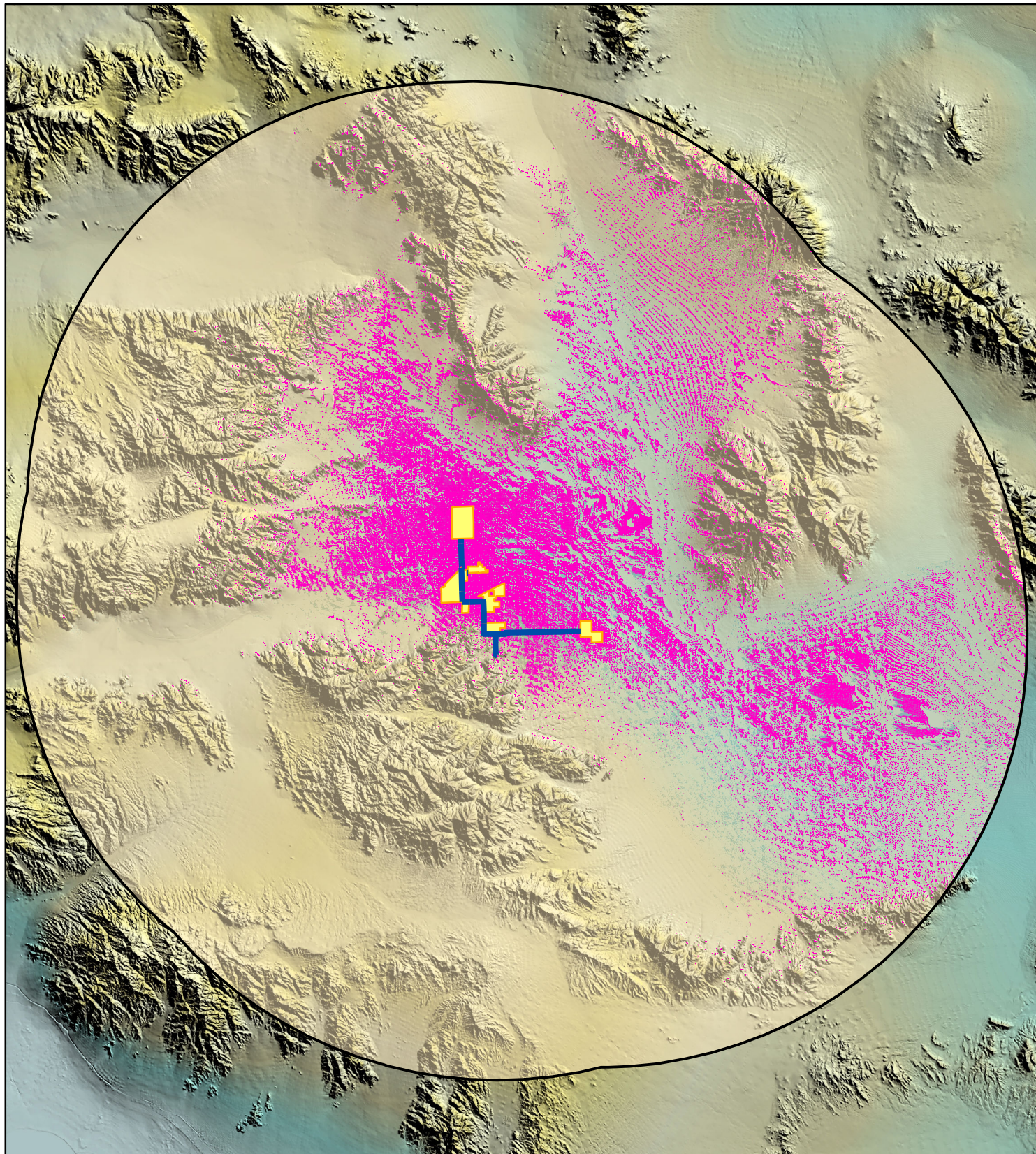
- A. A description of the overall rationale for the proposed surface treatment, including the selection of the proposed color(s) and finishes based on the characteristic landscape. Colors will be fielded tested using the actual distances from the KOPs to the proposed structures, using the proposed colors painted on representative surfaces;
- B. A list of each major Project structure, building, tank, pipe, and wall; the transmission line towers and/or poles; and fencing, specifying the color(s) and finish proposed for each. Colors must be identified by vendor, name, and pantone number; or according to a universal designation system;
- C. One set of color brochures or color chips showing each proposed color and finish;
- D. A specific schedule for completion of the treatment; and
- E. A procedure to ensure proper treatment maintenance for the life of the Project. The Project owner shall not specify to the vendors the treatment of any buildings or structures treated during manufacture or perform the final treatment on any buildings or structures treated in the field, until the Project owner receives notification of approval of the treatment plan by Riverside County and the BLM (gen-tie only). Subsequent modifications to the treatment plan are prohibited without the County's and

BLM's approval for components under their respective authorities; however, the project owner may consider the agencies' failure to respond to a request for review within 60 days an acceptance of the proposal.

MM AES-3 **Project Design.** To the extent possible, the Project owner will use proper design fundamentals to reduce the visual contrast to the characteristic landscape. These include proper siting and location; reduction of visibility; repetition of form, line, color and texture of the landscape; and reduction of unnecessary disturbance. Design strategies to address these fundamentals will be based on the following factors:

- *Vegetation Manipulation:* Retain as much of the existing vegetation as possible. Use existing vegetation to screen the development from public viewing. Use scalloped, irregular cleared edges to reduce line contrast. Use irregular clearing shapes to reduce form contrast. Feather and thin the edges of cleared areas and retain a representative mix of plant species and sizes.
- *Structures:* Minimize the number of structures and combine different activities in one structure. Use natural, self-weathering materials and chemical treatments on surfaces to reduce color contrast. Bury all or part of structures to the extent practical. Use natural appearing forms to complement the characteristic landscape. Screen the structure from view by using natural land forms and vegetation. Reduce the line contrast created by straight edges.
- *Linear Alignments:* Use existing topography to hide induced changes associated with roads, lines, and other linear features. Select alignments that follow landscape contours. Avoid fall-line cuts. Hug vegetation lines.
- *Reclamation and Restoration:* Reduce the amount of disturbed area and blend the disturbed areas into the characteristic landscape. Where feasible, replace soil, brush, rocks, and natural debris over disturbed area. Newly introduced plant species should be of a form, color, and texture that blends with the landscape.

MM AES-4 **Retention of Roadside Vegetation.** Retain SR-177 roadside vegetation along both directions of travel. Specifically, maintain a minimum 50-foot natural vegetation buffer as measured from the outer edge of the road shoulder along both northbound and southbound lanes for the purpose of providing visual screening of Project facilities and reducing visible contrast.








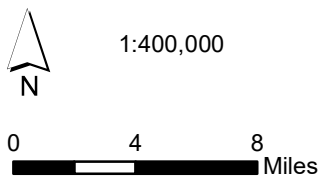
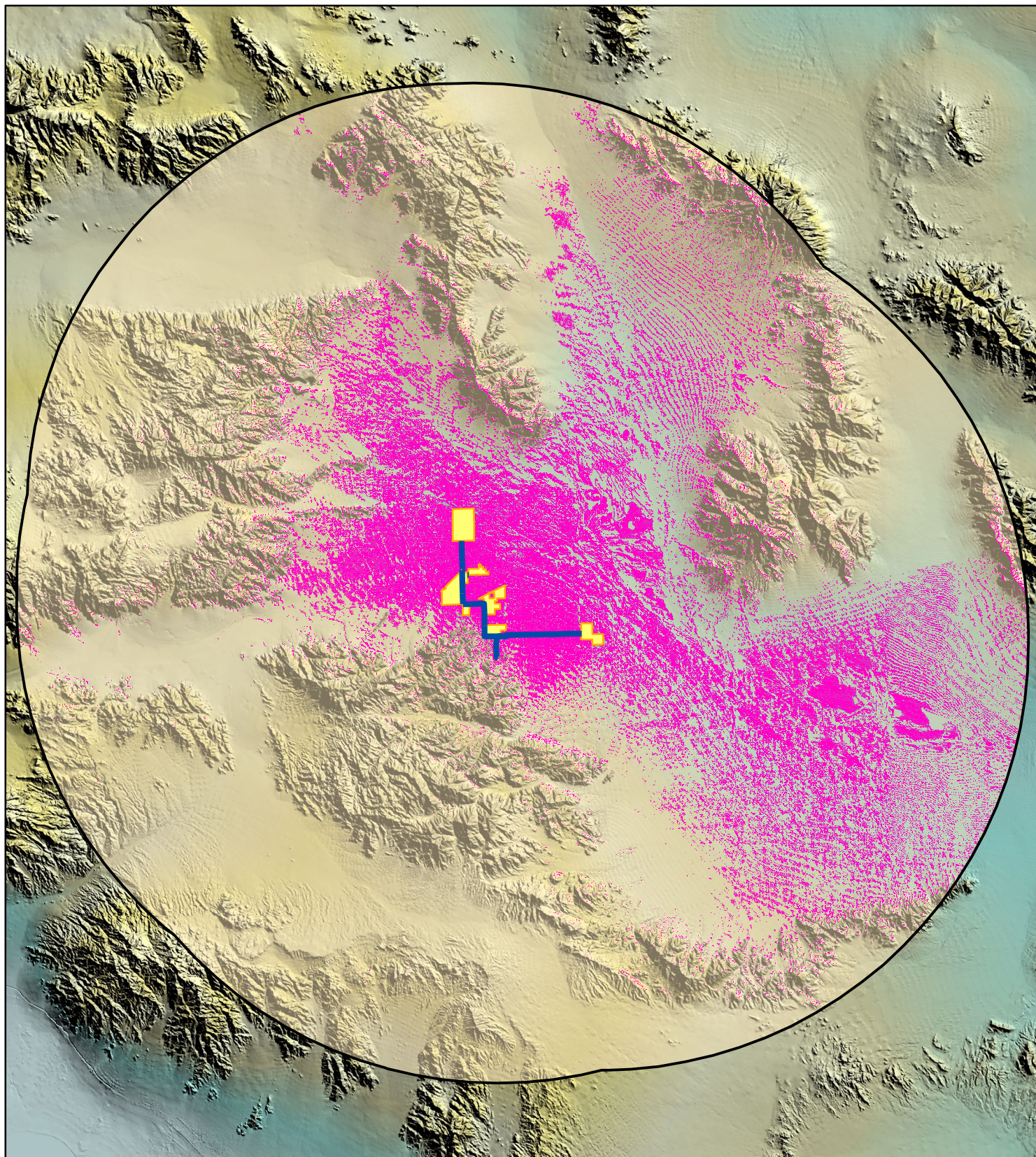
-  Proposed Gen-Tie
-  Solar Facility
-  Visible
-  Not Visible
-  20-mile search radius

Figure 3.2-1A
Viewshed Analysis
Proposed Solar Facility



1:400,000






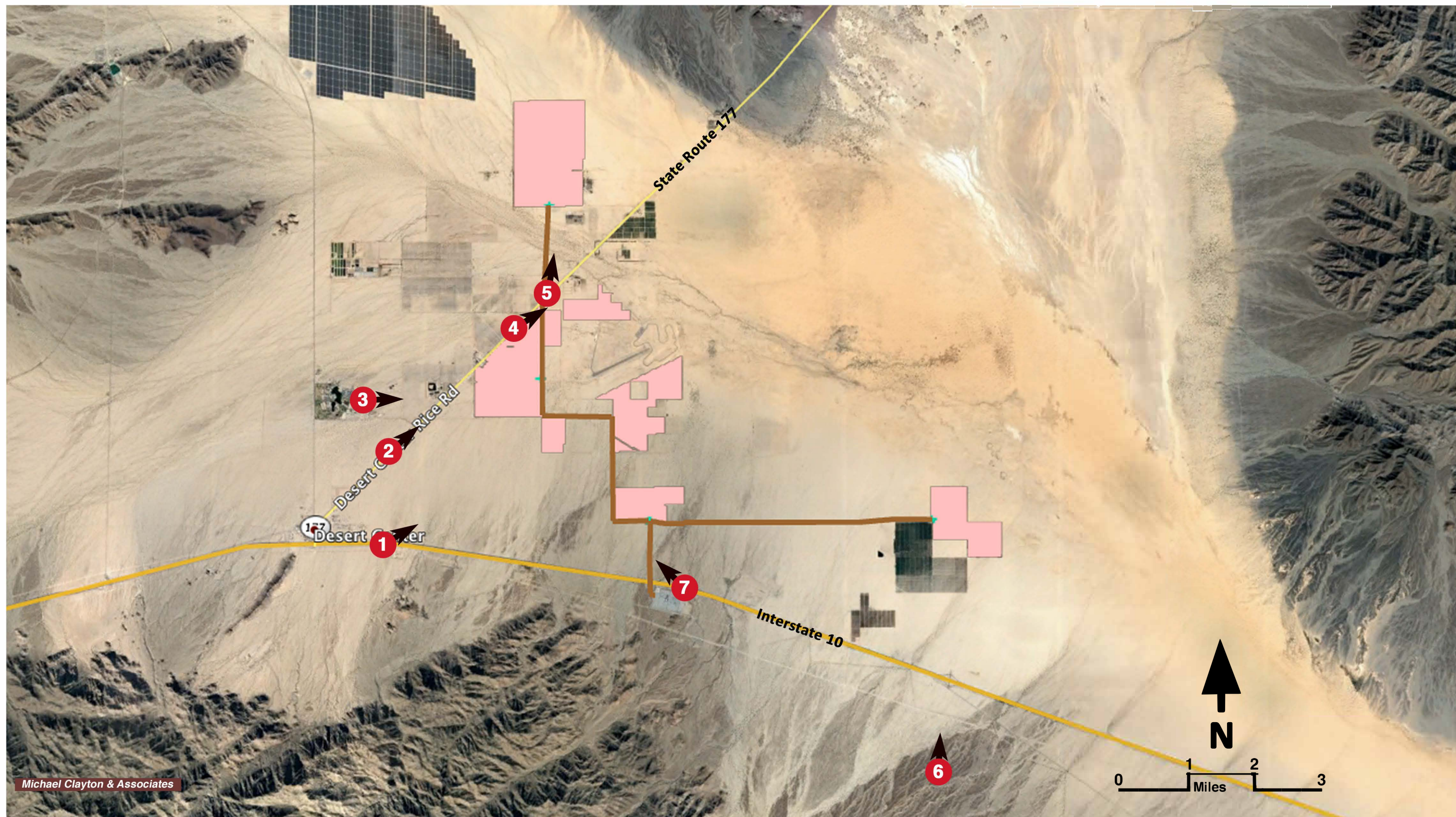
-  Proposed Gen-Tie
-  Solar Facility
-  Visible
-  Not Visible
-  20-mile search radius

Figure 3.2-1B

**Viewshed Analysis
Proposed Gen-Tie Route**



LEGEND

-  Project Solar Fields
-  Proposed Gen-Tie Lines

 Key Observation Point (KOP)

KOP Map

**Athos Renewable Energy Project
Aesthetics
Figure 3.2-2**



Michael Clayton & Associates

Latitude: 33.710406° Longitude: -115.383304°

This image presents the **Existing View** to the northeast from **KOP 1** on eastbound I-10, approximately one mile east of the Desert Center Rice Road (SR 177) overpass. This view captures the central portion of the proposed Project in the vicinity of SR 177. The closest arrays would be approximately 2.2 miles distant from KOP 1 while the most distant arrays in this field of view would be 5 or more miles away.

KOP 1
Eastbound I-10
Existing View

Athos Renewable Energy Project
Aesthetics
Figure 3.2-3A



This image presents a **Visual Simulation** of the proposed Project from **KOP 1** on eastbound I-10, approximately one mile east of the Desert Center Rice Road (SR 177) overpass. This view encompasses portions of the proposed Project at viewing distances from KOP 1 ranging from approximately 2.2 miles to approximately 5.3 miles.

KOP 1
Eastbound I-10
Visual Simulation

Athos Renewable Energy Project
Aesthetics
Figure 3.2-3B



Michael Clayton & Associates

Latitude: 33.729361° Longitude: -115.381986°

This image presents the **Existing View** to the north from **KOP 2** on northbound SR 177, approximately 1.5 miles northeast of Desert Center and approximately 1.5 miles southwest of the proposed Project. This view captures a central portion of Chuckwalla Valley along SR 177 with the Coxcomb, Granite, and Palen mountains providing features of visual interest. The proposed Project's solar arrays and gen-tie line would be located on both sides of the road along the valley floor in the center of the image.

KOP 2
Northbound SR 177
Existing View

Athos Renewable Energy Project
Aesthetics
Figure 3.2-4A



This image presents a **Visual Simulation** of the proposed Project from **KOP 2** on northbound SR 177, approximately 1.5 miles southwest of the Project arrays on the east side of SR 177 and approximately 4 miles southwest of the arrays to be located on the west side of the road. From this vantage point, the Project would appear as a noticeable dark-gray, horizontal and linear feature spanning both sides of SR 177 along the valley floor. Views of the Project would be partially screened by the roadside vegetation.

**KOP 2
Northbound SR 177
Visual Simulation**

**Athos Renewable Energy Project
Aesthetics
Figure 3.2-4B**



Michael Clayton & Associates

Latitude: 33.740178° Longitude: -115.388496°

This image presents the **Existing View** to the east from **KOP 3** on the east side of the Lake Tamarisk Desert Resort, approximately two miles north of I-10. This view captures a central portion of the Athos Project site at viewing distances ranging from 1.5 to 3.5 miles distant. The view toward the site is substantially screened by intervening vegetation. The Palen Mountains provide a background feature of visual interest relative to the flat, horizontal form of the Chuckwalla Valley floor.

KOP 3
Lake Tamarisk Desert Resort
Existing View

Athos Renewable Energy Project
Aesthetics
Figure 3.2-5A



Michael Clayton & Associates

Latitude: 33.740178° Longitude: -115.388496°

This image presents a **Visual Simulation** of the proposed Project from **KOP 3** on the east side of the Lake Tamarisk Desert Resort, approximately two miles north of I-10. This view encompasses portions of the proposed Project at viewing distances ranging from approximately 1.5 to 3.5 miles distant. As is apparent in the simulation, the Project would appear as a distant, low, horizontal feature along the valley floor, but would be substantially screened from view by intervening vegetation between KOP 3 and the Project.

KOP 3
Lake Tamarisk Desert Resort
Visual Simulation

Athos Renewable Energy Project
Aesthetics
Figure 3.2-5B



This image presents the **Existing View** to the northeast from **KOP 4** on northbound SR 177, approximately four miles northeast of Desert Center. This KOP would provide an immediate foreground view of a central portion of the Athos Project located immediately adjacent to the east side of SR 177, a primary local road in the Project area. The dominant landscape features include the broad, horizontal form of the central Chuckwalla Valley floor, backdropped by the Granite Mountains to the northeast and Palen Mountains to the east.

KOP 4
SR 177 - NE
Existing View

Athos Renewable Energy Project
Aesthetics
Figure 3.2-6A



This image presents a **Visual Simulation** of the proposed Project from **KOP 4** on northbound SR 177. This view encompasses a portion of the proposed Project adjacent, and to the east of, SR 177. As is apparent in the simulation, the Project would appear as a prominent industrial facility in the immediate foreground of views from the road. The simulation assumes the retention of existing vegetation along the shoulder of the road, in order to provide partial screening of the Project facilities.

KOP 4
SR 177 - NE
Visual Simulation

Athos Renewable Energy Project
Aesthetics
Figure 3.2-6B



Michael Clayton & Associates

Latitude: 33.761507° Longitude: -115.342931°

This image presents the **Existing View** to the north from **KOP 5** on northbound SR 177, approximately 4.7 miles northeast of Desert Center. The dominant landscape features include the broad, horizontal form of the northern Chuckwalla Valley floor, backdropped by the Eagle Mountains to the northwest and the Coxcomb Mountains to the north. This KOP would provide a view of the northern-most portion of the Project (Parcel Group A) located approximately 1.3 miles north of KOP 5 and SR 177.

KOP 5
SR 177 - North
Existing View

Athos Renewable Energy Project
Aesthetics
Figure 3.2-7A



This image presents a **Visual Simulation** of the proposed Project from **KOP 5** on northbound SR 177, approximately 4.7 miles northeast of Desert Center and approximately 1.3 miles south of the Project's northern-most solar field. From this vantage point, the Project would appear as a noticeable, narrow, dark, horizontal band along the valley floor. The northern-most portion of the gen-tie line would be more prominently visible given its immediate foreground proximity to the viewer at KOP 5.

KOP 5
SR 177 - North
Visual Simulation

Athos Renewable Energy Project
Aesthetics
Figure 3.2-7B



Michael Clayton & Associates

Latitude: 33.663652° Longitude: -115.246001°

This image presents the **Existing View** to the north from **KOP 6** on Corn Springs Road, approximately 1.1 miles south of Chuckwalla Valley Road. This view captures a central portion of Chuckwalla Valley backdropped by the Coxcomb and Granite mountains. The proposed Project's eastern-most solar arrays and eastern extension of the gen-tie line would be located along the valley floor in the center of the image. An existing transmission line corridor features prominently in the foreground landscape.

KOP 6
Corn Springs Road
Existing View

Athos Renewable Energy Project
Aesthetics
Figure 3.2-8A



Michael Clayton & Associates

Latitude: 33.663652° Longitude: -115.246001°

This image presents a **Visual Simulation** of the proposed Project from **KOP 6** on Corn Springs Road, approximately 1.1 miles south of Chuckwalla Valley Road and approximately 3.1 miles south of the proposed eastern-most solar fields. From this vantage point, the Project would appear as a noticeable narrow dark streak along the valley floor. The eastern-most portion of the gen-tie line would also be slightly visible as vertical, linear features along the valley floor.

KOP 6
Corn Springs Road
Visual Simulation

Athos Renewable Energy Project
Aesthetics
Figure 3.2-8B



Michael Clayton & Associates

Latitude: 33.701757° Longitude: -115.308573°

This image presents the **Existing View** to the northwest from **KOP 7** on westbound I-10 at Palen Ditch, approximately 5.3 miles east of Desert Center, across from Red Cloud Substation. This **cumulative view** encompasses a central portion of Chuckwalla Valley, northeast of Desert Center. The existing Desert Sunlight solar field is visible as a distant dark gray horizontal feature. A portion of its single-circuit gen-tie line (brown, vertical, mono-poles) is also visible as the gen-tie line converges on I-10.

KOP 7
Westbound I-10
Cumulative Existing View

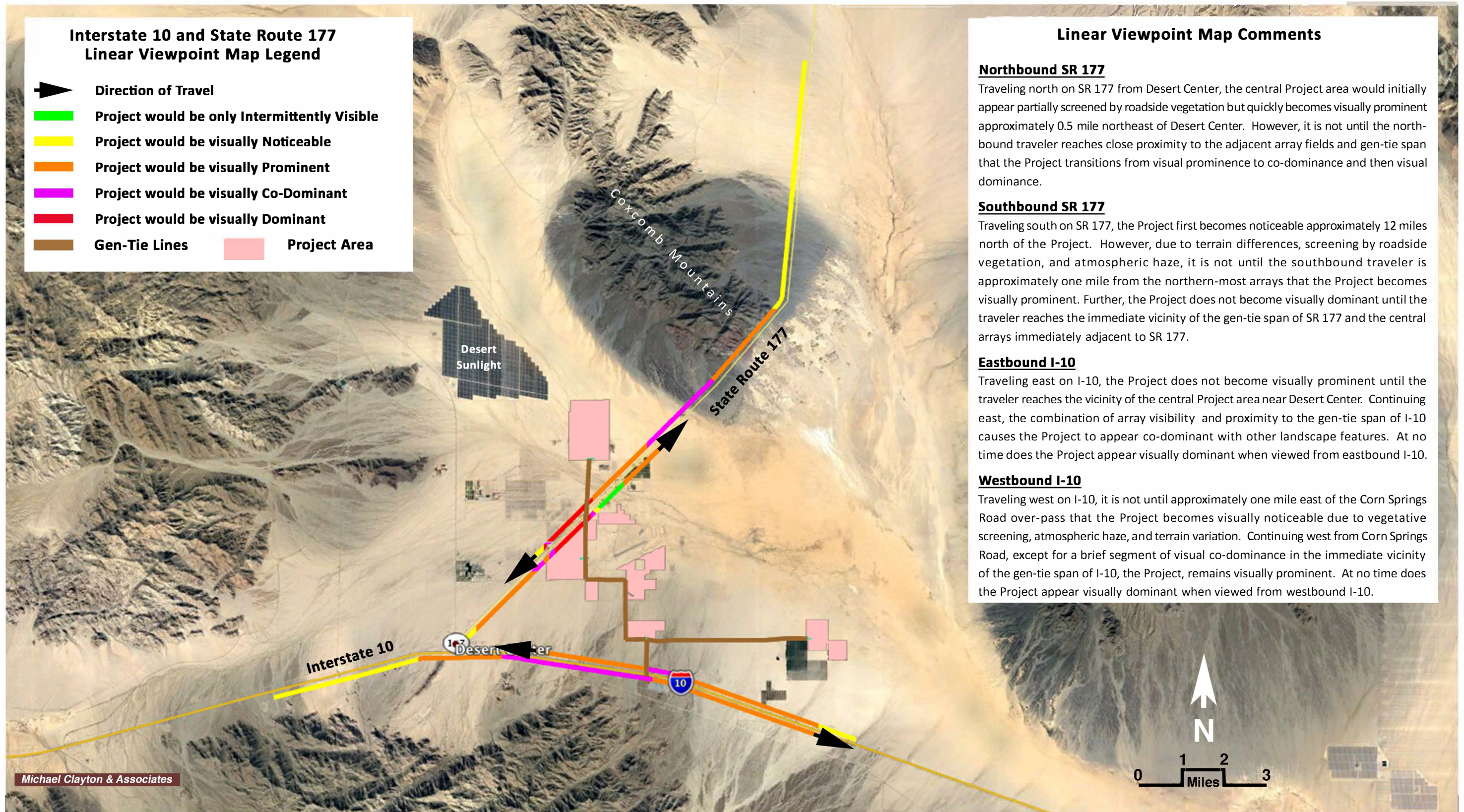
Athos Renewable Energy Project
Aesthetics
Figure 3.2-9A



This image presents a **Visual Simulation** of the **Cumulative** solar project development scenario as viewed from KOP 7 on westbound I-10, at Palen Ditch. The simulation must be considered conceptual since the design details of the reasonable foreseeable projects are unknown at this time. This simulation illustrates portions of the following proposed projects and/or their gen-tie lines: IO (foreground) Athos, Desert Harvest, Victory Pass, California Jupiter, DC 50, Palen, and Eagle Mountain Pumped Storage Project 500 kV Line.

**KOP 7
Westbound I-10
Cumulative Simulation**

**Athos Renewable Energy Project
Aesthetics
Figure 3.2-9B**



This **Linear Viewpoint Map** illustrates the visibility of the proposed Project from both eastbound and westbound I-10 and northbound and southbound SR 177. Views are color-coded as indicated in the legend above and include views of the Project up to 90 degrees off the direction of travel.

**Interstate 10 and
State Route 177
Linear Viewpoint Map**

**Athos Renewable Energy Project
Aesthetics
Figure 3.2-10**

3.3 Agriculture and Forestry Resources

This section evaluates the impacts on agriculture and forestry resources resulting from implementation of the proposed Project. The analysis in this section: presents an overview of existing conditions that influence agriculture and forestry, describes the applicable regulations, identifies the criteria used for determining the significance of environmental impacts, and describes the potential agriculture and forestry impacts of the proposed Project.

3.3.1 Environmental Setting

Riverside County

Agriculture is a strong component in Riverside County’s economy. According to the annual Riverside County Agricultural Production Report (2016), agriculture production accounted for an estimated total gross value of \$1,275,776,000. The primary agricultural products from Riverside County in 2016 were, in order: nursery stock, milk, table grapes, lemons, bell peppers, hay, eggs, dates, avocados, and carrots (Riverside County, 2016).

The most recent agricultural land conversion data available for Riverside County is for the period between 2014 and 2016. Land converted in this period is shown below in Table 3.3-1.

Table 3.3-1. Riverside County Agricultural Land Conversion 2014 to 2016

Land use category	Total Acreage Inventoried		2014 to 2016 Acreage Changes			
	2014	2016	Acres Lost (-)	Acres Gained (+)	Total Acreage Changed	Net Acreage Changed
	Prime Farmland	118,077	117,484	2,414	1,821	4,235
Farmland of Statewide Importance	44,002	43,757	991	746	1,737	-245
Unique Farmland	32,582	32,565	1,570	1,553	3,123	-17
Farmland of Local Importance	228,809	226,029	6,598	3,818	10,416	-2,780
Grazing Land	110,102	110,203	386	487	873	101
AGRICULTURAL LAND SUBTOTAL	533,572	530,038	11,959	8,425	20,384	-3,534

Source: DOC, 2016a

As described in the table above, for the two-year period from 2014 to 2016, Riverside County had a decrease of 3,534 acres in the total amount of active agricultural land mapped by the Farmland Mapping and Monitoring Program (FMMP). For comparison, during the 2012 to 2014 period, Riverside County had a net decrease in irrigated farmland of approximately 3,047 acres (DOC, 2016b).

The decrease in acres between 2014 to 2016 included a decrease of 3,635 acres of Important Farmland (including Prime Farmland, Farmland of Statewide Importance, Unique Farmland, and Farmland of Local Importance) and an increase of 101 acres of Grazing Land. The largest decrease was in Prime Farmland, with 593 acres converted to nonagricultural uses.

Site Description and Vicinity

Agriculture, in particular jojoba farming, is practiced in the Desert Center area where the proposed Project would be located. The proposed Project would be constructed within the Desert Center Area Plan primarily on land designated as Open Space Rural (OS-RUR) with some land designated as Public Facility and

less than 10 acres of land designated as Agriculture and zoned W-2-10, M-H, and N-A. The proposed parcels consist of active and fallow agricultural land and some open space and are not within a Specific Plan area. Specifically, Parcel G is located on an active date farm. There are no forestry resources in the proposed Project area or its vicinity.

The Project area is designated as Other Land under the California Department of Conservation (DOC) FMMP, which identifies various categories of farmland throughout the State (DOC, 2017). The California Land Conservation Act of 1965 (referred to as the Williamson Act) allows counties 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 for a reduction in assessed property taxes (DOC, 2015). None of the lands affected by the Project are under Williamson Act contracts or are a part of a Riverside County Agricultural Preserve. The two agricultural properties nearest to the proposed Project area that are subject to Williamson Act contracts are located approximately 1 mile south of Parcel Group A and directly across Highway 177 from Parcel Groups B and C. The two agricultural properties are classified as Non-Prime Agricultural Land under the Williamson Act. Property classified as Prime Agricultural Land under the Williamson Act is located about 1.5 miles to the southwest of Parcel Groups B through G.

The portions of the generation-tie line on BLM-administered land would not be located on agriculture or within any grazing allotments.

3.3.2 Regulatory Framework

Federal Regulatory Setting

Federal Farmland Protection Policy Act. The Farmland Protection Policy Act (7 U.S. Code [USC] Section 4201 et seq.; see also 7 Code of Federal Regulations [CFR] part 658) is overseen by the United States Department of Agriculture's (USDA) Natural Resources Conservation Service (NRCS). The Farmland Protection Policy Act is intended to "minimize the extent to which federal programs contribute to the unnecessary conversion of farmland to nonagricultural uses." The Act applies to projects and programs that are sponsored or financed in whole or in part by the federal government.

State Regulatory Setting

Land Conservation Act of 1965 (Williamson Act). The Williamson Act is intended to help preserve farmland. In creating the Act, the legislature noted that "the preservation of the maximum amount of the limited supply of agricultural land is necessary to the conservation of the State's economic resources, and is necessary not only to the maintenance of the agricultural economy of the State, but also for the assurance of adequate, healthful and nutritious food for future residents of this State and nation" (Government Code Section 51220). The Act enables participating local governments to enter into land conservation contracts with private landowners. Williamson Act contracts restrict specific parcels of land to agricultural and open space uses for a minimum term of ten years in return for reduced property tax assessments. The Williamson Act program is locally administered by counties (and some cities) to ensure compliance with the Williamson Act (Government Code Sections 51200–51207), local uniform rules, and individual contracts. The California Department of Conservation provides guidance and oversight to local governments to ensure consistency with the government code. Starting in 1972, the State provided counties with partial replacement of foregone local property tax revenues (Open Space Subvention Act). These subvention payments were suspended in 2009 due to State-level budget constraints.

Farmland Mapping and Monitoring Program. The California Department of Conservation established the Farmland Mapping and Monitoring Program (FMMP) in 1982 to identify important agricultural lands and

track the conversion of agricultural land to other uses. Through the FMMP, the California Department of Conservation (DOC) maintains statewide maps of agricultural lands. The maps cover 98 percent of the State's private lands (DOC, 2014b). The Department of Conservation updates farmland mapping using aerial photos. In order to qualify as Prime Farmland or Farmland of Statewide Importance, land must have been irrigated during the previous four years in addition to having prime soil characteristics.

The list below includes the agricultural categories mapped by the DOC. Collectively, lands classified as Prime Farmland, Farmland of Statewide Importance, Unique Farmland, and Farmland of Local Importance are referred to as "Important Farmland." Other Land is that which is not included in any of the other mapping categories.

- **Prime Farmland.** Farmland that has the best combination of physical and chemical features able to sustain long-term agricultural production. This land has the soil quality, growing season, and moisture supply needed to produce sustained high yields. Land must have been used for irrigated agricultural production at some time during the four years prior to the mapping date.
- **Farmland of Statewide Importance.** Farmland similar to Prime Farmland but with minor shortcomings, such as greater slopes or less ability to store soil moisture. Land must have been used for irrigated agricultural production at some time during the four years prior to the mapping date.
- **Unique Farmland.** Farmland of 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 cropped at some time during the four years prior to the mapping date.
- **Farmland of Local Importance.** Land of importance to the local agricultural economy as determined by each county's board of supervisors and a local advisory committee.
- **Grazing Land.** Land on which the existing vegetation is suited to the grazing of livestock. This category was developed in cooperation with the California Cattlemen's Association, University of California Cooperative Extension, and other groups interested in the extent of grazing activities. The minimum mapping unit for Grazing Land is 40 acres.

Local Regulatory Setting

Riverside County General Plan. The intent of the Agricultural Resources section of the Land Use Element of the Riverside County General Plan is to identify and preserve areas where agricultural uses are the long-term desirable use and to minimize the conflicts between agricultural and urban/suburban uses. The following policies included in the Land Use Element generally relate to the proposed Project with respect to agricultural resources (Riverside County, 2017).

- **Policy LU 7.1.** Require land uses to develop in accordance with the General Plan and area plans to ensure compatibility and minimize impacts.
- **Policy LU 7.4.** Retain and enhance the integrity of existing residential, employment, agricultural, and open space areas by protecting them from encroachment of land uses that would result in impacts from noise, noxious fumes, glare, shadowing, and traffic.
- **Policy 20.1.** Encourage retaining agriculturally designated lands where agricultural activity can be sustained at an operational scale, where it accommodates lifestyle choice, and in locations where impacts to and from potentially incompatible uses, such as residential uses, are minimized, through incentives such as tax credits.

- **Policy LU 20.2.** Protect agricultural uses, including those with industrial characteristics (dairies, poultry, hog farms, etc.) by discouraging inappropriate land division in the immediate proximity and allowing only uses and intensities that are compatible with agricultural uses.
- **Policy LU 20.4.** Encourage conservation of productive agricultural lands. Preserve prime agricultural lands for high-value crop production.
- **Policy LU 20.5.** Continue to participate in the California Land Conservation Act (the Williamson Act) of 1965.
- **Policy LU 7.5.** Require buffering to the extent possible between urban uses and adjacent rural/equestrian oriented land uses.

The intent of the Agriculture section of the Multipurpose Open Space Element of the Riverside County General Plan regarding agricultural use is to protect agricultural lands and landscapes as historical, cultural, and scenic resources. The following policy included in the Multipurpose Open Space Element generally relates to the proposed Project with respect to agricultural resources (Riverside County, 2017).

- **Policy OS 7.3.** Encourage conservation of productive agricultural lands and preservation of prime agricultural lands.

Desert Center Area Plan. The intent of the Land Use section of the Desert Center Area Plan is to enhance and/or preserve the identity, character, and features unique to the Desert Center area. The following policy included in the Desert Center Area Plan generally relates to the proposed Project with respect to agricultural resources (Riverside County, 2015).

- **Policy DCAP 3.1.** Protect farmland and agricultural resources in Desert Center through adherence to the Agricultural Resources section of the General Plan Multipurpose Open Space Element and the Agriculture section of the General Plan Land Use Element, as well as the provisions of the agriculture land use designation.

Riverside County Agricultural Preserve Ordinance – Ordinance No. 509. The Riverside County Agricultural Preserve Ordinance provides for the administration of lands placed in agricultural preserves, including procedures for initiating, filing, and processing requests to establish, enlarge, disestablish, or diminish agricultural preserves, pursuant to the California Land Conservation Act.

Riverside County Ordinance No. 348.4705. Zoning ordinance 348.4705 permits a solar power plant in several districts, including agricultural districts, with a use permit. Ordinance No. 348.4705 was enacted at the same time as and implements General Plan Policy LU-15.15, which states: “Permit and encourage, in an environmentally and fiscally responsible manner, the development of renewable energy resources and related infrastructure, including but not limited to, the development of solar power plants in the County of Riverside.”

Riverside County Ordinance No. 625, the “Right to Farm” Ordinance. Ordinance No. 625 factors into Riverside County’s standard significance thresholds. It was enacted to conserve, protect, and encourage the development, improvement, and continued viability of agricultural land. The intent of the ordinance is to reduce the loss to the County of its agricultural resources by limiting the circumstances under which agricultural operations may be deemed to constitute a nuisance. Nothing in the ordinance is to be construed to limit the right of any owner of real property to request that the county consider a change in the zoning classification.

3.3.3 Methodology for Analysis

The analysis focuses on the potential for implementation of the proposed Project to adversely affect agricultural resources through temporary disruption or disturbance of agricultural land uses and activities during construction, conversion of agricultural land to non-agricultural land uses during construction and operation, introduction of incompatible land uses or land use activities during operation, or through other changes to the physical environment that could result in loss or conversion of agricultural lands during construction and operation.

The approach is based largely on a comparison of the Project area, which is defined as the area within which all construction-related disturbance would occur, against important farmland as mapped in FMMP Important Farmland Series Maps, maps of Williamson Act contracts, and zoning maps. Existing use of land designated or zoned for agriculture was also considered.

3.3.4 CEQA Significance Criteria

The significance criteria listed below are from the Environmental Checklist Form in Appendix G of the CEQA Guidelines. Under CEQA, the proposed Project and alternatives would have significant impacts on agriculture and forestry if they would:

- *Conflict with existing zoning for agricultural use, or a Williamson Act contract (see Impact AG-1).*
- *Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to nonagricultural use or conversion of forest land to non-forest use (see Impact AG-2).*

The following additional significance criteria from the County of Riverside CEQA Environmental Assessment Form are used in the analysis. A project could have potentially significant impacts if it would:

- *Cause development of non-agricultural uses within 300 feet of agriculturally zoned property (Ordinance No. 625, "Right-to-Farm") (see Impact AG-3).*

The following CEQA significance criteria from Appendix G were not included in the analysis:

- *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.*

The Project area is designated as Other Land under the California Department of Conservation (DOC) FMMP. There are no lands designated as Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland) in the Project area; therefore, the proposed Project would not result in the conversion of the aforementioned farmlands to non-agricultural use.

- *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 51104(g)).*

There are no forest lands or timberlands in the Project area; therefore, the proposed Project would not conflict with existing zoning for, or cause rezoning of, forest land, timberland, or timberland zoned Timberland Production.

■ *Result in the loss of forest land or conversion of forest land to non-forest use.*

The proposed Project would not be located on land zoned specifically as either forest land or timberland. The Project would be located primarily on land zoned for agricultural production and as rural open space land. Although timber production is an allowable activity within an agricultural zone, the Project would not be used for timber production, nor is the site forested. In addition, the Project area is not considered timberland because the land is not located in a Timberland Production Zone. Overall, the Project does not meet the definition of “forest land” and the proposed Project would not result in the loss of forest land or conversion of forest land to non-forest use.

The following CEQA significance criteria from the County’s Environmental Assessment Form were not included in the analysis:

■ *Conflict with land within a Riverside County Agricultural Preserve.*

There are no Riverside County–designated agricultural preserves in the Project area that would be impacted by the Project. Gen-Tie Segment #1 heading south from Parcel Group A would be routed close to the east side of the Chuckwalla 2 Agricultural Preserve and could potentially encroach upon the Preserve. However, no portion of Gen-Tie Line Segment #1 would pass through the Preserve and there would be no impact to the Preserve from the construction, operation or decommissioning of the gen-tie line. The proposed Project would not convert preserve lands to non-agricultural use and would not conflict with land within a Riverside County Agricultural Preserve.

3.3.5 Proposed Project Impact Analysis

Members of the public supported developing the Project on land that had been previously disturbed for agriculture. However, one member of the public expressed concern about heat from the Project and the reflection on agriculture which could damage trees. Another member of the public expressed concerned that current zoning would be changed for surrounding properties, which could include height limits and setbacks for date trees at an existing date farm.

Impact AG-1. The Project would conflict with existing zoning for agricultural use, a Williamson Act contract, or land within an agricultural preserve.

Solar Facility

The proposed Project would be constructed on previously disturbed, private land designated by Riverside County Open Space Rural (OS-RUR), Agriculture, and Public Facilities. None of the lands affected by the proposed Project are under Williamson Act contracts or are a part of a Riverside County Agricultural Preserve. With construction and operation of the proposed Project, land zoned for agricultural uses would be converted to non-agricultural uses. However, this would be less than 10 acres and the uses under the proposed Project are allowed as a conditional use in Agricultural zones and, with the issuance of a conditional use permit, the proposed uses would be consistent with zoning and other local policies, including the Riverside County General Plan (see Section 3.3.2, Regulatory Framework).

Solar panels and interconnection facilities would be raised off the ground, but foundations for the electrical equipment, roadways, temporary laydown and parking areas, and grubbing and light grading would disturb the Project area. Construction of the access road segments would include compacting subsurface soils and placing a four-inch-thick layer of asphalt concrete over a 6-inch-thick layer of compacted aggregate base. However, the solar panels, which account for the majority of the Project area, would be built atop the relatively flat soil lots, leaving the farming soil relatively undisturbed and available for crop cultivation at the end of the Project’s life, should the parcels revert to agricultural land.

The Applicant is seeking a minimum 40-year Conditional Use Permit (CUP). At the end of the Project's useful life, the solar arrays and gen-tie line would be decommissioned and dismantled. Following removal of the above-ground and buried Project components, the site would be restored to its pre-solar facility conditions, or such condition as appropriate in accordance with County policy at the time of decommissioning. Following removal of Project components, the Project area would be available for conversion back to agricultural use after Project decommissioning.

Overall, since uses under the proposed Project are allowed as a conditional use in Agricultural zones and since most of the Project area would be covered by solar panels and therefore relatively undisturbed and available for reversion to agricultural uses at the end of the Project's life, the impact to agricultural uses from the proposed Project would be less than significant.

220 kV Generation-Tie Line

The proposed gen-tie line would traverse on private land designated by Riverside County as Agriculture and Open Space Rural (OS-RUR) as well as BLM-managed land not zoned for agricultural uses. None of the lands affected by the proposed Project are under Williamson Act contracts or are a part of a Riverside County Agricultural Preserve. Gen-Tie Segment #1 heading south from Parcel Group A would be routed close to the east side of the Chuckwalla 2 Agricultural Preserve and could potentially encroach upon the Preserve. However, no portion of Gen-Tie Line Segment #1 would pass through the Preserve and there would be no significant impact to the Preserve from the construction, operation or decommissioning of the gen-tie line.

The existing and planned land uses would be the same for the gen-tie line as for the solar facility for segments of the gen-tie line located on private lands (i.e., sections of Gen-Tie Segments 1 and 2). For segments of the gen-tie line located on BLM-administered land, there would be no impact (i.e., sections of Gen-Tie Segments 1 and 2 and all of Gen-Tie Segments 3 and 4).

Mitigation Measures for Impact AG-1

No mitigation would be required.

Significance After Mitigation

This impact would be less than significant.

Impact AG-2. 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 or conversion of forest land to non-forest use.

Solar Facility

The proposed Project's use of land designated by Riverside County as Open Space Rural (OS-RUR), Agriculture, and Public Facilities for non-agricultural use during the Project's minimum 40-year existence would not result in the conversion of adjacent farmland properties to non-agricultural use. The proposed Project would not introduce a non-agricultural use that is sensitive to or incompatible with agricultural operations that would occur nearby.

Vehicle emissions can impact the health and survival of crops; however, increased vehicle emissions from Project construction and decommissioning would be temporary in duration and occur only during these activities (Please refer to Section 3.4, *Air Quality*, for a detailed discussion regarding vehicle emissions). They would not be of significant duration to have a significant impact on the life cycle of plants in the area.

Water for construction-related dust control and operations could impact water availability for agricultural uses; however, water use for the proposed Project would not significantly adversely affect the adjacent farmers' share of the water supply (Please refer to Section 3.10, *Hydrology and Water Quality*, for a detailed discussion regarding water resources).

Solar facilities have also been shown to increase ambient air temperature around the plant compared to the surrounding landscape. This added heat dissipates quickly and could not be measured 100 feet away from the solar facility (Binder, 2016; Barron-Gafford, et al., 2016). Less than 2 acres of active agriculture is within 100 feet from Parcel Group G, the rest of the Project is at least 100 feet from active agriculture.

Overall, there is always a potential that a non-agricultural project would or could affect surrounding agricultural lands. However, the construction and operation of the proposed Project would not cause substantial changes to the existing environment such as changes to air quality, water supply, drainage, shading of adjacent lands, increased heat or other resources.

Given that the surrounding zoning includes agriculture, there could be some conflict with land uses surrounding the site. Typically, non-agricultural uses may present some problems with agricultural operations. In this case, the Project's underlying fallow ground could become a nuisance if not properly maintained, both in terms of dust and weed migration. However, soil would not be removed from the Project area and most of the proposed Project area would not be significantly disturbed due to the installation of solar panels. In addition, on-site soils would not be disturbed during Project operations. As described in Chapter 2, dust suppression methods would be implemented to ensure that dust would not become a nuisance during construction or operation on the proposed site or at the surrounding sites. Other than the infrequent maintenance and security visits, vehicle use in the Project area would be minimal, which would further reduce the potential for dust emissions. Additionally, a long-term strategy for weed control and management would be implemented during operation of the Project. The soil quality would be maintained throughout the life of the Project so that the parcels could be used for agricultural purposes at the end of the Project's life.

The temporary removal of land from agricultural use for use as a solar facility would not increase the total acreage of urban uses. This property would be available for reversion to agricultural use when the proposed Project is decommissioned. The proposed Project would not involve other changes in the existing environment which may result in the conversion of other agricultural lands to non-agricultural uses. The proposed Project furthermore would not interfere with neighboring agricultural operations by, for example, restricting aerial application of pesticides. Therefore, the proposed Project would result in less than significant impacts involving other changes in the existing environment.

220 kV Generation-Tie Line

The proposed gen-tie line would traverse private land designated by Riverside County as Agriculture and Open Space Rural (OS-RUR) as well as BLM-managed land not zoned for agricultural uses. The potential for impacts to surrounding agricultural lands and the methods to reduce impacts to these lands with regards to dust and weed migration would be the similar for the gen-tie line as for the solar facility. The temporary removal of land from agricultural use for use as gen-tie lines would not increase the total acreage of urban uses. This property would be available for reversion to agricultural use when the proposed Project is decommissioned. The proposed Project would not involve other changes in the existing environment which may result in the conversion of other agricultural lands to non-agricultural uses. Therefore, the proposed Project would result in less than significant impacts involving other changes in the existing environment.

Mitigation Measures for Impact AG-2

No mitigation would be required.

Significance After Mitigation

This impact would be less than significant.

Impact AG-3. The Project would cause development of non-agricultural uses within 300 feet of agriculturally zoned property (Ordinance No. 625, "Right-to-Farm").

Solar Facility

See Impacts AG-1 and AG-2 above regarding impacts from the construction and operation of the solar facility. The proposed Project would cause development of non-agricultural uses within 300 feet of agriculturally zoned property, but would not create significant impacts due to the location of non-agricultural use in proximity to agricultural use. As explained above, the Project would not create use conflicts with agricultural use or otherwise interfere with use of agriculturally zoned property adjacent to the Project area.

Regarding County Ordinance No. 625, the proposed Project would not result in the loss of agricultural resources in Riverside County as a result of a determination that existing uses on nearby agricultural land being deemed a nuisance. Agricultural activities in the Project area and their related impacts would have no effect on the construction or operation of the proposed Project.

In addition, the Project would not result in incompatible uses within a Riverside County Agricultural Preserve and would comply with Ordinance No. 509, because no aspect of the Project would cross or impact agricultural preserves in the Project area. Moreover, the proposed Project would be allowed as a conditional use on Riverside County lands zoned for agriculture and therefore would comply with Ordinance No. 348.4705. Overall, the proposed Project would not conflict with Riverside County Ordinance No. 625, "Right-to-Farm," nor any other Riverside County Ordinances discussed in Section 3.3.2, Regulatory Framework. The impact would be less than significant.

220 kV Generation-Tie Line

See Impacts AG-1 and AG-2 above regarding impacts from the construction and operation of the gen-tie line. The proposed gen-tie line would be allowed as part of a conditional use on Riverside County lands zoned for agriculture and as part of BLM's right-of-way (ROW) grant. As explained above, the Project would not create use conflicts with agricultural use or otherwise interfere with use of agricultural-zoned property adjacent to the Project area; the impact would be less than significant.

Mitigation Measures for Impact AG-3

No mitigation would be required.

Significance After Mitigation

This impact would be less than significant.

3.3.6 Alternative 1: No Project Alternative

The No Project Alternative would not result in any new construction and/or operational activities or any new associated ground-disturbing activities (solar panel installation, substation and O&M building, and

construction of access roads and gen-tie line). The No Project Alternative would not conflict with any agricultural activities or agricultural land. Therefore, the No Project Alternative would not have impacts to agriculture and forestry resources, while the proposed Project would have impacts that are less than significant with regard to these resources. Under the No Project Alternative, it is probable that other solar energy-related projects would be implemented within the site in lieu of the proposed Project. A different solar energy project would potentially result in similar impacts (i.e., less than significant) or worse to agriculture and forestry resources as those identified for the proposed Project.

3.3.7 Alternative 2: Reduced Footprint Alternative

Similar to the proposed Project, the Reduced Footprint Alternative would include the construction, operation, maintenance, and decommissioning of a solar facility and associated infrastructure. The Reduced Footprint Alternative would reduce the solar facility site by 387 acres by eliminating the development of two Parcel Groups D and F and would relocate Substation 4 to a new location on Parcel Group E. This would not change the distance of the Alternative to active agriculture because Parcel Group D and F are not near or on existing agriculture or fallow agriculture. Because the Reduced Footprint Alternative would be constructed on lands with the same designations and zoning as the proposed Project, the impacts would be the same as for the proposed Project but in a reduced area. The smaller footprint and ground disturbance would not result in less impacts to agricultural uses because the areas removed, Parcel Groups D and F, have not been used previously for agriculture, they are undeveloped desert. The impacts that remain would be less than significant. There would be no change in impacts to the gen-tie line analysis.

3.3.8 Gen-Tie Segment #1 Alternative Route Option

The Gen-Tie Segment #1 Alternative Route Option would be located east of the proposed Gen-Tie and would be approximately 0.65 miles longer than the proposed Gen-Tie Segment #1. There would be no change to the amount of solar infrastructure constructed and operated compared to the proposed Project. Because of the close proximity between the Route Option and the proposed Gen-Tie Segment #1, the impacts to agriculture and forestry resources from both the solar facility and gen-tie lines would be the same as for the proposed Project but along a longer route. However, the longer route would not impact any additional land zoned for or dedicated to agriculture so it would result in similar impacts to agricultural uses as the proposed route. The impacts remain less than significant.

3.3.9 Cumulative Impacts

Agricultural cumulative impacts include the proposed Project's impacts as well as those likely to occur as a result of other existing, proposed, and reasonably foreseeable projects. The geographic extent for the consideration of cumulative effects to agricultural and forestry resources is the Desert Center area. This geographic area was selected as most of the parcels in the Project area, and the Desert Center area as a whole, have been previously disturbed and are or were used for agriculture, particularly jojoba farming and because the pressure that a change in use may exert on agricultural operations is likely to manifest as a localized compatibility issue.

Tables 3.1-1 and 3.1-2 list existing and reasonably foreseeable projects in the region. The Desert Harvest Solar Farm; DC 50 Solar Project; California Jupiter, LLC Project; IO Solar Project; Victory Pass, LLC Project; SunPower Project, and Palen Solar Project are projects that would all be near the proposed Project and that could impact agricultural resources, although it is worth noting that several of these projects were permitted years ago and have yet to start construction.

Solar Facility

Continuing development within Riverside County has resulted in the conversion of land currently utilized for agricultural production to urban and other land uses. This agricultural conversion has been a continuing trend in the County and has resulted in a net loss of 3,534 acres of agricultural land between 2014 and 2016 (see Table 3.3-1). Impacts resulting from construction, operation, maintenance, and decommissioning of the proposed Project could result in a cumulative effect on agriculture with other past, present, or reasonably foreseeable future actions.

There are approximately 30 total projects within the cumulative geographic scope, some of which could result in the permanent conversion of agricultural land or Farmland to a non-agricultural uses. The conversion of agricultural lands, and specifically Farmland, in Riverside County from these projects would be considered a cumulatively significant impact.

Implementation of the proposed Project, in combination with other projects in the Desert Center area, could include land zoned for agricultural uses that would be utilized for non-agricultural uses or would cause development of non-agricultural uses within 300 feet of agriculturally zoned property. However, with the issuance of a CUP, developments under the cumulative scenario constitute allowed uses within Agricultural zones that have been found to be consistent with zoning. The proposed Project would not involve other changes in the existing environment that may result in the conversion of other agricultural lands to non-agricultural uses. In addition, there are no forest lands or timber resources in the Project area and neither the proposed Project nor the cumulative projects would convert any Important Farmland to non-agricultural uses. The solar arrays would be placed above ground and after the Project and the cumulative projects are decommissioned, the sites would be available to be returned to agricultural uses. Overall, the proposed Project's impacts combined with those of nearby projects would not result in a cumulatively significant impact to agricultural resources.

220 kV Generation-Tie Line

Cumulative impacts of the gen-tie line would be the same as for the solar facility with regards to impacts to agriculture and forestry resources. The gen-tie line would not combine with the cumulative projects to result in a cumulatively considerable impact because the Project gen-tie line would not create use conflicts with agricultural use or otherwise interfere with use of agricultural-zoned property adjacent to the Project area.

Mitigation Measures for Cumulative Impacts

No mitigation would be required.

Significance After Mitigation

The Project would not result in a cumulatively significant impact.

3.3.10 Mitigation Measures

No mitigation would be required.

3.4 Air Quality

This section evaluates the emissions of air pollutants and the air quality impacts resulting from implementation of the proposed Project. The analysis in this section: presents an overview of existing conditions that influence air quality; describes the applicable regulations; identifies the criteria used for determining the significance of environmental impacts; and describes the potential air quality impacts of the Project.

3.4.1 Environmental Setting

The proposed Project would be located within the jurisdiction of the South Coast Air Quality Management District (SCAQMD) in the Mojave Desert Air Basin (MDAB). West of the site is the SCAQMD-managed portion of the Coachella Valley (Salton Sea Air Basin). East of the site is the boundary of the jurisdiction of the neighboring Mojave Desert Air Quality Management District, which oversees the remainder of the Mojave Desert Air Basin, including the easternmost portion of Riverside County.

Criteria Air Pollutants. Air quality is determined by measuring ambient concentrations of certain criteria air pollutants. These pollutants are called “criteria” air pollutants because ambient air quality standards have been established for each of them to meet specific public health and welfare criteria. The criteria pollutants are ozone, respirable particulate matter (PM₁₀), fine particulate matter (PM_{2.5}), carbon monoxide (CO), nitrogen dioxide (NO₂), sulfur dioxide (SO₂), and lead. Ozone is an example of a secondary pollutant that is not emitted directly from a source (e.g., an automobile tailpipe), but it is formed in the atmosphere by chemical and photochemical reactions. Reactive organic gases (ROG), including volatile organic compounds (VOC), are regulated as precursors to ozone formation.

Ambient Air Quality Measurements. The nearest ambient air quality monitoring stations are in Joshua Tree National Park (Pinto Wells) and in Blythe. The monitoring station within Joshua Tree National Park is located approximately 10 miles north of the Project site, and the Blythe monitoring station is approximately 37 miles east of the Project site. These two nearest monitoring stations report ozone concentrations, and the nearest monitoring station for other pollutants including PM₁₀, PM_{2.5}, NO₂, and CO is in Palm Springs in the neighboring Salton Sea Air Basin, approximately 75 miles west of the Project site; the nearest SO₂ monitoring station is in Victorville located approximately 135 miles west northwest of the site. Background air quality data from the more urbanized locations would be likely to exceed the actual concentrations for the setting of this Project.

The most-recent three years of air quality measurements near the Project site are shown in Table 3.4-1.

Table 3.4-1. Ambient Air Quality Data for the Project Area

Pollutant	Air Quality Indicator	2014	2015	2016
Data from Joshua Tree National Park (Pinto Wells)				
Ozone	Highest 1-hour (ppm)	0.101	0.095	0.086
	Days above 1-hour Standard (0.09 ppm)	3	1	0
	Highest 8-hour (ppm)	0.092	0.084	0.074
	Days above 8-hour Standard (0.070 ppm)	40	18	5
Data from Blythe (445 West Murphy Street)				
Ozone	Highest 1-hour (ppm)	0.093	0.074	0.073
	Days above 1-hour Standard (0.09 ppm)	0	0	0
	Highest 8-hour (ppm)	0.084	0.066	0.061
	Days above 8-hour Standard (0.070 ppm)	12	0	0

Source: California Air Resources Board: iADAM: Air Quality Data Statistics (ARB, 2018).

Ozone. Ozone is not directly emitted from stationary or mobile sources, but is formed as the result of chemical reactions in the atmosphere between directly emitted nitrogen oxides (NOx) and hydrocarbons (VOCs) in the presence of sunlight. Pollutant transport from the Los Angeles area of the South Coast Air Basin is one source of the pollution experienced in the eastern Riverside County portion of the MDAB. Ozone concentrations have exceeded applicable standards in recent years primarily during the sunny and hot periods typical during May through September. High ozone concentrations can aggravate respiratory and cardiovascular diseases, irritate eyes, impair cardiopulmonary function, and cause leaf damage.

Particulate Matter (PM10) and Fine Particulate Matter (PM2.5). PM10 can be emitted directly or it can be formed many miles downwind from emission sources when various precursor pollutants interact in the atmosphere. Fine particulate matter, or PM2.5, is derived mainly either from the combustion of materials, or from precursor gases (SOx, NOx, and VOC) through complex reactions in the atmosphere. PM2.5 consists mostly of sulfates, nitrates, ammonium, elemental carbon, and a small portion of organic and inorganic compounds. In the MDAB, most ambient particulate matter is due to localized fugitive dust sources, such as vehicle travel on unpaved roads, agricultural operations, or wind-blown dust.¹ Particulate matter can aggravate respiratory diseases, result in reduced lung function, increase and cause chest discomfort, and cause reduced visibility.

Carbon Monoxide. The highest concentrations of CO occur when low wind speeds and a stable atmosphere trap the pollution emitted at or near ground level. These conditions occur frequently in the winter-time late in the afternoon, persist during the night and may extend one or two hours after sunrise. The MDAB has few areas with focused mobile source emissions, and CO concentrations are well below the state and federal ambient air quality standards. CO reduces tolerance from exercise, can cause impairment of mental function, impairment of fetal development, aggravate some heart diseases (angina), and cause death at high levels of exposure.

¹ Fugitive dust, unlike combustion source particulate and secondary particulate, is composed of a much higher fraction of larger particles than smaller particles. This means that a relatively small portion of fugitive dust is PM2.5, and PM10 is dominant. When PM10 ambient concentrations are significantly higher than PM2.5 ambient concentrations this tends to indicate that fugitive dust sources are dominant. If PM10 and PM2.5 concentrations are at comparable levels, then combustion sources and sources of precursors to secondary particulate are dominant.

Nitrogen Dioxide. Approximately 90 percent of the NO_x emitted from combustion sources is nitric oxide (NO), while the balance is NO₂. NO is oxidized in the atmosphere to NO₂, but some level of photochemical activity is needed for this conversion. The highest concentrations of NO₂ typically occur during the fall. The winter atmospheric conditions can trap emissions near the ground level, but lacking substantial photochemical activity (sunlight), NO₂ levels are relatively low. In the summer the conversion rates of NO to NO₂ are high, but the relatively high temperatures and windy conditions disperse pollutants, preventing the accumulation of NO₂. The NO₂ concentrations in the MDAB are well below the state and federal ambient air quality standards. NO₂ can aggravate respiratory diseases, reduce visibility, reduce plant growth, and form acid rain.

Sulfur Dioxide. Sulfur dioxide is typically emitted as a result of the combustion of a fuel containing sulfur. Total SO₂ emissions within the eastern MDAB are limited due to the limited number of major stationary sources and the regulatory limits on motor vehicle fuel sulfur content. The SO₂ concentrations in the MDAB are well below the state and federal ambient air quality standards. SO₂ can irritate the upper respiratory tract and be injurious to lung tissue causing reduced lung function, including asthma and emphysema. SO₂ can cause plant leaves to be yellow, and be destructive to metals, textiles, leather, finishes, and coatings. SO₂ can also limit visibility.

Sensitive Receptor Land Uses. Land uses that are sensitive to air pollution are: residences, schools, daycare centers, playgrounds and medical facilities. There are scattered residences in the Project area, namely near Highway 177/Rice Road, with at least one residence less than 100 feet from the Project parcel boundary. The Lake Tamarisk community is about 1.5 miles west of the site, and the nearest school is the Eagle Mountain School, over 7 miles northwest of the Project site.

3.4.2 Regulatory Framework

Ambient Air Quality Standards. The California Air Resources Board (ARB) and the U.S. Environmental Protection Agency (U.S. EPA) have independent authority to develop and establish health-protective ambient air quality standards, although the different legislative and scientific contexts cause some diversity between State and Federal standards currently in effect in California. The monitored levels of the pollutants are compared to the current National and California Ambient Air Quality Standards (NAAQS and CAAQS) to determine degree of existing air quality degradation. The standards currently in effect in California are shown in Table 3.4-2.

Table 3.4-2. National and California Ambient Air Quality Standards

Pollutant	Averaging Time	California Standards	National Standards
Ozone	1-hour	0.09 ppm	—
	8-hour	0.070 ppm	0.070 ppm
Respirable Particulate Matter (PM10)	24-hour	50 µg/m ³	150 µg/m ³
	Annual Mean	20 µg/m ³	—
Fine Particulate Matter (PM2.5)	24-hour	—	35 µg/m ³
	Annual Mean	12 µg/m ³	12.0 µg/m ³
Carbon Monoxide (CO)	1-hour	20 ppm	35 ppm
	8-hour	9.0 ppm	9 ppm
Nitrogen Dioxide (NO ₂)	1-hour	0.18 ppm	0.100 ppm
	Annual Mean	0.030 ppm	0.053 ppm
Sulfur Dioxide (SO ₂)	1-hour	0.25 ppm	0.075 ppm
	24-hour	0.04 ppm	0.14 ppm
	Annual Mean	—	0.030 ppm

Notes: ppm=parts per million; µg/m³= micrograms per cubic meter; “—” =no standard.
Source: ARB (<http://www.arb.ca.gov/research/aaqs/aaqs2.pdf>), May, 2016.

Ambient Air Quality Attainment Status and Air Quality Plans. The U.S. EPA, ARB, and the local air district classify an area as attainment, unclassified, or nonattainment with regard to certain pollutants, and these designations dictate the air quality management planning activities needed to make future air pollutant reductions. The classification depends on whether the monitored ambient air quality data show compliance, insufficient data available, or non-compliance with the ambient air quality standards, respectively. Table 3.4-3 summarizes attainment status for criteria pollutants in comparison with both the state and federal standards, for the Mojave Desert Air Basin portion of Riverside County.

Table 3.4-3. Attainment Status for Mojave Desert Air Basin Portion of Riverside County

Pollutant	California Designation	Federal Designation
Ozone	Nonattainment	Attainment
PM10	Nonattainment	Attainment
PM2.5	Attainment	Attainment
NO ₂	Attainment	Attainment
CO	Attainment	Attainment
SO ₂	Attainment	Attainment

Source: ARB, 2018; U.S. EPA, 2018.

The 2016 Air Quality Management Plan (AQMP) is SCAQMD’s strategy for attaining the ambient air quality standards in the South Coast Air Basin and Coachella Valley, which are regions that influence air quality in the Mojave Desert (SCAQMD, 2017). By establishing strategies and control measures for air pollutants in the upwind areas, air quality improvements would be achieved in the Mojave Desert Air Basin portion of Riverside County through the implementation of the 2016 AQMP.

Toxic Air Contaminants. Toxic air contaminants (TACs) are air pollutants that may lead to serious illness or increased mortality, even when present in relatively low concentrations. Potential human health effects of TACs include birth defects, neurological damage, cancer, and death. There are hundreds of different types of TACs with varying degrees of toxicity. Individual TACs vary greatly in the health risk they present; at a given level of exposure, one TAC may pose a hazard that is many times greater than another’s. TACs do not have ambient air quality standards, but are regulated by the local air districts using a risk-based approach. The proposed Project would not be considered a stationary source subject to risk assessment programs. Diesel particulate matter (DPM) is classified as a TAC, and statewide programs focus on managing this pollutant through motor vehicle fuels, engine, and tailpipe standards because many toxic compounds adhere to diesel exhaust particles. The local air districts support these programs by issuing permits and requiring controls for larger stationary sources of DPM, including diesel powered engines rated over 50 horsepower.

Federal

Federal Clean Air Act (CAA). The NAAQS for criteria air pollutants were established in 1970 with a mandate for periodic updating. The CAA places responsibility on state and local air agencies to maintain these ambient air quality standards. In the Project area, the SCAQMD has the responsibility to establish regulations, enforce air pollution control requirements, and develop the necessary air quality management to achieve the NAAQS. The U.S. EPA implements most aspects of the CAA, and reviews local and state air quality management plans and regulations to ensure attainment with the NAAQS. Because there are no federal nonattainment or maintenance designations in the MDAB portion of Riverside County, federal agency actions in the MDAB portion of Riverside County are not subject to CAA general conformity review requirements.

Visibility and Federal Class I Areas. The federal CAA requires U.S. EPA to administer programs so that all areas of the country achieve the federal ambient air quality standards within various specified time frames. For attainment areas that already meet the federal ambient air quality standards, the federal

Prevention of Significant Deterioration (PSD) permit program includes a three-tier classification defining the extent to which baseline air quality conditions can be degraded. Class I areas have the smallest allowable air quality deterioration limits. Class II areas allow greater deterioration of air quality but must maintain air quality conditions better than the federal air quality standards. Class III areas allow deterioration of air quality to the level of the federal ambient air quality standards.

The boundary of the Joshua Tree National Park (JTNP) Class I area is 0.9 miles (1.4 km) away, northeast of the edge of the northernmost Project parcels, Parcel Group A. Visibility is considered an important air quality value to be protected within JTNP. There are no other Class I areas within 62 miles (100 km) of the Project. Data from the Federal Land Manager Environmental Database (CIRA, 2016) indicate that visibility in the JTNP Class I area has been improving since 2001. For JTNP and other Class I areas in southern California, the Western Regional Air Partnership shows that the visual range has improved more than 20 percent in the most recent years (2010-2014) when compared to the baseline (2000-2004), and that this improvement is largely due to the local authorities having the ability to control anthropogenic emissions (WRAP, 2016).

State

California Clean Air Act. Implemented by the ARB, the California Clean Air Act establishes broad authority for California to regulate emissions from mobile sources and requires regions to develop and enforce strategies to attain CAAQS. In the Project area, the SCAQMD is responsible for demonstrating how these standards are met.

U.S. EPA/ARB Off-Road Mobile Sources Emission Reduction Program. The California Clean Air Act mandates that ARB achieve the maximum degree of emission reductions from all off-road mobile sources to attain the state ambient air quality standards. Off-road mobile sources include construction equipment. The earliest (Tier 1) standards for large compression-ignition engines used in off-road mobile sources became effective in California in 1996. Since then, the Tier 3 standards for large compression-ignition engines used in off-road mobile sources went into effect in California for most engine classes in 2006, and Tier 4 or Tier 4 Interim (4i) standards apply to all off-road diesel engines model year 2012 or newer. These standards and standards applicable to fleets that are already in-use address emissions of NO_x and toxic particulate matter from diesel combustion.

ARB In-Use Off-Road Diesel-Fueled Fleets Regulation. The regulations for in-use off-road diesel equipment are designed to reduce NO_x and toxic diesel particulate matter (DPM) from existing fleets of equipment. Depending on the size of the fleet, the owner would need to ensure that the average emissions performance of the fleet meets certain state-wide standards. In lieu of improving the emissions performance of the fleet, electric systems can be installed to replace diesel equipment in the fleet average calculations. Presently, all equipment owners are subject to a five-minute idling restriction in the rule (13 California Code of Regulations, Chapter 10, Section 2449).

ARB Portable Equipment Registration Program (PERP). This program allows owners or operators of portable engines and associated equipment commonly used for construction or farming to register their units under a statewide portable program that allows them to operate their equipment throughout California without having to obtain individual permits from local air districts.

Local

SCAQMD Rules and Regulations

The Project site is under the jurisdiction of the SCAQMD in the Mojave Desert Air Basin; the MDAB includes portions of Kern, Los Angeles, San Bernardino, and Riverside Counties. The SCAQMD has a number of rules presented in Table 3.4-4 relevant to controlling emissions from Project-related activities.

Table 3.4-4. SCAQMD Rules and Regulations

Applicable Rules	Description
Rules 201, 203, and 212 – Permit to Construct; Permit to Operate; and Standards for Approving Permits and Issuing Public Notice	Establishes the requirements to obtain a Permit to Construct and Permit to Operate for stationary sources of emissions. For exemption categories, see Rule 219: Equipment Not Requiring a Written Permit Pursuant to Regulation II.
Rule 401 – Visible Emissions	Limits visible emissions.
Rule 402 – Nuisance	Prohibits the discharge of air contaminants or other material which cause injury, detriment, nuisance, or annoyance to the public or which endanger the comfort, response, health or safety of the public or which cause injury or damage to business or property.
Rule 403 – Fugitive Dust	Limits fugitive emissions from certain bulk storage, earthmoving, construction and demolition, and manmade conditions that may cause wind erosion.
Rule 404 – Particulate Matter Concentration	The rule limits particulate matter emissions as a function of the exhaust flow rate from the regulated device.
Rule 463 – Organic Liquids Storage	Sets standards for storage of organic liquids with a true vapor pressure of 0.5 pounds per square inch or greater and standards for above-ground tanks used for gasoline storage with a capacity over 250 gallons.
Rule 1110.2 – Emissions from Gaseous and Liquid-Fueled Internal Combustion Engines	The purpose of this rule is to reduce NOx, VOCs, and CO from engines.
Regulation XIII – New Source Review	Establishes the pre-construction review requirements, including Best Available Control Technology and emission offset requirements for new, modified or relocated facilities to ensure that these facilities do not interfere with progress in attainment of the national ambient air quality standards.

Riverside County General Plan

Riverside County adopted the Air Quality Element of the County General Plan in 2015. The air quality element includes policies supporting regional cooperation with other jurisdictions to improve air quality; requiring compliance with federal, state, and regional air quality regulations; encouraging programs to reduce vehicle miles traveled; encouraging energy conservation in urban land uses; and encouraging development patterns that improve the County’s jobs/housing balance.

The Air Quality Element of the General Plan includes one policy directly relevant to the proposed Project, to facilitate development and siting of renewable energy facilities and transmission lines in appropriate locations (*Policy AQ 20.19*).

3.4.3 Methodology for Analysis

All construction- and operation-related emissions are quantified based on the best available forecast of activities. This analysis uses the California Emissions Estimator Model (CalEEMod; version 2016.3.2) software developed by the California Air Pollution Control Officers Association (CAPCOA). This is the most recent version of the CalEEMod software, and it relies upon mobile source emission factors from the ARB OFFROAD inventory and EMFAC2014 models. Where Project-specific design features are not yet defined, default and typical settings from CalEEMod are used. Default emission factors used in this analysis appear in the CalEEMod User’s Guide Appendix D (October 2017).

3.4.4 CEQA Significance Criteria

The significance criteria listed below are from the Environmental Checklist Form in Appendix G of the CEQA Guidelines. Under CEQA, the proposed Project and alternatives would cause significant impacts to air quality if they would:

- *Conflict with or obstruct implementation of the applicable air quality plan (see Impact AQ-1).*
- *Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard (see Impact AQ-2).*
- *Expose sensitive receptors to substantial pollutant concentrations (see Impact AQ-3).*
- *Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people (see Impact AQ-4).*

The following additional significance criteria from the County of Riverside CEQA Environmental Assessment Form are used in the analysis. A project could have potentially significant impacts if it would:

- *Expose sensitive receptors that are located within one mile of the Project site to substantial point source emissions (see Impact AQ-3).*

The following CEQA significance criteria from the County’s Environmental Assessment Form were not included in the analysis:

- *Involve the construction of a sensitive receptor located within one mile of an existing substantial point source emitter.*

The Project would not construct a sensitive receptor within one mile of an existing, substantial point source emitter.

Use of the Significance Criteria

To characterize the potential impact of criteria air pollutant emissions, SCAQMD recommends use of regional significance thresholds for construction and for Project-related operation emissions that are subject to CEQA review. The emissions from the activities of construction and operation under the proposed Project are compared to these SCAQMD regional significance thresholds to determine whether the Project would result in adverse air quality impacts. The SCAQMD regional significance emissions thresholds are summarized in Table 3.4-5.

Table 3.4-5. SCAQMD Regional Significance Thresholds (lb/day)

Pollutant	Construction	Operation (Mojave Desert Air Basin)
Nitrogen Oxides (NOx)	100	100
Volatile Organic Compounds (VOC)	75	75
Inhalable Particulate Matter (PM10)	150	150
Fine Particulate Matter (PM2.5)	55	55
Carbon Monoxide (CO)	550	550
Sulfur Oxides (SOx)	150	150

Note: For SCAQMD Coachella Valley (Salton Sea and Mojave Desert Air Basins), the mass daily thresholds for operation are the same as the construction thresholds.

Source: SCAQMD 2015.

For emissions exceeding the regional significance thresholds, the SCAQMD also provides air quality significance thresholds for ambient air quality impact assessments, which may be used to calculate the downwind concentrations caused by the on-site portions of Project emissions. The SCAQMD ambient air quality significance thresholds are summarized in Table 3.4-6.

Table 3.4-6. SCAQMD Ambient Air Quality Significance Thresholds

Pollutant	Construction Only (averaging basis)	Operation Only (averaging basis)	Construction or Operation (averaging basis)
Inhalable Particulate Matter (PM10)	10.4 µg/m ³ (24-hr)	2.5 µg/m ³ (24-hr)	1.0 µg/m ³ (annual)
Fine Particulate Matter (PM2.5)	10.4 µg/m ³ (24-hr)	2.5 µg/m ³ (24-hr)	—
Nitrogen Dioxide (NO ₂)	—	—	0.18 ppm (1-hr) 0.03 ppm (annual)
Carbon Monoxide (CO)	—	—	20 ppm (1-hr) 9.0 ppm (8-hr)
Sulfur Dioxide (SO ₂)	—	—	0.075 ppm (1-hr) 0.04 ppm (24-hr)

Source: SCAQMD 2015.

For sites located near sensitive receptors, SCAQMD developed the Localized Significance Thresholds (LSTs) to determine if a project could locally exceed the ambient air quality standards or cause a substantial contribution to existing exceedances at a given distance from an emitting site boundary to a nearby receptor. The LSTs vary depending on the meteorological conditions for each Source Receptor Area within the SCAQMD jurisdiction. LSTs for the Desert Center area (East Riverside County) are presented in Table 3.4-7.

Table 3.4-7. SCAQMD Localized Significance Emissions Thresholds

Pollutant	Site Area	Construction (lb/day)			Operation (lb/day)		
		25 meters	100 meters	500 meters	25 meters	100 meters	500 meters
Nitrogen Oxides (NOx)	5 acres	304	425	875	304	425	875
PM10	5 acres	14	67	248	4	16	60
PM2.5	5 acres	8	19	128	2	5	31
Carbon Monoxide (CO)	5 acres	2,292	5,331	31,115	2,292	5,331	31,115

Note: East Riverside County is SCAQMD "Source Receptor Area" zone 31.

Source: SCAQMD 2009.

Toxic air contaminants (TACs), including carcinogens and non-carcinogens, are subject to the following thresholds (SCAQMD, 2015):

- *Maximum Incremental Cancer Risk (MICR) greater than or equal to 10 in 1 million.*
- *Cancer Burden greater than 0.5 excess cancer cases, for areas where the MICR from a 30-year exposure duration is calculated to be greater than one in one million.*
- *Chronic & Acute Hazard Index greater than or equal to 1.0 (project increment).*

3.4.5 Proposed Project Impact Analysis

Issues raised during scoping related to air quality include the following topics:

- Dust caused by activity on unpaved surfaces and wind erosion.
- Air pollutants that contribute to adverse health effects, including asthma and respiratory difficulties.
- Review of the air quality analysis and documentation by the SCAQMD.

Impact AQ-1. The Project would conflict with or obstruct implementation of the applicable air quality plan.

The SCAQMD is responsible for managing local air quality and administering the mandatory California and federal programs protecting air quality. Across the entire State of California, the ARB ensures implementation of California's air quality management plans, known collectively as the State Implementation Plan. Activities in the Project area are not subject to any federal attainment planning requirements because the Mojave Desert Air Basin portion of Riverside County attains all federal air quality standards. State-level air quality planning strategies to attain CAAQS are implemented through rules, regulations, and programs adopted by SCAQMD and ARB to control ozone precursors, PM10, and PM2.5. Project-related activities would comply with the applicable rules, regulations, and programs. Strategies and control measures identified within the 2016 AQMP (SCAQMD, 2017) apply to activities in the Project area and the proposed Project where promulgated through SCAQMD's rules and regulations.

Solar Facility

A project could be inconsistent with the applicable air quality management plan or attainment plan if it causes population and/or employment growth or growth in vehicle-miles traveled in excess of the growth forecasts included in the attainment plan. The proposed solar facility would create up to 10 permanent full-time positions and positions for contractors for regularly providing ongoing maintenance, including panel washing and security. Although the construction workforce would involve up to 530 individuals, with an average construction-related on-site workforce of 320 individuals over the 30-month period, these positions would be temporary. Upon commencing routine operation, the temporary construction workforce would no longer be employed, and only the permanent employees would remain in the area. Regional air quality plans anticipate a baseline level of construction activity and some permanent population growth, and air quality attainment planning anticipates growth that includes the construction of some new infrastructure, such as the solar facility. Therefore, the Project would not conflict with or obstruct implementation of the applicable air quality plan. This impact would be less than significant, and no mitigation is required.

220 kV Generation-Tie Line

The workforce deployed for construction and long-term maintenance of the gen-tie lines would be a fraction of that necessary for the solar facility. Air quality attainment planning anticipates growth that includes the construction of some new infrastructure, such as the gen-tie lines for the Project. Therefore, the proposed gen-tie lines would not conflict with or obstruct implementation of the applicable air quality plan. This impact would be less than significant, and no mitigation is required.

Mitigation Measures for Impact AQ-1

No mitigation would be required.

Significance After Mitigation

This impact would be less than significant.

Impact AQ-2. The Project would result in a cumulatively considerable net increase of any criteria pollutant for which the Project region is nonattainment.

This criterion assesses whether the proposed Project would result in a cumulatively considerable net increase of any criteria pollutant for which the Project region is nonattainment. The proposed Project would contribute air pollutant emissions to the region during construction activities and operation. These emissions are discussed separately in more detail below.

Solar Facility

Construction-Phase Impact. Emissions during the construction phase would include criteria air pollutants that could exceed quantitative thresholds for ozone precursors or PM10 would represent a cumulatively considerable net increase of nonattainment pollutant. Emissions exceeding the quantitative thresholds could contribute to existing or projected violations of the ambient air quality standards. Construction would generate emissions at the site of the proposed solar facility and off-site along the roadways traveled by construction traffic. Construction emissions would be caused by exhaust from vehicles and equipment (this includes ozone precursors VOC or ROG and NOx), CO, and particulate matter [PM10 and PM2.5]) and fugitive dust/particulate matter from ground-disturbing activities and travel on unpaved surfaces and on paved roads.

The proposed solar facility would require light grading, and much of the 3,440 acres would experience some form of ground disturbance. To minimize the amount of fugitive dust from unpaved surfaces and emissions from other ground-disturbing activities during the site preparation period, all construction activity would be required to comply with local air district rules regarding dust control (including SCAQMD Rule 403). Diesel and gasoline-powered construction equipment would be classified as portable or mobile sources (off-road equipment), and are subject to statewide registration and fleet requirements. On-road motor vehicles used during construction would occur primarily off-site, and these include the heavy-duty trucks to deliver equipment, concrete, water, and other materials, and vehicles carrying crews and medium-duty deliveries. Motor vehicle exhaust emissions would occur outside of the proposed work sites as the traffic would occur primarily over the region-serving transportation network.

Detailed construction fleet and schedule assumptions are shown in the Air Quality Technical Report (AQTR), provided in EIR Appendix L. Because the construction activities may be phased, this analysis assumes that the month-by-month timing of construction would cause some overlap. This analysis groups construction into a sequence of four overlapping types of activities within the overall 30-month timeframe and three calendar years, as follows:

- Site Preparation: 5 months in Year 1.
- PV panel system installation: 20 months in Years 2 and 3.
- Electrical system installation (including collectors and gen-ties): 10 months in Year 3.
- Other activities that recur throughout construction and restoration: 30 months over Years 1 to 3.

Table 3.4-8 summarizes the maximum daily construction emissions, without potential mitigation.

Table 3.4-8. Proposed Project Maximum Daily Construction Emissions without Mitigation (lb/day)

Construction Sequence	VOC	NOx	CO	SO ₂	PM10	PM2.5
Year 1	55.4	562.0	351.2	0.9	338.3	76.7
Year 2	61.4	498.0	445.7	1.4	474.5	76.7
Year 3	66.9	513.2	499.0	1.6	500.1	81.9
Maximum Daily Emissions, without Mitigation	66.9	562.0	499.0	1.6	500.1	81.9
SCAQMD Significance Thresholds (lb/day)	75	100	550	150	150	55

Source: AQTR Attachment 1, AQ/GHG Emissions Inventory; AQTR Attachment 2, CalEEMod Output; EIR Appendix L includes results with activity management plan.

Construction-phase maximum daily emissions would be above the SCAQMD regional thresholds of significance for NOx, PM10, and PM2.5 if no Project-specific mitigation measures are implemented. Because construction emissions without mitigation would be below the thresholds for CO and SO₂, the proposed Project would not be likely to violate any air quality standard or contribute substantially to an existing or projected air quality violation for these pollutants.

Concurrent construction of other projects in close proximity to the proposed site could result in increased local air quality impacts for the limited duration of simultaneous construction activities. Construction-phase emissions from each specific Project site would vary, but would occur within an air basin that is a state nonattainment area for ozone and PM10. The effects of the cumulative projects would combine with the short-term construction emissions from the proposed Project and would contribute to violations of the state ambient air quality standards for ozone and PM10, resulting in a cumulative impact.

Construction-related emissions would cease after 30 months for the Project, and after that time they would not contribute to long-term nonattainment conditions. However, depending on the timing of construction of other nearby cumulative projects, the impacts of the construction of the solar facility could combine with the adverse effects of the other projects to result in a cumulatively considerable increase of air pollutant emissions. The severity of the potential impacts to air quality, as well as the incremental contribution of the proposed solar facility to the cumulative impact, would need to be reduced through implementing feasible mitigation.

Table 3.4-9 shows the ability of the necessary mitigation to reduce construction-related NOx, PM10, and PM2.5. Available mitigation includes specific dust control practices (Mitigation Measure AQ-1) and standards to require controls for off-road equipment engines (Mitigation Measure AQ-2). After including dust control and off-road equipment emissions controls as mitigation, maximum daily construction emissions of PM10 and PM2.5 would not exceed the SCAQMD thresholds, and this impact would be less than significant for these pollutants. In the effort to mitigate construction emissions of NOx, emissions CO would increase to a level that could exceed the threshold. However, CO is a pollutant that causes no existing violations of ambient air quality standards in the Project area, and Project-related CO emissions would not be likely to cause a new violation of standards. With dust control practices (MM AQ-1) and off-road equipment engine standards (MM AQ-2), the mitigated construction emissions of NOx could remain above the thresholds. The effects of further mitigation discussed below are also quantified in Table 3.4-9.

Table 3.4-9. Proposed Project Maximum Daily Construction Emissions with Mitigation (lb/day)

Construction with Mitigation AQ-1 & AQ-2	VOC	NOx	CO	SO₂	PM10	PM2.5
Year 1	19.2	99.3	351.0	0.9	79.3	22.1
Year 2	32.4	131.9	527.8	1.4	105.9	23.6
Year 3	36.2	138.6	586.6	1.6	119.5	27.1
Maximum Daily Emissions, with Mitigation Measures AQ-1 & AQ-2	36.2	138.6	586.6	1.6	119.5	27.1
Construction with Mitigation AQ-1, AQ-2 & AQ-3	VOC	NOx	CO	SO₂	PM10	PM2.5
Year 1	18.4	69.4	345.8	0.9	79.2	22.1
Year 2	31.5	97.1	522.4	1.4	105.9	23.5
Year 3	35.3	104.0	581.4	1.6	119.5	27.0
Maximum Daily Emissions, with Mitigation Measures AQ-1, AQ-2, & AQ-3	35.3	104.0	581.4	1.6	119.5	27.0
Construction Sequence with Activity Management Plan	VOC	NOx	CO	SO₂	PM10	PM2.5
Year 1	16.7	80.3	286.9	0.8	72.0	19.6
Year 2	27.8	90.2	415.6	1.1	97.8	21.7
Year 3	26.3	83.0	402.5	1.1	97.8	21.6
Year 4	30.1	90.2	462.5	1.3	116.9	25.9
Maximum Daily Emissions, with Activity Management Plan (Mitigation Measure AQ-4)	30.1	90.2	462.5	1.3	116.9	25.9
SCAQMD Significance Thresholds (lb/day)	75	100	550	150	150	55

Source: AQTR Attachment 1, AQ/GHG Emissions Inventory; AQTR Attachment 2, CalEEMod Output; EIR Appendix L includes results with activity management plan.

Further mitigation options for construction-related emissions could include establishing a specification that construction haulers and vendors use newer trucks for on-highway (on-road) deliveries (Mitigation Measure AQ-3). Additionally, the Project could use an adaptive “construction activity management plan” (Mitigation Measure AQ-4) to prevent construction from causing concurrent or overlapping activities that cause the sum of emissions to exceed the thresholds. Initiating separate projects to facilitate offsite reductions of NOx could also help to reduce the construction-related impact. Within SCAQMD Rule 2202, employers have obligations to implement emission reduction targets or use credits to reduce worker emissions; however, the Rule 2202 program does not apply to employees reporting to work at construction sites. This emissions reduction approach would not be feasible for this construction-related impact. To ensure that mitigated construction emissions of NOx would be below the daily emissions thresholds, after including dust control practices, off-road equipment engine standards, and the use of newer trucks for vendors and haulers, the ultimate design of the solar facility would need to include a construction activity management plan. The activity management plan would reflect the actual anticipated make-up of the construction equipment fleet, workforce, and timing to demonstrate that daily emissions rates of NOx remain below the threshold, prior to the County issuing final permits.

Taking together the effects of implementing Mitigation Measures AQ-1 (Fugitive Dust Control Plan), AQ-2 (Control On-Site Off-Road Equipment Emissions), AQ-3 (Require Newer Vehicles for On-Road Vendor and Hauling Trucks), and AQ-4 (Construction Activity Management Plan) would avoid creating a cumulatively considerable net emissions increase of construction-related NOx, PM10, and PM2.5. Additionally, after considering the feasible mitigation, the Project-related NOx emissions levels as an ozone precursor pollutant

would not contribute substantially to existing violations of the California ambient air quality standard for ozone, and this impact during construction would be less than significant.

Operational-Phase Impact. Operation, maintenance, inspections, security activities and panel washing would cause minimal levels of air pollutant emissions; maintenance and operational activities necessary for the solar facility and gen-tie lines would be limited. The Project would be required by general air district provisions to implement controls such as the use of water or chemical dust suppressants to minimize particulate matter emissions and to prevent visible particulate emissions to avoid nuisances.

As shown in Table 3.4-10, emissions during O&M would be minor and would not exceed the SCAQMD thresholds. With minimal direct emissions during operation, operation of the Project would not result in a cumulatively considerable net increase of any criteria pollutant, and this impact of air pollutant emissions during Project operations would be less than significant. No operational-phase mitigation is required.

Table 3.4-10. Proposed Project Daily Emissions During O&M (lb/day)

Activity	VOC	NOx	CO	SO ₂	PM10	PM2.5
Area Sources	10.8	0.1	15.2	0.0	0.1	0.1
On-road Motor Vehicle Trips	0.5	4.8	9.8	0.0	34.1	4.0
Off-road Equipment	1.2	11.1	10.9	0.0	0.8	0.7
Total Emissions During Operations	12.6	16.1	36.0	0.1	34.9	4.7
SCAQMD Significance Thresholds (lb/day)	75	100	550	150	150	55

Source: AQTR Attachment 1, AQ/GHG Emissions Inventory; AQTR Attachment 2, CalEEMod Output.

220 kV Generation-Tie Line

The proposed gen-tie lines for the solar facility would not require grading, and the installation of poles or structures and the associated conductors would be likely to occur concurrently with that of the proposed solar facility. The construction-phase emissions for the proposed gen-ties are included within those quantified for the proposed Project (Table 3.4-8), within Year 3 of solar facility development. As part of the overall solar facility development activity, construction of the gen-ties would contribute to construction-phase maximum daily emissions exceeding the SCAQMD regional thresholds of significance for NOx, PM10, and PM2.5 if no Project-specific mitigation measures are implemented.

The mitigation recommended for the proposed solar facility would be necessary to reduce this impact during construction of the gen-ties. With dust control and controls for off-road equipment engines recommended for the proposed solar facility, construction emissions of PM10 and PM2.5 would not exceed the SCAQMD thresholds. Mitigated construction emissions of NOx related to the proposed solar facility with gen-ties would be reduced to levels below the thresholds. Accordingly, the mitigated construction emissions due to the proposed gen-ties would not result in a cumulatively considerable net increase of any criteria pollutant.

Emissions during O&M would not exceed the SCAQMD thresholds because of minimal O&M activity for the gen-ties. For operations of the solar facility with the gen-ties, the emissions increase would be less than significant, and no operational-phase mitigation is required.

Mitigation Measures for Impact AQ-2

Implementation of Mitigation Measures AQ-1, AQ-2, AQ-3, and AQ-4 would mitigate Impact AQ-2 (see Section 3.4.10 below) for the construction phase.

Mitigation Measure AQ-1 (Fugitive Dust Control Plan) would mitigate the particulate matter impact caused by dust emissions during construction by implementing a suite of effective dust control practices, such as using soil stabilizers or watering exposed areas (2 times/day or as needed) throughout construction.

Mitigation Measure AQ-2 (Control On-Site Off-Road Equipment Emissions) would mitigate the NO_x, PM₁₀, and PM_{2.5} in diesel exhaust emissions by requiring use of the newest off-road equipment achieving the most-stringent Tier 4 engine emissions standards.

Mitigation Measure AQ-3 (Require Newer Vehicles for On-Road Vendor and Hauling Trucks) would mitigate the NO_x emissions during Project construction by specifying use of model year 2010 and newer heavy-duty and medium-duty trucks in contracts (e.g., for material delivery trucks, water trucks, and other hauling trucks).

Mitigation Measure AQ-4 (Construction Activity Management Plan) would mitigate the NO_x emissions during Project construction by scheduling the overlapping activities of on-road motor vehicles and off-road equipment to avoid excessive daily NO_x emissions, after implementing dust control practices and off-road equipment engine standards.

Significance After Mitigation

This impact would be less than significant with implementation of mitigation.

Impact AQ-3. The Project would expose sensitive receptors to substantial pollutant concentrations.

This criterion assesses whether the Project would expose sensitive receptors to substantial pollutant concentrations. There are scattered residences in the Project area, primarily near Highway 177/Rice Road, with at least one residence less than 100 feet from the Project parcel boundary.

Solar Facility

Localized Significance Thresholds. The SCAQMD Localized Significance Thresholds are suitable for determining near-field impacts as a result of emissions from a small site (up to 5 acres). In contrast, Project-related emissions would occur from activities on approximately 3,440 acres across 7 groups of non-contiguous parcels. Although the LSTs are not directly applicable, the Project-related maximum daily construction emissions of PM₁₀ and PM_{2.5} (Table 3.4-8) would exceed the LSTs within 500 meters (1,641 feet) of the sources. To determine the concentrations of PM₁₀ and PM_{2.5} near construction of the solar facility, these pollutants require a detailed review for potential localized impacts. The LSTs for NO_x and CO would not be exceeded by the proposed Project's mitigated levels of construction emissions (shown in Table 3.4-8). Accordingly, construction emissions would not be likely to cause substantial pollutant concentrations of NO_x (including NO₂) or CO.

Potential localized impacts would be most influenced by the on-site portions of construction emissions. Sources of construction emissions would be dispersed around the non-contiguous parcels of the solar facility, ensuring that no single location would be exposed to persistent and substantially increased pollutant concentrations. Emissions that occur off-site would be from motor vehicles both near and far from the Project boundary, and most off-site emissions would be on regional roadways far from sensitive receptors. To determine the extent of the localized impact, the AQTR (provided in EIR Appendix L) includes a screening-level ambient air quality impact assessment to calculate the downwind concentrations caused by the on-site portions of Project construction emissions and compare the results with the SCAQMD ambient air quality significance thresholds (Table 3.4-6) for construction-related PM₁₀ and PM_{2.5}.

The AQTR provides a screening evaluation for downwind concentrations due to construction-phase PM10 and PM2.5 uses the U.S. EPA-recommended guideline screening model, AERSCREEN, which is a screening version of the AERMOD (American Meteorological Society/EPA Regulatory Model). The model relies upon user-specified source parameters and surface characteristics to determine worst-case ambient impacts by generating a matrix of meteorological conditions, which are input to AERMOD (version: 16216r), obviating the need to gather site-specific meteorological data.

The emissions from the on-site fugitive dust and exhaust emissions of PM10 and PM2.5 from off-road equipment were configured in AERSCREEN, and the AERSCREEN results were used to evaluate whether Project on-site construction emissions would cause impacts at the ambient boundary of any of the non-contiguous Project parcels or as a result of the non-contiguous parcels having an overlapping effect. The localized impacts experienced by any location would vary substantially depending on its proximity to one or more of the non-contiguous Project parcels.

Construction-phase ambient air quality impacts of PM10 and PM2.5 from on-site activities would not cause localized ground level concentrations at the ambient boundary in excess of the SCAQMD thresholds. As a result, construction-phase emissions of PM10 and PM2.5 would not expose sensitive receptors to substantial pollutant concentrations, and the localized impact to ambient air quality would be less than significant.

Toxic Air Contaminants. Construction activities would result in locally increased concentrations of construction-related emissions, including diesel particulate matter (DPM) and other toxic air contaminants, which would cause increased health risk and hazards near the site. The primary health risks to nearby sensitive receptors would be driven by the DPM emissions from on-site equipment and vehicles during construction. Noncancer effects of DPM are normally less of a concern than cancer risks. To determine the extent of this impact, the AQTR includes a screening evaluation of the on-site construction emissions, to evaluate whether concentrations of DPM would result in a significant health risk to sensitive receptors in the Project area.

Sources of DPM would be in use over variable durations depending on specific activities occurring on one or more of the non-contiguous Project parcels. Emission calculations show that on-site DPM emissions would occur at an average rate of 0.92 lb/day over the 30-month construction duration. These emissions would be emitted from dozens of individual pieces of equipment from locations spread across the proposed solar facility site and along the gen-tie alignments, and sensitive receptors would be well separated from most activities.

The DPM concentrations at the nearest sensitive receptors would not result in an excessive incremental cancer risk, because the AQTR shows the potential incremental cancer risk associated with DPM at the worst-case residential receptor would be 5.0 in 1 million, which is within the SCAQMD threshold of significance of 10 in 1 million cancer cases for the Maximum Incremental Cancer Risk (MICR). As a result, the proposed level of DPM emissions would not expose sensitive receptors to substantial pollutant concentrations, and the localized health risk impact would be less than significant.

Valley Fever. Soils in some areas of California host the microscopic fungus that causes Valley Fever, known as *Coccidioides immitis*, which lives in the top two to 12 inches of soil in many parts of the state. When soil is disturbed by activities such as digging, driving, or high winds, fungal spores can become airborne and potentially be inhaled. Workers in Riverside County are less at risk than those in the Central Valley, where the greatest incidence of reported human Valley Fever cases occur. Across the state, employers have a legal responsibility to report illnesses in connection with employment and to provide workers with protection from health risks including any due to Valley Fever (DIR, 2018). The primary ways to reduce the

risk of Valley Fever are: avoiding exposure to dusty air or dust storms, preventing dirt or dust from becoming airborne, and if working at a dusty site, consider wearing an N95 mask or respirator (DPH, 2016). Project construction activities would be subject to stringent dust control requirements (including SCAQMD Rule 403), and the mandatory dust controls would avoid exposing construction workers and the off-site population to substantial concentrations of dust. Project operational and maintenance activities would minimally disturb on-site soils and would not create a risk of causing Valley Fever fungal spores to become airborne. As such, the impact of potential exposure to Valley Fever would be less than significant.

Visibility and Federal Class I Areas. Under the federal CAA, Class I areas are provided the greatest protections. The nearest boundary of the JTNP Class I area is located 0.9 miles (1.4 km) from the nearest Project parcels (Parcel Group A), to the northeast of the Project site. Ambient air quality impacts of the proposed Project including increased concentrations of airborne dust, including PM10 and PM2.5, and NOx emissions could impact visibility. However, the sources of emissions during construction would occur near the ground level, where dust would have a limited ability to notably affect distant vistas, and emissions would be dispersed across the site. The near-ground release and intermittent nature of construction sources ensures that the concentration near the JTNP would be much lower than the localized effects near the Project site. Additionally, all cumulative projects are anticipated to avoid visible plumes and control dust as required by SCAQMD Rule 401 and Rule 403. Projects subject to the CEQA process would also implement additional mitigation measures where needed to control dust. Controlling construction emissions as required by local rules and regulations and through mitigation measures identified above ensures that users of the JTNP would not experience substantial concentrations of pollutants, and the impact to visibility would be less than significant.

Operational-Phase Impact. During Project operations and maintenance, emissions would occur in limited quantities from the use of equipment and vehicles for routine maintenance, repair, and inspection. No new stationary sources of emissions would be included with the Project, except one standby or backup generator engine, if required. Mandatory regulatory controls would minimize and avoid impacts from dust emissions and off-road equipment exhaust so that O&M emissions would not result in substantial concentrations of any air pollutants. As a result, O&M would not expose sensitive receptors to substantial concentrations of air pollutants. This impact would be less than significant, and no additional mitigation is required.

220 kV Generation-Tie Line

The proposed gen-tie lines for the solar facility would create construction-phase emissions that are included within those quantified for the proposed solar facility. As part of the overall solar facility development activity, construction of the gen-ties would contribute to locally increased air pollutant concentrations. Construction-phase ambient air quality impacts for the gen-tie lines would be a subset of those quantified for the proposed solar facility. Substantial or adverse levels of localized ground-level concentrations of criteria pollutants and toxic air contaminants would not be likely to occur with gen-tie construction because the pollutants would be emitted from dozens of individual pieces of equipment from locations widely spread across the corridors of the gen-tie segments. The localized impact to ambient air quality and potential health risk impact would be less than significant.

Mitigation Measures for Impact AQ-3

No mitigation would be required.

Significance After Mitigation

This impact would be less than significant.

Impact AQ-4. The Project would result in other emissions (such as those leading to odors) adversely affecting a substantial number of people.

The proposed solar facility and gen-tie lines would not include any notable source of odors or other emissions that could adversely affect people, except for very small quantities of coatings that may include odorous organic compounds. Construction odors would be minimal because of the mandatory use of ultra-low sulfur diesel fuel, and odors would not negatively affect a substantial number of people. This impact would be less than significant, and no mitigation is required.

Mitigation Measures for Impact AQ-4

No mitigation would be required.

Significance After Mitigation

This impact would be less than significant.

3.4.6 Alternative 1: No Project Alternative

The No Project Alternative would not develop the solar facility and gen-tie line, and it would avoid all new construction and/or operational activities. It would not result in a change in emissions of any air pollutants. Therefore, the No Project Alternative would have no air quality impacts.

3.4.7 Alternative 2: Reduced Footprint Alternative

The Reduced Footprint Alternative would not develop Parcel Groups D and F. The remaining sites of the Alternative and the gen-tie line would be developed in a manner similar to that of the proposed Project. Similar to the Project, the Reduced Footprint Alternative would result in construction-phase emissions of NO_x at a significant level with implementation of mitigation. However, this alternative would have the potential to avoid generating construction-phase emissions near Parcel Group F, and this could avoid some localized AQ effects for a residence there. Overall, air quality impacts from the Reduced Footprint Alternative would be similar to those of the proposed Project.

3.4.8 Gen-Tie Segment #1 Alternative Route Option

The Gen-Tie Segment #1 Alternative Route Option would avoid going through parcel APN 807-191-031. All remaining features of the gen-tie line and solar facility would remain the same as with the proposed Project. Similar to the Project, the Gen-Tie Segment #1 Alternative Route Option would result in construction-phase emissions of NO_x at a significant level with implementation of mitigation. Overall, air quality impacts from this alternative would be similar to those of the proposed Project.

3.4.9 Cumulative Impacts

As discussed in Section 3.1.2 (Cumulative Impact Scenario), the geographic area affected by the Project and its potential to contribute to cumulative impacts is based on the topography surrounding the Project area and the natural boundaries affecting air resources. For air quality, the geographic scope of cumulative effects includes consideration of regional air emissions across the entire Mojave Desert Air Basin.

Solar Facility

The construction-phase emissions related to the proposed solar facility would be likely to occur concurrently with those of other cumulative projects in the Mojave Desert Air Basin and would contribute to the adverse effects of other cumulative projects to result in a cumulative significant impact to air quality. The incremental contribution of the proposed solar facility to the cumulative impact would be reduced through implementing Mitigation Measures AQ-1 (Fugitive Dust Control Plan), AQ-2 (Control On-Site Off-Road Equipment Emissions), AQ-3 (Require Newer Vehicles for On-Road Vendor and Hauling Trucks), and AQ-4 (Construction Activity Management Plan) identified in the discussion of Impact AQ-2. Because construction-related criteria air pollutant emissions would be mitigated and would entirely cease with completion of the 30-month duration of work, the construction emissions would not cause substantial impacts, and the incremental contribution of the proposed Project to the cumulative air quality impact would not be cumulatively considerable during construction.

220 kV Generation-Tie Line

The construction-phase emissions related to the proposed gen-tie lines would be likely to occur concurrently with those of other cumulative projects nearby and would contribute to the adverse effects of other cumulative projects to result in a cumulative adverse effect to air quality. The mitigation recommended for the proposed solar facility would be necessary to reduce this impact during construction of the gen-ties. Because mitigated construction emissions from the proposed solar facility and gen-ties would be reduced to levels below the significance thresholds, the incremental contribution of the proposed Project to the cumulative impact would not be substantial.

Mitigation Measures

Mitigation Measures AQ-1 (Fugitive Dust Control Plan), AQ-2 (Control On-Site Off-Road Equipment Emissions), AQ-3 (Require Newer Vehicles for On-Road Vendor and Hauling Trucks), and AQ-4 (Construction Activity Management Plan) would be implemented to address cumulative impacts for the construction phase of the Project.

Significance After Mitigation

The Project would result in a cumulatively considerable contribution to a significant cumulative impact.

3.4.10 Mitigation Measures

MM AQ-1 Fugitive Dust Control Plan. The Project owner would prepare and implement a Fugitive Dust Control Plan to address fugitive dust emissions during Project construction, operation, maintenance, and decommissioning. The plan would include measures to minimize fugitive dust emissions from development of laydown and staging areas, site grading, vegetation management, and installing all Project facilities through post-construction cleanup. The Project owner would take every reasonable precaution to prevent all airborne fugitive dust plumes from leaving the Project site and to prevent visible particulate matter from being deposited upon public roadways. The plan would be subject to review and approval by the SCAQMD (Rule 403).

The following measures would be included within the plan:

- During construction, all unpaved roads, disturbed areas (e.g., areas of scraping, excavation, backfilling, grading, and compacting), and loose materials generated during construction activities shall be stabilized with a non-toxic soil stabilizer or soil weighting agent or

watered two times daily or as frequently as necessary to minimize fugitive dust generation. Non-water-based soil stabilizers shall be as efficient as or more efficient for fugitive dust control than ARB-approved soil stabilizers and shall not increase any other environmental impacts, including loss of vegetation.

- The main access roads through the site shall be either paved or stabilized using soil binders, or equivalent methods, to provide a stabilized surface that is similar for the purposes of dust control to paving, that may or may not include a crushed rock (gravel or similar material with fines removed) top layer, prior to initiating construction. Delivery, laydown, and staging areas for construction or O&M supplies shall be paved or treated prior to taking initial deliveries.
- Grading and earthwork activities, including vegetation removal, cut and fill movement, and soil compacting, shall be phased across the site to minimize the amount of exposed or disturbed area on any single day.
- No vehicle shall exceed 15 miles per hour on unpaved areas within the construction site, with the exception that vehicles may travel up to 25 miles per hour on stabilized unpaved roads as long as such speeds do not create visible dust emissions.
- Visible speed limit signs shall be posted at the construction site entrances.
- All construction equipment vehicle tires shall be inspected and washed as necessary to be cleaned free of dirt prior to entering paved roadways.
- All unpaved exits from the construction site shall be graveled or treated to prevent track-out onto public roadways.
- All paved roads within the construction site shall be swept daily or as needed (less during periods of precipitation) on days when construction activity occurs to prevent the accumulation of dirt and debris.
- At least the first 500 feet of any paved public roadway exiting the construction site or exiting other unpaved roads to access the construction site or staging areas shall be swept as needed when dirt or runoff resulting from the construction activities is visible on the paved public roadway.

MM AQ-2

Control On-Site Off-Road Equipment Emissions. The Project owner, when entering into construction contracts or when procuring off-road equipment or vehicles for on-site construction or O&M activities, shall ensure that only new model year equipment or vehicles are obtained. The following measures would be included with contract or procurement specifications:

- All construction diesel engines not registered under California Air Resources Board's Statewide Portable Equipment Registration Program, with a rating of 50 hp or higher shall meet the Tier 4 California Emission Standards for Off-Road Compression-Ignition Engines, as specified in California Code of Regulations, Title 13, section 2423(b)(1), unless a good faith effort demonstrates that such engine is not available for a particular item of equipment. In the event that a Tier 4 engine is not available for any off-road equipment larger than 100 hp, a Tier 3 engine shall be used or that equipment shall be equipped with retrofit controls to reduce exhaust emissions of nitrogen oxides (NOx) and diesel particulate matter (DPM) to no more than Tier 3 levels unless certified by the engine manufacturers that the use of such devices is not practical for specific engine types.

- All diesel-fueled engines used in the construction of the facility shall have clearly visible tags showing that the engine meets the standards of this measure.
- All equipment and trucks used in the construction or O&M of the facility shall be properly maintained and the engines tuned to the engine manufacturer's specifications.
- All diesel heavy construction equipment shall not idle for more than five minutes. Vehicles that need to idle as part of their normal operation (such as concrete trucks) are exempted from this requirement.

MM AQ-3 **Require Newer Vehicles for On-Road Vendor and Hauling Trucks.** The Project owner, when entering into construction contracts or when selecting vendors, shall specify that vendors and haulers use model year 2010 and newer diesel haul trucks (e.g., for material delivery trucks, water trucks, and other hauling trucks). If 2010 model year or newer diesel trucks cannot be obtained, the Project owner shall specify that vendors and haulers use trucks that meet EPA 2007 model year NOx emissions control requirements.

MM AQ-4 **Construction Activity Management Plan.** The Project owner shall prepare and implement a construction activity or phasing plan that requires construction contractors to schedule the overlapping activities of on-road motor vehicles and off-road equipment to avoid excessive daily emissions. The activity management plan shall reflect the ultimate design of the solar facility and gen-tie line development timing, and shall reflect the anticipated make-up of the construction equipment fleet and workforce. The plan would need to reflect dust control practices (Mitigation Measure AQ-1), off-road equipment engine standards (Mitigation Measure AQ-2), and use of newer vehicles for vendor and hauling trucks (Mitigation Measure AQ-3). The plan shall be submitted to the County and accepted by the County prior to the County issuing final permits.

3.5 Biological Resources

This section describes the biological resources of the proposed Project site and vicinity, including vegetation and habitat, common plants and wildlife, and special-status plants and wildlife. In addition, this section identifies applicable federal, local, and state laws and regulations regarding biological resources. It identifies the criteria used to evaluate the significance of potential impacts on biological resources, the methods used in evaluating these potential impacts, and an analysis of potential impacts. Where impacts may be significant according to the criteria identified, this section identified mitigation measures to reduce those impacts to less than significant.

3.5.1 Environmental Setting

This description of the biological resources of the proposed IP Athos Renewable Energy Project site is based on the *Biological Resources Technical Report, Athos Renewable Energy Project, Riverside County, California* (BRTR) prepared by Ironwood Consulting Inc. (Ironwood) in 2018. The full BRTR is attached to this EIR as Appendix C. The proposed Project site is in the Chuckwalla Valley near the community of Desert Center, about halfway between the cities of Indio and Blythe, in unincorporated Riverside County, California. It consists of approximately 3,440 acres, including 3,224 acres of privately owned land, proposed as solar generator facilities and, in part, transmission line routes (i.e., generator-tie or gen-tie routes) and approximately 183 acres of BLM-managed public land, entirely within proposed gen-tie routes and access/spur roads. The portions of the Project site proposed for PV and storage components consist of seven non-contiguous groups of privately owned parcels. The seven groups of parcels are identified as A through G and the gen-tie segments are referred to as Gen-tie Segment #1 through Gen-tie Segment #4. The proposed Project is described in detail in Chapter 2 of this EIR and mapped on Figure 2-2.

The proposed Project site is located within the Bureau of Land Management (BLM) California Desert Conservation Area (CDCA) and the Northern and Eastern Colorado Desert Coordinated Management (NECO) Plan area. It is within the U.S. Fish and Wildlife Service (USFWS) designated southern Desert Tortoise Recovery Unit, and Gen-tie Segment #4 is located partially within designated critical habitat for the desert tortoise. Two BLM designated Desert Wildlife Management Areas (DWMAs), established to support management and recovery of the listed threatened desert tortoise, are located within close proximity to the proposed Project site: the Chuckwalla DWMA is located just south of I-10 (including the southernmost portion of Gen-tie Segment #4, but south of the proposed solar facilities), and the Joshua Tree National Park DWMA is located approximately 2 miles north of the northernmost portion of the Project site.

The proposed Project site is within the Riverside East Solar Energy Zone (SEZ) identified in the Solar Programmatic Environmental Impact Statement (BLM, 2012). Additionally, the Project site is within the Chuckwalla Valley ecoregion subsection of the Desert Renewable Energy Conservation Plan (DRECP) area (BLM, 2015). The DRECP identifies this area in the Land Use Plan Amendment (LUPA) and Final Environmental Impact Statement (FEIS) as a Development Focus Area (DFA).

The proposed Project site is in the central portion of Chuckwalla Valley in the Colorado Desert. The elevation of the surrounding landscape ranges from less than 400 feet above mean sea level (amsl) at Ford Dry Lake to over 3,000 feet amsl in the mountains that enclose the Chuckwalla Valley. The topography of the proposed Project site generally slopes toward the southeast at gradient of less than 1 percent. Elevations of the Project site itself range from approximately 491 feet amsl in the southeast to 588 feet amsl in the northwest. Anthropogenic features and private land uses in the vicinity include agriculture, residences, renewable energy, energy transmission, historical military operations, and recreational development and use.

Ironwood biologists performed full coverage wildlife surveys on the proposed Project site, including all proposed solar facility sites and gen-tie routes, in fall 2017 and spring 2018 (described in detail in Appendix C). Rainfall preceding both survey periods was below average, limiting the growth and flowering for many plants and therefore limiting the field team's ability to detect species that may be present in a better rainfall year.

Vegetation and Habitat

Most of the Project site is disused or fallow agricultural land and natural vegetation and habitat is limited. Two natural vegetation communities (creosote bush scrub and desert dry wash woodland) as well as one distinct natural habitat type (desert pavement) are present within the gen-tie lines and Parcel Groups D and F. Desert dry wash woodland in particular is identified by BLM (2002) and CDFW (2010) as sensitive for several reasons including its association with channels and alluvial processes, which further make it likely to be subject to CDFW’s jurisdiction under section 1600 of the California Fish and Game Code. The other parcel groups are made up of former agricultural lands and other anthropogenically disturbed lands. Some of the former agricultural lands have partially recovered from previous disturbance and are mapped as recovering creosote bush scrub or salt bush scrub. Acreages of vegetation communities are summarized in Table 3.5-1 and mapped on Figure 3.5-1.

The term habitat refers to the environment and ecological conditions where a species is found. Wildlife habitat is generally described in terms of vegetation, though a more thorough explanation includes availability or proximity to water; suitable nesting or denning sites; shade; foraging perches; cover sites to escape from predators; soils that are suitable for burrowing or hiding; limited noise and disturbance; or other factors that are unique to each species. Vegetation reflects many aspects of habitat, including regional climate, physical structure, biological productivity, and food resources (for many wildlife species). Thus, vegetation is a useful overarching descriptor for habitat and it is one of the primary factors in the assessments of habitat suitability presented in this section, as well as the analysis of potential impacts to wildlife habitat presented in Sections 3.5.5 through 3.5.9. Where additional details of habitat suitability are necessary, they are provided in the discussion of special-status wildlife species below. Examples include the aeolian sand requirements for Mojave fringe-toed lizard, and the availability of shade, cover, and water for burro deer.

Table 3.5-1. Vegetation, Habitat, and Land Cover Acreages, by Land Ownership

Vegetation, Habitat, or Land Cover	Solar Facility (private)	Gen-tie (private)	Gen-tie ROW (BLM)	Total
Natural vegetation and habitat types				
Sonoran creosote bush scrub	295.9	15.5	106.9	418.3
Desert pavement	7.5	0	16.6	24.1
Desert dry wash woodland	91.2	12.2	58.4	161.8
<i>subtotals</i>	394.6	27.7	181.9	604.2
Recovering vegetation and habitat types				
Recovering creosote bush scrub	289.7	12.1	1.2	303.0
Recovering salt bush scrub	183.3	-	-	183.3
<i>subtotals</i>	473.0	12.1	1.2	486.3
Anthropogenic land use and cover types				
Developed/disturbed	167.9	1.1	3.8	172.8
Active agriculture	151.2	0.3	-	151.5
Fallow agriculture	2,032.6	2.2	7.9	2,042.7
Open water (agricultural pond)	2.3	-	-	2.3
<i>subtotals</i>	2,354.0	3.6	11.7	2,369.3
Totals¹	3221.6	43.4	194.8	3459.8

1 - Minor variations from total acreage identified in Chapter 2 and text above are due to rounding error or differing GIS files created for the Project and/or obtained from other sources.

Sonoran creosote bush scrub. This vegetation is found on much of the undisturbed portions of the Project site (Parcel Groups D and F) and intergrades with desert dry wash woodland along desert washes. It is not designated as a sensitive plant community by BLM or CDFW. It is synonymous with *Larrea tridentata*–*Ambrosia dumosa* alliance and Lower Bajada and Fan Mojavean-Sonoran Desert Scrub (NVCS). Sonoran creosote bush scrub occurs on well-drained, secondary soils of slopes, fans, and valleys and is the most widespread creosote bush scrub habitat of the Colorado Desert. Dominant plants are creosote bush (*Larrea tridentata*) and white burr-sage (*Ambrosia dumosa*). Other occasional components include indigo bush (*Psoralea argemone*), sweetbush (*Bebbia juncea*), and button brittlebush (*Encelia frutescens*). There are also areas of recovering creosote bush scrub within the Project site where formerly fallow agricultural areas are recovering back to native vegetation. These areas have recolonized with ruderal species and sparse native vegetation with some evidence of former agricultural use.

Desert Dry Wash Woodland. Desert dry wash woodland is located along ephemeral washes within Parcel Groups D and F, and on some of the gen-tie routes. It is a sensitive vegetation community recognized as S4 by the California Natural Diversity Data Base (CNDDDB) and the BLM (2002) and the DRECP. Desert dry wash woodland is characteristic of desert washes, and often meets CDFW jurisdictional criteria as waters of the State. This community is synonymous with blue palo verde–ironwood (*Parkinsonia florida*–*Olneya tesota*) (microphyll) woodland alliance. Holland (1986) describes this community as an open to relatively densely covered, drought-deciduous, microphyll (small compound leaves) riparian scrub woodland, often supported by braided wash channels that change following every surface flow event. Within the Project site, this vegetation community is dominated by an open tree layer of ironwood, blue palo verde, and smoke tree (*Psoralea argemone*). The understory is a modified creosote scrub with big galleta grass (*Hilaria rigida*), brittlebush (*Encelia farinosa*), desert lavender (*Hyptis emoryi*), and occasional Russian thistle.

Desert Pavement. The term desert pavement primarily describes soil and substrate conditions, rather than vegetation. It has a state rarity rank of S4 and is synonymous to rigid spineflower–hairy desert sunflower (*Chorizanthe rigida*–*Geraea canescens*) desert pavement sparsely vegetated alliance. It is sparsely vegetated and may have an intermittent layer of cryptogamic crust. The ground surface is sandy and gravelly mixed alluvium with various rocks and gravel, cemented together by fine sediment or mineral deposits. The shrub layer of creosote bush is extremely sparse. The herb layer, though also sparse, is slightly greater (seasonally) and more diverse. Within the Project site, desert pavement is interwoven between areas of creosote bush scrub and desert dry wash woodland on solar sites D and F and some of the gen-tie routes in the southern portion of the site.

Anthropogenic Land Use and Cover Types. The remainder of the proposed Project area consists of active or former agricultural lands, and lands that have been developed or disturbed for human activities such as abandoned structures, completely denuded sections of former agricultural fields, and dirt roads. Portions of these former agricultural lands are recovering some components of natural vegetation (recovering creosote bush scrub and recovering saltbush scrub, see Table 3.5-1 and Figure 3.5-1).

Jurisdictional Waters

Ironwood delineated jurisdictional waters on the proposed Project site, using desktop GIS analysis and field investigations during spring 2018. The delineation methodology was based upon the CDFW MESA Guidelines, which applies fluvial geomorphology and ecohydrology to the interpretation of State jurisdictional waters. In the field, transects were typically performed perpendicular to flow patterns to ensure field verification of all potentially jurisdictional waterways. Jurisdictional acreages were calculated using GIS. The full Jurisdictional Waters Report is attached to this EIR as Appendix C.

Waters of the United States. Jurisdictional waters of the U.S. defined in the Clean Water Act (CWA) include interstate waters such as lakes, rivers, streams (including intermittent streams) and their tributaries. The proposed Project site is located within the closed Palen Dry Lake drainage basin, with no surface water connection to interstate waters or a traditional navigable waterway. In the case of intrastate waters (i.e., the ephemeral or intermittent drainage channels on the site), federal jurisdiction as waters of the U.S. applies only where degradation or destruction could affect interstate or foreign commerce. The U.S. Army Corps of Engineers (USACE) has determined that no jurisdictional waters of the U.S. occur on the project site (USACE, 2018) or on several other solar project sites (Desert Sunlight, Desert Harvest, and Palen) in the Chuckwalla Valley, which all lack a surface water connection to interstate waters or traditional navigable waterways. Therefore, no federal CWA authorization is required. .

Waters of the State. Jurisdictional waters of the State are defined more broadly than waters of the U.S., to include “any surface water or groundwater, including saline waters, within the boundaries of the state” (California Water Code section 13050(e)). No surface connection to larger water bodies is required under the State definition. The CDFW regulates alterations to state-jurisdictional waters under Section 1600 et seq. of the California Fish and Game Code. Jurisdictional acreage is interpreted as the bed and banks of channels and adjacent riparian vegetation. In the Chuckwalla Valley area, the Blue Palo Verde–Ironwood Woodland (or Desert Dry Wash Woodland, described above) is the regional riparian vegetation type. Due to the abundance and close spacing of braided channels throughout the area, all mapped Blue Palo Verde–Ironwood Woodland (Desert Dry Wash Woodland) is adjacent to one or more channels. The total acreage of state-jurisdictional streambeds and adjacent riparian habitat within the proposed solar facility site and on the gen-tie routes is shown in Table 3.5-2.

Table 3.5-2. Jurisdictional Waters of the State, Including Desert Dry Wash Woodland

Jurisdictional Feature	Solar Facility (private)	Gen-tie (private)	Gen-tie ROW (BLM)	Total
Natural vegetation and habitat types				
Streambed - Unvegetated Ephemeral Dry Wash	100.3	0.4	3.4	104.1
Streambed and Riparian - Desert Dry Wash Woodland	91.2	12.5	12.7	116.4
<i>subtotals</i>	<i>191.5</i>	<i>12.9</i>	<i>16.1</i>	<i>220.5</i>
Anthropogenic land use and cover types including disturbed/recovering vegetation				
Streambed - Unvegetated Ephemeral Dry Wash	45.6	0	0.1	
Streambed and Riparian - Desert Dry Wash Woodland	0	0	0	0
Open water (agricultural pond)	2.3	0	0	2.3
<i>subtotals</i>	<i>47.9</i>	<i>0</i>	<i>0.1</i>	<i>48.0</i>
Totals¹	239.4	12.9	16.2	268.5

1 - Minor variations from total acreage identified in Chapter 2 and text above are due to rounding error or differing GIS files created for the Project and/or obtained from other sources.

Special-status Plants

Ironwood conducted focused special status plant surveys in the spring of 2018 on all portions of the proposed Project site. The field methods were consistent with protocols recommended by USFWS, CDFW, California Native Plant Society (CNPS) and BLM. The BRTR provides a compilation of special-status plants with potential to occur in Project vicinity, and evaluates probability of occurrence for each species, based on habitat, elevational and geographic ranges, and field survey results. However, due to below average rainfall in the 2017-2018 rainfall year, many plants that might occur on the site during a better rainfall

year would may not have been detectable in 2018. The complete methods and results of the surveys are provided in the BRTR (Appendix C).

In this analysis, special-status plants include those species classified as one or more of the following:

- Listed, proposed for listing, or candidates for listing as threatened or endangered under the federal Endangered Species Act (ESA)
- Listed as threatened or endangered, or candidates for listing under the California Endangered Species Act (CESA), or listed as rare under the California Native Plant Protection Act
- Designated by BLM as Sensitive Plants: “all plant species that are currently on List 1B of the CNPS Inventory of Rare and Endangered Plants of California, are BLM Sensitive Species, along with others that have been designated by the California State Director” (note that the CNPS Lists are now known as California Rare Plant Ranks, or CRPR)
- Meet the definition of rare or endangered under CEQA § 15380 subdivisions (b) and (d). For this report, this is generally interpreted as all plants ranked as California Rare Plant Rank (CRPR) 1b and, in some cases, may include CRPR 2, 3, or 4 plant occurrences, which may be regionally significant if the occurrence is located at the periphery of the species’ range, or exhibits unusual morphology, or occurs in an unusual habitat/substrate; therefore all CRPR 1, 2, 3, and 4 plants are addressed here
- Considered special-status species in local or regional plans, policies, or regulations, such as the NECO Plan/EIS

All special-status plant observations are listed in Table 3.5-3. Additional special-status plants having either moderate or high probabilities of occurrence are identified and briefly described in the paragraphs below. No listed threatened or endangered plant species were observed or have the potential to occur on the Project site or in the vicinity. No BLM Sensitive Plants were found on the Project site, although one BLM-Sensitive Plant, Harwood’s eriastrum, could occur in windblown sand habitat in Parcel Group G or on the gen-tie routes. Emory’s crucifixion thorn (CRPR 2B.2), a special-status plant, was found on private lands in Parcel Group F and Gen-tie Segment # 2. Desert unicorn-plant (CRPR 4), another special-status plant, was observed on the site in Parcel Groups B, C, and E. Neither species is identified by BLM as a Sensitive Species.

Table 3.5-3. Special-status Plant Observations

Special-status Plant Species and Conservation Status	Solar Facility (private)	Gen-tie ROW (private)	Gen-tie ROW (BLM)
Natural vegetation and habitat types			
Emory’s crucifixion thorn (<i>Castela emoryi</i>); CRPR 2B.2	Parcel Group D (4 plants); off-site-south of Parcel Group A (2 plants)	—	Gen-tie Segment #2 (2 plants)
Desert unicorn-plant (<i>Proboscidea althaeifolia</i>); CRPR 4	—	—	Gen-tie Segments #1 & #2; 6 live plants total, Oct 2017
Anthropogenic land use and cover types, including disturbed/recovering vegetation			
Emory’s crucifixion thorn (<i>Castela emoryi</i>); CRPR 2B.2	—	—	—
Desert unicorn-plant (<i>Proboscidea althaeifolia</i>); CRPR 4	Parcel Groups B, C, and E; 7 dried plants total, May 2018	—	—

Emory's crucifixion thorn (*Castela emoryi*); CRPR 2B.2. Emory's crucifixion thorn was observed on Parcel Group D and Gen-tie Segment #2. There is additional suitable habitat in the wash areas on Parcel Groups D and F and on the gen-tie routes, but no additional occurrences on the Project site are expected because it is a large conspicuous shrub and can be located and identified at any time of year, even in a year of poor rainfall (in other words, this is not a plant that can be easily overlooked). It is uncommon but widespread in broad sandy wash habitat in the area. There are several additional records of occurrences in Chuckwalla Valley, including on the Desert Sunlight and Desert Harvest project sites. CRPR 2B.2 indicates that it is considered rare in California but more common outside of California.

Desert unicorn-plant (*Proboscidea althaeifolia*); CRPR 4. Desert unicorn-plant is found in sandy washes within Sonoran desert scrub habitats in San Bernardino, Imperial, Riverside, and San Diego Counties, as well as similar desert habitats in the southwestern states and northern Mexico. It also can be found in disturbed areas, including former agricultural lands. The CRPR 4 status is a "watch list" and does not indicate rarity or endangerment. Desert unicorn plant is a late-season bloomer (May to August) and its large and distinctive seed pods can be detected year-round. It was observed on the gen-tie and the solar farm parcels, and habitat is suitable throughout most of the Project site.

The following special-status plants, including two BLM Sensitive Plants, have a moderate or high probability of occurrence on the Project site, during a year of greater rainfall. None was observed on the Athos Project site during spring 2018 surveys, possibly due to the poor 2017-2018 rainfall.

Chaparral sand verbena (*Abronia villosa* var. *aurita*); BLM S, CRPR 1B.1. There is suitable sandy habitat for chaparral sand verbena on Parcel Group G and on some of the gen-tie routes. It is not expected on the former agricultural lands. No sand verbena species, including chaparral sand verbena was observed during spring plant surveys, possibly due to the extremely low winter rainfall. The CRPR 1B.1 designation indicates that the species is rare throughout its range (it is endemic in California). However, this plant's distribution and identification are unclear in published reference works. It was added to the CNPS Inventory based on recommendations by Andrew C. Sanders of the UC Riverside Herbarium. The primary conservation concern is for chaparral sand-verbena occurrences in western Riverside County and other locations outside the desert. These western plants appear to be distinct from the very common desert sand verbena, *Abronia villosa* var. *villosa*. Plants in the low desert often match the characteristics of the western Riverside County populations, but they are not regionally rare.

Harwood's eriastrum (*Eriastrum harwoodii*); BLM S, CRPR 1B.2. Harwood's eriastrum, also known as Harwood's phlox or woollystar, is a spring annual, typically found in dunes. It has been observed on partially stabilized dunes at nearby project sites. There is suitable habitat in the sandy areas of Parcel Group G and on some of the gen-tie routes.

Harwood's milk-vetch (*Astragalus insularis* var. *harwoodii*); CRPR 2B.2. Windblown sand is the primary habitat for Harwood's milk-vetch. There are several records in the Project vicinity and many new occurrences were documented in Chuckwalla Valley and the Palo Verde Mesa during surveys for other solar projects. There is suitable habitat in the sandy areas of Parcel Group G and on some of the gen-tie routes.

Jackass Clover (*Wislizenia refracta*); CRPR 2B.2. Two subspecies of jackass clover are reported from the Chuckwalla Valley: *W. refracta* ssp. *refracta* and *palmeri*. For both subspecies, the primary habitat is sandy washes, roadsides, or alkaline flats. Jackass clover has been documented at several locations around Palen Dry Lake. Suitable habitat is present in small patches of the Project site within Parcel Groups D, F, and G and some of the gen-tie routes. Jackass clover was not observed during spring plant surveys,

Abram's spurge (*Chamaesyce abramsiana*); CRPR 2B.2. Abram's Spurge occurs in saline scrub flats, playas, and along inlets and floodplains of playas. The records closest to the Project site were near Palen

Dry Lake and Pinto Basin. Marginally suitable habitat may be present within the Project site in saltbush scrub at Parcel Group G. Abram’s spurge was not observed within the Project area since it is a fall blooming plant and dries too quickly for identification in the spring.

Glandular ditaxis (*Ditaxis claryana*); CRPR 2B.2. Glandular ditaxis is an annual or short-lived perennial that blooms in the fall following the start or rainy season. There is one record in Desert Center and another near Corn Springs, south of I-10 (CNDDDB, 2018). Suitable habitat occurs within undisturbed portions of the Project site (Parcel Groups D and F, and some of the gen-tie routes).

California ditaxis (*Ditaxis serrata* var. *californica*) CRPR 3.2. California ditaxis has a CRPR of 3.2, which indicates more information is needed about the status of this species. It may be a glabrous variety of the common *Ditaxis neomexicana*. It occupies Sonoran Desert scrub habitat, primarily in sandy washes and alluvial fans of the foothills and lower desert slopes, from about 100 to 3,000 feet amsl. Suitable habitat appears to be present in Parcel Groups D and F and along some of the gen-tie lines.

Ribbed cryptantha (*Cryptantha costata*); CRPR 4.3. Ribbed cryptantha occurs in windblown sand habitats. A large local population was observed just east of the proposed Palen Solar Project site. Suitable habitat for ribbed cryptantha is found within Parcel Group G and possibly on some of the gen-tie routes.

Utah milkvine (*Cynanchum utahense*); CRPR 4.2. Utah milkvine is known from one record north of Desert Center and another record just southwest of Palen Dry Lake. Suitable habitat is found in the sandy soils of Parcel Group G and in undisturbed habitat of Parcel Groups D and F, and perhaps some of the gen-tie routes.

Special-status Wildlife

Ironwood conducted full-coverage wildlife surveys in the fall of 2017 and spring of 2018 on all portions of the proposed Project site for desert tortoise, burrowing owl, elf owl, Gila woodpecker, and other species as appropriate. The surveys were completed during USFWS-recommended desert tortoise activity seasons to allow for full desert tortoise surveys consistent with agency-recommended guidelines. The surveys identified all burrows and all evidence of wildlife use, including use by desert tortoise, burrowing owl, and desert kit fox. The field methods constitute partial completion of CDFW-recommended burrowing owl survey methods. During all wildlife surveys, biologists recorded all wildlife species observed, regardless of status. The BRTR provides a compilation of special-status wildlife with potential to occur in Project vicinity, and evaluates probability of occurrence for each species, based on habitat, elevational and geographic ranges, and field survey results. The complete methods and results of the surveys are provided in the BRTR (Appendix C).

Table 3.5-4. Special-status Wildlife Observations

Special-status Wildlife Species and Conservation Status	Solar Facility (private)	Gen-tie ROW (private)	Gen-tie ROW (BLM)
Natural vegetation and habitat types			
Desert tortoise (<i>Gopherus agassazi</i>); ST, FT	Parcel Group F (3 inactive burrows, definitely tortoise); off-site west of F (active sign and 2 inactive burrows (definitely tortoise)	—	Gen-tie Segment #3 (1 possible burrow, inactive)
Desert Kit Fox (<i>Vulpes macrotis arsipus</i>); CPF	Parcel Group D (3 inactive burrows); Parcel Group F (2 active burrows, 1 inactive burrow complex)	—	Gen-tie Segment #1 (3 inactive burrows) and Gen-tie Segment #2 (active burrow)

Table 3.5-4. Special-status Wildlife Observations

Special-status Wildlife Species and Conservation Status	Solar Facility (private)	Gen-tie ROW (private)	Gen-tie ROW (BLM)
American badger (<i>Taxidea taxus</i>); SSC	Parcel Group D (dig, active, fresh claw marks), Parcel Group F (dig, inactive)	—	—
Burro deer (<i>Odocoileus hemionus eremicus</i>); CPGS	—	—	Gen-tie Segment #4 (tracks, scat, 2 locations)
Western Burrowing Owl (<i>Athene cunicularia hypugaea</i>); SSC, BCC, BLMS	Parcel Group D (1 burrow with sign); Parcel Group F (1 burrow with sign)	—	—
Loggerhead shrike (<i>Lanius ludovicianus</i>); SSC, BCC	Parcel Group D (1 observation, perching) and off-site west of Parcel Group E (1 observation, perching)	—	—
Swainson's hawk (<i>Buteo swainsoni</i>) ST, BCC	—	—	Gen-tie Segment #3 (1 observation, in flight)
Anthropogenic land use and cover types, including disturbed/recovering vegetation			
Desert tortoise (<i>Gopherus agassazi</i>); ST, FT	Parcel Group B (3 inactive burrows; possibly desert tortoise)	—	—
Mojave fringe-toed lizard (<i>Uma scoparia</i>) SSC, BLMS	Parcel Group G (multiple observations)	—	—
Desert Kit Fox (<i>Vulpes macrotis arsipus</i>); CPF	Parcel Group A (9 active, 1 inactive burrow, and 1 inactive burrow offsite – south of A); Parcel Group C (6 active and 2 inactive burrow/burrow complexes); Parcel Group E (3 active and 2 inactive burrows/burrow complexes)	—	—
American badger (<i>Taxidea taxus</i>); SSC	Parcel Group A (1 active burrow), C (burrow complex and badger carcass)	—	—
Burro deer (<i>Odocoileus hemionus eremicus</i>); CPGS	Off-site date farm adjacent to Parcel Group G (4 animals)	—	—
Western Burrowing Owl (<i>Athene cunicularia hypugaea</i>); SSC, BCC, BLMS	Parcel Group A (4 burrows, 2 with sign); Parcel Group B (2 burrows with sign); Parcel Group C (one burrow with sign); Parcel Group E (1 burrow with sign); Parcel Group G (7 burrows with sign; 4 burrowing owl observations)	—	—
Prairie falcon (<i>Falco mexicanus</i>); WL, BCC	Parcel Group G (1 observation, in flight)	—	—
Swainson's hawk (<i>Buteo swainsoni</i>) ST, BCC	Parcel Group G (1 observation, in flight)	—	—

Source: BRTR, 2018. Acronyms: ST = State-listed threatened; FT = federally listed threatened; SSC = State species of special concern; BLMS = BLM sensitive; CPF = California protected furbearer; BCC = USFWS Bird species of conservation concern; WL = CDFW watch list; CPGS = California Protected Game Species.

Desert tortoise (*Gopherus agassizii*); ST, FT. Desert tortoise habitat on the Project site has low predicted occupancy values. These predicted occupancy values do not account for habitat degradation resulting from existing anthropogenic features, which would further reduce the occurrence probability in disturbed areas. Only Parcel Groups D and F, and several gen-tie routes such as 3 and 4, are undisturbed native habitat reflective of the predicted occupancy values. Project field survey results are described in the following paragraphs. Desert tortoise habitat connectivity is discussed separately, under Wildlife Movement.

Desert tortoise sign and potential burrows are categorized by class designations, as follows:

- Class 1. Currently active, with desert tortoise or recent desert tortoise sign
- Class 2. Good condition (no evidence of recent use) – definitely desert tortoise
- Class 3. Deteriorated condition (including collapsed burrows) – definitely desert tortoise
- Class 4. Good condition – possibly desert tortoise
- Class 5. Deteriorated condition (including collapsed burrows) – possibly desert tortoise.

No desert tortoises or active burrows were located on the Project site during the field surveys. Active desert tortoise sign (Class 1 tracks and scat) and inactive burrows (Class 2 and Class 3) were detected during Fall 2017 surveys west of Parcel Group F, during field surveys of an adjacent parcel. Inactive desert tortoise burrows or potential desert tortoise burrows were located Parcel Groups B, C, and F and on Gen-tie Segment #3 (Table 3.5-4). The limited amount of desert tortoise sign is consistent with the low predicted occupancy within the Project site and vicinity.

Mojave fringe-toed lizard (*Uma scoparia*) SSC, BLMS. Mojave fringe-toed lizard is primarily found in fine, loose, aeolian (windblown) sand habitat (see the discussion of aeolian sand in Section 3.7.1, Soils, of the EIR), primarily sand dunes. It also uses stabilized or partially stabilized sands and surrounding habitats at the margins of dry lakebeds, washes, and isolated pockets or aeolian sand against hillsides, and mixed habitat such as hummocks or pockets of soft sand interspersed with hard-packed sand and less suitable densities and composition of vegetation. Mojave fringe-toed lizards normally hibernate from November to February; from May to September, they are active in mornings and late afternoon, but seek cover during the hottest parts of the day.

Much of the Project area is identified in a habitat model published in the DRECP as potentially suitable for Mojave fringe-toed lizard (see Figure 12 of the BRTR, Appendix C). However, the combination of former agricultural land use and upwind land use conversion off-site has altered sand availability and aeolian sand transport, so that most of the Project area no longer provides suitable habitat for Mojave fringe-toed lizard. Mojave fringe-toed lizards were observed at several locations in Parcel Group G at the easternmost part of the Project site, where aeolian sand is carried onto the margins of disturbed or agricultural lands.

Couch's spadefoot toad (*Scaphiopus couchii*); SSC, BLMS. Couch's spadefoot toad appears above-ground when rainfall forms temporary pools and potholes with water lasting longer than 10-12 days, which are required for breeding, hatching, and metamorphosis. In California, it is known from the low desert region, especially the Colorado River corridor. Temporary runoff basins at the bases of sand dunes can be sites of reproduction. Couch's spadefoot toad was not observed, but suitable breeding habitat may be present within Parcel Group G due to presence of irrigation water which can accumulate in suitable temporary pools.

American badger (*Taxidea taxus*); SSC. The American badger is found in many habitat types where there is an adequate prey base of burrowing rodents and friable soils. One active burrow, two digs with claw marks or tracks, and one badger carcass were observed during field surveys.

Desert kit fox (*Vulpes macrotis arsipus*); CPF. Desert kit fox is not recognized as rare but it is a protected fur-bearing mammal. Title 14 of the California Code of Regulations, Section 460, stipulates that desert kit fox may not be taken at any time. Desert kit fox typically occurs in association with its prey base, which includes small rodents, primarily kangaroo rats, rabbits, lizards, insects, and in some cases, immature desert tortoises. Burrow complexes that have multiple entrances provide shelter, escape, cover, and reproduction, but desert kit foxes also utilize single burrows for temporary shelter. Desert kit fox burrows, burrow complexes, and scat were observed at several locations on the Project site (Table 3.5-4). Both active and inactive burrows and burrow complexes were located during the field surveys. Activity status at any given burrow may change over time since kit fox distribution changes according to prey availability and other factors.

Desert bighorn sheep (*Ovis canadensis nelsoni*); BLMS. The desert bighorn sheep is found from the Peninsular and Transverse Ranges through most of the desert mountain ranges of California, Nevada, and northern Arizona to Utah. Essential habitat for bighorn sheep includes steep, rocky mountain slopes, and areas where surface water is available during dry seasons. Habitat in the desert mountain ranges surrounding the upper Chuckwalla Valley is occupied by Nelson's bighorn sheep, and they occasionally use the valley floor habitat either for foraging (near the lower mountain slopes) or as movement routes among mountain ranges. Due to the land uses and human activity patterns on the Project site and similar surrounding land uses and activities, as well as the distance from suitable mountain slopes, the Project is not likely to affect bighorn sheep behavior or habitat use to any large extent. No sign or evidence of desert bighorn sheep was found during field surveys but scat is often difficult to distinguish from burro deer.

Burro deer (*Odocoileus hemionus eremicus*); CPGS. Burro deer is a subspecies of mule deer (*O. hemionus*) that inhabits desert dry wash woodland communities in the Colorado region of the Sonoran Desert near the Colorado River. During hot summers burro deer concentrate along the Colorado River, natural springs, or near anthropogenic water sources such as the Coachella Canal or agricultural areas where water developments have been installed and where microphyll woodland is dense and provides good forage and cover. Burro deer scat and tracks were observed at the southern end of Gen-tie Segment #4, and a group of 4 burro deer was observed southwest of Parcel Group G near the active date farm where irrigation water is available (Table 3.5-4).

Special status bats. Seven special-status bat species may forage on or near the Project site, discussed further in the BRTR (Appendix C). While any of these species may fly over the site to foraging or roosting sites, there is only limited roosting potential on the Project site in the abandoned structures, dry wash woodland, and date trees. Many bats, including special-status species, forage primarily on large insects such as moths, and tend to concentrate foraging activity around water sources, such as the irrigation sources around the active agricultural areas. For special-status bats of the vicinity, potential foraging or roosting on the Project site is evaluated below. Additional description of the species and their habitats may be found in the BRTR (Appendix C).

- Townsend's big-eared bat (*Corynorhinus townsendii*): SSC, BLMS. Some roosting potential in abandoned structures and desert dry wash woodland. Foraging habitat in the areas of desert dry wash woodland and artificial water sources near the date tree farms.
- California leaf-nosed bat (*Macrotus californicus*): SSC, BLMS. Potential for foraging but not expected to roost due to absence of suitable caves and mines.
- Pallid bat (*Antrozous pallidus*): SSC, BLMS. Potential for foraging and roosting within the dry wash woodland, date tree farms, and abandoned structures in the developed areas.
- Western mastiff bat (*Eumops perotis californicus*): SSC, BLMS. Potential for foraging on the Project site, but no roosting habitat.

- Western yellow bat (*Lasiurus xanthinus*): SSC. Potential for foraging, and potential roosting habitat within date tree farms.
- Big free-tailed bat (*Nyctinomops macrotis*): SSC. Potential for roosting and foraging within the abandoned structures, dry wash woodland, and date tree farm.
- Pocketed free-tailed bat (*Nyctinomops femorosaccus*): SSC. Suitable habitat for foraging is present, but no roosting habitat.

Western burrowing owl (*Athene cunicularia hypugaea*); SSC, BCC, BLMS. Burrowing owls are unique among the North American owls in that they nest and roost in abandoned burrows, especially those created by ground squirrels, kit fox, desert tortoise, and other wildlife. The southern California breeding season (defined as the time from pair bonding of adults to fledging of the offspring) generally occurs from February to August, with peak breeding activity from April through July, although in deserts this seasonality is likely to vary from year to year, depending on rainfall and prey availability. In the Project region, burrowing owls generally occur at low densities in scattered locations, but they can be found in much higher densities near agricultural lands where rodent and insect prey tend to be more abundant.

A total of seventeen burrows were observed within the Project site (Table 3.5-4) with burrowing owl sign consisting of white wash, feathers, or pellets. A total of five individual burrowing owls were observed at burrows; four of these were located on Parcel Group G near the date tree farm, possibly due to increased prey availability provided by the date palm farm and irrigation water. It is unknown whether the burrowing owls observed during the spring 2018 surveys were breeding pairs, but the observations give a good sense of burrowing owl occupancy during breeding season.

Golden eagle (*Aquila chrysaetos*): CFP, WL, BCC, BLMS. Golden eagles generally nest in rugged, open habitats with canyons and escarpments, often with overhanging ledges and cliffs or large trees used as cover. They forage widely over open terrain, and prey primarily on rabbits and rodents but will also take other mammals, birds, reptiles, and some carrion. They breed from late January through August with peak activity March through July. The nearest potential nesting habitat for golden eagles is located several miles to the north, northwest, and northeast of the Project site in the Coxcomb and Eagle mountains. The Project site does not provide suitable golden eagle nesting habitat but does provide suitable foraging habitat. Golden eagles could forage at the site at any time of year (e.g., locally nesting eagles could forage there during breeding season; non-nesting eagles could forage there year-round, including wintering and migratory seasons).

Prairie falcon (*Falco mexicanus*); WL, BCC. Prairie falcon nesting and foraging habitats are similar to those of the golden eagle (above), although their principle prey differ (they tend to be ground squirrels and other small mammals, birds, and lizards). The Project site provides suitable foraging habitat for this species, particularly near active agriculture where irrigation water attracts potential prey. The Project site does not contain suitable nesting habitat, although mountains located over 3 miles away may provide nesting habitat. A prairie falcon was observed in flight near Parcel Group G.

American peregrine falcon (*Falco peregrinus anatum*); CFP, BCC. The American peregrine falcon was formerly listed under CESA and ESA but has been delisted under both Acts. In California, its range is primarily central to northern California, with wintering habitat located in southern California. Migrants occur along the coast and in the western Sierra Nevada in spring and fall. It is found irregularly in the southern desert region, generally during migratory and winter seasons. It nested historically in desert mountain ranges near the Colorado River and may be re-occupying this historical part of its nesting range as its populations recover. The Project site provides suitable migratory or foraging habitat but lacks suitable nesting habitat.

Elf owl (*Micrathene whitneyi*); CA E, BLMS, BCC. Elf owl breeds in lowland habitats that provide cover and good nesting cavities, and winters in Mexico and southward. The Project site is near the western margin of its geographic range. Elf owls probably have never been common in California. The elf owl is a secondary cavity nester (it nests in cavities of trees and cacti, generally in disused woodpecker nests). Its nesting habitat is closely correlated with nesting habitat of woodpeckers, including Gila woodpecker (below). The palm groves and desert wash woodland habitat on the site may provide suitable (probably marginal) habitat for nesting elf owls. However, field surveys did not identify elf owl on the site.

Gila Woodpecker (*Melanerpes uropygialis*); CE, BLMS, BCC. Gila woodpecker is a year-around resident across its range. It can be fairly common in Southern California along the Colorado River, and occasionally ranges west to the Desert Center or Corn Springs areas. Gila woodpeckers prefer large patches of woody riparian vegetation for nesting but they have also been documented in various habitat types, such as desert washes and residential areas. They excavate cavity nests in large riparian trees such as cottonwoods or other species that area available, including large palo verdes, ornamental trees, or palms. Potentially suitable habitat within the Project site is found in desert washes (if there are palo verde trees large enough for cavity nests) but they would be expected to more readily use palm trees in Parcel Group G than palo verde or ironwood trees. Gila woodpeckers were not found during field surveys, but there is a low to moderate probability of nesting on the Project site in riparian woodland or, more likely, date palms.

Loggerhead shrike (*Lanius ludovicianus*); SSC, BCC. Loggerhead shrikes are uncommon year-round residents throughout much of southern California. They initiate their breeding season in February and may continue with raising a second brood as late as July. The entire Project site contains suitable foraging and nesting habitat for loggerhead shrike. During field surveys, one loggerhead shrike was observed in native habitat on Parcel Group D and another was observed west of Parcel Group E.

Le Conte's thrasher (*Toxostoma lecontei*); SSC. Le Conte's thrasher is a year-round resident in the Colorado Desert, occurring in desert flats, washes and alluvial fans with sandy or alkaline soil and scattered shrubs. Its preferred nest sites are thorny shrubs and small desert trees, and nesting rarely occurs in monotypic creosote scrub habitat or Sonoran Desert woodlands. Suitable habitat for Le Conte's thrasher is located on the Project site, primarily within desert dry wash woodland and the Sonoran creosote bush scrub.

Crissal Thrasher (*Toxostoma crissale*); SSC. Crissal thrasher is a year-round resident of southeastern deserts, occupying dense shrubs in desert riparian and desert wash habitats, including mesquite, ironwood, and acacia. The Project site provides limited but suitable nesting and foraging habitat primarily within the dry wash woodlands.

California horned lark (*Eremophila alpestris actia*); WL. The California horned lark is found throughout California except the north coast and is less common in mountainous areas. It nests in open areas. There are numerous records in Riverside County. Horned larks were observed frequently on the Project site, including the gen-tie routes, during the wildlife surveys.

Black-tailed gnatcatcher (*Poliophtila melanura*); WL. Black-tailed gnatcatchers are year-round residents in southeastern California and east through Arizona to southern Texas and northern Mexico. They are found in arid scrublands, desert brush, and dry washes. Native habitat areas within the Project site contain suitable foraging and potential nesting habitat. One individual was observed during the fall 2017 survey.

Special-status seasonal migrant birds. The following special-status bird species maybe migrate through the Project region during spring or fall migration or may spend winters in the vicinity but would not nest on or near the Project site due to absence of suitable wetland or riparian nesting habitat or due to geographic range. Potential for occurrence on the Project site is minimal, except for brief overflight or migratory stopovers. Four of them are listed as threatened or endangered so additional detail provided.

- Ferruginous hawk (*Buteo regalis*); WL, BCC. Potential foraging habitat during winter or migratory seasons, no potential nesting.
- Swainson's hawk (*Buteo swainsoni*); ST, BBC. Potential foraging habitat during migratory season, no potential nesting.
- Northern harrier (*Circus cyaneus*); SSC. Potential foraging habitat during winter or migratory seasons, no potential nesting.
- Short-eared owl (*Asio flammeus*); SSC. Potential foraging habitat during winter or migratory seasons, no potential nesting.
- Vaux's swift (*Chaetura vauxi*); SSC. Potential stopover foraging occurrence during migration; no potential nesting.
- Mountain plover (*Charadrius montanus*); SSC. Potential foraging habitat during winter or migratory seasons, no potential nesting.
- Sonora yellow warbler (*Setophaga petechia sonorana*); SSC, BCC. Potential stopover foraging occurrence during migration; no potential nesting.
- Yellow-breasted chat (*Icteria virens*); SSC. Potential stopover foraging occurrence during migration; no potential nesting.

Yuma Ridgway's rail (*Rallus obsoletus yumanensis*); ST, CFP, FE. Yuma Ridgway's rail, formerly known as Yuma clapper rail, nests in freshwater marshes. In the low desert region, it is found along the lower Colorado River and the Salton Sea and Imperial Valley areas of California. Ridgway's rails do not appear to migrate in the traditional sense; however, occasional occurrences across the desert show some level of movement. Outlier observations have been documented at Harper Dry Lake, East Cronese Dry Lake, and Desert Center, all at a great distance from known breeding areas.

Southwestern willow flycatcher (*Empidonax traillii extimus*); SE, FE. Southwestern willow flycatcher breeds in dense riparian habitats in the southwestern United States, and winters in southern Mexico, Central America, and northern South America. The willow flycatcher species is comprised of several recognized subspecies, including the southwestern willow flycatcher, which is the only subspecies that nests in the region. The closest known breeding locations to the Project site are approximately 35 miles away along the Colorado River and adjacent to the Salton Sea. Recent studies indicate that southwestern willow flycatchers do not migrate over the area of the desert where the Athos Project site is located. However, other willow flycatcher subspecies (not listed as threatened or endangered) may pass through the area during migration.

Yellow billed cuckoo (*Coccyzus americanus occidentalis*); SE, FT, BCC, BLMS. Western yellow-billed cuckoo breeds in expansive riparian areas in portions of California, Nevada, Arizona, and New Mexico. The closest known breeding habitat is approximately 35 miles away along the Colorado River. During migration, western yellow-billed cuckoos migrate across the desert and use shrubland habitats, but there have been no documented sightings of western yellow-billed cuckoo near the Project site.

Least Bell's vireo (*Vireo bellii pusillus*); SE, FE. Least Bell's vireo breeds in riparian habitats in southern California and portions of northern Baja California, Mexico and winters in southern Baja California. The closest known breeding habitat to the Athos site is to the northwest in the Big Morongo Canyon. The subspecies Arizona Bell's vireo (*V. b. arizonae*) is not ESA-listed, but is State-listed in California as endangered, and occurs along the lower Colorado River, approximately 35 miles east of the Project site. Least Bell's vireo probably migrates through the Colorado Desert.

Wildlife Movement

Accessibility between habitat areas (i.e., “connectivity”) is important to long-term genetic diversity and demography of wildlife populations. In the short term, connectivity may be important to individual animals’ ability to occupy their home ranges, if their ranges extend across a potential movement barrier. These considerations apply to greater or lesser extent to all plants and animals. Plant populations “move” over the course of generations via pollen and seed dispersal; most birds and insects travel and disperse via flight; terrestrial species, including small mammals, reptiles, arid land amphibians, and non-flying invertebrates, disperse across land. Therefore, landscape barriers and impediments are more important considerations for movement of terrestrial species. These considerations are especially important for rare species and wide-ranging mammals, which tend to exist in lower population densities.

In largely undeveloped areas, including the Chuckwalla Valley, wildlife habitat is available in extensive open space areas throughout much of the region, but specific barriers may impede or prevent movement. In these landscapes, wildlife movement planning focuses on specific sites where animals can cross linear barriers (e.g., wash crossings beneath Interstate 10), and on broader linkage areas that may support stable, long-term populations of target species and allow demographic movement and genetic exchange among populations in distant habitats (e.g., surrounding mountains).

The California Desert Connectivity Project provides a comprehensive and detailed habitat connectivity analysis for the California deserts. The Connectivity Project identified a Desert Linkage Network to maintain habitat for movement between landscape blocks. The landscape blocks identified in the project vicinity are the Palen–McCoy Mountains to the northeast and the Chocolate Mountains to the southwest. These landscape blocks are connected by broad habitat linkages. The DRECP designates specific areas within the mapped habitat linkage for multiple species habitat connectivity (see figures of the BRTR, Appendix C). Parcel Group F is partially located within the habitat linkage area identified in the DRECP.

In the Chuckwalla Valley, the biologically important functions of large mammal movement are (1) the long-term demographic and genetic effects of occasional animal movement among mountain ranges and other large habitat areas, and (2) regular movement to access local habitat resources, particularly water. Local burro deer apparently travel regularly to irrigation water sources at or near Parcel Group G. Animals such as desert bighorn sheep and burro deer may travel across the valley infrequently, to reach other subpopulations in surrounding mountains. In contrast to large animal movement, desert tortoises and other less-mobile animals may live out their entire lives within a linkage area between larger habitat blocks; for these species, movement among surrounding habitat areas may take place over the course of several generations.

Native habitats and anthropogenic land uses on the Project site provide potential wildlife movement routes through the Chuckwalla Valley for many species, such as shrubland birds, and ground-dwelling small mammals and reptiles, as well as burro deer. Movement opportunity varies for each species. For many terrestrial wildlife species, movement across the Chuckwalla Valley, including movement to and from the Project site, or across the site, is limited by anthropogenic barriers or land uses including roads, fences, and unsuitable habitat. Larger barriers to movement include the Desert Sunlight Solar Farm and future (approved but not yet constructed) Desert Harvest Solar Project.

The Colorado River Aqueduct and the I-10 freeway, located north and south of the Project site, respectively, are significant obstructions to movement by terrestrial wildlife. There are a few short below-ground segments of the aqueduct, but it is impassable to terrestrial wildlife except at those points. Some species, such as coyote, may learn to cross the freeway safely. However, the freeway presents an impassable or high-risk barrier to north-south movement for most terrestrial species, except at underpasses at wash

crossings. These underpasses provide connectivity and safe movement corridors between habitat to the north and south of the I-10. Wildlife species and sign detected at the undercrossings included lizards, rodents, rabbit, roadrunner, ground squirrel, fox, coyote, bobcat, and burro deer. Other linear features such as smaller paved and unpaved roads, transmission lines have only minimal effects on wildlife movement.

3.5.2 Regulatory Framework

This section identifies and summarizes the key federal, state, and local laws and regulations applicable to biological resources.

Federal

Federal Land Policy and Management Act (FLPMA; 43 U.S.C. Sections 1701-1787). Directs management of public lands managed by the U.S. Forest Service, National Park Service, and BLM; addresses land use planning, rights-of-way, wilderness, and multiple use policies.

Endangered Species Act (ESA; 16 USC Sections 1531-1543). Establishes legal requirements for the conservation of endangered and threatened species and the ecosystems upon which they depend. The ESA is administered by the USFWS for terrestrial species. Under the ESA, the USFWS may designate critical habitat for listed species. Section 7 of the ESA requires federal agencies to consult with the USFWS to ensure that their actions are not likely to jeopardize listed threatened or endangered species, or cause destruction or adverse modification of critical habitat. Section 10 of the ESA provides for similar consultation to authorize incidental take of listed species for non-federal applicants.

Migratory Bird Treaty Act (MBTA; 16 USC Sections 703-711). Prohibits take of any migratory bird, including eggs or active nests, except as permitted by regulation (e.g., licensed hunting of waterfowl or upland game species). Under the MBTA, “migratory bird” is broadly defined as “any species or family of birds that live, reproduce or migrate within or across international borders at some point during their annual life cycle” and thus applies to most native bird species. The U.S. Department of Interior has recently issued a solicitor’s opinion interpreting the MBTA prohibitions as being inapplicable to “incidental take.”

Bald and Golden Eagle Protection Act (BGEPA; 16 USC Section 668). The Bald and Golden Eagle Protection Act (BGEPA) prohibits the take, possession, and commerce of bald eagles and golden eagles. Under the BGEPA and subsequent rules published by the USFWS, “take” may include actions that injure an eagle, or affect reproductive success (productivity) by substantially interfering with normal behavior or causing nest abandonment. The USFWS can authorize incidental take of bald and golden eagles for otherwise lawful activities.

Noxious Weed Act (7 USC Sections 2801 et seq.). Provides for the “management of undesirable plants on Federal lands.”

Executive Order 13112, Invasive Species. Establishes the National Invasive Species Council and directs federal agencies to prevent the introduction of invasive species, provide for their control, and minimize the economic, ecological, and human health impacts caused by invasive species.

Executive Order 13186, Responsibilities of Federal Agencies to Protect Migratory Birds. Directs federal agencies to review the effects of actions and agency plans on migratory birds according to NEPA or other established environmental review processes, with emphasis on species of concern (Section 6 of the order) and identify unintentional take reasonably attributable to agency actions, focusing first on species of concern, priority habitats, and key risk factors and to develop and use principles, standards, and practices to lessen the amount of unintentional take (Section 9).

California Desert Conservation Area Plan, As Amended (CDCA Plan). The CDCA Plan guides the management of approximately 12 million acres of BLM-administered lands in the California Desert District, including the Mojave, Sonoran, and a small portion of the Great Basin Deserts. BLM lands within the Project area are within the CDCA Plan Area. The CDCA Plan directs management policy for multiple resources, including the following biological resources: Wildlife and Vegetation.

Northern and Eastern Colorado Desert Coordinated Management Plan (NECO). Provides more specific management direction for BLM lands in the Colorado Desert, including the BLM lands located within the Project area. Establishes several Desert Wildlife Management Areas (DWMAs), which cover much of the USFWS-designated critical habitat for the desert tortoise.

Desert Renewable Energy Conservation Plan (DRECP), Land Use Plan Amendment to the CDCA. The purpose of the DRECP is to conserve and manage plant and wildlife communities in the desert regions of California while facilitating the timely permitting of compatible renewable energy projects. The DRECP covers over 10 million acres of BLM land. The BLM Record of Decision (ROD) for the DRECP was issued in September 2016.

State

California Endangered Species Act (CESA; Fish and Game Code Section 2050 et seq.). Prohibits take of state-listed threatened or endangered species, or candidates for listing, except as authorized by the CDFW. Authorization may be issued as an Incidental Take Permit or, for species listed under both CESA and the federal ESA, through a Consistency Determination with the federal incidental take authorization.

Fully Protected Designations (Fish and Game Code Sections 3511, 4700, 5050, and 5515). The California Fish and Game Code designates 36 fish and wildlife species as “fully protected” from take, including hunting, harvesting, and other activities. The CDFW may only authorize take of designated fully protected species through a Natural Community Conservation Plan (NCCP) or for necessary scientific research.

Birds (Fish and Game Code Sections 3503 and 3513). The California Fish and Game Code prohibits take, possession, or needless destruction of bird nests or eggs except as otherwise provided by the code. Section 3513 provides for the adoption of the MBTA’s provisions (above).

Protected Furbearers (California Code of Regulations Title 14 Section 460). Specifies that several furbearing mammals, including desert kit fox, may not be taken at any time. The CDFW may permit capture or handling of these species for scientific research but does not issue Incidental Take Permits for other purposes.

Native Plant Protection Act (Fish and Game Code Sections 1900 1913). Prior to enactment of CESA and the federal ESA, California adopted the Native Plant Protection Act (NPPA). CESA (above) generally replaces the NPPA for plants originally listed as endangered under the NPPA. However, plants originally listed as rare retain that designation, and take is regulated under provisions of the NPPA. The California Fish and Game Commission adopted revisions to the NPPA allowing CDFW to issue incidental take authorization for listed rare plants, effective January 1, 2015.

Lake and Streambed Alteration (Fish and Game Code Sections 1600 1616). The CDFW regulates project activities that would divert, obstruct or change the natural flow, bed, channel, or bank of any river, stream, or lake.

Porter-Cologne Water Quality Control Act of 1969 (California Water Code Sections 13000 et seq.). Provides Regional Water Quality Control Boards (RWQCBs) regulation of Waters of the State including State coordination with the Clean Water Act where federally jurisdictional waters are present. The Project site is within the Colorado River RWQCB area.

Local

Riverside County General Plan (2015). Includes policies addressing biological resources within the Land Use (LU) and Open Space (OS) elements, as follows:

- **Policy LU 9.1:** Provide for permanent preservation of open space lands that contain important natural resources, cultural resources, hazards, water features, watercourses including arroyos and canyons, and scenic and recreational values (AI 10).
- **Policy LU 9.2:** Require that development protect environmental resources by compliance with the Multipurpose Open Space Element of the General Plan and Federal and State regulations such as CEQA, NEPA, the Clean Air Act, and the Clean Water Act.
- **Policy LU 24.1:** Cooperate with the CDFW, USFWS, and any other appropriate agencies in establishing programs for the voluntary protection, and where feasible, voluntary restoration of significant environmental habitats (AI 10).
- **Policy OS 18.1:** Preserve multi-species habitat resources in the County of Riverside through the enforcement of the provisions of applicable MSHCPs and through implementing related Riverside County policies. (The Project site is not within an MSHCP area).

3.5.3 Methodology for Analysis

The impact assessment presented in this EIR was conducted to identify and disclose potential direct, indirect, and cumulative impacts of the proposed Project and alternatives. Examples of potential direct impacts to biological resources include mortality, injury, or displacement of special-status plants or animals; loss or degradation of native habitat; interference with wildlife movement or migration; and disturbance to plants, animals, and habitat from noise, light, or dust. Examples of potential indirect impacts that occur later in time or farther removed in distance, include erosion, sedimentation, introduction of invasive species, or increased predation on native wildlife due to habitat alterations (e.g., perch sites or “subsidies” for predators).

The analysis presented in Section 3.5.5 is based on the biological resources on the Project site, described in Section 3.5.1 (Environmental Setting) and in Appendix C (Biological Resources Technical Report), and on the Description of the Proposed Project and Alternatives (Chapter 2 of this EIR). Several meetings were held among the applicant, wildlife agencies, and BLM biologists to discuss potential impacts and applicable regulation. In addition, written and oral comments regarding the Project’s potential impacts to biological resources (Appendix A, Scoping Report) were reviewed to inform the analysis.

The analysis identifies and describes the proposed Project’s expected impacts to biological resources and identifies mitigation measures as feasible and applicable to reduce those impacts to less than significant. Sections 3.5.6 through 3.5.8 provide similar analyses of Project alternatives. Potential impacts on biological resources that may be individually limited, but cumulatively considerable are addressed in Section 3.5.9. These analyses are based on the biological resources described in the Environmental Setting subsection above and on the Description of the Proposed Project and Alternatives in Chapter 2.

3.5.4 CEQA Significance Criteria

The following thresholds are used to determine whether the proposed Project or alternatives would result in a significant impact pursuant to CEQA. These thresholds of significance are based on Appendix G of the CEQA Guidelines. A biological resources impact is considered significant if the Project or alternative would:

- *Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife (CDFW) or the U.S. Fish and Wildlife Service (USFWS) (see Impact BIO-1).*
- *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 CDFW or USFWS (see Impact BIO-2).*
- *Have a substantial adverse effect on federal protected wetlands as defined by Section 404 of the Clean Water Act (CWA) (including, but not limited to, marshes, vernal pools, and coastal areas) or any State-protected jurisdictional areas not subject to regulation under Section 404 of the CWA through direct removal, filling, hydrological interruption, or other means (see Impact BIO-3).*
- *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 (see Impact BIO-4).*
- *Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance (see Impact BIO-5).*

The following additional significance criteria from the County of Riverside Environmental Assessment Form are used in the analysis. A project could have potentially significant impact to Biological Resources if it would:

- *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; or substantially reduce the number or restrict the range of an endangered, rare, or threatened species (see Impacts BIO-1 regarding endangered, rare, or threatened species, and BIO-6 regarding common species).*
- *Have a substantial adverse effect, either directly or through habitat modifications, on any endangered, or threatened species, as listed in Title 14 of the California Code of Regulations (Sections 670.2 or 670.5) or in Title 50, Code of Federal Regulations (Sections 17.11 or 17.12) (these citations refer to the CESA and ESA, respectively; see Impact BIO-1).*

The following CEQA significance criteria from Appendix G were not included in the analysis:

- *Conflict with the provisions of an adopted Habitat Conservation Plan; Natural Community Conservation Plan; or other approved local, regional, or State habitat conservation plan.*

The Project site is not within an area covered by an adopted Habitat Conservation Plan; Natural Community Conservation Plan; or other approved local, regional, or State habitat conservation plan. Public lands within and surrounding the Project site are within the area managed by BLM under the DRECP, which is applicable only on federal lands. The BLM is responsible for environmental review, including DRECP compliance, under NEPA

3.5.5 Proposed Project Impact Analysis

Issues raised during scoping related to Biological Resources include:

- Support for siting the Project on previously disturbed lands
- Recommendation for fencing with large enough openings to let small animals pass through
- Potential effects to threatened or endangered species, such as desert tortoise, Yuma Ridgway's rail, southwestern willow flycatcher, and yellow-billed cuckoo.

- Potential effects to other special-status wildlife, including golden eagle and burrowing owl
- Recommendations for protocol wildlife surveys to assess potential impacts and support wildlife agencies' review of the potential effects.
- Recommendations for coordination among the County, applicant, BLM, USFWS, and CDFW to discuss jurisdiction
- Potential "lake effect" that may attract birds, leading to collisions with the facilities
- Effects to the displaced wildlife (including snakes), loss of habitat, and barriers to movement routes
- Cumulative effects multiple projects on wildlife corridors

The Applicant, IP Athos, LLC, identified one Applicant-proposed measure (APM) related to biology for the proposed Project. Under APM BIO-1 (Wildlife Relocation), IP Athos LLC would prepare and implement a Wildlife Relocation Plan to ensure that special-status wildlife species, including desert tortoise, burrowing owl, and desert kit fox, are safely avoided or re located off the Project site prior to construction. The full text of APM BIO-1 may be found in Section 3.5.10 (Mitigation Measures). IP Athos, LLC, commits to complying with the following measure to reduce potential impacts during construction and operation.

Impact BIO-1. The Project would cause substantial adverse effect, either directly or through habitat modifications, to rare, threatened, endangered, or other special-status species; substantially reduce the number or restrict the range of an endangered, rare, or threatened species.

Potential effects to special-status plants and animals could result from construction or operation and maintenance (O&M) of the proposed Project, including both the proposed solar facility and the gen-tie line. The types of expected impacts are summarized in the following paragraphs, and identified separately for the solar field and gen-tie line for each resource.

Construction activities would minimize grubbing and grading, except for specific facilities (roads, foundations, parking and service areas, etc.) and possibly to remove the date palms in Parcel Group G. Site preparation would consist of micro-grading, or disc-and-roll grading (Section 2.3.3, Construction Phase 1: Site Preparation). Vegetation, including the native vegetation and habitat on Parcel Groups D, F, and G would be removed or cut. Soils throughout the solar fields would be affected by some form of ground disturbance. Effects to soils and vegetation, in turn, would affect special-status plants and animals that may be present, by removing nesting and foraging habitat, compacting soils, and collapsing burrows. Additionally, construction activities could directly affect these plants and animals.

Altered hydrology (e.g., storm water ponding behind berms, or increased storm water runoff which may cause erosion) from site preparation could directly or indirectly affect special-status plant habitats. Construction activities could accumulate dust on special-status plants that could diminish gas exchange or photosynthesis.

Construction activities would cause most mobile vertebrate wildlife to leave or attempt to leave the site. Animals dispersing from the site could be at increased risk of predation and possible vehicle collisions as they flush from cover during site clearing. After leaving their home territories, displaced animals may be unable to find suitable food or cover in new, unfamiliar areas. Displacement effects would apply to common wildlife species and to special-status species. In some cases, residents have reported increased numbers of rodents and snakes in their yards following site clearing for projects near their homes.

Construction could cause mortality of small mammals and reptiles, including special-status species, which may be crushed by construction equipment. In most cases, adult birds would fly away from the disturbance, but bird nests (including eggs or nestlings, if present) would be lost. Burrowing owls, if present during construction, would tend to shelter inside burrows where they could be vulnerable to crushing. Land use conversion could exclude special-status reptiles, birds, and mammals from portions of their territories. Facilities could present hazards to wildlife, including special-status wildlife. For example, vertical structures can be collision hazards for birds or bats in flight; trenches can be pitfall hazards for terrestrial wildlife; and construction materials such as open pipes or tubing can attract birds or terrestrial species, which can become trapped inside.

Noise and lighting during construction could affect wildlife in adjacent habitats by disrupting foraging, breeding, sheltering, and other activities; or may cause animals to avoid otherwise suitable habitat surrounding the site. Lighting during Project construction may affect nocturnal wildlife species, by causing alterations to foraging or movement behavior, possibly attracting some species to the site (e.g., bats may be attracted to insects at light sources) or dissuading other species from approaching the site. Various other human activities (e.g., vehicle traffic, accumulated waste, or nuisance water sources) can be injurious to special-status wildlife, either as direct hazards (vehicle strikes) or as attractants such as food or water that may in turn put animals in harm's way. Facilities and equipment may become nest or perch sites for certain birds (common raven, loggerhead shrike) which in turn may prey on special-status species (desert tortoise, Mojave fringe-toed lizard).

Potential direct and indirect impact to special-status plants and animals are outlined below, for the proposed solar facility and the gen-tie line. These direct and indirect adverse impacts to special-status species and their habitat could be substantial but can be reduced through mitigation measures specified in Section 3.5.10.

Solar Facility

Vegetation and Habitat. The proposed Project would permanently impact 2,832 acres of previously disturbed habitat and 395.5 acres of natural habitats (Table 3.5-1) by removing or substantially altering the soils and vegetation. Impacts to the previously disturbed lands would not be significant under Significance Criterion 1 because these lands provide only minimal vegetation structure and diversity, and because soils have been disturbed or altered by prior land uses. Potential impacts to the special-status species that may use these disturbed lands are addressed below.

Permanent impacts to natural habitat would include impacts to creosote bush scrub, desert pavement, and desert dry wash woodland. In addition, during construction, the Project would temporarily affect surrounding habitat by introducing noise, lighting, dust, and similar disturbance, possibly affecting wildlife behavior. The temporary impacts cannot be quantified because noise and disturbance will be intermittent, occurring at various parts of the Project area at various times during construction, and each species or individual animal would react differently to the various disturbances. All affected habitat (natural and previously disturbed) may support certain special-status plants or animals (described further below), and the desert dry wash woodland provides the most important habitat value for special-status species. The impacts to desert dry wash woodland are evaluated in more detail under Impact BIO-2 regarding riparian habitat and other sensitive natural communities. Without mitigation, the loss of natural habitat on the Project site would significantly affect special-status wildlife on the site or vicinity.

The principal indirect impact to native habitat is the potential introduction of invasive weeds which could degrade plant and wildlife habitat on the site and beyond the site boundaries if the weeds spread.

Impacts to natural habitat would be minimized by Mitigation Measures BIO-1 through BIO-6, listed below. Mitigation Measure BIO-1 (Biological Monitoring) would require monitoring and reporting to ensure compliance with all biological resource measures, including avoidance and minimization of habitat impacts. BIO-2 (Worker Environmental Awareness Training) would require training of on-site workers to require avoidance of and minimization of impacts to special-status species and their habitat. BIO-3 (Minimization of Vegetation and Habitat Impacts) would require clear demarcation of work areas and limitation of activities within those areas, to minimize adverse effects to habitat. BIO-4 (Integrated Weed Management Plan) would require an Integrated Weed Management Plan (IWMP) to prevent introductions or infestations of invasive weeds, and control or eradicate any infestations that may occur. BIO-5 (Vegetation Resources Management Plan) would require revegetation of temporarily disturbed areas to minimize dust and erosion, to minimize their effects to habitat. BIO-6 (Compensation for Natural Habitat Impacts) would require permanent protection of off-site natural habitat to offset the Project's impacts to natural habitats on the Project site. Together, this series of mitigation measures would minimize adverse impacts to native vegetation and offset the permanent loss through off-site habitat compensation.

Implementation of the IWMP specified in Mitigation Measure BIO-4 (Integrated Weed Management Plan) would control invasive weeds through mechanical or chemical methods on private lands, and mechanical methods only on BLM lands. The following herbicides could be applied for weed control on private lands:

- **Dinitroaniline Type:** Examples of this class are pendimethalin (Weedgrass™), trifluralin (Treflan™), benefin (Balan™), and combinations of these. These herbicides provide for pre-emergence control of annual grasses and other annuals.
- **Dithiopyr (Dimension™):** A selective herbicide primarily used for pre-emergence annual grass control in established turfgrass. However, it can be used for post emergence control of young grass seedlings. Dithiopyr breaks down in soil due to chemical and microbial degradation.
- **Glyphosates:** These are the most commonly used post-emergent, non-selective herbicides, including Rodeo™, Roundup™, and Accord™.

Herbicides can pose risks to terrestrial and aquatic vegetation. Most aquatic herbicides, and several terrestrial herbicides, are non-selective and could adversely impact non-target vegetation. Accidental spills and herbicide drift from treatment areas could be particularly damaging to non-target vegetation. Herbicides may also pose risks to terrestrial or aquatic animal species. Herbicides that persist on site could adversely affect animals that feed on target plants or are exposed to the herbicides (e.g., by digging or rolling in treated soil). Accidental spills and herbicide drift from treatment areas could reach non-target vegetation or habitat on public or private lands near treatment areas. The IWMP specifies usage parameters to prevent potential risks, including specific measures to avoid application at project perimeters, in the vicinity of native vegetation or special-status plants, and to avoid overspray or spillage in any areas. In addition, the IWMP specifies proposed usage and formulations of herbicides at the Athos Project.

Special-status plants. The proposed Project would not affect State or federally listed threatened or endangered plants. There is a low potential that it may affect one BLM Sensitive Plant, Harwood's eriastrum (suitable windblown sand habitat is present in parts of Parcel Group G and parts of the gen-tie routes). Habitat conditions in Parcel Group G are the result of windblown sand encroaching onto disturbed lands, and only a small part of the site could support Harwood's eriastrum. Much more extensive sand habitat, including habitat occupied by Harwood's eriastrum, is available off-site to the north and east. Construction of the solar arrays would minimize alterations to soil conditions, and windblown sand would continue to move through the developed Project site. Any potential effects to Harwood's eriastrum on the solar site would be temporary and less than significant.

Emory's crucifixion thorn occurs at two locations within Parcel Group D. There are several other occurrences in the surrounding area, including occurrences that may be affected by other projects. Without mitigation, the Project's impacts to Emory's crucifixion thorn could be locally significant. Mitigation Measure BIO-7 (Emory's Crucifixion Thorn Mitigation) would mitigate this potential impact by either avoiding the plants or horticultural propagation and off-site introduction. Because salvage appears to be a feasible mitigation strategy for Emory's crucifixion thorn and has been implemented for a nearby project, the measure includes the possibility of contracting a qualified institution to translocate them off site.

One other special-status plant, desert unicorn-plant, was documented on the Project site. This species is not rare and Project impacts to desert unicorn-plant would be less than significant.

No other special-status plant species were located during field surveys but there is a possibility that other species could occur there in a year of better rainfall. Chaparral sand verbena (CRPR 1B, BLMS) could occur on the solar sites as it is relatively common in desert regions. Potential impacts to chaparral sand verbena would not be significant. Several additional CRPR 2, 3, and 4 species also could occur; however, potential impacts to these plants would be less than significant due to their relatively low conservation status and regional occurrences outside the Project vicinity. Additionally, these plants occur in windblown sand (discussed above for Harwood's eriastrum) or are low-growing herbaceous species. Construction of the solar arrays would minimize alterations to soil conditions, and windblown sand would continue to move through the developed Project site. Any potential effects on the solar site to these species would be temporary and less than significant.

Desert tortoise. Most of the solar facility site is marginally suitable as desert tortoise habitat. Desert tortoises are scarce in the area, and none were found during field surveys. However, some recently active sign was observed west of Parcel Group F and prior surveys conducted for other projects have identified desert tortoise sign on or near gen-tie routes 3 and 4. Gen-tie Segment #4 (approximately 1 mile) is within desert tortoise critical habitat and the southernmost end (approximately 0.1 miles between the I-10 Freeway and the Red Bluff Substation) of the same route is within the BLM designated DWMA. There is a small potential that desert tortoise could be found on the solar facility site during Project construction or O&M. Parcel Groups D and F are more likely to support desert tortoises due to presence of natural habitat. The other parcel groups provide little habitat value, although a desert tortoise could occasionally cross the sites or occupy a burrow there.

If a desert tortoise is on the Project site during construction or O&M, it may be vulnerable to impacts such as mortality or injury due to vehicle collision or crushing by site preparation equipment. As a state and federally listed threatened species, take (such as injury or mortality, as well as handling of a desert tortoise) may only be authorized through consultation with the USFWS and CDFW. If Project activities cause injury or mortality to a desert tortoise, this would be a significant adverse impact. If the site is a part of a desert tortoise's home range, land use conversion could reduce local habitat availability, possibly reducing its access to food, water, or other resources. Land use conversion also could affect habitat connectivity in the area, addressed below under wildlife movement.

Mitigation identified below would prevent injury or mortality of desert tortoise. Tortoises may not be handled or moved without incidental take authorization from the USFWS and CDFW. The Applicant may seek this authorization or may opt to avoid any potential desert tortoise take as specified in Mitigation Measures BIO-8 (Wildlife Protection) and BIO-9 (Desert Tortoise Protection). If incidental take authorization is obtained, then desert tortoises may be handled or translocated according to a Wildlife Relocation Plan, to be prepared as specified in APM BIO-1 (Wildlife Relocation).

Mitigation Measures BIO-1 through BIO-6, would minimize adverse impacts to native vegetation and offset the permanent habitat loss through off-site habitat compensation. Additionally, Mitigation Measures BIO-8 (Wildlife Protection) and BIO-9 (Desert Tortoise Protection) would ensure no take of desert tortoise during Project construction or O&M. BIO-8 identifies numerous requirements to minimize or avoid wildlife injury such as site inspections, ramps to ensure escape from excavations, prevention of attractants such as trash or water, hazardous material avoidance, and vehicle speed limits, and BIO-9 (Desert Tortoise Protection) would require pre-construction clearance surveys, and monitoring or exclusion of desert tortoises from active work areas to prevent injury.

Mojave fringe-toed lizard. Mojave fringe-toed lizards were observed near the eastern margins of Parcel Group G. Much of the Project site may have provided suitable habitat for Mohave fringe-toed lizard prior to land use conversion and upwind interruption of aeolian sand transport. Today, suitable habitat is only present in Parcel Group G as a result of windblown sand encroaching onto disturbed lands, and only a small part of the site could support Mohave fringe-toed lizard. Much more extensive sand habitat, including habitat occupied by Mohave fringe-toed lizard, is available off-site to the north and east. Construction of the solar arrays would minimize alterations to soil conditions, and windblown sand would continue to move through the developed Project site. If perimeter fencing includes suitable gaps (rather than tortoise exclusion fencing), Mojave fringe-toed lizard could continue to occupy the site following construction. Any potential effects to Mohave fringe-toed lizard habitat on the solar site would be temporary and less than significant. However, site preparation for construction or vehicle traffic during O&M could cause Mojave fringe-toed lizard injury or mortality. This potential impact would be minimized through Mitigation Measure BIO-8 (Wildlife Protection), which identifies practices and requirements to prevent or minimize wildlife injury and mortality. With implementation of Mitigation Measure BIO-8, solar facility impacts to Mojave fringe-toed lizard would be less than significant.

Couch's spadefoot toad. Couch's spadefoot toad only appears above-ground when rainfall forms temporary pools and potholes with water lasting longer than 10 to 12 days, which are required for breeding, hatching, and metamorphosis. In California, it is known from the low desert region, especially the Colorado River corridor. It burrows underground or occupies rodent burrows when inactive. Couch's spadefoot toad was not observed, but suitable breeding habitat may be present within Parcel Group G due to presence of an existing pond and irrigation water which can accumulate to form suitable temporary pools near the active date tree farm. No tadpoles or toads were observed. The Project would not affect natural temporary breeding ponds. However, if Couch's spadefoot toad occurs intermittently on the site, site preparation for construction or vehicle traffic during O&M could cause injury or mortality. This potential impact would be minimized through Mitigation Measure BIO-8 (Wildlife Protection), which identifies practices and requirements to prevent or minimize wildlife injury and mortality. With implementation of Mitigation Measure BIO-8, solar facility impacts to Couch's spadefoot toad would be less than significant.

Desert kit fox and American badger. Recently active desert kit fox burrows and active American badger sign occur on the Project site (Table 3.5-4). Both species could use native or anthropogenic habitats, wherever prey animals may be present, and soils are suitable for burrows. Potential direct impacts to American badger and desert kit fox include mechanical crushing of individuals or burrows by vehicles and construction equipment, habitat loss, and noise and disturbance to surrounding habitat. Site fencing could entrap desert kit foxes or badgers in the construction area. Mitigation Measures BIO-1 through BIO-6, listed above, would minimize adverse impacts to native vegetation and offset the permanent habitat loss through off-site habitat compensation. APM BIO-1 (Wildlife Relocation) would develop and implement a relocation plan to exclude desert kit fox and American badger from solar facility sites, and thus prevent injury or take. Additionally, Mitigation Measures BIO-8 (Wildlife Protection) and BIO-10 (Desert Kit Fox and American Badger Relocation) would prevent or minimize potential injury to desert kit fox and

American badger. BIO-8 identifies practices and requirements to prevent or minimize wildlife injury and mortality, and BIO-10 specifies details for pre-construction surveys, exclusion of animals from dens, passive relocation from the site, and avoidance of natal dens.

Burro deer. The active agricultural areas provide a dependable water source for burro deer. Additionally, desert dry wash woodland habitat may provide seasonal foraging or cover habitat for burro deer. Potential impacts of the Project could include loss of water sources and habitat. Burro deer are expected to avoid Project-related disturbance during construction and O&M, and no special measures are necessary to exclude them from work areas. Mitigation Measures BIO-1 through BIO-6, listed above, would minimize adverse impacts to native vegetation and offset the permanent habitat loss through off-site habitat compensation. Mitigation Measure BIO-11 (Wildlife Water Source) would offset potential impacts to burro deer from the loss of an irrigation water source through access improvement to existing sources, removal of invasive tamarisk (or saltcedar) to improve surface flow, or provide an alternative water source as a replacement or supplement to existing sources.

Native Birds. Native birds are protected under the California Fish and Game Code and federal MBTA (see Section 3.5.2, Regulatory Framework). Special-status birds are identified in Section 3.5.1, but most protected bird species have no special conservation status. The entire Project site and surrounding area provides suitable nesting habitat for numerous resident and migratory bird species. Bird nests including eggs and nestlings are vulnerable to Project construction activities that may disrupt nesting behavior or damage nests, birds, or eggs.

Mitigation Measures BIO-1 through BIO-6, listed above, would minimize adverse impacts to native vegetation and offset the permanent habitat loss through off-site habitat compensation. Additionally, Mitigation Measure BIO-8 (Wildlife Protection) would help to minimize Project impacts to nesting birds through a series of requirements to minimize or avoid wildlife injury, such as site inspections, prevention of attractants such as trash or water, hazardous material avoidance, and vehicle speed limits. In addition, Mitigation Measure BIO-12 (Bird and Bat Conservation Strategy) would minimize potential effects to nesting birds by identifying and avoiding active nests. Together these measures would effectively minimize adverse impacts to native birds.

After completion of construction and throughout the life of the Project, the solar facilities and other Project components may present a collision or electrocution risk to birds. Based on information from other solar projects in the California desert, Project-related bird mortality is likely to range from a low of 0.4 birds per acre per year up to 1.7 birds per acre per year (BLM, 2018). In the case of solar panels, some have hypothesized that the collision risk may be linked to a “false-lake effect,” wherein birds may mistake PV panels for water bodies, and consequently be attracted to them. This effect, if any, has not been verified.

Mitigation Measure BIO-12 (Bird and Bat Conservation Strategy) would require the Applicant to prepare a Bird and Bat Conservation Strategy to monitor the death and injury of birds; resulting data would be used to inform an adaptive management program to mitigate or minimize and substantial Project-related avian impacts. This measure would avoid or mitigate adverse impacts to nesting birds and manage O&M activities to minimize potential bird collisions to the extent feasible.

Burrowing owl. A total of 5 burrowing owls and 14 apparently active burrows were observed during field surveys of the solar facilities. Suitable habitat is found throughout the site, including anthropogenic land uses, and burrowing owls could occupy the site during breeding or non-breeding seasons. Loss of these anthropogenically disturbed lands would not significantly impact overall habitat availability for burrowing owls. Potential direct Project impacts to burrowing owls include mechanical crushing of individuals or burrows by vehicles and construction equipment, habitat loss, and noise and disturbance to surrounding

habitat. Mitigation Measures BIO-1 through BIO-6, listed above, would minimize adverse impacts to native vegetation and offset the permanent habitat loss through off-site habitat compensation. Applicant Proposed Measure APM BIO-1 (Wildlife Relocation) would develop and implement a relocation plan to exclude burrowing owls from solar facility sites, and thus prevent injury or take. Additionally, Mitigation Measures BIO-8 (Wildlife Protection), BIO-12 (Bird and Bat Conservation Strategy), and BIO-13 (Burrowing Owl Avoidance and Relocation) would prevent or minimize potential injury to burrowing owl by identifying occupied burrows and safely excluding the owls through passive relocation. These measures are expected to effectively avoid take of burrowing owls by excluding them from the Project area or if active nests are present, by avoiding disturbance in surrounding buffer areas.

Golden eagle. Golden eagles are protected under the federal BGEPA as well as the MBTA and California Fish and Game Code. The Project site does not provide suitable golden eagle nesting habitat. However, the Project area provides suitable foraging habitat, and is within potential foraging distance of known golden eagle nesting territories located in the Eagle Mountains, Coxcomb Mountains, and Chuckwalla Mountains (BRTR, Appendix C). and foraging habitat loss may thus affect golden eagles during nesting, winter, or migratory seasons. Nevertheless, golden eagles would be likely to forage only infrequently on the solar facility site at any time of year, including winter and migration seasons because the Project area represents only about 1.5 percent of potential foraging habitat within the presumed 10-mile foraging radius for any given territory and the quality of the habitat is comparatively poor. Much of the Project area consists of anthropogenic land uses and previously converted desert habitat. In contrast, other abundant foraging habitat for local golden eagle territories is protected within Joshua Tree National Park (JTNP) or through other land use designations. Impacts to golden eagle foraging habitat would furthermore be offset through Mitigation Measure BIO-6 (Compensation for Natural Habitat Impacts), which would require protection of off-site compensation lands to mitigate Project impacts to vegetation and habitat, including golden eagle foraging habitat. Additionally, Mitigation Measure BIO-12 (Bird and Bat Conservation Strategy) would require the Applicant to prepare and implement an overall strategy to avoid, minimize, or mitigate Project impacts to birds and bats, including golden eagles through gen-tie design, operations monitoring and, if necessary, implementation of adaptive measures to further reduce effects. The proposed mitigation measures are expected to effectively avoid any take of golden eagles and to offset habitat loss.

Other Special-Status Raptors. Several other special-status raptors have been reported on or near the Project site or are likely to occur in the area seasonally. Several migratory raptors, including Cooper's hawk, sharp-shinned hawk, ferruginous hawk, northern harrier, merlin, and Swainson's hawk, short-eared owl, and long-eared owl, spend winters in the southern California deserts or, (for Swainson's hawk) migrate through the region between breeding habitat to the north and wintering habitat farther south. Prairie falcon would be expected to nest in the surrounding mountains and to forage over the Project site at any time of year. The Project's potential impacts to prairie falcon nesting and foraging habitat would be similar to those described for golden eagle. Project construction would eliminate suitable foraging habitat for these species. Impacts to raptor foraging habitat would be offset through Mitigation Measure BIO-6 (Compensation for Natural Habitat Impacts), which requires compensation for permanent impacts to native vegetation and habitat.

Gila Woodpecker and elf owl. Neither Gila woodpecker nor elf owl has been observed on the Project site, but both species have been reported at a native palm oasis at Corn Springs, about 10 miles to the south. Potential habitat is present in desert dry wash woodland and commercial palm groves on the Project site, but neither species was observed during Ironwood's field surveys. Gila woodpeckers are vocally and visually conspicuous during daytime surveys, and additional nocturnal callback surveys were conducted for elf owl. Thus, there is a low possibility that either species may nest on or adjacent to the site.

Nonetheless, should either species occur on the site in the future, Project impacts to native habitat can be offset through Mitigation Measure BIO-6 (Compensation for Natural Habitat Impacts), which requires compensation for impacts to dry wash woodland (Blue Palo Verde–Ironwood Woodland) at a ratio of 3:1. Direct impacts to nesting Gila woodpeckers or elf owls would be avoided through Mitigation Measure BIO-12 (Bird and Bat Conservation Strategy), which would require pre-construction nest surveys, and protection of active nests throughout the nesting season. These measures are expected to effectively avoid any potential take of Gila woodpecker or elf owl and to offset native habitat loss.

Special-Status Passerine Birds. The desert vegetation and adjacent mountains provide foraging, cover, or breeding habitat for resident and migratory special-status birds identified in Section 3.5.1. Potential Project impacts to these species would be the same as those described for other nesting or migratory birds. These impacts can be mitigated through Mitigation Measures BIO-6 (Compensation for Natural Habitat Impacts), which requires compensation for impacts to native habitats, and BIO-12 (Bird and Bat Conservation Strategy), which would require pre-construction nest surveys, and protection of active nests throughout the nesting season. These measures are expected to effectively minimize adverse impacts to special-status birds on the site and to offset habitat loss through the acquisition and management of offsite lands.

Special-Status Bats. Several special-status bats could use the Project site for foraging, but only minimal suitable roosting habitat is available. Project construction could adversely impact special-status bats through the elimination of desert shrubland foraging habitat. Common bats and (less likely) special-status bats may roost in desert dry wash woodland habitat, palm groves, or the existing structures (homes, trailers, etc.) on the site. Removal of those features could disturb, injure, or kill bats. Mitigation Measures BIO-1 through BIO-6 would minimize adverse impacts to native vegetation and offset the permanent habitat loss through off-site habitat compensation. Mitigation Measure BIO-8 (Wildlife Protection) includes a condition to inspect structures prior to demolition and remove wildlife or allow wildlife to escape. Mitigation Measure BIO-12 (Bird and Bat Conservation Strategy) would require additional pre-construction surveys and wildlife exclusion, or scheduling of tree removal outside the bat maternal roosting season. These measures are expected to effectively minimize potential impacts special-status bats, and to offset habitat loss.

220 kV Generation-Tie Line

Vegetation and habitat. Gen-tie construction would not affect most of the vegetation and habitat within the gen-tie routes described in Section 3.5.1 and Table 3.5-1. Instead, it would affect vegetation and habitat at discrete disturbance sites where towers or other work activities would be located. Impacts to vegetation and habitat at the sites would be similar to those described for the solar facility. Impacts to the previously disturbed lands would not be significant. Impacts to natural habitat, including desert dry wash woodland, would be minimized or offset by Mitigation Measures BIO-1 through BIO-5 over their entire length, and additionally Mitigation Measure BIO-6 (Compensation for Natural Habitat Impacts) on private, county-administered lands. While habitat compensation will not be included as a component of the BLM's Environmental Assessment, all other biological resources mitigation measures identified in this section would apply on BLM lands. Additionally, separate reviews for DRECP compliance or state or federal Endangered Species Act take authorization may require habitat compensation for impacts on federal lands. The gen-tie Project component would not have any additional vegetation and habitat impacts, and no additional mitigation would be required.

Special-status plants. The gen-tie would not affect State or federally listed threatened or endangered plants. There is a low potential that it may affect one BLM Sensitive Plant, Harwood's eriastrum (suitable

windblown sand habitat is present on parts of the gen-tie routes). Construction of the gen-tie would minimize alterations to soil conditions, and windblown sand would continue to move across the gen-tie routes. Any potential effects to Harwood's eriastrum on the gen-tie route would be temporary and less than significant.

Two Emory's crucifixion thorn were observed on Gen-tie Segment #2. If the plants cannot be avoided, the Project's impacts to Emory's crucifixion thorn could be locally significant. Mitigation Measure BIO-7 (Emory's Crucifixion Thorn Mitigation) would mitigate this potential impact by either avoiding the plants or by contracting with a qualified institution to translocate them off the site.

One other special-status plant, desert unicorn-plant (CRPR 4), was documented on the gen-tie routes. Gen-tie impacts to desert unicorn-plant would be less than significant due to its low conservation status and numerous occurrences throughout the region. While no other special-status plant species were located during field surveys, there is a possibility that several other species could occur there in a year of better rainfall, as described above for the solar facility. Potential impacts of the gen-tie would be less than significant. The Project's gen-tie component would not have any additional special-status plant impacts, and no additional mitigation would be required.

Desert tortoise. Most of the gen-tie routes are marginally suitable as desert tortoise habitat. No desert tortoises were found during field surveys but prior surveys have identified desert tortoise sign on or near Gen-tie Segments #3 and #4. Gen-tie Segment #4 is within critical desert tortoise habitat and the southernmost end of the same route is within the BLM designated DWMA. There is a small potential that desert tortoise could be found on the gen-tie route during Project construction or O&M. If this occurs, implementation of protection measures specified in Mitigation Measures BIO-8 (Wildlife Protection) and BIO-9 (Desert Tortoise Protection) and compliance with the terms of the DRECP and the USFWS 2016 Biological Opinion for the DRECP would prevent injury or mortality.

Mitigation Measures BIO-1 through BIO-6, BIO-8, and BIO-9 would minimize or offset desert tortoise habitat impacts, and avoid potential harm to desert tortoises during gen-tie construction and O&M. The Project's gen-tie component would not have any additional desert tortoise impacts, and no additional mitigation would be required.

Mojave fringe-toed lizard. Mojave fringe-toed lizards were not observed on the gen-tie routes, but suitable or marginally suitable habitat may be found on some of the routes, particularly Gen-tie Segment #3. Construction of the gen-tie line would minimize alterations to soil conditions, and windblown sand would continue to move across the route. Any potential effects to Mojave fringe-toed lizard habitat on the gen-tie route would be temporary and less than significant. However, site preparation for construction, or vehicle traffic during O&M, could cause Mojave fringe-toed lizard injury or mortality. This potential impact would be minimized through Mitigation Measure BIO-8 (Wildlife Protection). The Project's gen-tie component would not have any additional Mojave fringe-toed lizard impacts, and no additional mitigation would be required.

Couch's spadefoot toad. No potential breeding habitat for Couch's spadefoot toad has been observed along the gen-tie routes, and the gen-tie would not affect breeding ponds. However, if Couch's spadefoot toad occurs intermittently on the route, site preparation for construction or vehicle traffic during O&M could cause injury or mortality. This potential impact would be minimized through Mitigation Measure BIO-8 (Wildlife Protection), which identifies practices and requirements to prevent or minimize wildlife injury and mortality. With implementation of Mitigation Measure BIO-8 (Wildlife Protection), solar facility impacts to Couch's spadefoot toad would be less than significant.

Desert kit fox and American badger. Desert kit fox and active American badger could use native or anthropogenic habitats along the gen-tie routes. During gen-tie construction they could be subject to mechanical crushing of individuals or burrows by vehicles and construction equipment, habitat loss, and noise and disturbance to surrounding habitat. Mitigation Measures BIO-1 through BIO-6, listed above, would minimize adverse impacts to native vegetation and offset the permanent habitat loss through off-site habitat compensation. It is unlikely that an active burrow would be located at a gen-tie work site, but applicant Proposed Measure APM BIO-1 (Wildlife Relocation) would develop and implement a relocation plan to exclude desert kit fox and American badger if needed, and thus prevent injury or take. Additionally, Mitigation Measures BIO-8 (Wildlife Protection) and BIO-10 (Desert Kit Fox and American Badger Relocation) would prevent or minimize potential injury to desert kit fox and American badger. The Project's gen-tie component would not have any additional desert kit fox or American badger impacts, and no additional mitigation would be required.

Burro deer. Burro deer are expected to avoid Project-related disturbance during gen-tie construction and O&M, and no special measures are necessary to exclude them from work areas. The gen-tie line would not interrupt burro deer access to water or habitat areas. No significant impacts to burro deer would result from the gen-tie line and no additional mitigation would be required.

Native birds and bats. This analysis addresses all native birds and bats except burrowing owl (addressed below). The analysis here includes potential impacts of the gen-tie line to golden eagle, other raptors, Gila woodpecker, elf owl, special-status passerines, and special-status bats. Native birds and bats could use native or anthropogenic habitats along the gen-tie routes. During gen-tie construction they could be subject to habitat loss, and noise and disturbance to surrounding habitat. Mitigation Measures BIO-1 through BIO-6, listed above, would minimize adverse impacts to native vegetation and offset the permanent habitat loss through off-site habitat compensation.

Collision. Bird collisions with structures typically occur when the structures are not visible (e.g., bare power lines or guy wires at night), deceptive (e.g., glazing and reflective glare), or confusing (e.g., light refraction or reflection from mist). Transmission lines, including the proposed gen-tie line, present collision hazards to birds. Based on mortality data for another project's gen-tie within the Riverside East SEZ, mortality of approximately 24 birds per year per kilometer of gen-tie is expected for the proposed Project.

Electrocution. Large birds can be electrocuted by transmission lines if the bird's wings simultaneously contact conductors, or a conductor and a ground. This happens most frequently when a bird attempts to perch or take off from a structure with insufficient clearance between these elements. Distribution lines that are less than 69 kilovolts (kV) but greater than 1 kV generally have less spacing than transmission lines, thus posing an electrocution hazard for perching raptors. Configurations less than 1 kV or greater than 69 kV typically do not present an electrocution potential, based on conductor placement and orientation (APLIC, 2006).

Mitigation Measure BIO-12 (Bird and Bat Conservation Strategy) would require the Applicant to prepare a Bird and Bat Conservation Strategy to monitor the death and injury of birds; resulting data would be used to inform an adaptive management program to mitigate or minimize and substantial Project-related avian impacts. Mitigation Measure BIO-14 (Gen-tie lines) would require design and construction of the gen-tie lines to avoid potential for electrocution and minimize potential for roosting on the structures or colliding with them. These measures would effectively minimize or mitigate adverse effects of collision or electrocution to the extent feasible.

Burrowing owl. Burrowing owls could use native or anthropogenic habitats along the gen-tie routes. During gen-tie construction they could be subject to mechanical crushing of individuals or burrows by vehicles

and construction equipment, habitat loss, and noise and disturbance to surrounding habitat. Mitigation Measures BIO-1 through BIO-6, listed above, would minimize adverse impacts to native vegetation and offset the permanent habitat loss through off-site habitat compensation. Note that BIO-6 (compensation) would apply on private lands only. It is unlikely that an active burrow would be located at a gen-tie work site, but applicant Proposed Measure APM BIO-1 (Wildlife Relocation) would develop and implement a relocation plan to exclude burrowing owls if needed, and thus prevent injury or take. Additionally, Mitigation Measures BIO-8 (Wildlife Protection) and BIO-12 (Burrowing Owl Avoidance and Relocation) would prevent or minimize potential injury to burrowing owls. The Project's gen-tie component would not have any additional burrowing owl impacts, and no additional mitigation would be required.

Mitigation Measures for Impact BIO-1

Implementation of the following mitigation measures would mitigate Impact BIO-1 (see Section 3.5.10 for full text of the measures).

- BIO-1 (Biological Monitoring)
- BIO-2 (Worker Environmental Awareness Training)
- BIO-3 (Minimization of Vegetation and Habitat Impacts)
- BIO-4 (Integrated Weed Management Plan)
- BIO-5 (Vegetation Resources Management Plan)
- BIO-6 (Compensation for Natural Habitat Impacts on County-administered Lands)
- BIO-7 (Emory's Crucifixion Thorn Mitigation)
- BIO-8 (Wildlife Protection)
- BIO-9 (Desert Tortoise Protection)
- BIO-10 (Desert Kit Fox and American Badger Relocation)
- BIO-11 (Wildlife Water Source)
- BIO-12 (Bird and Bat Conservation Strategy)
- BIO-13 (Burrowing Owl Avoidance and Relocation)
- BIO-14 (Gen-tie Lines)

Significance After Mitigation

This impact would be less than significant with implementation of mitigation identified above.

Impact BIO-2. The Project would cause substantial adverse effect, on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations or by CDFW or USFWS.

Desert dry wash woodland is the riparian vegetation of regional episodic hydrologic systems of the regional desert and it is identified in the NECO Plan and DRECP as a sensitive habitat type. No other sensitive natural communities are found on the Project site.

Solar Facility

Construction of the solar facility would eliminate approximately 92.4 acres of desert dry wash woodland (Table 3.5-1). This habitat provides greater food, nesting, and cover, and its wildlife diversity is generally greater than in the surrounding desert. Examples of special-status species that depend in part on desert microphyll woodlands include black-tailed gnatcatcher and burro deer. In addition, many of the species occupying the surrounding upland desert shrublands are found in greater numbers in microphyll woodlands.

Impacts to desert dry wash woodland would be minimized by Mitigation Measures BIO-1 through BIO-6, described under Impact BIO-1. Notably, Mitigation Measure BIO-6 (Compensation for Natural Habitat Impacts) identifies the compensation ratio for desert dry wash woodland habitat is 3:1, due to its regional significance, productivity, and importance to wildlife. Together, this series of mitigation measures would minimize adverse impacts to desert dry wash woodland and offset the permanent loss through off-site habitat compensation.

220 kV Generation-Tie Line

Gen-tie construction would affect desert dry was woodland at discrete disturbance sites where towers or other work activities would be located. Impacts to sensitive habitat would be similar to those described above for the solar facility, but much more limited due to the smaller disturbance sites. These impacts would be minimized or offset by Mitigation Measures BIO-1 through BIO-6. In combination, these measures are expected to minimize or prevent adverse effects to sensitive habitats. The Project's gen-tie component would not have any additional impacts to waters of the State, and no additional mitigation would be required.

Mitigation Measures for Impact BIO-2

Implementation of Mitigation Measures BIO-1 (Biological Monitoring), BIO-2 (Worker Environmental Awareness Training), BIO-3 (Minimization of Vegetation and Habitat Impacts), BIO-4 (Integrated Weed Management Plan), BIO-5 (Vegetation Resources Management Plan), and BIO-6 (Compensation for Natural Habitat Impacts) would mitigate Impact BIO-2 (see Section 3.5.10).

Significance After Mitigation

This impact would be less than significant with implementation of mitigation identified above.

Impact BIO-3. The Project would cause substantial adverse effect on federally protected wetlands or State-protected jurisdictional areas.
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Project construction and O&M would directly or indirectly affect State-protected jurisdictional waters found along the ephemeral washes and adjacent desert dry wash woodlands on Project site. No wetlands would be affected by the proposed Project, and the Project site is not subject to federal regulation due to its location within the Ford Dry Lake watershed, which is an intrastate basin not identified as jurisdictional waters of the U.S. (Section 3.5.1, Environmental Setting, Jurisdictional Waters).

Solar Facility

There are 237 acres of State-jurisdictional waters on the proposed solar facility site. These include native desert dry wash woodland habitat (addressed in more detail under Impact BIO-2) and unvegetated washes crossing creosote bush scrub or anthropogenically disturbed areas. Impacts to the desert dry wash woodland are described under Impact BIO-2. The unvegetated streambeds convey water and sediment to stream channels and their associated vegetation and habitat (e.g., Desert Dry Wash Woodland), both on the Project site, and off-site downstream.

The proposed Project does not include diversion channels, detention basins, or other substantial alterations to the existing surface hydrology. Water and sediment would be conveyed downslope, across the site, by sheet flow or within channels after site preparation and Project construction. However, surface flow patterns, velocities, and sediment loads may be altered throughout the site by solar panel foundations, access roads, and other Project features. Potential impacts to the unvegetated washes could include

increased siltation caused by Project activities, fluvial transport of silts or pollutants off-site via the ephemeral channels, or altered flows causing downstream erosion or eliminating natural transport of sands and water to downstream habitat areas. Total impacts to jurisdictional areas are calculated as the sum of mapped desert dry wash woodlands (above) plus the acreage of jurisdictional streambeds mapped outside those woodlands (146 acres), or 237 acres total. Impacts to state-jurisdictional streambeds would require the Applicant to obtain a Lake and Streambed Alteration Agreement from the CDFW.

These impacts would be offset by Mitigation Measures BIO-1 through BIO-6 described under Impact BIO-1. In addition, Mitigation Measure BIO-15 (Streambed and Watershed Protection) would require a series of Best Management Practices (BMPs) to prevent or minimize adverse effects to streambed function and off-site habitats, and would require the Applicant obtain a Lake and Streambed Authorization Agreement from the CDFW prior to initiating construction in jurisdictional waters of the State. In combination, these measures are expected to minimize or prevent adverse effects to waters of the State.

220 kV Generation-Tie Line

Gen-tie construction would affect State waters at discrete disturbance sites where towers or other work activities would be located. Impacts to State waters would be similar to those described above for the solar facility, but limited to the smaller disturbance sites. These impacts would be minimized or offset by Mitigation Measures BIO-1 through BIO-6 and BIO-15 as described above for the solar facility. In combination, these measures are expected to minimize or prevent adverse effects to waters of the State. The Project's gen-tie component would not have any additional impacts to waters of the State, and no additional mitigation would be required.

Mitigation Measures for Impact BIO-3

Implementation of Mitigation Measures BIO-1 (Biological Monitoring), BIO-2 (Worker Environmental Awareness Training), BIO-3 (Minimization of Vegetation and Habitat Impacts), BIO-4 (Integrated Weed Management Plan), BIO-5 (Vegetation Resources Management Plan), BIO-6 (Compensation for Natural Habitat Impacts), and BIO-15 (Streambed and Watershed Protection) would mitigate Impact BIO-3 (see Section 3.5.10).

Significance After Mitigation

This impact would be less than significant with implementation of mitigation identified above.

Impact BIO-4. The Project would interfere substantially with the movement of fish or wildlife, wildlife corridors, or impede the use of native wildlife nursery sites.

Solar Facility

Wildlife movement through the area is compromised by the existing pattern of land use. The proposed solar facility would further interrupt potential wildlife movement routes through the area, primarily for movement across anthropogenically disturbed land, but also across two parcel groups providing native habitats. The eastern portion of Parcel Group F is within a potential multiple-species linkage route identified in the DRECP (BLM, 2015), and conversion of that area to a solar facility would largely prevent movement across it for many species, including desert tortoise and burro deer (BRTR Figure 14, Appendix C). The USFWS identifies conservation of the smaller-scale habitat accessibility within the I-10 corridor between Cactus City and Desert Center as essential, including conservation of culverts and bridges beneath I-10 and loss of desert tortoise habitat connections to these crossings. The USFWS targets compensation land acquisition for connectivity along the I-10 corridor between Cactus City and Desert Center.

Mitigation Measure BIO-6 (Compensation for Natural Habitat Impacts) would require acquisition and management of off-site vegetation and habitat in perpetuity to offset the permanent loss of natural vegetation and habitat on the Project site and incorporates the USFWS focus area between Desert Center and Cactus City. This measure would offset the proposed Project's impacts to wildlife movement habitat.

Wildlife "nursery sites" such as bird nests or suitable breeding habit for other species may be found throughout the Project site, particularly on the native habitat parcels. Mitigation Measures BIO-1 through BIO-6 would minimize and offset habitat impacts for common wildlife and special-status species, and Mitigation Measures BIO-8 through BIO-13 would prevent or offset adverse effects to special-status wildlife nesting or breeding sites by requiring specific pre-construction surveys, passive translocation of certain species away from the area, avoidance of buffer areas while bird nests are active, and other related requirements.

220 kV Generation-Tie Line

Many wildlife species are expected to move through the area, across the gen-tie routes. Gen-tie construction activities could dissuade wildlife from approaching construction areas due to noise and disturbance. This effect would be temporary (limited to construction phase). Once completed, the gen-tie line would have minimal effects on terrestrial wildlife movement. However, the gen-tie towers and conductors could present a collision hazard for birds, including special-status species as well as common birds that are protected under state and federal laws. Mitigation Measure BIO-12 (Bird and Bat Conservation Strategy) would require pre-construction surveys to identify active bird nests, and avoidance of disturbance or disruption nesting behavior, as well as O&M monitoring for bird mortality and implementation of an adaptive management framework if mortality thresholds are exceeded. Mitigation Measure BIO-14 (Gen-tie Lines) would require mechanisms to visually warn birds such as permanent markers or bird flight diverters; avoid or minimize use of guy wires; and maintain sufficient distance between all conductors and grounded components to prevent electrocution. These measures would effectively minimize wildlife movement across the proposed gen-tie routes.

Mitigation Measures for Impact BIO-4

Implementation of Mitigation Measures BIO-1 (Biological Monitoring), BIO-2 (Worker Environmental Awareness Training), BIO-3 (Minimization of Vegetation and Habitat Impacts), BIO-4 (Integrated Weed Management Plan), BIO-5 (Vegetation Resources Management Plan), BIO-6 (Compensation for Natural Habitat Impacts), BIO-8 (Wildlife Protection), BIO-9 (Desert Tortoise Protection), BIO-10 (Desert Kit Fox and American Badger Relocation), BIO-11 (Wildlife Water Source), BIO-12 (Bird and Bat Conservation Strategy), BIO-13 (Burrowing Owl Avoidance and Relocation) and BIO-14 (Gen-tie Lines) would mitigate Impact BIO-4 (see Section 3.5.10).

Significance After Mitigation

This impact would be less than significant with implementation of mitigation identified above.

Impact BIO-5. Conflict with any local policies or ordinances protecting biological resources.
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Applicable Riverside County policies and ordinances protecting biological resources are identified in Section 3.5.2 (Regulatory Framework, Local). These policies direct permanent preservation of important open space lands, compliance with the Multipurpose Open Space Element of the General Plan, protection of environmental resources, cooperation with resource agencies for the voluntary protection or restoration of significant habitats, and preservation of multi-species habitat resources.

Solar Facility and 220 kV Generation-Tie Line

The solar facility would impact biological resources protected by the General Plan provisions, including special-status plants and animals, sensitive habitats, and waters of the State, as described under Impacts BIO-1 through BIO-4. Without mitigation, these impacts could result in significant impacts to biological resources. Mitigation Measures BIO-1 through BIO-15 would assure consistency with local policies.

Mitigation Measures for Impact BIO-5

Implementation of Mitigation Measures BIO-1 (Biological Monitoring), BIO-2 (Worker Environmental Awareness Training), BIO-3 (Minimization of Vegetation and Habitat Impacts), BIO-4 (Integrated Weed Management Plan), BIO-5 (Vegetation Resources Management Plan), BIO-6 (Compensation for Natural Habitat Impacts), BIO-8 (Wildlife Protection), BIO-9 (Desert Tortoise Protection), BIO-10 (Desert Kit Fox and American Badger Relocation), BIO-11 (Wildlife Water Source), BIO-12 (Bird and Bat Conservation Strategy), BIO-13 (Burrowing Owl Avoidance and Relocation), BIO-14 (Gen-tie Lines) and BIO-15 (Streambed and Watershed Protection) would mitigate Impact BIO-5 (see Section 3.5.10).

Significance After Mitigation

This impact would be less than significant with implementation of mitigation.

Impact BIO-6. The Project would substantially reduce the habitat of a wildlife species; cause a wildlife population to drop below self-sustaining levels; or threaten to eliminate a plant or animal community.

Solar Facility and 220 kV Generation-Tie Line

The proposed Project would reduce habitat availability for a number of special-status wildlife species, as described under Impact BIO-1. Similarly, the Project would reduce habitat availability for common species. Project activities could cause mortality or injury to common species, or could eliminate or reduce availability of natural habitats or communities. The loss of largely disturbed habitat would not, however, substantially reduce the habitat of a wildlife species, cause a wildlife population to drop below self-sustaining levels, or threaten to eliminate a plant or animal community. Indeed, the Project is not expected to take any desert tortoise, although this analysis recognizes the possibility. Take of other wildlife species would similarly be limited. In addition, the mitigation measures outlined above would minimize or offset these adverse effects, as described under Impact BIO-1.

Most of the solar facility site consists of anthropogenically disturbed land (Table 3.5-1). Loss of these disturbed lands would not substantially affect common or special-status wildlife species. Impacts to native habitats would be minimized or offset through Mitigation Measures BIO-1 through BIO-6. Additionally, Mitigation Measure BIO-15 (Streambed and Watershed Protection) would minimize adverse effects to on-site and downstream waters of the State. As a result, habitat reductions for both common and special-status wildlife species would not be substantial.

General wildlife protection and avoidance measures are identified in Mitigation Measures BIO-8 (Wildlife Protection), BIO-11 (Wildlife Water Source) and BIO-12 (Bird and Bat Conservation Strategy), to minimize impacts to common and special-status wildlife, including breeding activities and long-term population sustainability. Additional Mitigation Measures BIO-9 (Desert Tortoise Protection), BIO-10 (Desert Kit Fox and American Badger Relocation), and BIO-13 (Burrowing Owl Avoidance and Relocation) are identified to protect special-status wildlife species, including their breeding activities and long-term population sustainability.

Mitigation Measures for Impact BIO-6

Implementation of Mitigation Measures BIO-1 (Biological Monitoring), BIO-2 (Worker Environmental Awareness Training), BIO-3 (Minimization of Vegetation and Habitat Impacts), BIO-4 (Integrated Weed Management Plan), BIO-5 (Vegetation Resources Management Plan), BIO-6 (Compensation for Natural Habitat Impacts), BIO-8 (Wildlife Protection), BIO-9 (Desert Tortoise Protection), BIO-10 (Desert Kit Fox and American Badger Relocation), BIO-11 (Wildlife Water Source), BIO-12 (Bird and Bat Conservation Strategy), BIO-13 (Burrowing Owl Avoidance and Relocation), BIO-14 (Gen-tie Lines) and BIO-15 (Stream-bed and Watershed Protection) would mitigate Impact BIO-6 (see Section 3.5.10).

Significance After Mitigation

This impact would be less than significant with implementation of mitigation.

3.5.6 Alternative 1: No Project Alternative

Under Alternative 1, the Athos Project would not be approved by the County and the proposed solar facility and gen-tie line would not be constructed. The Project site would remain subject to existing County land use regulations and the BLM would continue to manage the public land sections of the proposed gen-tie route according to the existing land use designations. It is expected that the solar facility and gen-tie sites would remain in their existing condition, with no new structures or facilities and no ground disturbance. As a result, impacts of the proposed Project described in Section 3.5.5 would not occur and project sites would continue to be affected by current uses.

3.5.7 Alternative 2: Reduced Footprint Alternative

The Reduced Footprint Alternative would avoid all the solar facility's impact to native habitat located in Parcel Groups D and F (395 acres). Native habitat impacts of the gen-tie line would be slightly greater than described above because of the gen-tie route location within Parcel Groups D and F. Impacts of Alternative 2, including the solar facility and gen-tie, to special-status species habitat (primarily limited to the native habitat parcel groups) would be qualitatively the same as described for the proposed Project, but quantitatively substantially less. Other potential direct and indirect impacts to special-status species, including construction and O&M impacts, would be the same as described above for the proposed Project. Mitigation Measures BIO-1 through BIO-15 identified for the proposed Project would also be applicable for the Reduced Footprint Alternative. Note, however, that applying Mitigation Measure BIO-6 (Compensation for Natural Habitat Impacts) would apply only to natural habitats affected on the gen-tie routes and result in far fewer acres of compensation land.

3.5.8 Gen-Tie Segment #1 Alternative Route Option

The Gen-Tie Segment #1 Alternative Route Option would slightly alter the vegetation and habitat impacts of the Project's gen-tie component, and consequently slightly alter potential site-specific impacts to plants and wildlife, including special-status species. In general, Impacts BIO-1 through BIO-6 of the Gen-Tie Segment #1 Alternative Route Option would be qualitatively the same as the proposed route, and quantitatively only slightly greater. For example, the Alternative Route Option would be slightly longer than the proposed gen-tie routes, and thus would present a slightly greater collision hazard to native birds. Other potential direct and indirect impacts to special-status species, including construction and O&M impacts, would be the same as described above for the proposed Project. Mitigation Measures BIO-1 through BIO-15 identified for the proposed Project would also be applicable for this alternative.

3.5.9 Cumulative Impacts

The geographic extent for this cumulative analysis includes the desert portion of Riverside County (Palm Springs to the Colorado River) because it consists of similar habitat areas and encompasses the home ranges of species such as those that would be directly or indirectly affected by the proposed Project. Cumulative effects for biological resources apply to both plant and wildlife species and must consider distribution, habitat availability, designated critical habitat, local rarity or commonness, and likely responses to Project effects for each species.

From a timing perspective, the Project could contribute to cumulative effects to Biological Resources starting with the initiation of on-site activities and continuing throughout the O&M phase, through final decommissioning.

As the number of solar projects and other development and land use changes increase in the region, the cumulative impacts to biological resources, such as habitat loss also increase. This analysis considers the current and foreseeable future projects identified in Tables 3.1-1 (Past or Present Projects or Programs in the Project Area) and 3.1-2 (Probable Future Projects in the Project Area). Cumulatively, those projects would total more than 30,000 acres of development, and many miles of transmission lines. This analysis presumes that Mitigation Measures BIO-1 through BIO-15, identified in the sections above to mitigate the Project's impacts to biological resources, would be implemented.

Solar Facility

Vegetation and Habitat. Construction-related impacts of the cumulative projects would temporarily increase noise and activities, dust, and other habitat disturbances throughout the region. On completion of construction, longer-term land use conversion would contribute to reduced habitat availability and increased habitat fragmentation. In the context of the number of past, present, and future projects many of which are large solar projects, the effects of the proposed Project would contribute incrementally to the cumulative significant impacts to vegetation and habitat. However, the Project's incremental contribution to the cumulative impact would not be considerable because the majority of the Project site has been disturbed by past or ongoing land uses and the loss of natural habitats that would result from the Project would be offset by protecting compensation lands off-site. Sonoran desert scrub, a widespread and common habitat type, would be offset at a 1:1 ratio, while desert dry wash woodland, a sensitive community, would be offset at a 3:1 ratio. By implementing these compensation ratios, the residual net loss of native habitat would be relatively minor, and would not make a material difference to the scope, nature or extent of the cumulative impact to vegetation and habitat.

Special-status Plants. The proposed Project could affect special status plants, identified in Section 3.5.5. No threatened or endangered plants, nor any BLM Sensitive Species, were identified on the site. There is a low possibility that it may affect one BLM Sensitive Plant, Harwood's eriastrum. A few individual Emory's crucifixion-thorn would be affected, and several additional more widespread special-status plants could be affected. The past, present, and future projects would have similar or greater impacts to special-status plants which would result in a cumulatively significant impact to regional special-status plants. The contribution of the Project would not be considerable because of the limited number of special-status plants onsite and because mitigation measures identified under Impact BIO-1 would reduce the impacts so that residual effects would be minimal. The residual net loss of special-status plants would not make a material difference to the scope, nature or extent of the cumulative impact.

Desert tortoise. Desert tortoises are scarce in the Project vicinity, and none were found during field surveys. However, recently active tortoise sign has been observed near Parcel Group F. Most of the past,

present, and foreseeable future projects in the vicinity would impact desert tortoise habitat and many of them could directly affect desert tortoises although the impacts would be relatively minor for each project, due to relatively low-quality desert tortoise habitat in the Desert Center area (north of the DWMA). Nonetheless, due to the number and size of the cumulative projects they would result in a cumulatively significant impact. Mitigation measures identified in this EIR for the proposed Project would prevent take of desert tortoise and offset impacts to its habitat. These measures would reduce the impacts so that residual effects to desert tortoise would be minimal and the incremental contribution of the proposed Project to the cumulative impacts to desert tortoise would not be considerable because no take would occur and habitat loss would be offset. The residual net loss of desert tortoise habitat would not make a material difference to the scope, nature or extent of the cumulative impact.

Mojave fringe-toed lizard. Mojave fringe-toed lizards were observed on Parcel Group G, in windblown sand that has encroached onto disturbed land. Much more extensive sand habitat, including habitat occupied by Mohave fringe-toed lizard, is available off-site to the north and east. In combination with past, present, and foreseeable future projects, notably the Palen Solar Project and other projects in the sand habitat, the Project could have a cumulatively substantial impact on Mojave fringe-toed lizard populations and habitat. Windblown sand would be limited by project fencing but would continue to move through the developed solar field and Mojave fringe-toed lizard could continue to occupy the site following construction. Mitigation measures identified under Impact BIO-1 would minimize potential Mojave fringe-toed lizard injury or mortality. Residual impacts to Mojave fringe-toed lizard would be minimal. Therefore, the incremental contribution of the proposed Project to the cumulative impacts to Mojave fringe-toed lizard would not be considerable because little or no take or habitat loss would occur. The residual net loss of previously disturbed habitat would not make a material difference to the scope, nature or extent of the cumulative impact.

Couch's spadefoot toad. Neither Couch's spadefoot toads nor naturally occurring seasonal pools were observed on the project site. There is a possibility that road mortality, or loss of potentially suitable irrigation-fed ponds, could affect Couch's spadefoot toad, if it occurs in the vicinity. In combination with past, present, and foreseeable future projects, the Project could have a cumulatively substantial impact on Couch's spadefoot toad populations and habitat. Project-related impacts to Couch's spadefoot toad, if any, are expected to be minimal and would be mitigated through measures identified under Impact BIO-1. Residual impacts to Couch's spadefoot toad would be minimal. Therefore, the incremental contribution of the proposed Project to the cumulative impacts to Couch's spadefoot toad would not be considerable because little or no take or habitat loss would occur. The residual net loss of previously disturbed habitat would not make a material difference to the scope, nature or extent of the cumulative impact.

Desert kit fox and American badger. Recently active desert kit fox burrows and active American badger sign occur on the Project site (Table 3.5-4). Both species could use native or anthropogenic habitats, wherever prey animals may be present. Both species are expected to occur on the cumulative projects and loss of the habitat and prey species could result in a significant cumulative impact. Mitigation measures identified under Impact BIO-1 would offset habitat loss for both species and prevent or minimize wildlife injury and mortality, and require pre-construction surveys to exclude both species from work sites. The incremental contribution of the proposed Project to the cumulative impacts to these species would not be considerable because no take would occur and native habitat loss would be offset. The residual net loss of habitat would not make a material difference to the scope, nature or extent of the cumulative impact.

Burro deer. The principal potential impacts to burro deer would be loss of irrigation water near Parcel Group G as a dependable water source, and loss of desert dry wash woodland habitat. Burro deer are

expected to occur on the cumulative projects and loss of the habitat and water sources could result in a significant cumulative impact. Mitigation measures identified under Impact BIO-1 would offset habitat loss and offset potential loss of the irrigation water source. The incremental contribution of the proposed Project to the cumulative impacts to burro deer would not be considerable because no take would occur, and habitat or water source loss would be offset. The residual net loss of dry wash woodland habitat would not make a material difference to the scope, nature or extent of the cumulative impact.

Native Birds, including Special-status Passerine Birds. Migratory birds are expected to occur throughout the area during construction and O&M of the Project. Land use conversion for the Project and any of the cumulative projects would result in habitat loss and degradation, displacement, decreased foraging activities, and potentially disruption or failure of nesting, increased predation, or mortality. Solar panels of the proposed Project as well as other solar PV projects may cause a “lake effect” leading to bird mortality. Collision hazards would occur due to the transmission lines and gen-tie lines associated with the solar projects and the Eagle Crest Pumped Storage Project. Taken together, the projects would result in a cumulatively significant impact for native birds.

The proposed Project’s impacts would be mitigated to the extent feasible through pre-construction surveys, avoidance of active nests, O&M phase mortality monitoring, and mitigation applied through adaptive management, depending on monitoring results, as described in Mitigation Measure BIO-12 (Bird and Bat Conservation Strategy). Additionally, the majority of the Project’s solar facilities would be built on disturbed lands, and natural habitat loss would be minimized and offset through mitigation measures identified under Impact BIO-1. Therefore, the incremental contribution of the proposed Project to the cumulative impacts to native bird habitat and nesting success would not be considerable because no take would occur, and native habitat loss would be offset. The residual net loss of native habitat would not make a material difference to the scope, nature or extent of the cumulative impact.

Regarding potential collision or lake effect mortality, Mitigation Measure BIO-12 (Bird and Bat Conservation Strategy), would require monitoring of bird kills and implementation of adaptive management. With implementation of the Project-specific mitigation measures, the contribution to cumulative impacts (if they exist) to native bird populations from the proposed solar facilities would not be considerable.

Burrowing owl. Potential impacts of the solar facility to burrowing owl include habitat loss or degradation, possible injury or mortality if they happen to be present in a work area, particularly during nesting season, and possible mortality from collision with facilities, as described above for native birds. Other projects in the cumulative scenario include several transmission lines and solar energy projects with similar habitat for burrowing owl. Effects of the other projects would be similar to potential effects of the proposed solar facility. Together these projects would result in significant impact to habitat loss and mortality to burrowing owls. The incremental contribution of the proposed Project to the cumulative impacts to burrowing owls, including habitat, construction-related mortality, or collision mortality, would not be considerable because native habitat loss would be offset, no take would occur during construction, and potential collision would be mitigated as described above for native birds. The residual net loss of habitat would not make a material difference to the scope, nature or extent of the cumulative impact.

Special-Status Raptors, including Golden eagle. No special-status raptors (except burrowing owl) are expected to nest on the solar facility site. However, the site provides suitable seasonal or year-round foraging habitat for several raptor species, described under Impact BIO-1, and is within potential foraging distance of known golden eagle nesting territories. Several raptors are likely to forage infrequently on the solar facility site at any time of year, including winter and migration seasons. Much of the Project area consists of anthropogenic land uses and previously converted desert habitat. Effects of the other projects

in the cumulative scenario would be similar to potential effects of the proposed solar facility. Cumulatively, these projects could result in significant impact due to habitat loss. The incremental contribution of the proposed solar facility to the cumulative impacts to special-status raptors, including habitat and collision mortality, would not be considerable because native habitat loss would be offset and potential collision would be mitigated as described above for native birds. The residual net loss of habitat would not make a material difference to the scope, nature or extent of the cumulative impact.

Gila Woodpecker and elf owl. Potential habitat for Gila woodpecker and elf owl is present in desert dry wash woodland and commercial palm groves on the proposed solar facility site. Based on habitat conditions and negative field surveys, there is only a low possibility that either species may nest on or adjacent to the site or may be subject to potential collision with the facilities. Potential impacts, including mortality or other direct impacts as well as habitat loss for both species would be avoided or mitigated through measures identified under Impact BIO-1. These measures are expected to effectively avoid any take of Gila woodpecker or elf owl and to offset native habitat loss. Impacts of the projects in the cumulative scenario not on agriculture lands would cumulatively result in significant loss of desert dry wash woodland habitat, potentially affecting Gila woodpecker and elf owl habitat availability. The incremental contribution of the proposed solar facility to the cumulative impacts to Gila woodpecker and elf owl, including habitat loss and collision mortality, would not be considerable because native habitat loss would be limited and would be offset. Potential collision impacts would be mitigated as described above for native birds. The residual net loss of habitat would not make a material difference to the scope, nature or extent of the cumulative impact.

Special-Status Bats. Solar facility construction could adversely impact special-status bats through the elimination of desert shrubland foraging habitat or (less likely) loss of roost sites in desert dry wash woodland habitat, palm groves, or the existing structures (homes, trailers, etc.) on the site. Removal of those features could disturb, injure, or kill bats. Mitigation measures identified under Impact BIO-1 would minimize and offset habitat loss, inspect structures and remove wildlife or allow wildlife to escape prior to demolition, and require pre-construction surveys or scheduling of tree removal outside the bat maternal roosting season. These measures are expected to effectively minimize potential impacts to special-status bats, and to offset habitat loss. Cumulative projects would also eliminate desert shrubland foraging habitat and result in the loss of roost sites, a significant cumulative impact to special-status bats. These projects would implement measures similar to those identified for the proposed Project, including offset of native habitats, avoidance of active roosts, and Bird and Bat Conservation Strategies. The incremental contribution of the proposed solar facility to the cumulative impacts to special-status bats, including habitat loss and collision mortality, would not be considerable because native habitat loss would be offset and potential collision would be mitigated as described above for native birds. The residual net loss of habitat would not make a material difference to the scope, nature or extent of the cumulative impact.

Sensitive Habitat and Jurisdictional Waters of the State. The proposed solar facility would affect desert dry wash woodland and unvegetated ephemeral dry wash, which meet criteria as jurisdictional waters of the State. Many of the cumulative projects would have similar impacts to desert dry wash woodland and unvegetated ephemeral dry wash due to the nature of the area and the large washes that cross it, resulting in a significant cumulative impact. The effects of the proposed Project would contribute incrementally to the cumulative impacts to sensitive habitat and jurisdictional waters of the State, but this incremental contribution would not be considerable because mitigation measures identified under Impact BIO-4 and BIO-5 would reduce the impacts so that residual effects would be minimal. The net loss of sensitive habitat and jurisdictional waters would not make a material difference to the scope, nature or extent of the cumulative impact.

220 kV Generation-Tie Line

The cumulative analysis for the gen-tie lines would be the same as for the solar facility because the habitat and affected species would be the same. The contribution of the gen-tie lines would be less than the solar facility because of the minor disturbance associated with the gen-tie poles.

Regarding potential collision or electrocution mortality, Mitigation Measure BIO-12 (Bird and Bat Conservation Strategy), would require monitoring of bird kills and implementation of adaptive management. Mitigation Measure BIO-14 (Gen-tie lines) would require design and construction of the gen-tie lines to avoid potential for electrocution and minimize potential for roosting on the structures or colliding with them. Future projects on public BLM lands would incorporate applicable DRECP Conservation Management Actions (CMAs), activity-specific bird and bat CMAs, bird and bat conservation strategies, and bird and bat habitat compensation. Projects not subject to the DRECP would implement any applicable mitigation measures required by Riverside County or other lead agencies. With implementation of the Project-specific mitigation measures, the contribution to cumulative impacts to native bird populations from the proposed gen-tie line would not be considerable.

3.5.10 APMs and Mitigation Measures

APM BIO-1 Wildlife Relocation. The Applicant will prepare and implement a Wildlife Relocation Plan (POD Appendix M) to ensure that special-status wildlife species, including (but not limited to) desert tortoise, burrowing owl, and desert kit fox, are safely avoided or relocated off the Project site prior to construction. The Wildlife Relocation Plan will conform to USFWS guidelines for desert tortoise surveys, avoidance, and relocation, and to CDFW guidelines for burrowing owl and desert kit fox passive relocation, including scheduling to avoid disturbance to natal dens or burrows. The Wildlife Relocation Plan will specify methodology for pre-construction clearance surveys on the proposed solar fields and gen-tie routes; monitoring or tracking special-status species, burrows, or dens that may be located during the surveys; construction of off-site artificial burrows if needed; avoidance to allow for wildlife to safely move out of harm's way, or methods for localized "out of harm's way" desert tortoise relocation; passive relocation methods for burrowing owl or desert kit fox; qualifications of field personnel who may handle desert tortoises; and follow-up monitoring of translocated animals.

MM BIO-1 Biological Monitoring. The Applicant will assign a Lead Biologist as the primary point of contact for the lead and resource agencies regarding biological resources mitigation and compliance. For desert tortoise protection measures (BIO-9, below), the Lead Biologist will serve as the Field Contact Representative (FCR). The Applicant will provide the resume of the proposed Lead Biologist to the County (as appropriate) for concurrence prior to onset of ground-disturbing activities. The Lead Biologist will have demonstrated expertise with the biological resources within the Project area. The Lead Biologist duties will vary during the construction, O&M, and decommissioning phases. In general, the duties will include, but will not be limited to those listed below:

- Regular, direct communication with representatives of Riverside County, and other agencies, as appropriate.
- Train and supervise additional Biological Monitors to ensure that all biological monitoring activities are completed properly and according to schedules. Monitoring will include inspections of any area or activity that may impact biological resources to ensure compliance with all mitigation measures for biological resources.

- Conduct or oversee Worker Environmental Awareness Program (WEAP) training (Mitigation Measure BIO-2).
- Conduct or oversee clearance surveys and monitoring duties as defined in all adopted mitigation measures.
- Halt any activities in any area if it is determined that the activity, if continued, would cause an unauthorized adverse impact to biological resources.
- Clearly mark sensitive biological resource areas during construction, O&M, and decommissioning, and inspect these areas at appropriate intervals for compliance with regulatory terms and conditions.
- Conduct or oversee bi-weekly compliance inspections during ground disturbing construction activities. Inspections will include delineating limits of disturbance, fence construction activities, pre-construction clearance surveys; and initial clearing, grubbing, and grading.
- Inspect or oversee daily inspection of active construction or O&M activity areas where animals may have become trapped. At the end of each work day, either inspect installation of structures that prevent entrapment or allow escape during periods of construction inactivity. Periodically inspect areas with high vehicle activity (e.g., parking lots) for animals in harm's way and relocate them if necessary.
- During the operations phase of the Project, conduct quarterly compliance inspections (fencing condition, trash management, wildlife mortality logs, etc.); conduct weed monitoring and control (according to the Integrated Weed Management Plan).
- Immediately notify the Applicant, County, and resource agencies (as applicable) in writing of dead or injured special-status species, or of any non-compliance with biological mitigation measures or permit conditions.
- During construction, provide weekly verbal or written updates to Riverside County, and, for any information pertinent to state or federal permits, to the BLM or resource agencies.
- During construction and O&M, prepare and submit monthly and annual compliance reports, respectively.

MM BIO-2

Worker Environmental Awareness Training. The Lead Biologist will prepare and implement a Worker Environmental Awareness Program (WEAP). The Applicant will be responsible for ensuring that all workers at the site receive WEAP training prior to beginning work on the Project and throughout construction and operations. The WEAP will be available in English and Spanish. The Applicant will submit the WEAP to Riverside County for approval prior to implementation. If the County does not respond to submittal of the draft Plan within 60 days, the Project owner may consider this a waiver of the County's authority to comment and the Plan may be considered approved. The WEAP will:

- Be developed by or in consultation with the Designated Biologist and consist of an on-site or training center presentation with supporting written material and electronic media, including photographs of protected species, available to all participants.
- Provide an explanation of the function of flagging that designates authorized work areas; specify the prohibition of soil disturbance or vehicle travel outside designated areas.

- Discuss general safety protocols such as vehicle speed limits, hazardous substance spill prevention and containment measures, and fire prevention and protection measures.
- Review mitigation and biological permit requirements.
- Explain the sensitivity of the vegetation and habitat within and adjacent to work areas, and proper identification of these resources.
- Discuss the federal and State Endangered Species Acts, Bald and Golden Eagle Protection Act, and the Migratory Bird Treaty Act and the consequences of non-compliance with these acts.
- Discuss the locations and types of sensitive biological resources on the Project site and adjacent areas and explain the reasons for protecting these resources.
- Inform participants that no snakes, other reptiles, birds, bats, or any other wildlife will be harmed or harassed.
- Place special emphasis on species that may occur on the Project site and/or genotype lines, including special-status plants, desert tortoise, Mojave fringe-toed lizard, burrowing owl, golden eagle, nesting birds, desert kit fox, American badger, and burro deer.
- Specify guidelines for avoiding rattlesnakes and reporting rattlesnake observations to ensure worker safety and avoid killing or injuring rattlesnakes. Wherever feasible, rattlesnakes should be safely removed from the work area using appropriate snake handling equipment, including a secure storage container for transport.
- Describe workers' responsibilities for avoiding the introduction of invasive weeds onto the Project site and surrounding areas, describe the Integrated Weed Management Plan.
- Provide contact information for the Lead Biologist and instructions for notification of any vehicle-wildlife collisions or dead or injured wildlife species encountered during Project-related activities;
- Include a training acknowledgment form to be signed by each worker indicating that they received training and will abide by the guidelines.

MM BIO-3 **Minimization of Vegetation and Habitat Impacts.** Prior to ground-disturbing activities, work areas (including, but not limited to, staging areas, access roads, and sites for temporary placement of construction materials and spoils) will be delineated with construction fencing (e.g., the common orange vinyl material) or staking to clearly identify the limits of work and will be verified by the Lead Biologist. No paint or permanent discoloring agents shall be applied to rocks or vegetation (to indicate surveyor construction activity limits or for any other purpose). Fencing/staking will remain in place for the duration of construction. Spoils will be stockpiled in disturbed areas. All disturbances, vehicles, and equipment will be confined to the fenced/flagged areas.

When feasible, construction activities will minimize soil and vegetation disturbance to minimize impacts to soil and root systems. Upon completion of construction activities in any given area, all unused materials, equipment, staking and flagging, and refuse shall be removed and properly disposed of, including wrapping material, cables, cords, wire, boxes, rope, broken equipment parts, twine, strapping, buckets, and metal or plastic containers. Any unused or leftover hazardous products shall be properly disposed of offsite.

Hazardous materials will be handled and spills or leaks will be promptly corrected and cleaned up according to applicable requirements. Vehicles will be properly maintained to prevent spills or leaks. Hazardous materials, including motor oil, fuel, antifreeze, hydraulic fluid, grease, will not be allowed to enter drainage channels.

MM BIO-4 Integrated Weed Management Plan. The Applicant will prepare and implement an Integrated Weed Management Plan (IWMP) to minimize or prevent invasive weeds from infesting the site or spreading into surrounding habitat. Riverside County and the BLM (for gen-tie segments on BLM lands) must approve the plan. If the County does not respond to submittal of the draft IWMP within 60 days, the Project owner may consider this a waiver of the County's authority to comment and the Plan may be considered approved. The IWMP will identify weed species occurring or potentially occurring in the Project area, means to prevent their introduction or spread (e.g., vehicle cleaning and inspections), monitoring methods to identify infestations, and timely implementation of manual or chemical (as appropriate) suppression and containment measures to control or eradicate invasive weeds. The IWMP will identify herbicides that may be used for control or eradication, and avoid herbicide use in or around any environmentally sensitive areas. The IWMP will also include a reporting schedule, to be implemented by the Lead Biologist.

MM BIO-5 Vegetation Resources Management Plan. The Applicant will prepare and implement a Vegetation Resources Management Plan, to be reviewed and approved by Riverside County. If the County does not respond to submittal of the draft Plan within 60 days, the Project owner may consider this a waiver of the County's authority to comment and the Plan may be considered approved. The goal will be to prevent further degradation of areas that may be temporarily disturbed by Project activities, but not to restore pre-disturbance habitat values (those impacts are mitigated through off-site compensation). The Vegetation Resources Management Plan will detail the methods to revegetate temporarily impacted sites; salvage cacti from the Project footprint; and long-term vegetation management within the solar facility during its operations.

- *Revegetation of temporarily impacted sites.* The Plan will specify methods to prevent or minimize further site degradation; stabilize soils; maximize the likelihood of vegetation recovery over time (for areas supporting native vegetation); and minimize soil erosion, dust generation, and weed invasions. The nature of revegetation will differ according to each site, its pre-disturbance condition, and the nature of the construction disturbance (e.g., drive and crush, vs. blading). The Plan will include: (a) soil preparation measures, including locations of recontouring, decompacting, imprinting, or other treatments; (b) details for topsoil storage, as applicable; (c) plant material collection and acquisition guidelines, including guidelines for salvaging, storing, and handling plants from the Project site, as well as obtaining replacement plants from outside the Project area (plant materials will be limited to locally occurring native species from local sources); (d) a plan drawing or schematic depicting the temporary disturbance areas (drawing of "typical" gen-tie structure sites will be appropriate); (e) time of year that the planting or seeding will occur and the methodology of the planting; (f) a description of the irrigation, if used; (g) success criteria; and (h) a monitoring program to measure the success criteria, commensurate with the Plan's goals, (i) contingency measures for failed revegetation efforts not meeting success criteria. For temporary disturbance on BLM lands, any specific BLM requirements would supersede this measure.

- *Cactus Salvage*. In conformance with BLM policy, the Applicant will include salvaged or nursery stock yuccas (all species), and cacti (excluding cholla species, genus *Cylindropuntia*), in revegetation plans and implementation affecting BLM lands. The Plan will include methods to salvage and replant cacti and yucca, species found on the site; season for salvaging the plants; methods for salvage, storage, and re-planting them; locations for re-planting; and appropriate monitoring and success criteria for the salvage work.
- *Operations Phase On-Site Vegetation Management*: The Plan will include methods and scheduling for on-site vegetation management throughout the operations phase, describing mowing or other vegetation treatments to be implemented, disposal of mown material, and incorporating all applicable components of the Integrated Weed Management Plan, including any proposed herbicide usage.

MM BIO-6 Compensation for Natural Habitat Impacts on County-administered Land. The Applicant will acquire and protect, in perpetuity, compensation habitat to offset loss of natural habitat on County-administered lands on the Project site. No compensation would be required for impacts to anthropogenic land use or recovering areas. The acreages and ratios will be based upon final calculation of impacted acreage and thus would be less for the Reduced Project Alternative than the proposed Project. Acreages will be adjusted as appropriate for other alternatives or future modifications during implementation. To the extent that Sonoran creosote bush scrub may substantially recover from drive and crush site preparation, total impact acreage will be reduced.

Compensation will be provided for impacts to the following resources, at the specified ratios (acres acquired and preserved to acres impacted):

- Desert dry wash woodland: 3:1
- Sonoran creosote bush scrub: 0.5:1

Criteria for the acquisition, initial protection and habitat improvement, and long-term maintenance and management of compensation lands will include all the following: Provide habitat value that is comparable to the habitat impacted, taking into consideration soils, vegetation, topography, human-related disturbance, invasive species, wildlife movement opportunity, proximity to other protected lands, management feasibility, and other habitat values. The primary focus area for acquiring parcels to maintain/improve connectivity will be along the I-10 corridor between Desert Center and Cactus City with a priority on parcels that connect conserved lands on either side of the I-10 through large culverts or bridges. Mitigation may be “nested” or “layered,” to the extent that it meets habitat requirements for multiple species that will or may be impacted by the Project.

The Applicant shall provide funding or bonding for the acquisition in fee title or in easement, initial habitat improvements and long-term maintenance and management of the compensation lands prior to construction activities on native habitat. Within 18 months of completing construction, the Applicant or an approved third party will prepare a Compensation Plan, identifying the proposed compensation lands, and specifying the land ownership, conservation easement terms, long-term management, and responsibility for funding or endowment. The Compensation Plan will be submitted for review and approval to Riverside County. The County will consult with CDFW or another land manager in its review of the Compensation Plan to ensure that the mitigation will support any permits and authorizations to be issued by CDFW.

MM BIO-7 **Emory's Crucifixion Thorn Mitigation.** The Applicant will mitigate impacts to Emory's crucifixion thorn (CRPR 2) through one or a combination of the following strategies.

- *Avoidance.* Project design will avoid at minimum 75 percent of the Emory's crucifixion thorn occurrences within the Project boundaries or other work areas, including the gen-tie line, as identified in the BRTR and recorded in accompanying GPS data and will provide a minimum 100-foot buffer area surrounding each avoided occurrence, where no Project activities will take place.
- *Off-site compensation.* The Applicant will provide compensation lands consisting of occupied Emory's crucifixion thorn habitat at a 1:1 ratio for any occupied habitat affected by the Project, according to the terms described in MM BIO-6 (Compensation for Natural Habitat Impacts). Occupied habitat will be calculated on the Project site and on the compensation lands as including each special status plant occurrence and a surrounding 100-foot buffer area. Off-site compensation will be incorporated into the Project's Habitat Compensation Plan, for review and approval by Riverside County. Mitigation may be "nested" or "layered," to the extent that it meets habitat requirements for multiple species that will or may be impacted by the Project.
- *Salvage.* The Applicant will consult with Rancho Santa Ana Botanic Garden (RSABG) regarding the success of salvage efforts for this species at the Desert Sunlight Solar Farm Project site. If the strategy has been shown to be feasible, then the Applicant will prepare and implement an Emory's Crucifixion Thorn Salvage and Relocation Plan, to be reviewed and approved by Riverside County prior to disturbance of any occupied Emory's crucifixion thorn habitat. Emory's crucifixion thorn on private lands may also be subject to the provisions of the California Desert Native Plants Act. The Applicant will contract with RSABG or another entity with comparable experience and qualifications, to salvage at minimum 75 percent of Emory's crucifixion thorn individuals from the proposed Project site and transfer them to a suitable off-site location.
- *Horticultural propagation and off-site introduction.* If salvage and relocation is not believed to be feasible for Emory's crucifixion thorn, then the Applicant will consult with RSABG or another qualified entity, to develop and implement an appropriate experimental propagation and relocation strategy.

MM BIO-8 **Wildlife Protection.** The Applicant shall undertake the following measures during construction and O&M to avoid or minimize impacts to wildlife. Implementation of all measures shall be subject to review and approval by Riverside County.

- *Wildlife avoidance.* Wherever feasible, Project activities will avoid interference with wildlife (include ground-dwelling species, birds, bats) by allowing animals to escape from a work site prior to disturbance; conducting pre-construction surveys and exclusion measures for certain species as specified in other measures; checking existing structures (homes, trailers, etc.) for animals such as bats, barn owls, skunks, or snakes that may be present, and safely excluding them prior to removing the structures.
- *Minimize traffic impacts.* The Applicant will specify and enforce maximum vehicle speed limits as specified in the Traffic Control Plan, to minimize risk of wildlife collisions and fugitive dust.
- *Minimize lighting impacts.* Night lighting, when in use, shall be designed, installed, and maintained to prevent side casting of light towards surrounding fish or wildlife habitat.

- *Avoid use of toxic substances.* Soil bonding and weighting agents used for dust suppression on unpaved surfaces shall be non-toxic to wildlife and plants.
- *Minimize noise and vibration impacts.* The Applicant will conform to noise requirements specified in the noise analysis of this EIR to minimize noise to offsite habitat.
- *Water.* Potable and non-potable water sources such as tanks, ponds, and pipes shall be covered or otherwise secured to prevent animals (including birds) from entering. Prevention methods may include storing water within closed tanks or covering open tanks with 2-centimeter netting. Dust abatement will use the minimum amount of water on dirt roads and construction areas to meet safety and air quality standards. Water sources (e.g., hydrants, tanks, etc.) shall be checked periodically by biological monitors to ensure they do not create puddles.
- *Trash.* All trash and food-related waste shall be contained in vehicles or covered trash containers inaccessible to ravens, coyotes, or other wildlife and removed from the site regularly.
- *Workers.* Workers shall not feed wildlife or bring pets to the Project site. Except for law enforcement personnel, no workers or visitors to the site shall bring firearms or weapons.
- *Wildlife netting or exclusion fencing.* The Applicant may install temporary or permanent netting or fencing around equipment, work areas, or Project facilities to prevent wildlife exposure to hazards such as toxic materials or vehicle strikes, or prevent birds from nesting on equipment or facilities. Bird deterrent netting will be maintained free of holes and will be deployed and secured on the equipment in a manner that, insofar as possible, prevents wildlife from becoming trapped inside the netted area or within the excess netting. The biological monitor will inspect netting (if installed) twice daily, at the beginning and close of each work day. The biological monitor will inspect exclusion fence (if installed) weekly.
- *Wildlife entrapment.* Project-related excavations shall be secured to prevent wildlife entry and entrapment. Holes and trenches shall be backfilled, securely covered, or fenced. Excavations that cannot be fully secured shall incorporate wildlife ramp or other means to allow trapped animals to escape. At the end of each work day, a biological monitor shall ensure that excavations have been secured or provided with appropriate means for wildlife escape.
- *All pipes or other construction materials or supplies* will be covered or capped in storage or laydown areas. No pipes or tubing will be left open either temporarily or permanently, except during use or installation. Any construction pipe, culvert, or other hollow materials will be inspected for wildlife before it is moved, buried, or capped.
- *Dead or injured wildlife* will be reported to CDFW or the local animal control agency, as appropriate (special-status species must be reported to CDFW). A biological monitor shall safely move the carcass out of the road or work area if needed and dispose of the animal as directed by the agency. If an animal is entrapped, a biological monitor shall free the animal if feasible, or work with construction crews to free it, in compliance with safety requirements, or work with animal control or CDFW to resolve the situation.
- *Pest control.* No anticoagulant rodenticides, such as Warfarin and related compounds (indandiones and hydroxycoumarins), may be used within the project site, on off-site project facilities and activities, or in support of any other project activities.

MM BIO-9 **Desert Tortoise Protection.** No desert tortoise may be handled or relocated without authorization from USFWS and CDFW. The Applicant may seek incidental take authorization from both agencies to handle or translocate desert tortoise. If incidental take authorization is obtained, then desert tortoises would be handled or translocated according to a Wildlife Relocation Plan, to be prepared as specified in APM BIO-1 (Wildlife Relocation), pending approval by both agencies. If incidental take authorization is not obtained, desert tortoises would not be handled or translocated.

The Applicant will employ a biologist who is qualified to conduct desert tortoise clearance surveys (qualified biologist), who will be on-site during all construction. Additionally, the Applicant will designate a Lead Biologist as the Field Contact Representative (FCR) for purposes of the desert tortoise protection measures identified below.

The qualified biologists may be the Project's Lead Biologist, a biological monitor, or another individual. The qualified biologist's qualifications will be subject to review and approval by Riverside County. Qualifications may include work as a compliance monitor on a project in desert tortoise habitat, work on desert tortoise trend plot or transect surveys, conducting surveys for desert tortoise, or other research or field work on desert tortoise. Attendance at a training course endorsed by the agencies (e.g., Desert Tortoise Council tortoise training workshop) is a supporting qualification.

The qualified biologist shall conduct pre-construction clearance surveys for each work area, watch for tortoises wandering into the construction areas, check under vehicles, and examine excavations and other potential pitfalls for entrapped animals. The qualified biologist will be responsible for overseeing compliance with desert tortoise protective measures and for coordination with the Project's Lead Biologist/FCR (described below). The qualified biologist shall have the authority to halt all Project activities that are in violation of these measures or that may result in take of a desert tortoise. The qualified biologist will not handle or relocate desert tortoises unless specifically authorized by the USFWS and CDFW. Any incident that is considered by the qualified biologist to be in non-compliance with these measures will be documented immediately by the qualified biologist.

The FCR will be responsible for overseeing compliance with desert tortoise protective measures and for coordination with resource agencies. The FCR will have the authority to halt any Project activities that may risk take of a desert tortoise or that may be inconsistent with adopted mitigation measures or permit conditions. Neither the FCR nor any other Project employee may bar or limit any communications between any Natural Resource Agency or The County of Riverside Environmental Programs Division and any Project biologist, biological monitor or contracted biologist. Upon notification by the qualified biologist or another biological monitor of any noncompliance the FCR will ensure that appropriate corrective action is taken. Corrective actions will be documented by the qualified biologist. The following incidents will require immediate cessation of any Project activities that could harm a desert tortoise: (1) location of a desert tortoise within a work area; (2) imminent threat of injury or death to a desert tortoise; (3) unauthorized handling of a desert tortoise, regardless of intent; (4) operation of construction equipment or vehicles outside a Project area cleared of desert tortoise, except on designated roads; and (5) conducting any construction activity without a biological monitor where one is required.

The Applicant will be responsible for implementing the following requirements, under direction by the qualified biologist and FCR where appropriate.

- *Preconstruction Clearance Survey.* Transects will be spaced 15 feet apart. Clearance will be considered complete after two successive 100-percent coverage surveys have been conducted without finding any desert tortoises. Clearance surveys must be conducted during the active season for desert tortoises (April through May or September through October). If a tortoise or an occupied tortoise burrow is located during clearance surveys, work activities will only proceed at the site and within a suitable buffer area after the tortoise has either moved away of its own accord, or if it has been translocated off the site under authorization by the USFWS and CDFW.
- *Worker Training:* The following specifications will be incorporated into the WEAP training, identified in Mitigation Measure BIO-2. Prior to the onset of construction activities, a desert tortoise education program will be presented by the FCR or qualified biologist to all personnel who will be present on Project work areas. Following the onset of construction, any new employee will be required to formally complete the tortoise education program prior to working on-site. At a minimum, the tortoise education program will cover the following topics:
 - A detailed description of the desert tortoise, including color photographs;
 - The distribution and general behavior of the desert tortoise;
 - Sensitivity of the species to human activities;
 - The protection the desert tortoise receives under the state and federal Endangered Species Acts, including prohibitions and penalties incurred for violation;
 - The protective measures being implemented to conserve the desert tortoise during construction activities; and
 - Procedures and a point of contact if a desert tortoise is observed on-site.
- *Construction phase tortoise exclusion fencing.* Prior to construction of solar facilities, temporary or permanent desert tortoise exclusion fencing will be installed around the work areas. The fence will adhere to USFWS design guidelines, where applicable. The qualified biologist will conduct a clearance survey before the tortoise fence is enclosed to ensure no tortoises are in the work area. Any potentially occupied burrows will be avoided until monitoring or field observations (e.g., with a motion-activated camera or fiber-optic mounted video camera) determines absence. If live tortoises or an occupied tortoise burrow are identified in the work area, tortoises shall be relocated under authorization by USFWS and CDFW or allowed to leave on their own accord before enclosing the fence. The fence shall be either continuously monitored prior to closure, or clearance surveys shall be repeated prior to closure after tortoises are removed. Once installed, exclusion fencing will be inspected at least monthly and following all rain events, and corrective action taken if needed to maintain it. Fencing around each work area will include a “cattle guard” or desert tortoise exclusion gate at each entry point. This gate will remain closed at all times, except when vehicles are entering or leaving the Project area. If it is deemed necessary to leave the gate open for extended periods of time (e.g., during high traffic periods), the gate may be left open as long as a qualified biologist is present to monitor for tortoise activity in the vicinity.
- *Unfenced work areas.* As an alternative to exclusion fencing, any work conducted in an area that is not fenced to exclude desert tortoises must be monitored by a qualified biologist who will stop work if a tortoise enters the work area. Work activities will only

proceed at the site and within a suitable buffer area after the tortoise has either moved away of its own accord, or if it has been translocated off the site under authorization by the USFWS and CDFW. Work sites with potential hazards to desert tortoise (e.g., auger holes, steep-sided depressions) that are outside of the desert tortoise exclusion fencing will be fenced by installing exclusionary fencing, or not left unfilled overnight.

- *Operation phase tortoise monitoring or exclusion.* At the Applicant's discretion, and in consultation with resource agencies, permanent desert tortoise exclusion fencing may be installed around each solar facility site, or the Applicant may prepare and implement a monitoring and avoidance program to ensure no take of desert tortoise during O&M, while allowing wildlife (possibly including desert tortoise) to move through the facilities uninjured.
- *Tortoises under vehicles.* The ground beneath vehicles parked outside of desert tortoise exclusion fencing will be inspected immediately prior to the vehicle being moved. If a tortoise is found beneath a vehicle, the vehicle will not be moved until the desert tortoise leaves of its own accord.
- *Tortoises on roads.* If a tortoise is observed on or near the road accessing a work area, vehicles will stop to allow the tortoise to move off the road on its own.
- *Tortoise Observations.* Any time a tortoise is observed within or near a work site, Project work activities will only proceed at the site and within a suitable buffer area after the tortoise has either moved away of its own accord, or if it has been translocated off the site under authorization by the USFWS and CDFW. If a tortoise is observed outside of exclusion fencing, construction will stop and the tortoise shall be allowed to move out of the area on its own. If a tortoise or tortoise burrow is observed within the exclusion fencing, construction in the vicinity will stop, pending translocation of the tortoise or other action as authorized by USFWS and CDFW.
- *Dead or Injured Specimens.* Upon locating a dead or injured tortoise, the Applicant or its agent will immediately notify the Palm Springs Fish and Wildlife Office by telephone within three days of the finding. Written notification must be made within five days of the finding, both to the appropriate USFWS field office and to the USFWS's Division of Law Enforcement. The information provided must include the date and time of the finding or incident (if known), location of the carcass or injured animal, a photograph, cause of death, if known, and other pertinent information.

MM BIO-10 Desert Kit Fox and American Badger Relocation. This measure supplements APM BIO-1 (Wildlife Relocation) by specifying further detail regarding desert kit fox and American badger avoidance and passive relocation. Under direction of the Lead Biologist, biological monitors shall conduct pre-construction surveys for desert kit fox and American badger no more than 30 days prior to initiation of construction activities. Surveys shall also consider the potential presence of dens within 100 feet of the Project boundary (including utility corridors and access roads) and shall be performed for each phase of construction. If dens are detected each den shall then be further classified as inactive, potentially active, or definitely active. Inactive dens directly impacted by construction activities shall be excavated by hand and backfilled to prevent reuse. Potentially active dens directly impacted by construction activities shall be monitored by the Biological Monitor for three consecutive nights using a tracking medium such as diatomaceous medium or fire clay and/or infrared camera stations at the entrance. If no tracks are observed in the tracking

medium or no photos of the target species are captured after three nights, the den shall be excavated and backfilled by hand. If tracks are observed, dens shall be fitted with the one-way trap doors to encourage animals to move off-site. After 48 hours post installation, the den shall be excavated by hand and collapsed. Dens shall be collapsed prior to construction of the perimeter fence, to allow animals the opportunity to move off-site without impediment. If an active natal den is detected on the site, the CDFW shall be contacted within 24 hours. The course of action would depend on the age of the pups, location of the den site, status of the perimeter fence, and the pending construction activities proposed near the den. A 500-foot no disturbance buffer shall be maintained around all active dens. Alternatively, a designated biologist authorized by CDFW shall trap and remove animals from occupied dens and move them off-site into appropriate habitat. Additionally, the following measures are required to minimize the likelihood of distemper transmission:

- Any kit fox hazing activities that include the use of animal repellents such as coyote urine must be cleared through the CDFW prior to use; and
- Any documented kit fox mortality shall be reported to the CDFW within 24 hours of identification. If a dead kit fox is observed, it shall be retained and protected from scavengers until the CDFW determines if the collection of necropsy samples is justified.

MM BIO-11 Wildlife Water Source. The Applicant will coordinate with the County, BLM, CDFW, and USFWS to offset potential Project impacts to burro deer and other wildlife resulting from loss of existing irrigation water supplies at Parcel Group G. In coordination with the agencies, the Applicant will support replacement, repairs, maintenance, or monitoring of existing wildlife water sources in the Project vicinity; support access improvements to existing sources; support removal of invasive tamarisk (or saltcedar) from natural water sources (to improve surface flow); or provide an alternative water source as a replacement or supplement to existing sources.

MM BIO-12 Bird and Bat Conservation Strategy (BBCS). The Applicant will prepare and implement a Bird and Bat Conservation Strategy to avoid or minimize take of migratory birds that may nest on the site or may be vulnerable to collision with Project components. The BBCS will identify potential hazards to birds during construction and O&M phases of the Project and specify measures to recognize, minimize, or avoid those hazards. The BBCS will articulate the Applicant's commitment to reduce risk to birds and bats. Over the course of construction and O&M, progress and challenges that are encountered may necessitate review or revision of the BBCS, on mutual agreement among the Applicant and County. The initial goals of the BBCS are to:

- Provide an organized and cost-effective framework for compliance with State and federal laws protecting birds
- Specify record keeping, reporting, and communication procedures to document compliance with the terms of the BBCS
- Foster a sense of stewardship with the Applicant and on-site staff

Construction. Pre-construction surveys for active nests will be conducted by one or more qualified biologists at the direction of the Project Lead Biologist. The biologists' qualifications will be subject to review and approval by Riverside County. Nest surveys will be conducted for all Project activities throughout the nesting season, identified here as beginning January 1 for raptors and hummingbirds and February 1 for other species, and

continuing through August 15. Nest surveys will be completed at each work site no more than 7 days prior to initiation of site preparation or construction activities. Nest surveys will cover all work sites, including the solar facility and gen-tie, and adjacent off-site habitat areas of 1,200 feet for raptors and 250 feet for other species. If adjacent properties are not accessible to the field biologists, the off-site nest surveys may be conducted with binoculars.

At each active nest, the qualified biologist will establish and mark a buffer area surrounding the nest where construction activities that could disrupt nesting behavior will be excluded. The BBCS may identify species-specific buffer distances or variable distances, depending on activity levels (e.g., driving past the nest to access work sites may be less disruptive than foundation construction). Alternately, buffer distances will be 1,200 feet for raptor nests and 250 feet for other species. The extent of nest protection will be based on proposed construction activities, species, human activities already underway when the nest is initiated (e.g., a house finch nest built in the eaves of an occupied structure would warrant less avoidance or protection than a loggerhead shrike nest build in native shrubland), topography, vegetation cover, and other factors. The avoidance and protection measures will remain in effect until the nest is no longer active.

If for any reason a bird nest must be removed during the nesting season, the Applicant or its agent will notify the CDFW and USFWS and retain written documentation of the correspondence. Nests would be removed only if they are inactive, or if an active nest presents a hazard.

Operation and Maintenance. The BBCS will specify monitoring and conservation measures to be implemented by the Applicant to document bird mortality that may result from bird injury or mortality caused by collision with Project components, including gen-tie line collisions. The BBCS will include:

- A statement of the Applicant's understanding of the importance of bird and bat safety and management's commitment to remain in compliance with relevant laws
- Documentation of conservation measures to be implemented through design and operations to minimize bird and bat fatalities at the solar facilities and gen-tie line
- Consistent, practical and up-to-date direction to O&M staff on how to avoid, reduce, and monitor bird and bat fatalities
- A 3-year O&M monitoring and reporting program for potential bird and bat fatalities
- Identification of fatality thresholds that, if surpassed, would trigger adaptive management measures such as changes to Project O&M
- An adaptive management framework to be applied if thresholds are surpassed

MM BIO-13 **Burrowing Owl Avoidance and Relocation:** This measure supplements APM BIO-1 (Wildlife Relocation) by specifying further detail regarding burrowing owl. Burrowing owl protection and relocation will incorporate the following requirements:

- Pre-construction surveys for burrowing owls, possible burrows, and sign of owls (e.g., pellets, feathers, white wash) will be conducted throughout each work area no more than 14 days prior to construction.

- Should any of the pre-construction surveys identify burrowing owl or active burrows within the solar facility, the Lead Biologist will coordinate with the Construction Contractor to implement avoidance and set-back distances. Disturbance of owls or occupied burrows during the breeding season (February 1 through August 31) will not be permitted.
- Any unoccupied suitable burrows within the solar facility footprint will be excavated and filled in under the supervision of the Lead Biologist prior to site preparation.
- The Plan will specify detailed methods for passive relocation of burrowing owls if needed and monitoring and management of the passive relocation including a three-year monitoring program.

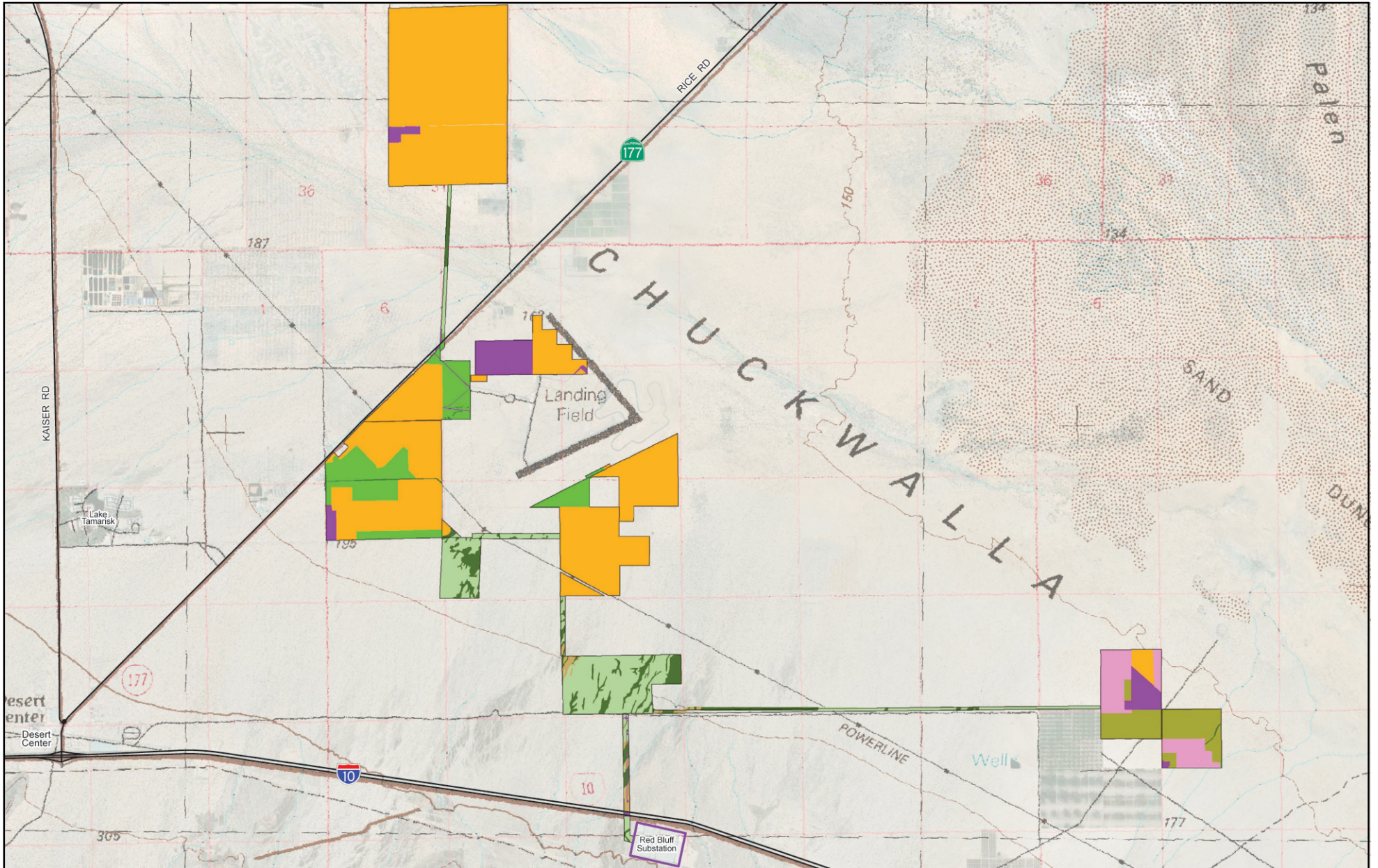
MM BIO-14 Gen-tie lines. Gen-tie line support structures and other facility structures shall be designed in compliance with current standards and practices to discourage their use by raptors for perching or nesting (e.g., by use of anti-perching devices). This design would also reduce the potential for increased predation of special-status species, such as the desert tortoise. Mechanisms to visually warn birds (permanent markers or bird flight diverters) shall be placed on gen-tie lines at regular intervals to prevent birds from colliding with the lines (APLIC, 2006). To the extent practicable, the use of guy wires shall be avoided because they pose a collision hazard for birds and bats. Necessary guy wires shall be clearly marked with bird flight diverters to reduce the probability of collision. Shield wires shall be marked with devices that have been scientifically tested and found to significantly reduce the potential for bird collisions. Gen-tie lines shall maintain sufficient distance between all conductors and grounded components to prevent potential for electrocution of the largest birds that may occur in the area (e.g., golden eagle and turkey vulture). They shall utilize non-specular conductors and non-reflective coatings on insulators.

MM BIO-15 Streambed and Watershed Protection. Prior to ground-disturbing activities in jurisdictional waters of the state, the Applicant will obtain a Streambed Alteration Agreement from the CDFW and applicable authorization (if any) from the Regional Water Quality Control Board. The Applicant will implement Best Management Practices (BMPs) identified below to minimize adverse impacts to streambeds and watersheds.

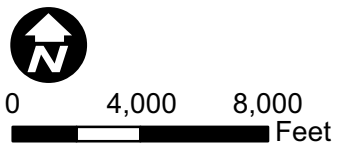
- Vehicles and equipment will not be operated in ponded or flowing water except as specified by resource agencies.
- The Applicant will minimize road building, construction activities, and vegetation clearing within ephemeral drainages to the extent feasible.
- The Applicant will prevent water containing mud, silt, or other pollutants from grading or other activities from entering ephemeral drainages or being placed in locations that may be subjected to high storm flows.
- Spoil sites will not be located within 30 feet from the boundaries of drainages or in locations that may be subjected to high storm flows, where spoils might be washed back into drainages.
- Raw cement/concrete or washings thereof, asphalt, paint or other coating material, oil or other petroleum products, or any other substances that could be hazardous to vegetation or wildlife resources, resulting from Project-related activities, will be prevented from contaminating the soil and/or entering ephemeral drainages. The Applicant shall

ensure that safety precautions specified by this measure, as well as all other safety requirements of other measures and permit conditions are followed during all phases of the Project.

- When operations are completed, any excess materials or debris will be removed from the work area. No rubbish will be deposited within 150 feet of the high-water mark of any drainage during construction, operation, and decommissioning the Project.
- No equipment maintenance will occur within 150 feet of any category 3, 4, or 5 streambed or any streambed greater than 10 feet wide and no petroleum products or other pollutants from the equipment will be allowed to enter these areas or enter any off-site state-jurisdictional waters under any flow.
- With the exception of the drainage control system installed for the Project, the installation of bridges, culverts, or other structures will be such that water flow (velocity and low flow channel width) is not impaired. Bottoms of temporary culverts will be placed at or below stream channel grade.
- No broken concrete, debris, soil, silt, sand, bark, slash, sawdust, rubbish, or other organic or earthen material from any construction or associated activity of whatever nature will be allowed to enter into, or be placed where it may be washed by rainfall or runoff into, off-site state-jurisdictional waters.
- Stationary equipment such as motors, pumps, generators, and welders located within or adjacent to a drainage will be positioned over drip pans. Stationary heavy equipment will have suitable containment to handle a catastrophic spill/leak. Clean up equipment such as brooms, absorbent pads, and skimmers will be on site prior to the start of construction.
- The cleanup of all spills will begin immediately. Riverside County will be notified immediately by the Applicant of any spills and will be consulted regarding clean-up procedures.



Source: Ironwood Consulting, 2018.



 Red Bluff Substation

Native Vegetation

-  Creosote Bush Scrub
-  Desert Dry Wash Woodland
-  Desert Pavement
-  Recovering Creosote Bush Scrub
-  Recovering Salt Bush Scrub

Non-Native Vegetation


-  Active Agriculture
-  Developed/Disturbed
-  Fallow Agriculture

Figure 3.5-1

Vegetation Communities

3.6 Cultural Resources and Tribal Cultural Resources

This section provides information on existing cultural resources and tribal cultural resources in and surrounding the IP Athos Renewable Energy Project (Athos or Project) area and alternatives. The California Environmental Quality Act (CEQA) requires that the effects of discretionary projects on cultural and tribal cultural resources be considered in the planning process. This section evaluates the proposed Project's potential impacts to these resources.

Cultural resources can reflect the history, diversity, and culture of the region, as well as the people who created them. Cultural resources are unique in that they are often the only remaining evidence of human activity that occurred in the past. Cultural resources can be natural or built, purposeful or accidental, physical or intangible. They encompass archaeological, traditional, and built environment resources, including but not necessarily limited to buildings, structures, objects, districts, and sites. Cultural resources include locations of important events, traditional cultural places, sacred sites, and places associated with important people. Many cultural resources are present in the region surrounding the proposed Project area, located both on the ground surface and buried beneath the ground surface, which could be affected by development without adequate protections in place.

Tribal cultural resources (TCR) are a newly defined class of resources under state law; they are described in more detail in Section 3.6.2 Regulatory Framework under State regulations. TCRs include sites, features, places, cultural landscapes, and sacred places or objects that have cultural value or significance to a Tribe. To qualify as a TCR, the resource must either: (1) be listed on, or be eligible for listing on, the California Register of Historical Resources or other local historic register; or (2) constitute a resource that the lead agency, at its discretion and supported by substantial evidence, determines should be treated as a TCR (PRC § 21074(a)(2)). Native American tribes that are traditionally and culturally affiliated with a geographic area can provide lead agencies with expert knowledge of TCRs.

The following discussion is based on the cultural resources technical report prepared for this project: *Phase I Cultural Resource Inventory and Evaluation for the Athos Renewable Energy Project, Riverside County, California* (Dyste et al., 2018).

3.6.1 Environmental Setting

Natural Setting

The natural setting is considered by most archaeologists as a key element that “sets the stage” for human development. Fundamentally, the natural setting determines the types of food and material resources available to prehistoric populations that inhabited the vicinity of the Project area.

The Project area is located in the Colorado Desert, which is situated within the southern Basin and Range geomorphic province. The Colorado Desert's terrain consists of a series of broad, shallow southeast-trending valleys that drain into the Colorado River. Several playas, or closed basin sinks, exist on the valley floor. North-south trending weathered mountain ranges, rarely exceeding 4,000 feet in elevation, surround the valleys.

The climate of the Colorado Desert is generally hot and dry, with minimal rainfall. Average daily temperatures typically range from 66 degrees Fahrenheit (°F) in winter to 105°F in summer, although summer temperatures can be upward of 120°F. Annual rainfall totals within the Colorado Desert are among the lowest in the Sonoran Desert, averaging less than 2 inches per year in the Salton Trough and between 2 and 4 inches near the Colorado River.

The Project is in the Chuckwalla Valley. Mountains that surround the valley include the Palen and Coxcomb ranges to the north, the Eagle Mountains to the west, and the Chuckwalla Mountains to the south. Four dry lakes or playas present within the Chuckwalla Valley basin include Palen Lake, Ford Lake, Hayfield Lake, and an unnamed playa between the McCoy Range and Mule Mountain. Holocene-age alluvium consisting of silt, sand, and gravel covers most of the ground surface in the project vicinity, although active dune sands also may be present at the surface. Materials for ground stone tools, such as gneiss, schist, and granitic rocks from bedrock in the mountains, would have been abundant within many areas of the alluvial piedmont and available for ground stone tool manufacture or heat retention in hearth features. Surface water sources are minimal in the Chuckwalla Valley, limited to seasonal and perennial sources. Perennial water comes from Corn Springs in the Chuckwalla Mountains south of the Project area. Springs, including Corn Springs, are usually at the bases of the nearby mountains. Monsoon activity turns dry washes into raging torrents that cut through the Valley and drain into Palen Dry Lake.

The primary plant community in the Colorado Desert is the creosote scrub community, which is dominated by creosote bush and white bursage. Other plant communities include the cactus scrub community, which includes barrel cactus, calico cactus, and ocotillo, and the saltbrush series. Common animals include desert cottontail, jackrabbit, kangaroo rat, packrat, chuckwalla iguana, desert tortoise, and desert quail.

Paleoclimate

During the time that humans have lived in California, the Colorado Desert has undergone several climatic shifts, which have influenced human use of the vicinity of the Project site.

The Pleistocene (1.8 million to 10,000 years ago), and the Holocene (10,000 years ago to the present) environmental record from the Mojave Desert provides a model for the Colorado Desert. The environmental record from the Mojave Desert indicates that the climate of the Late Pleistocene and Holocene was characterized by periods of warm, dry conditions interspersed with periods of cooler, wetter climate. During the wetter periods of the Holocene some of the basins in the Mojave Desert and Colorado Desert regions became shallow lakes, with extensive marshy shorelines. Being sources of food, water, and materials, these lakes would have attracted Native Americans use and settlement. Palen Dry Lake is one example.

Prehistoric Setting

The Project area's location suggests multiple groups were present in the region at various times because it is near the boundary of the Colorado and Mojave deserts and it is located along a known prehistoric and historic travel corridor. Groups in the region originated from portions of the Mojave Desert, the interior Colorado Desert, and the Colorado River as well as more distant locations, such as the peninsular ranges or the Southwest. Therefore, the area's archeological record also may reflect affinities with any of these regions. Consequently, the prehistoric context herein draws on current knowledge from both the Mojave and Colorado desert regions.

Paleoindian Period (~12,000 to 8,000 B.P.)

This first period of human occupation in California is commonly referred to as the Paleoindian Period (~12,000 to 8,000 years Before Present [B.P.]). Evidence of a permanent Paleoindian occupation in the Colorado Desert is scant. Isolated Paleoindian projectile points (large fluted points) have been recovered on the surface at several locations, including Pinto Basin, Ocotillo Wells, Cuyamaca Pass, and the Yuha Desert. However, few Paleoindian archaeological sites have been identified in the Colorado Desert. The dearth of evidence may be due to a lack of large-scale data recovery efforts in the region, or Paleoindian

sites in the region may be of a more ephemeral nature due to ecological instability and highly mobile populations. For instance, during this period Ford Dry Lake, located east of the Project area, appears to have contained only temporary playa lakes and not perennial pluvial lakes, which would have allowed for more permanent settlement near a stable resource base.

Archaic Period (8,000 to 1,500 B.P.)

During the Archaic period (8,000 to 1,500 B.P.), climates were generally warmer and drier. Populations grew and prehistoric economies became more diversified, shifting away from large game hunting. New technologies, such as the milling stone, indicate an increasing dependence on plant resources. Archaic period projectile points include Gypsum, Elko, and Humboldt series.

Late Prehistoric Period (1,500 B.P. to Historic Period)

By the Late Prehistoric period (1,500 B.P. to the historic period), an extensive network of established trade routes wound their way through the desert. Several major trails crossed the Mojave and Colorado Deserts before and at the time of Spanish contact and continued to be used not only by the native peoples but by Euro-American explorers as well. The Yuma-Needles Trail ran from south of Yuma up the western side of the Colorado River to the Needles area. The Mojave Trail ran from Needles west across the desert to the coast. The Coco-Maricopa Trail, an important prehistoric transportation corridor from the Colorado River to the Pacific Coast, ran from Arizona through the Salton Sink and then northwest to meet the Mojave Trail near San Bernardino, passing south of the Project area. The complex network of prehistoric trails consisted of major travel routes and special activity areas, interconnected with smaller trails. Broken ceramic vessels, lithic debitage, and small rock features or shrines are often found along trails. It is also believed that these trade routes encouraged or were the motivating factors for the development of an “increasingly complex socioeconomic and sociopolitical organization” within Protohistoric peoples in the Southern California area.

Artifacts typical of the Late Prehistoric period include Desert Side-notched and Cottonwood projectile points, brownware and buffware ceramics, and steatite shaft straighteners. Ceramics appear to have been introduced in the Salton Basin by about 1,000 B.P. Imported goods from the California coast, such as shell beads, are also found and testify to the importance of trade during this period. Late Prehistoric sites are often associated with trails, pictographs, petroglyphs, bedrock milling surfaces, and rock shelters. During this period, a shift took place along the Colorado River from hunting and gathering to floodplain horticulture. A large number of Late Prehistoric sites have been found on the shoreline of ancient Lake Cahuilla.

Numerous geoglyphs exist in the lower Colorado River area, the most well-known of which are the Blythe Intaglios, large anthropomorphic (human-shaped) and zoomorphic (animal-shaped) figures located along the Colorado River north of the town of Blythe, California. Although there is a notable absence of reliable chronological indicators such as time-sensitive artifacts or charcoal-bearing features associated with the Blythe geoglyphs, they are generally estimated to be about 1,000 years in age.

Ethnohistoric Setting

There is archaeological evidence that ancestors of the Yuman-speaking groups have been in the Study Area for some time. However, these were not the only people who would have used this area. Ethnographic information indicates that several other Native American groups, such as the Cahuilla and Chemehuevi, at least traversed the Study Area.

Native use of the Chuckwalla Valley area in the eighteenth and early nineteenth centuries was conditioned by its location in a frontier or boundary zone between the Halchidoma to the east and the Takic groups — the Cahuilla and Serrano — to the west. The Halchidoma were linked to the desert division of the Cahuilla and the mountain division of the Serrano by ties of political friendship and long-distance exchange. Thus, the Chuckwalla Valley area formed a geographical link between these groups and formed a major travel corridor for communication between them. In addition to this east-west travel, the Chuckwalla Valley also provided a corridor for north-south travel between the territories of two Colorado River groups who were enemies of the Halchidoma, the Mojave and the Quechan. Traveling parties from either one of these two groups going up or down the Colorado River had to veer away westward from the Palo Verde Valley to avoid the Halchidoma. This often took them through the Chuckwalla Valley region.

Ethnohistorical and ethnographic sources for the Chuckwalla Valley area have been limited by the fact that the area was not regularly visited by nonnative people until the 1860s. This was due in part to the fact that water and feed management on the eastern California deserts posed a severe challenge to successful horse or mule travel to the Colorado River and Arizona by nonnative people. In addition, the boundaries and areas of settlement of native groups in the region have changed over time. Thus, ethnohistoric information and archaeological data may outline quite different patterns of occupation and territoriality. Nevertheless, it can be said with confidence that most groups living in the vicinity of the Athos Project when the Spanish first made forays into the area spoke languages in the Yuman family of the Hokan language stock. These include the Halchidoma and Mojave, and the Quechan. Surrounding groups are Uto-Aztecanspeakers; the Chemehuevi speak a language of the Numic branch, and the Cahuilla are Takic-speakers. The final desiccation of Lake Cahuilla is thought to have caused major disruptions in the population in the Colorado Desert, perhaps contributing to the persistent warfare reported along the lower Colorado and Gila rivers.

Native American groups having historical tribal territories falling within the Project vicinity include the Quechan, Mojave, Halchidoma, Chemehuevi, Desert Cahuilla, and Serrano.

Quechan

Quechan is a variation on the names Kwichyan or Kuchiana but this group is also commonly known as the Yuma; today they refer to themselves as Kw'tsan. The Quechan are among the Yuman-speaking tribes who occupied the lower Colorado River where it forms the boundary between California and Arizona. Prior to contact, the Quechan populations may have reached 4,000.

Quechan subsistence was based on a combination of horticulture, fishing, and gathering. Plants such as maize, melons, teparies, corn, black-eyed beans, and pumpkins were cultivated in the rich silt of the Colorado River floodplain. During wet winter and spring months, Quechan groups occupied seasonal villages located above the river floodplain. In the summer and fall, small kin groups would relocate along the river to plant crops. Diets were supplemented with fish taken from the river. Several villages were located along the Colorado River, including *Avi Kwotapai* located on the west side of the Colorado River between Blythe and Palo Verde Valley and *Xenu mala vax* on the east side of the river near present-day Ehrenberg.

For the Quechan, like other lower Colorado River groups, individual dreaming to seek guidance in life and spiritually based power was a principal aspect of religious belief and practice. This included learning sacred songs about events that occurred at the time of the creation of the world through dreaming. Singing these songs was, and remains, a principal avenue of religious expression. The dreaming experience meant that sacred places could be visited, and the sacred landscape traversed, through dreaming rather than through conventional travel, although physical travel along trails to sacred places was also an important aspect of the religious experience. Travel on key Native American trails continues to be a cultural practice today to

commemorate and experience traditional culture. The geography of sacred places related to the sacred song cycles of Yuman groups is a major cultural feature of the lower Colorado River region. In the early 20th century, Alfred Kroeber collected large quantities of information on places mentioned in Mojave song cycles, from as far afield as the Pacific Ocean, the Tehachapi Mountains, the Gulf of California, Tucson, and southern Nevada.

The Quechan Tribe is a federally recognized tribe with its governmental office in Yuma, Arizona. The U.S. government established the Fort Yuma-Quechan Reservation on the California side of the Colorado River in 1884, although Euro-American settlers appropriated much of the land. Reservation lands were further broken up by allotment to individual Quechan members in 1912. The tribe ratified a constitution and elected a seven-person tribal council in 1936. In 1978, the tribe had 25,000 acres of land restored to them. Today, the Quechan Tribe's reservation spans the Arizona-California border at the Colorado River near the confluence with the Gila River and encompasses 45,000 acres. Approximately 2,475 members are currently enrolled in the Quechan Tribe.

Mojave

The Yuman-speaking Mojave Indians, or Aha Makav, were among the earliest residents in the Mojave Desert. They moved from the area approximately 500 years ago to the Colorado River where they were documented by Father Francisco Garcés, a Spanish explorer, in 1776. Another Spanish explorer, Juan de Onate, may have observed this group as early as 1604 based on his descriptions of the "Mojave" people along the Colorado River. The Mojave are notable for their understanding of themselves as a unified "nation" of people, known as the Hamakhava, rather than as a series of loosely related clans or villages. The whole of the Mojave acted together in defending their territory and attacking their enemies.

During much of the year, the Mojave lived in villages on terraces above the Colorado River, only moving down onto the floodplain in the spring to plant crops after the seasonal floods. Like other lower Colorado River peoples, the Mojave relied on floodplain horticulture, fishing, and gathering for subsistence. Planted crops included maize, black-eyed beans (cowpeas), squash, pumpkin, and several local grasses. Cultivated plants were supplemented by the collection of wild plant foods including honey mesquite and mesquite screwbean, which could be stored for long periods of time and were traditional staple foods. Although the pods of both plants could be eaten green, they were usually pounded into flour using long stone or wooded pestles. Additionally, screwbean pods were often processed in large pits dug into sandy soil where the pods were placed, covered with vegetation, and then periodically watered to leach out bitter compounds.

The bulk of the traditional Mojave diet was vegetarian but hunting and fishing were nonetheless important components of the seasonal subsistence cycle. Mojave hunters considered spring the best time to hunt, when they could lie in wait next to springs where the young grass would attract deer. Rabbits and other small game were also targeted, although they were more often taken in traps, snares, and communal drives. When the high waters of the Colorado River receded in July and August, the Mojave turned to fishing and caught a variety of Colorado River fish species by driving them into shallow sloughs or trapping them in seines.

The Mojave are well known for their long-distance travel. Like other Colorado River tribes, they participated in a trade network extending east to the Pueblos of Arizona and west to the Pacific coast. A number of important passes and routes of travel, including the well-known Mohave trail connecting the high deserts with the southern California coastal valleys, were developed or frequented by the Mojave. The endurance and speed of Mojave travelers were legendary at the time of European contact. During the Colonial era, the Spanish frequently encountered groups of traveling Mojave who continued the tradition

of desert–coastal travel and trade throughout the mission period, occasionally in conflict with the wishes of Spanish officials.

The general Yuman belief in the importance of dreaming, and the fundamental interrelationship between the mundane and spiritual worlds, was particularly developed among the Mojave. All people were capable of meaningful dreaming, and most individuals came to their chosen roles in life as a result of their dreams. In dreams, the Mojave travel in a mythical place and time when the world was first formed and the important places, such as mountains and springs, came into being. Dreams also inform public rituals, and the many complicated “song series” that singers perform from memory are said to be dreamed as much as learned. The songs of the Mojave are remarkably specific geographically, noting “the exact spot at which each character journeyed or slept or stood or looked about.” Thus, Mojave songs seem to act as a means of storing and transferring important landscape knowledge; they are, among other things, a collection of meaningfully constituted mental maps of the Mojave territory and beyond. Many nearby groups, including the Chemehuevi, borrowed extensively from the Mojave song series repertoire.

Today, descendants of the Mojave belong to the following federally recognized tribes: Colorado River Indian Tribe (CRIT), Fort Mojave Indian Tribe, and the Fort Yuma Quechan Indian Nation (Quechan Tribe). CRIT was established in 1865. The CRIT Reservation today includes almost 300,000 acres of land in both California and Arizona and is centered on the Colorado River. This reservation includes business interests focusing on agriculture, a casino, outdoor recreation, and light industry. The CRIT Reservation has about 3,500 Mojave, Chemehuevi, Hopi, and Navajo members. Although the four combined groups are united within the CRIT Reservation and act as a single geopolitical unit, each Tribe continues to maintain and observe its individual traditions, distinct religion, and unique cultural character. The Fort Mojave Indian Reservation was founded in 1870. It currently has over 1,100 members and is located along the Colorado River and covers nearly 42,000 acres in Arizona, California, and Nevada.

Halchidoma

The Halchidoma (also known as the Panya) are a Yuman-speaking people who, until about 1825, lived along the Colorado River between the present-day cities of Blythe and Needles. According to the oral history of the Halchidoma, they travelled south to Mexico where they lived adjacent to a Yaqui settlement until around 1838 when most died of an epidemic. At that point the remaining Halchidoma moved north-east and eventually settled down with the Maricopa tribe, another Yuman-speaking group living along the Gila River.

The Halchidoma were known to travel and trade over great distances. The Coco-Maricopa Trail, leading west from a portage point across the Colorado River adjacent to the City of Blythe, linked the Halchidoma with the Pacific coast. Ceramic seriation and radiocarbon dates from marine shell artifacts indicate that an extensive trade network between the Pacific coast and the lower Colorado River region was established by at least 1100 B.P. The Halchidoma traded with the Cahuilla, Hualapai, Papago, and Pima of Arizona, and were closely allied with the Maricopa.

By all accounts, the Halchidoma were frequently in conflict with their Colorado River neighbors, the Quechan and Mojave. During the decades, if not centuries, of open hostility, the Halchidoma established strong alliances with the Yuman-speaking Maricopa and Cocopa peoples who lived to the east, along the Gila River. Ultimately, the Halchidoma went to live with and intermarried with their allies the Maricopa, and are, therefore, poorly documented in the ethnographic literature. Contrary to some understandings, the Halchidoma are still extant and reside on the Salt River Pima Reservation.

Chemehuevi

The Chemehuevi are the southernmost of 16 groups of Southern Paiute peoples, and the only non-Yuman speakers living along the lower Colorado River at the time of European contact. The traditional territory of the Chemehuevi was an extensive area southwest of Las Vegas, including portions of the eastern Mojave Desert of California. The Chemehuevi lived along the Lower Colorado River, although only within the last few hundred years. Their traditional territory was the largest of any tribe in California speaking the same dialect. They occupied a huge portion of the eastern Mojave Desert, ranging from the Old Woman Mountains in eastern San Bernardino County, west to some undefined point in the middle of the Mojave Desert where Serrano territory began, and as far south as the Riverside/Imperial County line. The Spanish missionary explorer Francisco Garcés in 1775–1776, suggests that the northern Chuckwalla Valley was in the territory of the Chemehuevi.

The Chemehuevi living in the deserts practiced a relatively nomadic hunting/gathering way of life, with larger settlements near reliable water sources, but no permanent villages. Groups moved with the rhythm of the seasons, arriving to harvest plant foods as they matured and hunting primarily small game. Hunting parties also traveled to the San Bernardino Mountains and visited with their allies the Northern Serrano, or Vayume. Owing to the impermanence of most desert encampments, housing was typically of brush erected to protect inhabitants from the harsh sun and wind. Several foods, including dried meats, dried melon and squash, agave hearts, and various seeds, were stored in specially prepared baskets, earth pits, and caves. Chemehuevi groups did not live permanently with their food caches, though, and the stealing of cached food was apparently a grave issue, one that could incite war and inflict spiritual harm.

Until their expansion into the lower Colorado River region, the Chemehuevi did not use pottery, but relied instead on a variety of woven baskets and implements, often with painted designs. Chemehuevi hunters were known for their recurved, sinew-backed bows, which, though shorter than comparable Mojave bows, were nonetheless accurate, powerful, and well-suited to hunting deer and other big game. Those groups that settled along the Colorado River adopted agriculture, more substantial wooden dwellings, pottery, and a number of other cultural features from their riverine neighbors. They are known to have constructed hand-dug wells.

Despite an underlying friction, the Chemehuevi were traditional allies of the Mojave, and after the Halchidoma were driven from the Colorado River area in the early nineteenth century, the Chemehuevi moved into the Parker/Blythe area vacated by the Halchidoma. Some Chemehuevi families moved to the Mara Oasis, near what now is the city of Twenty-nine Palms. Some scholars suggest that the Chemehuevi may have settled in the Palo Verde Valley vicinity before the expulsion of the Halchidoma. According to Mojave tradition the Chemehuevi were invited to come to the Colorado River after 1830. Chemehuevi sources, though, suggest that the Chemehuevi Valley and Cottonwood Island along the Colorado River were part of the Chemehuevi traditional territory prior to the 1800s. This continues to be a point of disagreement between scholars and between the descendants of the historical Mojave and Chemehuevi.

In the Protohistoric and Historical periods, the Chemehuevi traveled extensively through the deserts and as far west as the Pacific coast “just to look around,” and to exchange goods and obtain marine shell ornaments and raw materials. Periodically, small groups of Chemehuevi and Las Vegas Southern Paiute would travel together to the Hopi villages in Arizona, although those trips were described as purely social visits involving gift exchanges, not trading expeditions.

In 1853 the Chemehuevi lost their traditional lands to the United States Government. The Chemehuevi Valley Reservation was established in 1907. However, Tribal members were soon relocated to the Parker, Arizona, area and their status as a federally recognized Tribe was taken away. In 1935, the United States

Congress authorized as much acquisition of the reservation land as necessary for the Parker Dam Project, which resulted in the inundation of nearly 8,000 acres of reservation land. The Tribe was again recognized by the federal government as the Chemehuevi Tribe in 1970. Today, the Chemehuevi Indian reservation comprises approximately 32,000 acres of trust land, including 30 miles of Colorado River frontage.

Chemehuevi descendants reside on the Colorado River Indian Tribes (CRIT) Reservation and the Twentynine Palms Band of Mission Indians Reservation, as well as on several other reservations. In 1890, 160 acres were set aside for a reservation for the Chemehuevi near Twentynine Palms. In 1910, 640 acres adjacent to the existing Cabazon reservation in Coachella, was given jointly to the Cahuilla and the Chemehuevi, and those who remained on the Twentynine Palms reservation were encouraged to move there. Some went, some stayed, and others chose to settle elsewhere in California.

Desert Cahuilla

The Cahuilla language, divided into Desert, Pass, and Mountain dialects, has been assigned to the Cupan subfamily of the Takic branch of the Uto-Aztecan linguistic family. Territory traditionally claimed by the Cahuilla stretches from the summit of the San Bernardino Mountains in the north to Borrego Springs and the Chocolate Mountains in the south, a portion of the Colorado Desert west of Orocopia Mountain to the east, and the San Jacinto Plain near Riverside and the eastern slopes of Palomar Mountain to the west.

Cahuilla villages usually were located in canyons or on alluvial fans near water and food patches. The area immediately around a village was owned in common by a lineage. Other lands were divided into tracts owned by clans, families, and individuals. Numerous sacred sites with rock art were associated with each village. Villages were connected by trail networks used for hunting, trading, and social visiting. Trading was a prevalent economic activity. Some Cahuilla were trading specialists. The Cahuilla went as far west as the Channel Islands and east to the Gila River to trade.

The Cahuilla had access to an immense variety of plant resources present within a diverse suite of habitats. Several hundred plant species were used for food, manufacture, and medicine. Acorns, mesquite and screw beans, pinyon nuts, and cactus fruits were the most important plant foods. They were supplemented by a host of seeds, tubers, roots, bulbs, fruits and berries, and greens. Corn, beans, squash, and melons were cultivated. Over 200 species of plants were used as medicines. Hunting and meat processing were done by men. Game included deer, mountain sheep, pronghorn, rabbits, rodents, and birds. These were pursued by individuals and communal hunting groups. Blinds, pits, bows and arrows, throwing sticks, nets, snares, and traps were used to procure game. Communal hunts with fire drives sometimes occurred.

Mortars and pestles, manos and metates, pottery, and baskets were used to process and prepare plant and animal foods. Cahuilla material culture included a variety of decorated and plain baskets; painted/incised pottery; bows, arrows, and other hunting-related equipment; clothing, sandals, and blankets; ceremonial and ritual costumes and regalia; and cordage, rope, and mats. Games and music were important social and ritual activities for the Cahuilla.

Structures varied in size from brush structures to dome-shaped or rectangular houses that were 15–20 feet long and ceremonial houses. The chief's house usually was the largest. Used for many social, ceremonial, and religious functions, it was located near a good water source. It generally was next to the ceremonial house, which was used for rituals, curing, and recreational activities. Other structures included a communal men's sweathouse and granaries.

The Cahuilla had named clans, composed of between 3 and 10 lineages, with distinct dialects, common genitors, and a founding lineage. Each lineage owned particular lands, stories, songs, and anecdotes. Each lineage occupied a village and controlled specific resource areas. Clan territory was jointly owned by all

clan members. Territory ownership was established by marked boundaries (rock art, geographic features), and oral tradition. Most of a clan's territory was open to all Cahuilla. Kinship rules determined rights to assets and responsibilities within a lineage. Each lineage cooperated in defense, large-scale subsistence activities, and ritual performance. The founding lineage within a clan often owned the office of ceremonial leader, the ceremonial house, and sacred bundle. Artifacts and equipment used in rituals and subsistence was owned by individuals and could be sold or loaned.

The office of lineage leader usually passed from father to eldest son. He was responsible for correct performance of rituals, care of the sacred bundle, and maintenance of the ceremonial house. The lineage leader also determined when and where people could gather and hunt, administered first-fruits rites, and stored food and goods. He knew boundaries and ownership rights, resolving conflict with binding decisions. The lineage leader met with other lineage leaders concerning various issues. He was assisted in his duties by a hereditary official responsible for arranging details for performance of rituals. Other functionaries included song leaders/ceremonialists, assisted by singers and dancers.

Ritual and ceremony were a constant factor in Cahuilla society. Some ceremonies were scheduled and routine, while others were sporadic and situational. The most important ceremonies were the annual mourning ceremony, the eagle ceremony, rites of passage (especially those associated with birth, naming, puberty, and marriage), status changes of adults, and rituals directed towards subsistence resources. The main focus was upon performance of cosmologically oriented song cycles, which placed the Cahuilla universe in perspective, reaffirming the relationship(s) of the Cahuilla to the sacred past, present, to one another, and to all things.

Today there are nine Southern California reservations that are acknowledged homes to bands of Cahuilla. The Cahuilla bands include: Agua Caliente Band of Cahuilla Indians of the Agua Caliente Indian Reservation; Augustine Band of Cahuilla Indians; Cabazon Band of Mission Indians; Cahuilla Band of Mission Indians of the Cahuilla Reservation; Los Coyotes Band of Cahuilla and Cupeno Indians of the Los Coyotes Reservation; Morongo Band of Cahuilla Mission Indians of the Morongo Reservation; Ramona Band of Cahuilla Mission Indians; Santa Rosa Band of Cahuilla Indians; and Torres-Martinez Desert Cahuilla Indians. A tenth group, the Mission Creek Tribe, is currently not a federally recognized tribe.

Serrano

The Serrano were primarily a mountain-dwelling tribe. Traditional Serrano territory stretched east from Cajon Pass in the San Bernardino Mountains, north to Victorville, east to the area around Twenty-nine Palms, and south to Yucaipa Valley. According to the Serrano statement of tribal boundaries, ancestral territory extends north, east, and south of Joshua Tree National Park, including the Chuckwalla Valley portion of the desert.

The Serrano were linked to the desert-dwelling Cahuilla through political friendship and long-distance exchange networks that may have crossed near or through the Chuckwalla Valley. The Chuckwalla Valley region was a major corridor for east–west travel between Cahuilla and Serrano territory to the west and the Halchidoma homeland to the east. Bean and Mason's account of the attempts of Romero to reconnoiter this route provide an indication of how actively it was used during the 1820s. In Garcés' time, in the 1770s, exchange between the coast and the Halchidoma would have involved the easterly movement of shell beads, and probably a westerly movement of textile items. By the 1820s, however, the movement of saddle stock to the Colorado River had also become important. In addition, there may have been a movement of child captives on the part of the Maricopa and the Halchidoma along this trail, the destination being the Los Angeles region. Garcés' 1776 account also indicates the importance of north–

south travel by Mojave, Quechan, and Chemehuevi along trails on the west side of the Colorado away from the river.

Aspects of the Serrano world view are similar to that of the Southern Paiute, Chemehuevi, and Mojave. Formed over the course of hundreds of years, if not longer, these people came to know the Mojave Desert in ways that many today cannot fully understand. They named the animals, plants, mountains, water, literally everything. For these people, the Mojave Desert was not just a place to find subsistence and shelter, it was literally their world, and hence they could be considered the first stewards of the Mojave Desert, where relationships and deep connections with their environment were formed during creation. The basic tenants of Serrano epistemology help forge the relationship they have with their environment. To Southern Paiute, Chemehuevi, Mojave, Serrano, and other Native American groups, the universe is alive and everything is interconnected. Traditional beliefs among the Serrano, Mojave, and other Yuman groups emphasize the ability of spiritually powerful dreamers to return to creation times through dreams. This idea of traveling back to creation times is associated with songs recounting the journeys of the supernatural beings. These song cycles, as they have been called by some, comprise many individual songs that recount the journeys of supernatural beings across the Mojave Desert and greater Southwestern landscapes.

Today, descendants of the Serrano belong to the following federally recognized tribes: Morongo Band of Mission Indians and the San Manuel Band of Mission Indians.

Historic Setting

In California, the Historic Era is generally divided into three periods: the Spanish or Mission Period (1769 to 1821), the Mexican or Rancho Period (1821 to 1848), and the American Period (1848 to present). Although Europeans did pass through the Project area during the Mission and Mexican Periods, all of the resources identified in the Project area are associated with the American Period. As such the following discussion emphasizes the American Period. The history of the area relates to themes involving the development of the West and the Colorado Desert, mining and homesteading activities, military desert training, and agribusiness in the late twentieth century.

Regional Development

In the early 1800s, prospectors were some of the only Euro-Americans traveling in the California deserts, and they frequently came into conflict with Native American groups. In the 1820s, limited placer mining began in the eastern Colorado Desert. Regionally, mining and prospecting activities were most intense in the mountains and high deserts of the Mojave, but small-scale mining has been a consistent feature of the Colorado Desert from the 1800s to the present day.

After the Treaty of Guadalupe-Hidalgo in 1848, the United States took control of the Southwest and established a series of camps and forts throughout the Arizona, Nevada, and California deserts. The U.S. Cavalry was used to protect settlers and immigrants from the often-hostile tribes whose territories they were invading. Following the discovery of gold at Sutter's Mill the same year, mining camps were established in the desert beginning with Salt Creek in the Armargosa Desert. In the 1850s, some would-be miners tried their luck in the eastern Colorado Desert but found very little gold. Most miners simply passed through the desert on their way to the larger strikes to the west and north.

As part of an effort to establish a railroad route from St. Louis to the Pacific Ocean, the U.S. government conducted a series of surveys from 1853 to 1855 to identify feasible routes. Lieutenant Amiel Weeks Whipple, a topographical engineer in the U.S. Army, was assigned the task of determining the westernmost section of the route from Arkansas to Los Angeles. Whipple passed through Mojave territory

in 1854, crossing the Colorado River near present-day Needles. The railroad surveys recorded the terrain and geology of the Colorado Desert. The land that includes the Study Area was included in the survey in 1853.

Along the eastern bank of the Colorado River, the town of La Paz, Arizona, developed when gold was discovered nearby. The subsequent gold rush made La Paz an instant boomtown whose population peaked at 1,500 in the 1860s. By 1863, between “2,500 and 3,000 Americans and Mexicans were on the river between Palo Verde Valley and El Dorado Canyon,” most of them engaged in mining. Along the stage line between San Bernardino and the Colorado River, La Paz was an important stop, serving as the county seat for Yuma County until 1870. The La Paz mining district yielded placer gold for only a short period, and by the end of the nineteenth century, La Paz passed from boomtown to ghost town.

Significant economic development of the Colorado Desert region began in the 1870s and came to fruition in the early part of the twentieth century. Development was dependent largely on two things: water and transportation. Development of transportation came in 1872 with the construction of the Southern Pacific Railroad from Los Angeles to present-day Indio and, eventually, Yuma. The early townsite of Indio, the mid-point between Los Angeles and Yuma, was created to provide living quarters for train crews and railroad workers. A nearby Native American reservation provided some of the labor force for its construction. The first trains ran on May 29, 1876. The Southern Pacific Railroad reached Yuma on September 30, 1877. Railroad stops were built at Walters (now called Mecca), Woodspur (Coachella), and Thermal, among others. The second transcontinental railroad was completed when the Southern Pacific and the Atchison, Topeka, and Santa Fe Railroads were linked at Deming in New Mexico Territory on March 8, 1881, providing settlers relatively quick and easy access to the region.

The railroad was the single most important boost to mining in the southeastern Colorado Desert, offering convenient transportation of heavy mining equipment, supplies, personnel, and bullion. By 1880, the Southern Pacific Railroad was providing regional access to gold and silver ore deposits in the Chocolate Mountains, Cargo Muchachos, and Palo Verde Mountains. When mines opened up near the turn of the twentieth century, stamp mills and small tracks leading from the mines to the stamp mills were built. Mining productivity in the southeastern Colorado Desert was greatest between 1890 and 1910, with a brief resurgence in the 1930s.

A further boost to regional development in the Colorado Desert was the rail rate war of 1887, when fares from Missouri River to California were slashed to \$1. Advertising programs were developed to attract settlers to the West. With the railroad to transport crops and the consistently warm climate, areas in the desert were attractive places for prospective farmers of the time. Besides settlers, others were attracted to sanitariums that took advantage of the warm climate and desert hot springs at Palm Springs for health reasons.

Transportation

William D. Bradshaw blazed the first road through what is now Riverside County in 1862 as an overland stage route beginning at San Bernardino, California, and ending at La Paz (now Ehrenberg), Arizona. Early in the 1860s, Hank Brown and John Frink independently developed routes to access the gold mines in the vicinity of La Paz. Frink’s route was an east–west road established as an alternative to the more southern Butterfield Stage route. This was apparently the first Anglo development across the Palo Verde Mesa, although it has since all but disappeared. Bradshaw’s route, later known eponymously as the Bradshaw Trail, crossed the desert to the La Paz mining district. Bradshaw also operated a ferry across the Colorado River near Providence Point, opposite a small community that would become Ehrenberg, Arizona.

Bradshaw developed his road partly along Brown's and Frink's previous routes, although Bradshaw's trail headed more directly east from Salt Creek Pass to the north slopes of the Chocolate Mountains. Bradshaw, like the majority of early trailblazers, used Native American routes that predated Spanish exploration. Part of Bradshaw's trail may have been the Coco-Maricopa Trail, which intersected the Colorado River near Blythe and may have passed south of the Project. The Bradshaw Trail is near Corn Spring. The Bradshaw Trail, like many other cross-country routes, became largely obsolete with the arrival of rail service in the desert and the depletion of the La Paz gold fields in the late 1870s. The railroads reoriented the development of trails and wagon roads that connected new mining communities to major routes of transportation. Railroad stops became destinations for wagon roads, allowing points of access for development of the remote desert interior. Bradshaw's trail has been largely obliterated and is now a 65-mile-long graded road that traverses mostly public land south of the Chuckwalla Mountains.

The early highway system in the United States developed out of a patchwork of trails that later became unimproved roads and eventually were connected into an integrated system of paved routes. Often, early roads in the United States followed prehistoric trails. One of the earliest transportation corridors through the Chuckwalla Valley included U.S. Routes 60 and 70, currently known as Chuckwalla Valley Road. As late as 1926, portions of Chuckwalla Valley Road were still unpaved.

Topographic maps of the Study Area indicate that at least one other unpaved road traversed the Chuckwalla Valley. The U.S. Army map of Hopkins Well (1943) and U.S. Geological Survey (USGS) Chuckwalla Mountains 15-minute quadrangle (1944) show a road that generally traverses the Study Area from the northwest to the southeast. Although the road is unnamed, it follows a parallel alignment to Chuckwalla Valley Road to the south, just like the road on the Hopkins Well and Chuckwalla Mountains maps.

Today, I-10 is the major transportation corridor through the Chuckwalla Valley. The highway is the major connector between Los Angeles and Phoenix. The road was completed in 1968 and has become a major east-west corridor for travelers and commercial traffic.

Mining

Riverside County was known historically for its sporadic, small-scale mining of gold, silver, lead, copper, uranium, fluorite, and manganese. Large numbers of prospectors were attracted to the region during the gold boom in La Paz (in western Arizona, 6 miles north of present Ehrenberg) in 1862. Not long after, miners and prospectors began combing the mountains on either side of the Chuckwalla Valley. Gold was being mined as early as 1865 in the Eagle Mountain District. Much later, in the late 1940s, Kaiser Steel began a large-scale iron ore mining operation in the Eagle Mountains. In the 1950s, the Blythe-Eagle transmission line was constructed. It was a 161 kV transmission line that connected a substation in Blythe to a substation near Eagle Mountain for the purpose of providing power to the mine and the community of mine workers.

In the Granite Mountains to the north-northwest, there was a short stint of gold mining beginning in 1894, followed by resurgence in the late 1920s by the Chuckwalla Mining and Milling Corporation. Copper mining occurred in the Palen Mountains to the northwest during the 1910s, by the Fluor Spar Group, Homestake Group, Crescent Copper Group, Orphan Boy, and Ophir mines. Most of these mines were abandoned only a few years later.

The short-lived Pacific Mining District in the Chuckwalla Mountains was established in 1887, following gold and silver discoveries that caused the most substantial rush to Riverside County in its history. Sixty claims were filed by the end of the year, but the boom fizzled by 1890 because the owners never had enough capital to work them properly. About 1898, some 40 claims in the area were taken up by the Red

Cloud Mining Company. In 1901, a force of 50 men worked there. The company installed a new hoist and a 30-ton mill and was raising money through stock offerings to construct a tram from the mine to the mill. The company changed hands some time before 1915, however, and soon folded. Just prior to this, six prospectors began working the Chuckwalla Placer Diggings near Chuckwalla Springs. This lasted about 15 years. The Red Cloud Mine was resurrected in 1931, when a small amalgamation plant was built and continued operations until 1945.

With the onset of World War II (WWII), the demand for steel increased. However, the iron ore in the Eagle Mountain claims was protected as part of the Joshua Tree National Monument, established in 1936. Henry J. Kaiser had a steel mill at Fontana and the Vulcan iron mine near Kelso that supplied materials for his west coast shipyards. Kaiser purchased the Eagle Mountain mine and succeeded in having the boundaries of Joshua Tree Monument shifted to exclude Eagle Mountain. Kaiser constructed a rail line that connected to the Southern Pacific Railroad, and ore mining commenced in 1948. By 1971, the Eagle Mountain Mine produced 90 percent of California's iron.

At its height, the mine employed more than 4,000 people, making it the largest employer in Riverside County. The town of Eagle Mountain included schools, fire and police departments, 416 rental houses, 185 trailers, 383 dormitories, and 32 apartments. Kaiser Steel needed to provide medical care for the residents of Eagle Mountain, and medical care provided by the company eventually became what is today Kaiser Permanente. The mine closed in 1983 because of economic factors and competition from abroad.

Water Conveyance

The Colorado River Aqueduct (CRA) is a water conveyance system operated by the Metropolitan Water District of Southern California. Construction began in 1933 and water first flowed through the system in 1941. The CRA system carries Colorado River water, impounded at Lake Havasu on the California-Arizona border, through, over, and across mountains and desert to the coastal and inland valleys of Southern California. The CRA stretches 242 miles from Parker Dam to Lake Mathews (formerly known as Cajalco Reservoir). Water from Lake Mathews was then distributed to local water districts in the Los Angeles basin and lower Santa Ana River drainage. The system is composed of two reservoirs, five pumping plants, 63 miles of canals, 92 miles of tunnels, 84 miles of buried conduit and siphons, and a filtration plant at La Verne, California. The nearest of these pump stations to the Study Area is the Eagle Mountain Pump Lift, located 7 miles north of Desert Center.

The Project involved ingenious engineering solutions and newly introduced equipment at the time of its construction. It also employed over 35,000 people during an 8-year span of construction, and as many as 10,000 people at one time, making it Southern California's single largest work opportunity during the Great Depression. Prior to beginning construction, little to no infrastructure was present in the desert. Roadways, power lines, telephones, and water sources had to be built to accommodate the work effort required. Due to its many engineering merits, the CRA has been named a National Historic Civil Engineering Landmark by the American Society of Civil Engineers. Today, it is one of the principal water supply systems for Southern California.

Construction of the transmission lines to power the system began in 1934 with the grading of dirt roads to provide access to the tower locations. The line is constructed of single H-frame steel towers with cross supports. Erection of the towers began in February 1936 and the line from Hoover Dam to Iron Mountain Pump Lift was completed by the end of 1936. Construction of the line from Iron Mountain Pump Lift to Hayfield Pump Lift was completed in July 1937.

Military Training Activities

Evidence of military training is present across the Colorado Desert. George Patton's Desert Training Center/California-Arizona Maneuvers Area (DTC/C-AMA) and Operation Desert Strike have left many artifacts, features, and sites across the region. The DTC/C-AMA was established in the 1940s to prepare U.S. troops for possible deployment to North Africa. The Project Area overlaps with where this training took place.

Desert Training Center/California-Arizona Maneuver Area

In 1942, during WWII, General George S. Patton Jr. established the Desert Training Center/California-Arizona Maneuver Area (DTC/C-AMA) in a sparsely populated region of southeastern California, Arizona, and Nevada. Its purpose was to prepare tank, infantry, and air units for the harsh conditions of North Africa, practicing maneuvers, developing tactics, and field-testing equipment. The installation was in operation for 2 years and covered 16,000 square miles. It was the first simulated theater of operations in the United States. Its location was chosen for its unforgiving desert heat, rugged terrain, available telephone communications system, and accessibility by established railroads and highways.

Recent renewable energy projects in the region have identified many DTC/C-AMA-related sites, artifacts and features. These resources were understood to be pieces of a larger historic district which represents an important piece of the military history of the nation. The DTC/C-AMA was the largest training facility and the only one of its kind in American military history, eventually encompassing more than 18,000 square miles. The tactical, strategic, and logistical doctrines developed and refined during the facility's life were applied overseas and undoubtedly helped to win World War II.

DTC/C-AMA resource types include maneuver areas, divisional camps, small unit training areas, air facilities and crash sites, bivouacs, campsites, ranges, supply depots and railroad sidings, and hospitals and medical centers. Based on the close proximity of Desert Center, sites within the Project Area could be related to most of these property types. The following is a summary of properties known to be present in the vicinity of Desert Center.

Maneuver Areas: The Chuckwalla Valley. The greater Chuckwalla Valley was considered a maneuver area, consisting of 11,520 acres, and was considered "contaminated" immediately after the war. Units moved across this valley in many of the maneuvers, and bivouacs and defensive positions were established in many locations. The valley, with its many washes and arroyos surrounded by rugged mountains, made for an apt place for training for war in North Africa. These washes, referred to as wadis overseas, were often places of tactical importance as they allowed for the concealment of a variety of types of units. They could also serve as an impediment to rapid movement. Several passes adjacent to this valley also served as good training grounds for movement, attack, and defense.

Desert Center Airport. The Desert Center Army Airfield was first known as the Desert Center Airdrome and was operational beginning sometime in the winter of 1942–1943. The airfield was a sub-base of Thermal Army Airfield, as a support base for the Air Technical Services Command. The airport contained two paved runways, each measuring 5,000 by 150 feet, along with taxiways and a parking apron. More than 40 buildings were constructed at the airfield, including an operations building, power house, control tower, pump house and well, and a 10,000-gallon water tower. Other buildings included officer's quarters, mess hall, dispensary, headquarters, recreation hall, link trainer building, hangar, and various supply buildings. Several crash sites are known to exist in the DTC/C-AMA, particularly in those areas close to air facilities.

Air-to-ground ranges are also considered a part of air facilities. For the most part, air-to-ground gunnery practice focused on the toe of mountains. Bombs and .50-caliber shell casings from these activities have

been found in the years following the Army's departure from the area. There were likely range markers established on these facilities, along with targets for the aircraft to fire upon.

Desert Center Observer's Camp. A camp was established immediately north of the small town of Desert Center, along the road to Camps Coxcomb and Iron Mountain. It was here that the maneuvers were evaluated and deficiencies pointed out. The camp contained 112 tents, 5 shower buildings, and 8 latrines. The camp was also supplied with water through a well and pump along with a 4,000-gallon storage tank. The land is located along the north side of I-10 between Chiriaco Summit and Desert Center as well as immediately to the east of Eagle Mountain Road.

18th Ordnance Battalion Campsite. Located 5 miles east of Desert Center, this camp appears to encompass a watering point. The only structures reported included a capped well, a 50,000 gallon water tank, and a wooden tower. Tent stakes and other refuse have been found in an area that relate to this camp.

Small Arms Range – Desert Center. A small arms range was established southeast of the town of Desert Center on the north end of the Chuckwalla Mountains. Neither the type of weapons used here nor the units that used it are known. In addition to established ranges, troops also developed their own more informal ranges while out on field exercises. In these cases, officers chose a suitable place with appropriate safety precautions (particularly natural features that formed a backstop) and established a firing position for their troops to use live ammunition.

Desert Center Supply Depot. A quartermaster truck site was established near the small community of Desert Center. A rock alignment for the 496th Medium Ordnance Company remains northeast of the town. The rock alignment spells out "496 MEDCO." An ammunition depot was established northeast of Desert Center, although its location has not been examined or confirmed.

Desert Center Evacuation Hospital. An evacuation hospital was established near the town of Desert Center on both sides of the road to Eagle Mountain. The hospital site remains in good condition today and retains its basic design and layout. Many rock-lined walkways, roads, symbols, tent sites, and other activity areas remain in place. Artifacts are dispersed across the site as well as in dumps. Artifacts remaining include cans, bottles, bandage spools, glass, wood, and miscellaneous metal. In addition, a motor pool for the hospital site remains. Rock alignments, military vehicle parts, and a solvent basin mark this location today.

Desert Strike

One brief military training exercise, known as Desert Strike, took place in the desert maneuver area in May 1964. Amidst the nuclear arms race, the U.S. Strike Command conducted the joint Army and Air Force field training exercise for the major combat organizations and their support units in employing tactical nuclear and conventional weapons. Army and Air Force troop units were trained in passive and active tactics as well as concepts and procedures for joint operations.

The exercise was a two-sided enactment, with fictitious world powers "Calonia" and "Nezona" sharing a common border at the Colorado River. The premise of the conflict between these two entities, each led by a Joint Task Force, was a dispute over water rights. Major tactical operations during the exercise included deep armor thrusts, defensive operations along natural barriers, counterattacks including airmobile and airborne assaults, and the simulated use of nuclear weapons. The Air Force provided fighter, air defense, interdiction, counterair reconnaissance, and troop carrier operations in support of both joint task forces. This training maneuver took place on more than 13 million acres of public and private lands in the California, Nevada and Arizona deserts at a cost of 54 million dollars, or 540 dollars per man.

The curator of Patton's Museum has stated that the types of activities carried out during Desert Strike complicate the identification of earlier DTC/C-AMA sites because the Army often utilized surplus WWII munitions and rations in their subsequent training maneuvers. The tracks left by larger, heavier tanks of later years are one of the best avenues to distinguish between early- and later-period resources, as are rations and munitions with later date stamps.

Agriculture/Ranching

Agriculture became an important industry, second only to mining, by the late 1850s. Homesteading formed the foundation for California's agricultural economy in the nineteenth century, and the official passage of the Homestead Act in 1862 opened vast areas of the public domain to private citizens. The Desert Land Act of 1877 also promoted the acquisition of open tracts of land, with an entitlement to 640 acres for each applicant, who were primarily speculators. Generally, lands that fell under this act were marginal for sustained agriculture. Transforming arid land into productive farming and grazing lands was a key factor in development. Although agriculture became an important industry in the Palo Verde Valley near Blythe and the Colorado River, significant agricultural development did not take place near the Study Area until the late twentieth century.

Land claims continued into the twentieth century, with numerous Desert Land Entries in the Project vicinity dating to 1909 and 1910. However, most twentieth-century claims on residual federal lands were poorly suited for agriculture. Several claims were abandoned or rejected. Many Desert Land Entries were never improved or established due to inadequate water and harsh conditions. Lands available for homesteading also became increasingly marginal over time, requiring ever-larger tracts to achieve success. Large-scale farming came to dominate the regional marketplace.

The federal government and the State of California decided to invest in the cultivation of the jojoba plant as an alternative to sperm whale oil. A tax-break was given to private growers, and speculators began buying up acreage in the deserts of California, including the Chuckwalla Valley. In the late 1970s and early 1980s, farmers purchased land in Chuckwalla Valley and began commercially growing jojoba. Hundreds of farms were established in the 1980s by private farmers hoping to make a large profit. The Desert Center area was specifically promoted as an ideal location for jojoba farms. Land in the area increased in value from \$300 per acre before jojoba to \$2,500 in 1980, after jojoba farms were being established. However, the boom was short lived because the jojoba plant grows slowly and it takes years for plants to produce oil. Many jojoba farms were converted to other crops, including asparagus. Currently there is only one active jojoba farm in the Chuckwalla Valley, La Ronna Jojoba Company.

Community Development – Desert Center

There are few communities in the Chuckwalla Valley. Desert Center is the closest community, approximately 4 miles west of the Study Area. The largest nearby city is Blythe, which is located 35 miles east. Other smaller communities include Hell and Eagle Mountain; neither is currently occupied.

Desert Center was founded in 1921 by Stephen Ragsdale, who opened a small gas station and diner with his wife Lydia. It is situated along a segment of former U.S. Highway 60/70 (Ragsdale Road) near the intersection of Rice Road (SR 177) and north of I-10. The town's core buildings, including the Desert Center Café, automobile garage/service station, and cabins on the south side of Ragsdale Road as well as the post office and market on the north side are on lots that were originally carved out of a larger 40-acre parcel acquired by Ragsdale through a land patent from the State of California approved December 22, 1926.

They pumped gasoline from a 55-gallon drum and served food to weary travelers. Ragsdale was successful in establishing the town along Route 60. It was moved 5 miles to the north to its current location along

the freeway following construction of I-10. The community of Desert Center experienced a resurgence associated with the DTC/C-AMA and the establishment of Camp Desert Center and Airfield. The town, however, once again became a small quiet roadside attraction after the DTC/C-AMA was closed at the end of WWII. The airfield is now privately owned.

Today Desert Center is in disrepair, although it still serves as a stopping point along I-10.

3.6.2 Regulatory Framework

Numerous laws and regulations require state and local agencies to consider the effects a project may have on cultural resources and tribal cultural resources. These laws and regulations stipulate a process for compliance, define the responsibilities of the various agencies proposing the action, and prescribe the relationship among other involved agencies.

Federal

Because portions of the Project are located on BLM land and requires an amendment to the existing land use permit, the Project is a federal undertaking that requires compliance with the National Environmental Policy Act (NEPA) and Section 106 of the National Historic Preservation Act (NHPA). Section 106 requires that federal agencies take into account the effect of their actions on properties that may be eligible for or listed in the National Register of Historic Places.

State

There are numerous state regulations and policies that direct management of cultural resources on state lands and by state agencies. The following is a discussion of the most pertinent laws affecting the Project and impact analysis from a state perspective. These laws identify four types of resources: historical resources, unique archaeological resources, human remains and tribal cultural resources.

Historical Resources

Under CEQA, cultural resources listed in, or determined to be eligible for listing in, the CRHR or a local register meet the CEQA definition of “historical resources” and must be given consideration in the CEQA process. For this Draft EIR, effects on historical resources may be considered impacts of the Project. Under the California Code of Regulations, Title 14, Chapter 11.5, properties listed on or formally determined to be eligible for listing in the NRHP are automatically eligible for listing in the CRHR. A resource is generally considered to be historically significant under CEQA if it meets the criteria for listing in the CRHR. These criteria are essentially the same as the eligibility criteria for the NRHP. In addition to being at least 50 years old, a resource must meet at least one (and may meet more than one) of the following four criteria:

- *Criterion 1, is associated with events that have made a significant contribution to the broad patterns of our history;*
- *Criterion 2, is associated with the lives of persons significant in our past;*
- *Criterion 3, embodies the distinctive characteristics of a type, period, or method of construction, or represents the work of a master, or possesses high artistic values; or*
- *Criterion 4, has yielded, or may be likely to yield, information important to history or prehistory.*

In addition, historical resources must also possess integrity of location, design, setting, materials, workmanship, feeling, and association.

Unique Archaeological Resources

Additionally, CEQA states that it is the responsibility of the lead agency to determine whether the project will have a significant effect on “unique” archaeological resources. An archaeological artifact, object, or site can meet CEQA’s definition of a unique archaeological resource even if it does not qualify as a historical resource (PRC 21083.2[g]; 14 CCR 15064.5[c][3]). An archaeological artifact, object, or site is considered a unique archaeological resource if “it can be clearly demonstrated that, without merely adding to the current body of knowledge, there is a high probability that it meets any of the following criteria (PRC 21083.2[g]):

- Contains information needed to answer important scientific research questions and there is a demonstrable public interest in that information.
- Has a special and particular quality such as being the oldest of its type or the best available example of its type.
- Is directly associated with a scientifically recognized important prehistoric or historic event or person.”
- If it can be demonstrated that a project will cause damage to a unique archaeological resource, the lead agency may require that reasonable efforts be taken to preserve these resources in place or provide mitigation measures.

Human Remains

Public Resources Code (PRC), Section 5097.98(b) and (e) requires 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 Native American Heritage Commission-identified Most Likely Descendants (MLD) to consider treatment options. In the absence of MLDs or of a treatment acceptable to all parties, the landowner is required to re-inter the remains elsewhere on the property in a location not subject to further disturbance. Section 5097.99 establishes as a felony the acquisition, possession, sale, or dissection with malice or wantonness Native American remains or funerary artifacts. Finally, Section 5097.991 establishes as state policy the repatriation of Native American remains and funerary artifacts.

Health and Safety Code (HSC), Section 7050 makes it a misdemeanor to mutilate, disinter, wantonly disturb, or willfully remove human remains found outside a cemetery and further requires a project owner to halt construction if human remains are discovered and to contact the county coroner.

Tribal Cultural Resources

PRC Sections 21073, 21074, 21080.3, 21082.3, 21083.09, 21084.2, and 5097.94 (Assembly Bill AB 52 2014). The Public Resources Code section 21074 defines a TCR as “a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe.” TCRs also include “non-unique archaeological resources” that may not be scientifically significant, but still hold sacred or cultural value to a consulting tribe.

CEQA requires that impacts to TCRs be identified and, if impacts will be significant, that mitigation measures be implemented to reduce those impacts to the extent feasible (PRC § 21081). In the protection and management of the cultural environment, both the statute and the CEQA Guidelines (14 California Code of Regulations Section 15000 et seq.) provide definitions and standards for management of TCRs.

A resource shall be considered significant if it is: (1) listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in PCR § 5020.1(k) (discussed

in detail above); or (2) a resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in of PCR § 5024.1(c). In applying these criteria, the lead agency must consider the significance of the resource to a California Native American tribe.

A project may have substantial adverse change in the significance of a TCR if:

- The adverse change is identified through consultation with any California Native American tribe that requests consultation and is traditionally and culturally affiliated with the geographic area of a proposed project (PCR § 21084.2).
- The resource is listed, or eligible for listing, in the California Register of Historical Resources or in a local register of historical resources, and it is demolished as described in detail above (State CEQA Guidelines section 15064.5 (b)).

The fact that a TCR is not listed in, or determined to be ineligible for listing in, the CRHR, is not included in a local register of historical resources or is not identified in a historical resources survey does not preclude a lead agency from determining that the resource may be a historical resource.

Local

Riverside County General Plan

The following policies outlined in the Riverside County General Plan (2015) address cultural resources:

- **Policy OS 19.1** Cultural resources (both prehistoric and historic) are a valued part of the history of the County of Riverside.
- **Policy OS 19.2** The County of Riverside shall establish a Cultural Resources Program in consultation with Tribes and the professional cultural resources consulting community that, at a minimum would address each of the following: application of the Cultural Resources Program to projects subject to environmental review; government-to-government consultation; application processing requirements; information database(s); confidentiality of site locations; content and review of technical studies; professional consultant qualifications and requirements; site monitoring; examples of preservation and mitigation techniques and methods; curation and the descendant community consultation requirements of local, state and federal law. (AI 144)
- **Policy OS 19.3** Review proposed development for the possibility of cultural resources and for compliance with the cultural resources program.
- **Policy OS 19.4** To the extent feasible, designate as open space and allocate resources and/or tax credits to prioritize the protection of cultural resources preserved in place or left in an undisturbed state. (AI 145)
- **Policy OS 19.5** Exercise sensitivity and respect for human remains from both prehistoric and historic time periods and comply with all applicable laws concerning such remains.

3.6.3 Methodology for Analysis

The cultural resources Project area, where resources may be subject to direct effects, for the CEQA analysis is defined as an area totaling 3,533 acres, including the footprint of the solar facility and the new 220 kV gen-tie line. Outside the solar facility boundaries, the cultural resources Project area on private and state-owned land consists of a corridor 50 feet on either side the gen-tie centerline. On BLM land the Project area consists of a corridor 150 feet on either side the gen-tie centerline which expands to 450 feet

at any bends to accommodate tensioning and pulling sites. For new access roads or road improvements the cultural resources Project area is a corridor 50 feet on either side of the road center line. In contrast, the CEQA cultural resources Study Area refers to the Project area plus a 1-mile area surrounding the Project area where resources may be subject to indirect effects. The Study Area was used during the records search at the Eastern Information Center (EIC) of the California Historical Resources Information System (CHRIS).

Various sources were consulted as part of the background research associated with the Project. Cultural Resources staff synthesized records and literature housed at the CHRIS EIC and consulted archival and literary resources pertaining to the prehistory, ethnography, and history of the Project area and 1-mile surrounding vicinity (i.e., the Study Area).

Archival Research

Three parcels within the Project footprint have extant buildings and structures (Assessor's Parcel Number [APN] 811-170-012, 807-191-004, and 810-110-001). Aerial photographs dated 1996, 2002, 2005, 2009, 2010, and 2012 as well as USGS topographic maps dated 1944, 1963, and 1986 demonstrate that one parcel within the Project Area (APN 811-170-013) has extant structures constructed before 1968. However, archival research at the Riverside County Assessor-Clerk-Recorder's Office and the Riverside County Transportation and Land Management Agency confirmed that the extant buildings and structures on this property are not 50 years old or older. The structures were constructed in the late 1970s and 1980s for a jojoba/asparagus farm and labor camp on the property. It is possible that earlier buildings and structures visible on historic maps have since been replaced, removed, or destroyed.

Previous Studies

A records search was conducted at the Eastern Information Center of CHRIS, housed at the University of California, Riverside, on March 20–21, 2018, March 27–28, 2018, and April 12, 2018. The records search identified a total of nine previous cultural resource investigations conducted since 1977 within the Project area, and 27 in the surrounding 1-mile Study Area. Previous investigations for the Study Area have been completed for nine renewable energy projects, eight transmission line projects, seven infrastructure projects, one communications project, and two geothermal or geo-testing projects. In total, 12 percent (408 acres) of the Project area has been inventoried by these previous surveys, although much of this work concentrated on the southern portion of the Project area.

Previously Identified Resources

The record search resulted in the identification of 182 isolates, 132 archaeological sites, three historic districts, and four built environment resources that were recorded as part of previous projects. Archaeological sites include 77 historical sites, 46 prehistoric sites, and three sites with both prehistoric and historical components. Site records were not found for six resources in the 1-mile surrounding area.

The Prehistoric Trails Network Cultural Landscape/Historic District (PTNCL) and Desert Training Center Cultural Landscape/Historic District (DTCCL) are CRHR-eligible districts that encompass the entire Study Area. Notable resources in the Study Area include the North Chuckwalla Mountains Petroglyph National Register District (CA-RIV-01383) and segments of the Coco-Maricopa/Halchidoma Trail (CA-RIV-0053T). Both have been determined individually eligible for the NRHP and CRHR and are also contributors to the PTNCL.

Previously recorded resources in the Project area include two historic districts, 22 historical archaeological sites and three built environment resources. Nine resources are exclusively on BLM-administered land, 9

are exclusively on private land, and 8 encompass both private and BLM lands. Built environment resources include the Blythe-Eagle Mountain Transmission Line (P-33-019415), SR 177/Rice Road (P-33-025150), and a segment of U.S. Route 60/70.

Native American Outreach (Pre-AB 52)

A Sacred Lands File (SLF) search was requested from the Native American Heritage Commission (NAHC) on May 25, 2018 to determine if any known Native American cultural properties (e.g., traditional use or gathering areas, places of religious or sacred activity) are present in the Project area and surrounding 1-mile area. The NAHC responded on May 30, 2018, stating that the SLF search was negative for Native American cultural resources; however, the NAHC requested that Native American individuals and organizations be contacted to elicit information and/or concerns regarding cultural resource issues related to the proposed Project.

In order to complete the record search and identification of known cultural resources or TCRs in the Project area, a letter describing the Project and asking tribal representatives for their input was sent via the U.S. Postal Service and electronic mail (email) on June 6, 2018. Follow-up correspondence via email on June 20, 2018. The following tribes were contacted: Agua Caliente Band of Cahuilla Indians, Augustine Band of Cahuilla Mission Indians, Cabazon Band of Mission Indians, Cahuilla Band of Indians, Campo Band of Mission Indians, Chemehuevi Reservation, Colorado River Indian Tribe, Ewiiapaayp Tribal Office, Jamul Indian Village, La Posta Band of Mission Indians, Los Coyotes Band of Mission Indians, Manzanita Band of Kumeyaay Nation, San Pasqual Band of Mission Indians, Santa Rosa Band of Mission Indians, Soboba Band of Luiseño Indians, Sycuan Band of Kumeyaay Nation, Torres-Martinez Desert Cahuilla Indians, Twenty-Nine Palms Band of Mission Indians and Viejas Band of Kumeyaay Indians.

As of July 21, 2018, five responses have been received. The Twenty-Nine Palms Band of Mission Indians email response stated the Tribe is not aware of any cultural resources or TCRs located within the Study Area. The Cahuilla Band of Indians indicated via email that they are not aware of any cultural resources in or near the Study Area. In a letter dated June 7, 2018, the Cabazon Band of Mission Indians indicated they are not aware of any cultural resources in or near the Study Area. In a letter dated June 29, 2018, the Agua Caliente Band of Cahuilla Indians stated that the Project is within their traditional use area. The tribe requested copies of the Phase I report and CHRIS EIC data; they also requested to have a Native American monitor present during Project activities. On July 3, 2018 the Soboba Band of Luiseno Indians identified the Project area as being within their tribal traditional use area. The Soboba Band of Luiseño Indians requested to consult with the County, that copies of information pertaining to the Project be transmitted, that a Native American tribal monitor be present during survey and ground-disturbing activities, and that the Project observe tribal procedures related to cultural and tribal cultural resources.

Archaeological Survey

The archaeological survey took place in April, May and November of 2018. Survey crews performed an intensive field survey of the Project area by walking over the ground using parallel transects spaced 5 to 20 meters apart in areas previous disturbed by agricultural activities, and 5 to 15 meters apart in all other areas. Crews carefully inspected all landforms likely to possess archaeological resources including areas with any unusual contours, soil changes, distinctive vegetation patterns, surface features (e.g., road cuts, ditches, and stream cuts), and/or potential cultural markers.

The surveyed landscape was generally flat with a slope of 0 to 10 percent. Visibility outside agricultural fields was good to excellent (80 to 100 percent clear). In agricultural fields visibility was reduced to fair to good as the view was partially obstructed by vegetation and crops. In these areas, ground visibility ranged

between 60 and 80 percent clear. One portion of the proposed Solar Facility Parcel Group B was obscured by a modern mulch dump, resulting in reduced visibility of 0 to 10 percent where mulch was present.

For the purposes of the Project, an isolate was defined as three or fewer artifacts within a 25-square-meter area; an archaeological site consists of four or more associated artifacts. Apparent clusters of artifacts were recorded as concentrations. Nonportable elements of sites (i.e., hearths, mining claims) were recorded as features. The crews recorded specific information about surface artifacts, including but not limited to lithics, ceramics, and historical artifacts. Information collected during the in-field analysis of prehistoric artifacts included artifact class, raw material type, morphology or form, and count. For historical artifacts, the crews recorded the material class, functional group, diagnostic information (product name, manufacturer, or maker’s mark), and artifact number. In addition, crews consulted the field guide, *Documenting the Desert Training Center and California-Arizona Maneuver Area Cultural Landscape* (Baxter et al., 2010) to identify historic-aged artifacts and possible DTC/CAMA-related features. Locational data was collected on all observed features and distinctive artifacts so that they could be found again during future site visits. No cultural material was collected during the survey. All items removed from the surface for inspection and recordation were placed back in their original locations and positions.

Built Environment Survey

The built environment survey was conducted on May 7, 2018. Access to each parcel was by four-wheel drive vehicle and then on foot to visually examine each building, structure, or group of resources. In-field observations of built environment structures included diagnostic features of architecture, building materials, and construction style and method. Observation of modern additions to existing structures was also noted. Previously recorded built environment resources were revisited, noting the condition and any changes that may have occurred since the resource’s original recording.

Resources in the Project Area

Surveyors identified 11 previously unrecorded historical archaeological sites and revisited 10 of 22 previously recorded resources. All field activities were conducted on private or state-owned land. The 12 previously recorded resources on exclusively BLM land were not revisited. For those resources located on both private and BLM land, only those portions on private land were revisited. As discussed previously, two CRHR-eligible historic districts encompass the Project area. Sixteen isolates were identified during these field efforts. However, these resources are not considered eligible for the CRHR or NRHP, and therefore are not considered further. All resources present within the Project area are summarized in Table 3.6-1 below. Information about the 24 ineligible resources can be found in EIR Appendix D. The seven resources eligible for the CRHR and/or the NRHP are described in more detail below. As many of these resources are contributors to the DTC/CAMA historic district DTCCCL, a detailed description of that district is provided.

Table 3.6-1. Cultural Resources Within the Project Area

Resource #	Description	CRHR Eligibility	Land Ownership	Project Component
AE-3752-059H	Military site with 2 foxholes (1942–1944 DTC/C-AMA)	Eligible under Criteria 1 and 4; contributor to DTCCCL	Private	Solar Facility Parcel Group F
AE-3752-063H	Historical artifact scatter (1942–1944 DTC/C-AMA or Desert Strike)	Not eligible individually; contributor to DTCCCL	Private	Solar Facility Parcel Group F

Table 3.6-1. Cultural Resources Within the Project Area

Resource #	Description	CRHR Eligibility	Land Ownership	Project Component
AE-3752-064H	Military site with 36 foxholes and 7 gun emplacements (1942–1944 DTC/C-AMA)	Eligible under Criteria 1 and 4; contributor to DTCCL	Private	Solar Facility Parcel Group F
AE-3752-065H	Historical artifact scatter: paper target, wood (DTC/C-AMA or Desert Strike)	Not eligible individually; contributor to DTCCL	Private	Solar Facility Parcel Group F
AE-3752-066H	Historical artifact scatter with buried component (1840s through 1920s)	Eligible for the CRHR	Private	Gen-Tie Segment #1
AE-3752-067H	Historical artifact scatter and water pump valve (1948)	Not eligible	Private	Access Road to Solar Facility Parcel Group A
AE-3752-068H	Historical artifact scatter (1900 – present)	Not eligible	Private/BLM	Gen-Tie Segment #1
AE-3752-101H	Historic car and truck parts (1904–present)	Not eligible	Private	Solar Facility Parcel Group D
AE-3752-102H	Historical pit feature and artifact scatter (1904–present)	Not eligible	Private	Solar Facility Parcel Group D
AE-3752-106H	Historical road segment and artifact scatter (1913–1948)	Eligible for the CRHR	Private	Solar Facility Parcel Group D
AE-3752-200H	3 military tank maneuver loci with 1000s of tank tracks and associated artifact scatters (1942–1944 DTC/C-AMA)	Eligible under Criteria 1 and 4; contributor to DTCCL	Private	Solar Facility Parcel Groups D & F
P-33-019434/ CA-RIV-9873H	Historical artifact scatter (1942–1944 DTC/C-AMA)	Not eligible individually; contributor to DTCCL	BLM	Solar Facility Parcel Group G
P-33-018787	Historical artifact scatter (1942–1944 DTC/C-AMA)	Not eligible individually; contributor to the DTCCL	BLM/Private	Solar Facility Parcel Group G
P-33-019471/ CA-RIV-9910H	Historical artifact scatter (1935 to 1964)	Not eligible individually; contributor to the DTCCL	BLM/Private	Solar Facility Parcel Group F
P-33-006836/ CA-RIV-10759H	Desert Center Army Airfield and gravel roads (1942–1944 DTC/C-AMA)	Not eligible individually; contributor to the DTCCL	BLM/Private/ State	Solar Facility Parcel Group B
P-33-020572/ CA-RIV-10473H	Historical survey marker (1945)	Not eligible	Private	Solar Facility Parcel Group C
P-33-019611	Multiple isolated historical artifacts on a single DPR form	Not eligible	BLM	Solar Facility Parcel Groups A-G and Gen-Tie Line Segments #1-4
N/A	PTNCL Discontiguous Prehistoric District	Eligible	BLM/Private/ State	Solar Facility Parcel Groups A-G and Gen-Tie Line Segments #1-4

Table 3.6-1. Cultural Resources Within the Project Area

Resource #	Description	CRHR Eligibility	Land Ownership	Project Component
N/A	DTCCL Discontiguous District (1942–1944 DTC/C-AMA)	Eligible	BLM/Private/State	Solar Facility Parcel Groups A-G and Gen-Tie Line Segments #1-4
P-33-018299	Historic domestic refuse deposit (early twentieth century)	Not eligible	BLM	Gen-Tie Line Segment #3
P-33-018393/ CA-RIV-9481H	18th Ordinance Battalion Campsite (1942–1944 DTC/C-AMA)	Eligible Criteria A/1; contributor to DTCCL	BLM	Gen-Tie Line Segment #3
P-33-019463/ CA-RIV-9902H	Historical artifact scatter (1942–1944 DTC/C-AMA)	Not eligible individually; Contributor to DTCCL	BLM	Gen-Tie Line Segment #3
P-33-019464/ CA-RIV-9903H	Historical artifact scatter (1942–1944 DTC/C-AMA)	Not eligible individually; Contributor to DTCCL	BLM	Gen-Tie Line Segment #3
P-33-019468/ CA-RIV-9907H	Historical artifact scatter (1942–1944 DTC/C-AMA)	Not eligible individually; Contributor to DTCCL	BLM	Gen-Tie Line Segment #3
P-33-019469/ CA-RIV-9908H	Historical artifact scatter (1942–1944 DTC/C-AMA)	Not eligible individually; Contributor to DTCCL	BLM	Gen-Tie Line Segment #3
P-33-019470/ CA-RIV-9909H	Historical artifact scatter (1942–1944 DTC/C-AMA)	Not eligible individually; Contributor to DTCCL	BLM	Gen-Tie Line Segment #3
P-33-019472/ CA-RIV-9911H	Historical artifact scatter (1942–1944 DTC/C-AMA)	Not eligible individually; Contributor to DTCCL	BLM	Gen-Tie Line Segment #3
PALEN-2H	5 military foxholes and artifact scatter (1942–1944 DTC/C-AMA)	Not eligible individually; Contributor to DTCCL	BLM	Gen-Tie Line Segment #3
PALEN-6H	Historic can scatter (1920s to 1940s)	Not eligible	BLM	Gen-Tie Line Segment #3
P-33-017766/ CA-RIV-9857	U.S. Route 60/ 70/ Chuckwalla Valley Road segment and associated dikes (1920s to 1960s)	Segment not eligible	BLM/Private	Gen-Tie Line Segment #4
P-33-019415/ CA-RIV-9854H	Blythe-Eagle Mountain Transmission Line segment (1950)	Segment not eligible; contributor to existing Eagle Mountain Mine and Townsite historic district.	BLM/Private	Gen-Tie Line Segments #2 & 3
P-33-025150/ CA-RIV-12372H	SR 177/Rice Road segment (1930s)	Eligible Criteria 1/A, 3/C, 4/D; segment is eligible	BLM/Private	Gen-Tie Line Segment #1
P-33-020426/ CA-RIV-10335H	Historical artifact scatter (1880-1914)	Not eligible	Private	Gen-Tie Line Segment #1

Historic-Era Resources

All of the resources in the Athos Project area, and potentially subject to direct impacts, are historic-era resources.

Desert Training Center Cultural Landscape/Historic District (DTCCL) and Contributors

The DTCCL is a contiguous historic district that incorporates historical archaeological sites associated with the DTC/C-AMA in the Chuckwalla Valley and on the Palo Verde Mesa. The relevant themes include U.S.

Preparation for World War II, U.S. Military Training, Gen. George S. Patton. Jr., and Gen. Walton Walker. Depots, airfields, ranges, bivouacs, maneuver areas, camps, and hospitals are among some of the property types included in the district. The significance period is preliminarily defined as 1942–1944. The DTC/C-AMA was the largest and the only such military training facility in American military history. The training that took place here undoubtedly helped to win World War II. Most property types associated with the DTC/C-AMA, exist today as archaeological resources, such as refuse deposits, tank tracks, foxholes, and bivouacs.

The DTCCL was determined eligible for listing on the CRHR (Criterion 4) as part of the Palen Solar Power Project. The BLM is in the process of preparing a National Register of Historic Places Multiple Property Documentation Form (NPS 10-900-b) for DTC/C-AMA historic properties. In this draft document, the themes, trends, and patterns of history shared by the DTC/C-AMA properties are organized into historic contexts and the property types that represent those historic contexts are defined. Property types include: maneuver areas, divisional camps, small unit training areas, air facilities and crash sites, bivouacs, campsites, ranges, supply depots and railroad sidings, and hospitals and medical centers. The following resources are considered eligible in their own right and contributors to the DTCCL.

AE-3752-059H – This resource is located on private land within the boundaries of the proposed solar facility. The site consists of two foxholes (Features 1 and 2) and one bullet cartridge. AE-3752-059H is associated with the use of the Chuckwalla Valley as a maneuver area during operation of the DTC/C-AMA from 1942 to 1944.

AE-3752-064H – This resource is located on private land within and extending beyond the boundaries of the proposed solar facility. An expansive 985,824-square-foot area containing 42 distinct WWII-era DTC features, including at least 36 small one- to two-person foxholes and seven larger mechanically dug fighting positions. The site is likely associated with a tank maneuver area (AE-3752-200H Locus 2).

AE-3752-200H – This resource is located on private land within and extending beyond the boundaries of the proposed solar facility. The site consists of seven linear tank tracks and three maneuver area loci situated across various well-formed, albeit highly disturbed, desert pavements within the alluvial floodplain extending north-northeast from the Chuckwalla Mountains. The three loci are in the southernmost part of the site and are likely connected by individual features that are being eroded by seasonally active alluvial flows that dissect the tracks in a north-northeast direction. Thousands of tank tracks exist in each loci, and more are visible from the northwest boundary of the Study Area at Locus 3. Several other features, including one rock cairn, also are recorded within the site boundaries.

P-33-018393/CA-RIV-9481H 18th Ordinance Battalion Campsite – This resource is located on BLM land within the boundaries of the proposed gen-tie corridor. Historical records describe the 18th Ordinance Battalion Campsite as a watering point located approximately 5 miles east of Desert Center that included a capped well, a 50,000-gallon water tank and a wooden tower. CA-RIV-9481 is located 5 miles east of Desert Center. The site's features, including a capped well, foundation for a possible holding tank, and historic debris, appear to be consistent with the historical description of the Campsite.

CA-RIV-9481 is recommended eligible for inclusion to the NRHP under Criterion A and the CRHR under Criterion 1 due to its association with the DTC/C-AMA. Rather than one of many common site types (i.e. debris scatters, tank tracks, emplacements, etc.), CA-RIV-9481 is a known DTC resource akin to known camps, roads, or airstrips. CA-RIV-9481 is recommended not eligible for inclusion to the NRHP under Criterion B and the CRHR under Criterion 2 because the site cannot be directly associated with the lives of persons important to the past. The site is recommended not eligible under Criterion C/3 because none of the elements of the site represent a distinct style, type design, or method of construction. Lastly, CA-RIV-9481 is recommended not eligible under Criterion D/4 because the research potential for the site has

been exhausted by previous research. While the wooden tank is no longer at the site, CA-RIV-9481 retains sufficient integrity, particularly integrity of place, location, feeling, and association with the DTC/C-AMA for inclusion to the NRHP and CRHR under criterion A/1.

Contributors to DTTCL – Two historical artifact scatters located on private land (AE-3752-063H and AE-3752-65H) are not eligible individually for the CRHR but are considered a contributor to the DTTCL. Eight historical artifact scatters located on BLM land are considered contributors to a DTC/C-AMA-related historic district: P-33-019434/CA-RIV-9873H, P-33-019463/CA-RIV-9902H, P-33-019464/CA-RIV-9903H, P-33-019468/CA-RIV-9907H, P-33-019469/CA-RIV-9908H, P-33-019470/CA-RIV-9909H, P-33-019472/CA-RIV-9911H, and PALEN-2H. Finally, three artifact scatters located on both private and BLM land are also considered contributors to a DTC/C-AMA-related historic district: P-33-018787, P-33-019471/CA-RIV-9910H, and P-33-006836/CA-RIV-10759H. However, none of these resources are eligible in their own right.

Other Historic-Era Resources

AE-3752-066H – This resource is located on private land along Gen-Tie 1. It is a triangular-shaped historic-era refuse dump consisting of cans, glass and other refuse such as baling wire and metal. All of the cultural material dates to between 1840 and 1920 and may be associated with early ranching or mining. There is high potential for subsurface deposits given the site's location in an active alluvial wash.

AE-3752-106H – This resource is located on private land within proposed Solar Facility D. It is a road segment oriented east-west that is approximately 91 feet wide by 1,723 feet long with an associated refuse scatter. Historical research indicates the road and trash scatter were in use between 1913 and 1948.

P-33-025150/ CA-RIV-12372H (SR 177/Rice Road segment) – This road segment was built in the 1930s in support of construction of the Colorado River Aqueduct (CRA) system. It was known at that time as Parker Dam Road, or simply, the Aqueduct Road, and was an asphalt-paved two-lane roadway. The CRA electrical transmission line parallels this road for much of its extent, while the aqueduct itself is farther away and was accessed by dirt roads branching off Aqueduct Road. Portions of the CRA have been recommended eligible for listing in the NRHP under Criterion A, relating to the system's significance as a 242-mile-long manmade water conveyance system supplying Southern California, and Criterion C for engineering merits associated with its construction. At the time of construction, the area between the Colorado River and the San Jacinto Mountains (where the canal terminated) was largely undeveloped. Beginning in 1923, surveyors for the City of Los Angeles (later Metropolitan Water District of Southern California) penetrated the desert by car, mule, and on foot to prepare detailed maps of the entire area so that potential aqueduct construction routes could be considered. The surveyors stayed at temporary campsites and often established their own routes into the region. The surveyed area included 25,000 square miles between Boulder Canyon and the California-Mexico border. Metropolitan engineers designed the CRA to fit the landscape. The first infrastructure in the region (roads, water, electric power, and telephones) was built to accommodate construction of the CRA. Aqueduct Road was one of these early roadways and was recently recommended as a contributing element of the CRA Historic District. The resource was previously recommended as eligible for inclusion in the CRHR and NRHR under Criterion 1/A, 3/C, and 4/D.

Prehistoric Resources

No prehistoric resources, other than 15 isolated flaked stone artifacts were found in the Project area. However, three sensitive prehistoric resources eligible for the CRHR and NRHP are located within 1 mile of the Project Area: the Halchidoma (or Coco-Maricopa) Trail (CA-RIV-00053T), the North Chuckwalla Mountains Petroglyph National Register District (CA-RIV-01383) and CA-RIV-1515. These resources are also considered contributors to the PTNCL. All four resources are described below.

Prehistoric Trails Network Cultural Landscape/Historic District (PTNCL) – The PTNCL is an historic district that incorporates prehistoric archaeological sites associated with the Halchidoma (or Coco-Maricopa) Trail (CA-RIV-00053T). The District consists of important destinations in the Colorado Desert near Blythe, California, the network of trails that tie them together, and the features and sites associated with the trails. The boundary extends along the length of the historically known route of the Halchidoma Trail, from where it begins near Blythe at the Colorado River, continuing to the west through the Chuckwalla Valley towards modern Los Angeles, with a width of 10 miles. The PTNCL site types are divided into three categories: destinations, trails, and trail-associated sites or features. Destinations primarily include water sources, but also include residential, religious, and resource-collection sites. Trails can either be created by the movement of traveling feet or formal construction. They average 30 cm in width and can be traced for many kilometers, interrupted only by gullies and washes. Trail-associated sites or features could include: concentrations of ceramics/pot drops, cleared circles, rock rings, rock clusters, rock cairns, rock alignments, petroglyphs, and geoglyphs. When the trail itself is not preserved, its route can be approximately traced by distinctive patterns of trail-associated sites and features. The period of significance is the entire prehistoric and early historic periods. The thematic associations include travel, trade, ritual, and resource exploitation, particularly the collection of stone tool and ground stone raw materials. The PTNCL was determined an historic district eligible for the CRHR as part of the Palen Solar Power Project. The boundaries encompass the entire Athos Project area, with a previously recorded segment of CA-RIV-00053T present in the Athos Study Area.

CA-RIV-00053T (Halchidoma or Coco-Maricopa Trail) – Segments c and d of the Coco-Maricopa Trail, which pass through the Project Study Area to the south of the Red Bluff Substation, have been determined eligible for the NRHP/CRHR under Criteria A/1 and D/4. Segment c consists of a lithic scatter and an east/west trending trail that measures 34 cm in width and runs for a distance of 38 meters. Segment d consists of a 1,100-meter length of trail that runs northwest/southeast across pediments on the northeast leading edge of the Chuckwalla Mountains, with associated lithic scatter, lithic reduction loci, quartz vein quarry localities, and stacked rock trail markers or cairns. These segments are immediately adjacent to and appear to lead to the North Chuckwalla Mountains Petroglyph National Register District (CA-RIV-01383).

CA-RIV-01383 (North Chuckwalla Mountains Petroglyph National Register District) – This resource is in the Study Area south of the Red Bluff Substation. The resource includes more than 170 petroglyph panels, rock rings, cleared circles, trails, and artifact concentrations. CA-RIV-01383 has been determined eligible for listing under NRHP Criteria C and D, and is eligible to the CRHR under Criteria 1, 3, and 4.

CA-RIV-1515 – This resource is in the Study Area east of solar facility G a long linear area of sand dunes extending along the southeast shoreline of Palen Dry Lake on the floor of the Chuckwalla Valley west of the Palen Mountains and southeast of the Coxcomb Mountain. It contains a diversity of cultural materials including fire-altered rock, chipped and ground stone artifacts, and ceramics, in addition to a turquoise pendant and bone fish hooks. This resource was assumed eligible for inclusion on the NRHP and CRHR under Criterion D/4 as part of the Palen Solar Project.

Tribal Cultural Resources

Information presented in this section was gathered through AB 52 consultation between the County of Riverside and California Native American Tribes that have cultural affiliations with the proposed Project area and that have requested to consult on the proposed Project. Supplementary information was gathered from the cultural resource literature and records search, cultural resources field survey, ethnographic summary, and pre-AB 52 tribal outreach.

Project Notification

AB 52 requires that within 14 days of the lead agency determining that a project application is complete, a formal notice and invitation to consult about the proposed Project be sent to all tribal representatives who have requested in writing to be notified of projects that may have a significant effect on TCRs located within the Proposed Project area (PCR § 21080.3.1(d)). On March 29, 2018, the County of Riverside mailed certified letters to representatives of ten tribes that had previously submitted a written request to the County of Riverside to receive notification of proposed projects. These tribes included Agua Caliente Band of Cahuilla Indians, Soboba Band of Luiseño Indians, Twenty-Nine Palms Band of Mission Indians, Morongo Band of Mission Indians, Torres Martinez Desert Cahuilla Indians, Cabazon Band of Mission Indians, Cahuilla Band of Indians, Ramona Band of Cahuilla, Quechan Indian Nation, and Colorado River Indian Tribes (CRIT). In addition, because of staffing changes with some groups, follow up notices were sent to the Quechan on August 6, 2018. The letters included a brief description of the proposed Project, information on how to contact the lead agency Project Manager, and a USGS topographic quadrangle showing the Project components and lay-down areas. The letters noted that requests for consultation needed to be received within 30 days of the date of receipt of the notification letter; three responses were received.

AB 52 Native American Tribal Consultation

AB 52 states that once California Native American tribes have received the project notification letter, the tribe then has 30 days to submit a written request to consult (PCR § 21080.3.1(d)). Upon receiving a Tribe's written request to consult, the lead agency then has 30 days to begin tribal consultation. Consultation must include discussion of specific topics or concerns identified by tribes. Any information shared between the Tribes and the lead agency representatives is protected under confidentiality laws and not subject to public disclosure (GC § 6254(r); GC § 6254.10) and can be disclosed only with the written approval of the Tribes who shared the information (PCR § 21082.3(c)(1-2)).

Consultation as defined in AB 52 consists of the good faith effort to seek, discuss, and carefully consider the views of others. Consultation between the lead agency and a consulting Tribe concludes when either of the following occurs: (1) the parties agree to measures to mitigate or avoid a significant effect, if a significant effect exists on a TCR; or (2) a consulting party, acting in good faith and after reasonable effort, concludes that mutual agreement cannot be reached (PCR § 21080.3.2(b)).

The Agua Caliente, Soboba and Twenty-Nine Palms tribes requested to consult on the proposed Project within the 30-day time limit.

A consultation meeting took place with Soboba on July 30, 2018. During the consultation Soboba requested that the group be allowed to monitor during ground disturbing activities because there is the potential for subsurface resources to be present. They also requested that the Cultural Resources Management Plan be developed with tribal input. Soboba also recommended that decommissioning include native monitoring and that there be an area set aside for reburial of any prehistoric cultural resources.

Consultation was held with Twenty-Nine Palms on May 8, 2018. At this meeting concern was expressed for resources that may be located nearer to the lakebed. A follow-up meeting was held on November 19, 2018. In this meeting the tribe expressed concern for off project impacts to cultural sites from run off during storm events. They also requested a visual analysis and a 3-D rendering of what the project will look like when built. Agua Caliente requested the cultural report, shapefile of the project boundary and site records.

The project conditions of approval (mitigation measures) were provided to the consulting tribes on January 31, 2019. Agua Caliente responded in a letter dated February 08, 2019 stating that the concerns of the

ACBCI THPO have been addressed and proper mitigation measures have been proposed to ensure the protection of tribal cultural resources. The letter formally concluded AB52 consultation.

A response was received from the Twenty-Nine Palms Band of Mission Indians dated February 07, 2019. The letter stated that the THPO is aware of numerous cultural resources within 1-mile of the project area that may be impacted by the construction that may take place. Additionally, the project is in the vicinity of a culturally sensitive site and within the Chemehuevi Traditional Use Area (TUA). For these reasons, the project could have significant impacts on potential cultural resources that concern the Twenty-Nine Palms Band of Mission Indians. Although the THPO agreed with the proposed mitigation measures, there were a few minor changes requested. The THPO requests a draft and final copy of the Cultural Resources Monitoring Plan and that the interested tribes have the opportunity to comment. MM CUL-3 has been edited to reflect this request. The THPO also requested that a monitoring agreement be in place prior to grading. The THPO requested that a record of attendance be available for distribution to consulting tribe(s) upon request. MM CUL-5 has been edited to reflect this recommendation. The THPO also requested that a Native American Monitor be present during removal of any temporary fencing required by MM CUL-9. MM CUL-9 has been edited to reflect this change. Lastly, The THPO requests a draft and final copy of the Prehistoric Trails Summary Report, Geographic Information Systems (GIS) data acquired for the report, and copies of any visual analysis completed for the project. The GIS data and the visual analysis info was provided to the tribe on February 21, 2019 and the Prehistoric Trails report will be provided to all of the consulting tribes when complete. In closing, the THPO stated that with the implementation of the above comments, the current concerns for the project will be reduced to less than significant levels.

No TCRs were identified within the immediate Project vicinity. However, construction could inadvertently disturb presently unknown and unrecorded TCRs.

Mitigation Measures MM CUL-1 to MM CUL-13 were developed to address potential impacts to cultural resources and TCRs.

Consultation concluded on February 27, 2019.

3.6.4 CEQA Significance Criteria

The significance criteria listed below are from the Environmental Checklist Form in Appendix G of the CEQA Guidelines. They are used to determine whether a project or alternatives would result in significant impacts under CEQA related to cultural resources or tribal cultural resources. Under CEQA, the Project would cause a significant impact if it caused a substantial adverse change in the significance of a historical resource, an archeological resource, or a tribal cultural resource as defined under CCR, Title 14, Chapter 3, Section 15064.5.

The Project would have a significant impact on these cultural resources if it would:

Historic Site

- Alter or destroy an historic site.
- Cause a substantial adverse change in the significance of a historical resource as defined in California Code of Regulations, Section 15064.5.

Archaeological Resources

- Alter or destroy an archaeological site.

- Cause a substantial adverse change in the significance of an archaeological resource pursuant to California Code of Regulations, Section 15064.5?
- Disturb any human remains, including those interred outside of formal cemeteries?
- Restrict existing religious or sacred uses within the potential impact area?

The project would cause a substantial adverse change in the significance of a Tribal Cultural Resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American Tribe, and that is:

- Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1 (k); or,
- A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1? In applying the criteria set forth in subdivision (c). of Public Resources Code Section 5024.1 for the purpose of this paragraph, the lead agency shall consider the significance to a California Native tribe.

Under all of these criteria, adverse changes and impacts are the following:

- Physical, visual, or audible disturbances resulting from construction and development that would affect the integrity of a resource or the qualities that make it eligible for the CRHR;
- Exposure of resources to vandalism or unauthorized collecting;
- A substantial increase in the potential for erosion or other natural processes that could affect resources;
- Neglect of a resource that causes its deterioration, except where such neglect and deterioration are recognized qualities of a property of religious and cultural significance to a Native American tribe; or
- Transfer, lease, or sale of a resource out of federal ownership or control without adequate and legally enforceable restrictions or conditions to ensure long-term preservation of the resource's historic significance.

3.6.5 Proposed Project Impact Analysis

Scoping

Issues raised during scoping related to Cultural Resources and Tribal Cultural Resources include the following, which are addressed in the potential impacts discussed below:

- Concern about impacts to 75 known prehistoric cultural resources within 1-mile of the Project area. Requests the development and implementation of a mitigation and monitoring plan with tribal input and participation.
- Concern about impacts to 2 known Tribal Cultural Resources important to the Chemehuevi in general and Twenty-Nine Palms Band of Missions Indians in particular, within 1-mile of the Project area. Request for comprehensive Visual Impact Assessment emphasizing the visual effects to sensitive resources.
- Concern about impacts to resources sacred to the Mojave near the Red Bluff Substation.

Geographic Limits of Analysis

The geographic limits of the cultural resource analysis under CEQA are referred to as the “Project Study Area,” which includes the area of land surrounding a project site and ancillary linear facility corridors. For the Athos Renewable Energy Project evaluated in this EIR, the County has identified a study area as follows:

- Direct impacts to all resource types: the solar facility, a corridor 150 feet on either side the gen-tie centerline which expands to 450 feet at any bends to accommodate tensioning and pulling sites, and a corridor 50 feet on either side of the road center line.
- Indirect impacts to all resource types: the direct impacts study area plus a 1-mile buffer.

Impact CUL-1. The Project would alter or destroy an historical site or archaeological site or cause adverse change in significance of historical resource as defined in California Code of Regulations, Section 15064.5.

Solar Facility

Direct Effects. Four resources eligible for the CRHR and therefore considered historical resources under CEQA, are potentially subject to direct effects from the solar facility. One of these is a historic road segment and artifact scatter AE-3752-106H. Direct impacts to this resource would be addressed by Mitigation Measure CUL-10 (Journal Article) which would ensure that interested stakeholders will learn about this historical resource.

Three of these resources are eligible in their own right and are contributors to the DTCL: AE-3752-059H, AE-3752-064H, and AE-3752-200H. Direct impacts to these three resources would be addressed by Mitigation Measure CUL-11 which would ensure that these resources were documented in detail and incorporated into a summary report and map presenting the results of archaeological evidence of DTC/C-AMA-related activities in the Chuckwalla Valley to date.

Six WWII-era archaeological sites are potentially subject to direct effects from the solar facility: AE-3752-063H, AE-3752-065H, P-33-019434/ CA-RIV-9873H, P-33-018787, P-33-019471/ CA-RIV-9910H, and P-33-006836/ CA-RIV-10759H. These resources are not eligible for the CRHR in their own right under any Criteria, so are not subject to direct impacts. However, the six WWII-era resources are contributors to the DTCL.

Direct effects to newly identified resources would be addressed by the implementation of Mitigation Measures CUL-1 through CUL-13 which would reduce these impacts to less than significant levels.

Indirect Effects. Three sensitive archaeological resources are present in the indirect effects study area: the North Chuckwalla Petroglyph National Register District (CA-RIV-1383), Coco-Maricopa Trail (CA-RIV 53T) segments (c) and (d), and CA-RIV-1515. All of these resources are eligible for the CRHR and are contributors to the PTNCL.

A visual simulation was prepared to allow assessment of the changes to views for these locations (see Figure 3.2-2, KOP 1, 6 and 7). The proposed Project appears as a dark gray streak along the distant valley floor, partially obscured by intervening utility facilities. Therefore, because the Proposed Project would be distant within the viewshed of the resources, the proposed Project would not create a substantial visual intrusion upon the setting of each resource, a defining characteristic. Visual changes would be in kind with the current nature and scale of existing visible developments. Minor visual impacts to the setting would be addressed by the following measures: Mitigation Measures AES-1 through AES-4, which would

employ design elements that reduce the visual contrast to characteristics of the landscape. Therefore, the proposed Project would not compromise the integrity of the resources. As such these resources are not subject to indirect effects from the construction of the solar facilities.

220 kV Generation-Tie Line

Direct Effects. Three resources eligible for the CRHR and therefore considered historical resource under CEQA: AE-3752-066H, P-33-018393/ CA-RIV-9481H and P-33-025150/ CA-RIV-12372H are potentially subject to direct effects from the gen-tie line. AE-3752-066H is a WWII-era archaeological resource and a contributor to the DTCCL. P-33-025150/ CA-RIV-12372H is a segment of SR 177/Rice Road). This road segment was built in the 1930s in support of construction of the Colorado River Aqueduct (CRA) system and is eligible for the CRHR and NRHR under Criteria 1/A, 3/C, and 4/D. P-33-018393/ CA-RIV-9481H is the WWII-era 18th Ordinance Battalion Campsite and a contributor to the DTCCL. Direct impacts to these resources would be addressed by Mitigation Measure CUL-9 (Temporary Fencing), which would protect the resources from destruction through avoidance implemented during construction.

Indirect Effects. Three sensitive archaeological resources are present in the indirect effects study area: the North Chuckwalla Petroglyph National Register District (CA-RIV-1383), Coco-Maricopa Trail (CA-RIV-53T) segments (c) and (d), and CA-RIV-1515. All of these resources are eligible for the CRHR and are contributors to the PTNCL.

A visual simulation was prepared to allow assessment of the changes to views for these locations (see Figure 3.2-2, KOP 1, 6 and 7). The proposed Project transmission lines are clearly visible from these sensitive resources. However, the visual changes would be in kind with the current nature and scale of existing visible developments. Minor visual impacts to the setting would be addressed by the following measures: Mitigation Measures AES-1 through AES-4, which would employ design elements that reduce the visual contrast to characteristics of the landscape. Therefore, the proposed Project would not compromise the integrity of the resources. As such these resources are not subject to indirect effects from the construction of the transmission lines, and no mitigation is necessary.

Mitigation Measures for Impact CUL-1

Implementation of Mitigation Measures CUL-1 through CUL-13 and AES-1 through AES-4 would mitigate Impact CUL-1 (see Section 3.6.10 below).

The following summarizes how each mitigation measure would reduce the impacts of the Project to cultural resources:

- **AES-1 (Night Lighting Management Plan)** would reduce industrial intrusions to the rural setting of CRHR-eligible resources.
- **AES-2 (Surface Treatment of Project Structures and Buildings)** would reduce industrial intrusions to the rural setting of CRHR-eligible resources.
- **AES-3 (Project Design)** would reduce industrial intrusions to the rural setting of CRHR-eligible resources.
- **AES-4 (Retention of Roadside Vegetation)** would reduce industrial intrusions to the rural setting of CRHR-eligible resources.
- **CUL-1 (Project Archaeologist)** would identify the people who would implement all of the mitigation measures and ensures they have the appropriate qualifications.

- **CUL-2 (Cultural Resources Monitoring Plan)** would provide for the preparation and implementation of the monitoring plan and address the details of all activities and would provide procedures that must be followed in order to reduce the impacts to cultural and historic resources.
- **CUL-3 (Archaeological Monitor)** would ensure that that an adequate number of qualified archaeological monitors are onsite to ensure all earth moving activities are monitored.
- **CUL-4 (Native American Monitor)** would ensure that that an adequate number of Native American monitors are onsite to ensure all earth moving activities are monitored and would establish their authority to halt ground disturbing activities.
- **CUL-5 (Tribal Cultural Sensitivity Training)** would ensure that a tribal representative is hired to provide Cultural Sensitivity Training for all construction personnel and would specify the content of that training.
- **CUL-6 (Discovery of Unanticipated Resources)** would establish cultural resources discovery protocols.
- **CUL-7 (Artifact Disposition)** would ensure that artifacts discovered during construction are either reburied or curated at an appropriate institution.
- **CUL-8 (Monitoring Report)** would establish reporting standards summarizing the results of monitoring and any post review discovery situations.
- **CUL-9 (Temporary Fencing)** would protect three resources from direct effects through fencing and avoidance.
- **CUL-10 (Journal Article)** would address the loss of data potential as a result of direct impacts to historic road segment and artifact scatter AE-3752-106H by ensuring that the historical information associated with this resource would be shared with interested stakeholders.
- **CUL-11 (Desert Center DTC/C-AMA Summary Report and District DPR Form)** would address the loss of data potential through direct impacts to three CRHR-eligible DTC/C-AMA resources and cumulative impacts to 6 resources that are contributors to the DTCLL district, by ensuring that these resources were documented in detail and incorporated into a summary report presenting evidence of DTC/C-AMA activities in the Chuckwalla Valley. These documents would assist cultural resources specialists identify new DTC/C-AMA related resources and support the management of the district by relevant agencies.
- **CUL-12 (Prehistoric Trails Summary Report)** would address industrial intrusions to the rural setting resulting in cumulative impacts to three CRHR-eligible resources that are also contributors to the PTNCL, ensuring existing information about prehistoric trails and associated artifacts and features in the Chuckwalla Valley are incorporated into a summary report. This document would assist tribal representatives and cultural resources specialists identify new PTNCL related resources and support the management of the district by relevant agencies.
- **CUL-13 (Archival and Field Studies for Historic-Era Resources)** would provide additional historical information about four resources of interest to the County.

Significance After Mitigation

This impact would be less than significant with implementation of mitigation.

Impact CUL-2. The Project would cause an adverse change in significance of a unique archaeological resource pursuant to California Code of Regulations, Section 15064.5.

Solar Facility and 220 kV Generation-Tie Line

The direct and indirect impacts of solar facility and gen-tie construction, operation, and decommissioning, to unique archaeological resources could create significant impacts under criterion CUL-2 (adverse change to significance of archaeological resources). Adverse impacts are not anticipated because no unique archaeological resources have been identified to date; however, mitigation may be required should they be identified.

Mitigation Measures for Impact CUL-2

Implementation of Mitigation Measures CUL-1 through CUL-13 and AES-1 through AES-4 would mitigate Impact CUL-2 (see Section 3.6.10 below).

Significance After Mitigation

This impact would be less than significant with implementation of mitigation.

Impact CUL-3. The Project would disturb any human remains including those interred outside of formal cemeteries.

Solar Facility and 220 kV Generation-Tie Line

The direct and indirect impacts of solar field and gen-tie construction, operation, and decommissioning, could cause disturbance or damage to human remains. This would be a significant impact under criterion CUL-3 (disturbance of human remains). Adverse impacts are not anticipated because no human remains have been found in the Project area; however, mitigation may be required should they be identified.

Mitigation Measures for Impact CUL-3

Implementation of Mitigation Measures CUL-1 through CUL-9, CUL-12 and AES-1 through AES-4 would mitigate Impact CUL-3 (see Section 3.6.10 below).

Significance After Mitigation

This impact would be less than significant with implementation of mitigation.

Impact CUL-4. The Project would restrict existing religious or sacred uses within the potential impact area.

Solar Facility and 220 kV Generation-Tie Line

The direct and indirect impacts of solar field and gen-tie construction, operation, and decommissioning, could restrict existing religious or sacred uses within the potential impact area. This would be a significant impact. Adverse impacts are not anticipated because no existing religious or sacred uses have been identified in the Project area; however, mitigation may be required should they be identified.

Mitigation Measures for Impact CUL-4

Implementation of Mitigation Measures CUL-1 through CUL-9, CUL-12 and AES-1 through AES-4 would mitigate Impact CUL-4 (see Section 3.6.10 below).

Significance After Mitigation

This impact would be less than significant with implementation of mitigation.

Impact TCR-1. The Project would cause adverse change in the significance of a Tribal Cultural Resource determined by the Lead Agency.

Solar Facility and 220 kV Generation-Tie Line

The direct and indirect impacts of solar field and gen-tie construction, operation, and decommissioning, could cause disturbance or damage to tribal cultural resources. This would be a significant impact under criterion TCR-1 (adverse change in the significance of a tribal cultural resources identified through tribal consultation). However, impacts are not anticipated because no tribal cultural resources determined by the County have been found in the Project area or identified through tribal consultation.

Mitigation Measures for Impact TCR-1

Implementation of Mitigation Measures CUL-1 through CUL-9, CUL-12 and AES-1 through AES-4 would mitigate Impact TCR-1 (see Section 3.6.10 below).

Significance After Mitigation

This impact would be less than significant with implementation of mitigation.

Impact TCR-2. The Project would cause adverse change in the significance of a Tribal Cultural Resource eligible for or listed on the CRHR or in a local register of historical resources as defined in Public Resources Code section 5020.1 (k).

Solar Facility and 220 kV Generation-Tie Line

The direct and indirect impacts of solar field and gen-tie construction, operation, and decommissioning, could cause disturbance or damage to tribal cultural resources. This would be a significant impact under criterion TCR-2 (adverse change in the significance of a tribal cultural resources eligible or listed on the CRHR). However, they are not anticipated because no tribal cultural resources that are eligible or listed on the CRHR have been identified.

Mitigation Measures for Impact TCR-2

Implementation of Mitigation Measures CUL-1 through CUL-9, CUL-12 and AES-1 through AES-4 would mitigate Impact TCR-2 (see Section 3.6.10 below).

Significance After Mitigation

This impact would be less than significant with implementation of mitigation.

3.6.6 Alternative 1: No Project Alternative

Under the No Action Alternative, the Project would not be constructed so there would be no impact to historical resources. Other projects or linear facilities could potentially be developed at this location, because it is located in the Riverside East Solar Energy Zone (SEZ) of BLM's Western Solar Plan and is land designated as a Development Focus Area (DFA), but any future project(s) would be evaluated under separate CEQA and/or NEPA analyses.

3.6.7 Alternative 2: Reduced Footprint Alternative

Under this alternative, approximately 387 acres of undisturbed land (Parcel Groups D and F) would be removed from overall Project site boundary. Therefore, under the Reduced Footprint Alternative the four CRHR eligible resources in Solar Facility Parcel Groups D and F would not be destroyed by the proposed Project. As such, the direct impacts to cultural resources would be less than the proposed Project.

Three sensitive archaeological resources are present in the indirect effects study area of Alternative 2: the North Chuckwalla Petroglyph National Register District (CA-RIV-1383), Coco-Maricopa Trail (CA-RIV-53T) segments (c) and (d), and CA-RIV-1515. However, the solar facilities would be distant within the viewshed of the resources, and Alternative 2 would not create a substantial visual intrusion upon the setting of each resource, a defining characteristic. Visual changes would be in kind with the current nature and scale of existing visible developments. As such these resources are not subject to indirect effects from the construction of the solar facilities under Alternative 2. Overall, the indirect impacts of this alternative would be the same as the proposed Project, and the same mitigation is required for unanticipated discoveries.

Under this alternative, no changes to the gen-tie are proposed. Therefore, the direct and indirect impacts of this alternative would be the same as the proposed Project, less than significant with mitigation implemented as defined above.

3.6.8 Gen-Tie Segment #1 Alternative Route Option

Under this alternative a different route for Gen-Tie Segment #1 is proposed, which would be 0.65 miles longer. However, both the proposed Project and the Alternative Route Option would impact AE-3752-066H a CRHR-eligible WWII-era archaeological resource and a contributor to the DTCCL. As such, the direct impacts for this alternative are the same as for the proposed Project. Given the long distance between this gen-tie segment and the three sensitive archaeological resources are present in the indirect effects study area, no indirect impacts are anticipated. Overall, the direct and indirect impacts of this alternative would be the same as the proposed Project, and would be less than significant with mitigation implemented as defined above.

3.6.9 Cumulative Impacts

Methodology

When the results of cultural resources pedestrian surveys are not available for projects included in the cumulative analysis, calculating the number of cultural resources likely destroyed by construction per acre is considered an acceptable quantitative cumulative analysis method, and is used below. Central to this method is the understanding that cultural resources are a non-renewable resource. The average number of resources per acre is calculated by using the survey results from recent, nearby projects. This regional resource density per acre is then applied to the “Existing Projects or Programs in the Project Area” and “Future Foreseeable Projects in the Project Area” as way of calculating the number of resources that existed prior to industrial development of the Project area, the number of resources that have been destroyed since that time and the number of resources that may be destroyed in the future. Frequently, the lists of projects used in cumulative analyses are missing old projects where project information is not easily available. This analysis has supplemented the cumulative project list with key past projects.

For the cumulative analysis of cultural resources, the relevant geographic scope was defined to include a 2-mile strip centered on I-10 in eastern Riverside County. The area is equivalent to a 4 mile-wide strip, 48 miles long, between Blythe and Desert Center, with an area of 192 square miles (122,440 acres).

Geographic Scope

Past, present and reasonably foreseeable future actions would cause impacts that could combine with the impacts of the Project to cause an adverse cumulative impact related to cultural resources. As described above, the results of recent pedestrian surveys in eastern Riverside County (Desert Sunlight, Genesis, Blythe, and Palen Solar Projects) were used to calculate an average resource density for the cumulative study area. The average resource density was used to estimate the number of resources that have been destroyed by past, present and future foreseeable projects in Table 3.6-2 (Cumulative Analysis Results: Estimated Number of Cultural Resources per Acre). Information about the number of acres disturbed (in contrast to area surveyed) for the Desert Sunlight, Genesis, Blythe, and Palen Solar Projects among others, was used in this analysis.

The results of impact calculations are summarized below in Table 3.6-2. The information in Table 3.6-2 was supplemented with key past projects that likely destroyed many cultural resources in the region, such as the construction of the I-10 freeway. Supplementary projects are indicated in italics, and the assumptions related to these projects are described in detail following the table.

Table 3.6-2. Cumulative Analysis Results: Estimated Number of Cultural Resources per Acre

Location	Acres	Estimated Number of Cultural Resources (Acres x 0.019)	Estimated Number of Potentially Eligible Cultural Resources (Acres x 0.002)
Acres surveyed for Desert Sunlight, Genesis, Blythe, and Palen Solar Projects (Note: because these projects have been built or already underwent environmental review – these data are known and not estimated).	29,574	554 = Average Density of 0.019 sites per acre	70 = Average Density of 0.002 sites per acre
Eastern Riverside County (Blythe to Desert Center)	122,440	2,326	245
Existing Projects or Programs in the Project Area			
Blythe PV Project	200	4	1
McCoy Solar Project	8100	154	16
Genesis Solar Energy Project	1950	37	4
Blythe Solar Power Project	4100	78	8
Desert Sunlight Solar Project	4400	84	9
SCE Red Bluff Substation	75	2	1
<i>Devers–Palo Verde 1 Transmission Line</i>	116	2	1
<i>Devers–Palo Verde 2 Transmission Line</i>	116	2	1
SCE Colorado River Substation	90	2	1
<i>Chuckwalla Valley Prison and Ironwood Prison</i>	1,720	33	4
<i>I-10 Freeway</i>	1163	22	3
<i>Kaiser Eagle Mountain Mine</i>	3,500	67	7
Existing Projects Total	25,530	487	56
Future Foreseeable Projects in the Project Area			
<i>Desert Southwest Transmission Line</i>	116	2	1
Palo Verde Mesa Solar Project	3393	64	7
Sonoran Energy Project	30	1	1
Eagle Mountain Pumped Storage Project	90	2	1
Rice Solar Energy Project	1410	27	3

Table 3.6-2. Cumulative Analysis Results: Estimated Number of Cultural Resources per Acre

Location	Acres	Estimated Number of Cultural Resources (Acres x 0.019)	Estimated Number of Potentially Eligible Cultural Resources (Acres x 0.002)
Desert Quartzite Solar	4845	93	10
Crimson Solar	4000	76	8
Blythe Mesa Solar Project	3600	69	7
Desert Harvest Solar Farm	1208	23	3
DC 50 Solar Project	450	9	1
Sun Edison Jupiter Project	1800	34	4
First Solar Development LLC	3500	67	7
SunPower Project	2000	38	4
Plot Plan No.23577 Revised Permit No 2	10	1	1
Paradise Valley Development – Specific Plan No. 339	1800	34	4
Future Projects Total	28,252	540	62

Supplementary projects (in italics above) are described in more detail as follows:

- Construction of Chuckwalla Valley and Ironwood State Prisons: Construction of the Chuckwalla Valley and Ironwood State Prisons disturbed approximately 1,720 acres, suggesting that 29 cultural sites were destroyed pursuant to this work.
- Construction of I-10: Interstate 10 is a four-lane divided highway with associated bridges, off-ramps and a berm system. Assuming a minimum width of 200 feet and length of 48 miles, this project disturbed approximately 1,163 acres, suggesting that 22 cultural sites were destroyed during its construction.
- The Devers–Palo Verde No. 1 and Devers–Palo Verde No. 2 Transmission Lines: Based on the construction of the access road and excluding the transmission tower pads, a width of 20 feet and a length of 48 miles were assumed for this analysis, resulting in approximately 116 acres of disturbance for each projects (232 acres total) and the destruction of approximately 2 cultural resources each (4 total).
- Mining activities at the Kaiser Eagle Mountain Mine: mining activities at the Kaiser Eagle Mountain Mine may have disturbed about 3,500 acres, destroying an estimated 67 cultural resources.

Together, existing actions within the cumulative study area as summarized in Table 3.6-2 disturbed an estimated 25,530 acres, or 21 percent of the cumulative study area (122,440 acres), and may have destroyed 487 of the estimated 2,362 cultural resources.

Present and reasonably foreseeable actions in Eastern Riverside County include 15 solar projects, development of the Chuckwalla Raceway, four new transmission lines and other activities identified as part of the cumulative scenario. Although some of these projects may not be built, this analysis conservatively assumes the maximum number of cultural resources would be destroyed. Reasonably foreseeable actions within the cumulative study area as summarized in Table 3.6-2 would disturb 28,252 acres, or 23 percent of the cumulative study area (122,440 acres), and destroy 540 cultural resources.

The results of this analysis suggest that past, present and reasonably foreseeable future actions have already destroyed, and are projected to destroy, approximately 44 percent of the cultural resources that are estimated to have originally existed in the cumulative analysis study area. This analysis does not take into account the variation in cultural resource types as well as the variation in significant values associated

with the NRHP and CRHR-eligible resources in the cumulative study area. Also, it is possible that cultural resource types regularly considered not eligible in accordance with current standards and practices may have eligible values in the future as regional research advances and new archaeological methods (such as dating techniques) are discovered and become accessible to researchers in the cumulative study area.

Solar Facility and 220 kV Generation-Tie Line

The effects of the proposed Project or an alternative when combined with impacts from past, present, and reasonably foreseeable projects, contribute to the cumulatively considerable adverse impacts to two cultural landscapes/historic districts in eastern Riverside County. As summarized in Table 3.6-1, based on the number of acres that would be disturbed (Athos cultural resources study area 3,533 acres), direct impacts associated the Project would contribute approximately 2.8 percent of the cumulative impacts within the cumulative analysis study area (122,440 acres) in eastern Riverside County.

A total of 31 cultural resources and portions of two historic districts are present within the direct effects study area of the proposed Project. Seventeen (17) of the 31 resources are WWII-era historic resources and are contributors to the DTCCL. Four of these resources are eligible in their own right for the CRHR. Thirteen (13) of these resources are not individually eligible for listing on the CRHR. The destruction of both eligible and ineligible contributors as a result of the Project contributes in a small but measurable way to the destruction of the DTCCL as a whole. Cumulative impacts to the DTCCL would be addressed through MM CUL-11 (Desert Center DTC/C-AMA Summary Report and District DPR Form). With implementation of MM CUL-11, the Project would not result in a considerable contribution to cumulative effects on these WWII-era resources.

Three sensitive prehistoric archaeological resources are present in the indirect effects study area. These include: prehistoric site CA-RIV-1515, North Chuckwalla Petroglyph National Register District (CA-RIV-1383), and Coco-Maricopa Trail (CA-RIV-53T) segments (c) and (d). All of these resources are contributors to the PTNCL. The addition of more industrial components to the Chuckwalla Valley contributes in a small but measurable way to a visual intrusion upon the setting of the PTNCL, a defining characteristic of the resource under Criterion 1. This visual intrusion compromises the integrity of the resource.

Cumulative impacts to the PTNCL as a result of visual intrusion would be addressed with implementation of MM CUL-12 (Prehistoric Trails Summary Report). Implementation of CUL-12 would reduce the contribution of the Project but the cumulative impact would remain significant.

Mitigation Measures for Cumulative Impacts

Mitigation Measures CUL-11 and CUL-12 and AES-1 through AES-4 would be implemented (see Section 3.6.10 below).

Significance After Mitigation

The Project would result in a cumulatively considerable contribution to a significant cumulative impact to the PTNCL as a result of visual intrusion.

3.6.10 Mitigation Measures

MM AES-1 **Night Lighting Management Plan.** *See full text in Section 3.2, Aesthetics.*

MM AES-2 **Surface Treatment of Project Structures and Buildings.** *See full text in Section 3.2, Aesthetics.*

- MM AES-3** **Project Design.** *See full text in Section 3.2, Aesthetics.*
- MM AES-4** **Retention of Roadside Vegetation.** *See full text in Section 3.2, Aesthetics.*
- MM CUL-1** **Project Archaeologist.** Prior to issuance of grading permits: The applicant/developer shall provide evidence to the County of Riverside Planning Department that a County certified professional archaeologist (Project Archaeologist) has been contracted to implement a Cultural Resource Monitoring Program.
- MM CUL-2** **Cultural Resource Monitoring Plan.** Prior to issuance of grading permits: The applicant/developer shall provide evidence to the County of Riverside Planning Department that a Cultural Resource Monitoring Plan has been developed with input from the consulting tribes that addresses the details of all activities and provides procedures that must be followed in order to reduce the impacts to cultural and historic resources to a level that is less than significant (except for the Project’s contribution to a significant cumulative impact to the PTNCL, which would remain significant after mitigation) as well as address potential impacts to undiscovered buried archaeological resources associated with this project. A fully executed copy of the contract and a wet-signed or DocuSigned (e-signature) copy of the Monitoring Plan shall be provided to the County Archaeologist to ensure compliance with this condition of approval.
- Working directly under the Project Archaeologist, an adequate number of qualified Archaeological Monitors shall be present to ensure that all earth moving activities are observed and shall be on-site during all grading activities for areas to be monitored including off-site improvements. Inspections shall vary based on the rate of excavation, the materials excavated, and the presence and abundance of artifacts and features. The frequency and location of inspections shall be determined by the Project Archaeologist.
- MM CUL-3** **Archaeological Monitor.** Prior to issuance of grading permits: The applicant/developer shall provide evidence to the County of Riverside Planning Department that an adequate number of qualified archaeological monitors shall be onsite to ensure all earth moving activities are observed for areas being monitored. This includes all grubbing, grading and trenching onsite and for all offsite improvements. Inspections shall vary based on the rate of excavation, the materials excavated, and the presence and abundance of artifacts and features. The frequency and location of inspections shall be determined and directed by the Project Archaeologist.
- MM CUL-4** **Native American Monitor.** Prior to the issuance of grading permits, the developer/permit applicant shall enter into an agreement with the consulting tribe(s) for at least one Native American Monitor. The Native American Monitor(s) shall be on-site during all initial ground disturbing activities and excavation of each portion of the project site including clearing, grubbing, tree removals, grading and trenching. In conjunction with the Archaeological Monitor(s), the Native American Monitor(s) shall have the authority to temporarily divert, redirect or halt the ground disturbance activities to allow identification, evaluation, and potential recovery of cultural resources. The developer/permit applicant shall submit a fully executed copy of the agreement to the County Archaeologist to ensure compliance with this condition of approval. Upon verification, the Archaeologist shall clear this condition. This agreement shall not modify any condition of approval or mitigation measure.
- MM CUL-5** **Tribal Cultural Sensitivity Training.** Prior to ground disturbance, the developer/permit applicant shall enter into an agreement with the consulting tribe(s) to provide Cultural

Sensitivity Training. A representative designated by the consulting Tribe(s) shall provide Cultural Sensitivity Training for all construction personnel. Training shall include a brief review of the cultural sensitivity of the Project and the surrounding area; what resources could potentially be identified during earthmoving activities; the protocols that apply in the event unanticipated cultural resources are identified, including who to contact and appropriate avoidance measures until the find(s) can be properly evaluated; and any other appropriate protocols. This is a mandatory training and all construction personnel must attend prior to beginning work on the project site. A copy of the agreement and a copy of the sign in sheet shall be submitted to the County Archaeologist to ensure compliance with this condition of approval. A record of attendance shall be available to the consulting tribes upon request.

MM CUL-6 **Discovery of Unanticipated Resources.** In the event that previously unidentified potentially significant cultural resources are discovered, the Archaeological and/or Tribal Monitor(s) shall have the authority to divert or temporarily halt ground disturbance operations in the area of discovery to allow evaluation of potentially significant cultural resources. The Project Archaeologist, in consultation with the Tribal monitor, shall determine the significance of the discovered resources. The County Archaeologist must concur with the evaluation before construction activities shall be allowed to resume in the affected area. Further, before construction activities are allowed to resume in the affected area, the artifacts shall be recovered or if feasible, preserved in place if requested by the tribe(s), and features recorded using professional archaeological methods. The Project Archaeologist shall determine the amount of material to be recovered for an adequate artifact sample for analysis. Isolates and clearly non-significant deposits shall be minimally documented in the field and the monitored grading can proceed.

MM CUL-7 **Artifact Disposition.** Prior to Grading Permit Final Inspection, the landowner(s) shall relinquish ownership of all cultural resources that are unearthed on the Project property during any ground-disturbing activities, including previous investigations and/or Phase III data recovery.

Historic Resources – all historic archaeological materials recovered during the archaeological investigations (this includes collections made during an earlier project, such as testing of archaeological sites that took place years ago), shall be curated at the Western Science Center, a Riverside County curation facility that meets State Resources Department Office of Historic Preservation Guidelines for the Curation of Archaeological Resources ensuring access and use pursuant to the Guidelines

Prehistoric Resources – One of the following treatments shall be applied:

- a. **Reburial of the resources on the Project property.** The measures for reburial shall include, at least, the following: Measures to protect the reburial area from any future impacts. Reburial shall not occur until all required cataloguing, analysis and studies have been completed on the cultural resources, with an exception that sacred items, burial goods and Native American human remains are excluded. Any reburial processes shall be culturally appropriate. Listing of contents and location of the reburial shall be included in the confidential Phase IV Report. The Phase IV Report shall be filed with the County under a confidential cover and not subject to a Public Records Request.

- b. **Curate the resources on the Project property.** If reburial is not agreed upon by the Consulting Tribes then the resources shall be curated at a culturally appropriate manner at the Western Science Center, a Riverside County curation facility that meets State Resources Department Office of Historic Preservation Guidelines for the Curation of Archaeological Resources ensuring access and use pursuant to the Guidelines. The collection and associated records shall be transferred, including title, and are to be accompanied by payment of the fees necessary for permanent curation. Evidence of curation in the form of a letter from the curation facility stating that subject archaeological materials have been received and that all fees have been paid, shall be provided by the landowner to the County. There shall be no destructive or invasive testing on sacred items, burial goods and Native American human remains.

MM CUL-8 **Monitoring Report.** Prior to Grading Permit Final Inspection, a Phase IV Cultural Resources Monitoring Report shall be submitted that complies with the Riverside County Planning Department's requirements for such reports for all ground disturbing activities associated with this grading permit. The report shall follow the County of Riverside Planning Department Cultural Resources (Archaeological) Investigations Standard Scopes of Work posted on the TLMA website. The report shall include results of any feature relocation or residue analysis required as well as evidence of the required cultural sensitivity training for the construction staff held during the required pre-grade meeting and evidence that any artifacts have been treated in accordance to procedures stipulated in the Cultural Resources Management Plan.

MM CUL-9 **Temporary Fencing.** Temporary fencing shall be required for the protection of cultural site(s) AE-3752-066H, P-33-018393/ CA-RIV-9481H and P-33-025150/ CA-RIV-12372H during any construction activities along the Gen-Tie lines. Prior to commencement of construction activities, the project archaeologist shall confirm the site boundaries and determine an adequate buffer for protection of the site(s). The applicant shall direct the installation of fencing under the supervision of the project archaeologist and Native American Monitor. The fencing can be removed only after construction activities have been completed.

MM CUL-10 **Journal Article.** Prepare and submit for publication a journal article summarizing the results of research on AE-3752-066H (historic refuse dump), AE-3752-106H (historic road segment), and P-33-025150/ CA-RIV-12372H (SR 177/Rice Road segment). The County Archaeologist shall review and approve the article prior to submission. The article shall be submitted to a local historical journal such as the Journal of the Riverside Historical Society.

MM CUL-11 **Desert Center DTC/C-AMA Summary Report and District DPR Form.** In order to address direct impacts to all DTC/C-AMA resources eligible for the CRHR as well as cumulative impacts to the DTCCCL and any contributor to the district, prior to Grading Permit Final Inspection the Project owner shall retain cultural resources specialists with previous knowledge of the DTC/C-AMA. These specialists shall review and synthesize the information contained in DPR forms for DTC/C-AMA-associated resources in the Chuckwalla Valley. The results shall be summarized in a report and district DPR form, if appropriate, for the Desert Center vicinity. Some of the key resources shall include the Chuckwalla Valley Maneuver Area, the Desert Center Army Airfield, Desert Center Observer's Camp, 18th Ordnance Battalion Campsite, the Desert Center Small Arms Range, the Desert Center Supply Depot, and the Desert Center Evacuation Hospital. The report and DPR forms shall be submitted to the County for review. After review and approval the report and DPR forms shall be submitted to the California Historical Resources Information System Eastern Information Center.

MM CUL-12 Prehistoric Trails Summary Report. In order to address cumulative and indirect impacts to the Prehistoric Trails Network Cultural Landscape/Historic District (PTNCL) prior to Grading Permit Final Inspection the Project owner shall retain cultural resources specialists with prior experience working with prehistoric resources in the Blythe and/or Desert Center vicinity. These specialists shall review and synthesize the information contained in DPR forms and previously prepared reports regarding prehistoric trails and associated artifacts and features in the Chuckwalla Valley. The results shall be summarized in a report and district DPR form, if appropriate, for the Desert Center vicinity. After review and approval, the report and DPR forms shall be submitted to the California Historical Resources Information System Eastern Information Center.

MM CUL-13 Archival and Field Studies for Historic-Era Resources. Prior to grading, the consultant shall conduct archival research to determine context and association with major historical themes for AE-3752-064H, which has been identified as a historical resource for purposes of CEQA, and for CA-RIV-9854H, -9857H, and -20572, which will be avoided by the Project but are still of interest to the County.

3.7 Geology, Soils and Mineral Resources

This section describes the existing regional and local geology, soil conditions, and mineral resources, and the regulatory framework for these resources. Though CEQA does not generally consider the impact of the existing environment on the Project or alternatives, this section also identifies seismic hazards that could potentially affect structures associated with the Project to assist decision-makers in addressing regulatory concerns. The Project area relevant to the analysis of geology, soils, minerals and geologic hazards is the physical footprint of Project's construction, operation and maintenance, and decommissioning activities. The study area for faulting and seismic hazards includes the larger Southern California region, because distant faults can produce ground shaking and secondary seismic hazards at the Project area. The information in this section is based on the Geotechnical Engineering Report: Athos Solar Facility Desert Center, California, prepared by Terracon Consultants, Inc. (2018) ("Geotechnical Report") provided in Appendix F of this Draft EIR.

3.7.1 Environmental Setting

The Project site is located within the Mojave Desert Geomorphic Province in Riverside County, California. Geologic structures within this Province trend mostly northwest, in contrast to the prevailing east-west trend in the neighboring Transverse Ranges Geomorphic Province to the west. The Mojave Desert Province extends into lower California and is bounded by the Garlock Fault to the north, the San Andreas Fault to the west and Nevada and Arizona borders to the east.

Geology

The proposed Project site is in Southern California, which is a seismically active area. The type and magnitude of seismic hazards affecting the site are dependent on the distance to active faults, the intensity, and the magnitude of the seismic event. The site is not located within an Alquist-Priolo Earthquake Fault Zone shown on the State Fault Hazard Maps (Terracon Consultants, Inc, 2018).

The geotechnical work for the Project included completing 37 borings to approximate depths ranging between 21 and 51 feet below ground surface, test pits, field electrical resistivity surveys, and in-situ pile tests.

Additionally, the Geotechnical Report identified the Project area as having a Seismic Design Class D for Substations 1, 2, and 3 and Class C for Substation 4. A Seismic Design Category is a classification assigned to a structure based on its occupancy category, and the severity of the design earthquake ground motion. The California Building Code recommends that the design of structures be based on the peak horizontal ground acceleration (PGA) having a 2 percent probability of exceedance in 50 years. The Geotechnical Report identified a peak ground acceleration of 0.338g (Substation 1), 0.341g (Substation 2), 0.301g (Substation 3), and 0.318g (Substation 4).

Regarding geologic hazards, the Geotechnical Report summarizes the risk as follows (additional information regarding the geologic hazards is provided in the report):

- Slope stability – The site is within a gentle slope area, geologic hazards associated with slope instability may be considered low.
- Landslide hazards – The site is within a gentle slope area; landslide hazards may be considered low.
- Surface fault rupture – The site is not located within an Alquist-Priolo Special Study Zone or a fault zone based on the County of Riverside studies.
- Fissures – The site is not within an Alquist-Priolo Special Study Zone nor within a liquefaction zone. The expectation of fissures occurring at the site is considered low.

- Collapsible and/or expansive soils – the laboratory test results indicate that the materials at a depth of approximately 2½ feet below ground surface exhibit a moderate collapse potential when saturated. However, the Geotechnical Report states that based on the in-situ dry density of the sample and the relatively granular nature of the soils, it is the opinion of the authors that the sample was slightly disturbed. Additional studies will be conducted. Onsite soils are not considered expansive due to their non-plastic nature.
- Liquefaction potential – The California Geologic Survey (CGS) has designated certain areas within Southern California as potential liquefaction hazard zones. These are areas considered at a risk of liquefaction-related ground failure during a seismic event, based upon mapped surficial deposits and the presence of a relatively shallow water table. The Project site is not located within a liquefaction hazard zone as mapped by the CGS. The site is mapped within a low to moderate liquefaction zone by Riverside County. Based on the anticipated depth to groundwater (70 feet below the ground surface¹) and subsurface conditions encountered on-site, the Geotechnical Report concludes that the potential for liquefaction at the site is considered low.
- Subsidence – Based on the County of Riverside GIS system, the site is located within an area susceptible to subsidence.
- Ground shaking potential – The site is not located with an Alquist-Priolo Fault Zone. However, with the active faults in the region, the site could be subjected to strong ground shaking that may result from earthquakes on local to distant sources during the life span of the Project

Soils

According to the Geotechnical Report (Terracon Consultants, Inc, 2018) and the Eolian System Map of the East Riverside Area (CGS, 2014), the solar facility parcel groups (A through G) and gen-tie line corridors are generally underlain by Alluvium deposits (Qyf) with a portion of the northern (Parcel Group A) and easternmost (Parcel Group G) parcels of the Project site mapped for surficial deposits of Dune sands (Qe). Within the southwestern most portions of the site (Parcel Group F) and along the gen-tie lines, Pleistocene non-marine deposits are mapped consisting of unconsolidated to weakly consolidated sand, silt, and gravel (Qoa).

The Alluvium deposits (Qyf) are of latest Pleistocene and Holocene age. They include unconsolidated to slightly consolidated sand and gravel, poorly to moderately sorted, fine- to coarse-grained; gravel includes pebbles, cobbles, and boulders. This unit contains active alluvial fans and washes that serve as sources of windblown (aeolian) sediment.

The surficial deposits of Dune sands (Qe) include active windblown deposits consisting of dunes and sand sheets where the sand is predominantly fine- to medium-grained. Dry soil color is typically very pale brown. Both these areas are either actively or were previously farmed.

The Pleistocene non-marine deposits include alluvial fan, alluvial valley, and alluvial terrace deposits. In general, these deposits are capped by a gravel lag or desert pavement with moderately to strongly developed desert varnish.

Portions of the Project area have been or are currently being used for agricultural purposes. It is expected that the upper one to 2 feet of soil in these areas have been disturbed for these agricultural activities.

¹ This estimate is based on a monitoring well located approximately 1 mile north of the Desert Center Airport identified by the California Department of Water Resources.

Geomorphology. Geomorphology is the study of the landforms and relief patterns that make up the earth's surface. Sand dune transport systems form where winds are consistently strong enough to lift just above the ground and push (or "saltate") fine sand grains across the dune surface, especially where there is little or no vegetation to stabilize the loose soil. Sandy alluvium in dry washes and alluvial fans are examples of sources for these materials, and strong winds generally transport the sands to areas with topographic irregularity, such as at the mountain front, where decreasing winds deposit sand. Except in high-force winds, wind does not typically suspend and transport sand high into the air (BLM, 2015).

The Project site is located within the Chuckwalla Valley, a region of active aeolian sand migration and deposition. Aeolian processes play a major role in the creation and establishment of sand dune formations and habitat in the Chuckwalla Valley and those within the Project area.

A recent study (Kenney, 2018) reviewed the sand corridor throughout the Chuckwalla Valley and concludes that the sand transport system relies on local sand systems, rather than systems that cross the entire Chuckwalla Valley. It identifies some sand sources throughout the Project, described below.

Parcel Group A. The proposed Parcel Group A is surrounded by sand sources, with active washes to the south that are important for aeolian systems as a sand source, sand transport, and stabilizing moisture. Aeolian geomorphic Zone C is located east of the Project with low sand migration rate identified by minor very thin and sparse sand sheets and coppice dunes, and Zone BC to the north with low to moderate sand migration rate identified by minor active sand sheet and coppice dune. There are minor areas to the west of Parcel Group A identified as Zone BW, with moderate to weak sand migration rate in a region dominated by stable and typically eroding older dune deposits. The site itself is not identified as part of the geomorphic zones.

Parcel Group G. The proposed Parcel Group G is crossed by active washes that are important for aeolian systems as a sand source, sand transport, and stabilizing moisture. It is also adjacent to areas to the north and east identified as important for aeolian systems and as Zone BW.

Gen-tie Line. The gen-tie line connecting Parcel Groups A and C would cross an active wash that is important for aeolian systems as a sand source, sand transport, and stabilizing moisture.

The remainder of the site and gen-tie lines are not located on the geomorphic zones.

Mineral Resources

The Project site (Parcel Groups A–G and gen-tie lines) is mapped as Mineral Resource Zone (MRZ)-4 (CDMG, 1994), which identifies "areas of no known mineral occurrences where geologic information does not rule out either the presence or absence of industrial mineral resources." Therefore, no economically viable mineral deposits are known to be present at the site, and no mines are known to have existed within the Project site boundary.

There are no active mining claims nor any locatable mineral activity within the Project area (A-G and gen-tie lines) (BLM, 2015). There are no active mineral leases within the Project site or surrounding area (BLM, 2015). The presence of alluvial materials at the site location means that the property could potentially be accessed and developed as a source of sand and gravel, or saleable minerals.

3.7.2 Regulatory Framework

Federal

The BLM manages the area where the gen-tie lines are located under the California Desert Conservation Plan, As Amended. With respect to mineral resources, the CDCA Plan aims to maintain the availability of

mineral resources on public lands for exploration and development. The Desert Renewable Energy Conservation Plan amended the California Desert Conservation Plan with a focus on renewable energy and conservation. With regards to minerals, the DRECP does not amend the CDCA Plan goals, it adds the goal to support the national need for a reliable and sustainable domestic mineral and energy supply and to support responsible mining and energy development operations necessary for California's infrastructure, commerce and economic well-being.

State

California Building Code. The CBC is promulgated under the CCR, Title 24, Parts 1 through 12 (also known as the California Building Standards Code) and is administered by the California Building Standards Commission. The Project is subject to the applicable sections of the CBC. The Riverside County Building Department is responsible for implementing the CBC for the Project. The Project would comply with applicable seismic design and construction criteria of the most recent CBC.

The earthquake design requirements consider the occupancy category of the structure, site class, soil classifications, and various seismic coefficients which are used to determine a Seismic Design Category (SDC) for a project as described in Chapter 16 of the CBC. The SDC is a classification system that combines the occupancy categories with the level of expected ground motions at the site and ranges from SDC A (very small seismic vulnerability) to SDC E (very high seismic vulnerability and near a major fault). For Seismic Design Categories D, E, and F, Chapter 18 requires analysis of slope instability, liquefaction, and surface rupture attributable to faulting or lateral spreading, plus an evaluation of lateral pressures on basement and retaining walls, liquefaction and soil strength loss, and lateral movement or reduction in foundation soil-bearing capacity. It also addresses mitigation measures to be considered in structural design, which may include ground stabilization, selecting appropriate foundation type and depths, selecting appropriate structural systems to accommodate anticipated displacements, or any combination of these measures.

State Surface Mining and Reclamation Act of 1975. The Surface Mining and Reclamation Act of 1975 (PRC §2710 et seq.) mandated the initiation by the State Geologist of mineral land classification to help identify and protect mineral resources in areas within the State subject to irreversible land uses that would preclude mineral extraction. The Act also allowed the State Mining and Geology Board to designate lands containing mineral deposits of regional or statewide significance. Mineral lands are mapped according to jurisdictional boundaries (i.e., counties), mapping all mineral commodities at one time in the area, using the California Mineral Land Classification System. Classification into Mineral Resource Zones is completed by the State Geologist in accordance with the State Mining and Geology Board's priority list. Classification of these areas is based on geologic and economic factors without regard to existing land use and land ownership.

Local

Riverside County Code of Ordinances. Title 15 of the Riverside County Code of Ordinances regulates buildings and construction by adopting by reference the CBC, in addition to County-specific amendments which are equal to or more stringent than the provisions of the CBC. The County requires project applicants to obtain a grading permit from the building official prior to conducting grading or clearing of any kind. County Ordinance No.457.98 requires a grading permit for any exploratory excavations consisting of 1,000 cubic yards or greater in any one location of one acre or more. This applies to all trenching, borings, and any access road clearing/construction that may be necessary.

Riverside County General Plan – Desert Center Area Plan: Seismic. Seismic hazards pose significant threats to life and property in the area. The most significant fault within the plan area runs northerly of and parallel to Interstate 10 through the Desert Center community. Threats from seismic events include ground shaking, fault rupture, and landslides. Liquefaction is a moderate threat within much of the area. The use of special building techniques, the enforcement of setbacks, and practical avoidance measures will help to mitigate these potentially dangerous circumstances.

- **Policy DCAP 11.1** Protect health and safety from seismic-related incidents through adherence to the Seismic Hazards section of the General Plan Safety Element.

Desert Center Area Plan: Slope. The Chuckwalla, Eagle, and Coxcomb Mountains play an integral part in establishing the character and atmosphere of Desert Center. While densities are limited in the Open Space-Rural land use designation, development that does occur must prevent or minimize the potential for erosion and landslides, preserve significant views, and minimize grading and scarring. The following policies are intended to protect life and property while maintaining the natural character of this area.

- **Policy DCAP 12.1** Protect life and property, and maintain the character of Desert Center, through adherence to the Hillside Development and Slope section of the General Plan Land Use Element, the Rural Mountainous and Open Space land use designations within the General Plan Land Use Element, and the Slope and Soil Instability Hazards section of the General Plan Safety Element.

3.7.3 Methodology for Analysis

Evaluation of potential geologic and soil-related impacts were based on the Geotechnical Report prepared for the proposed Project (Terracon Consultants, Inc, 2018). It is assumed that geotechnical considerations for future structures are designed in accordance with applicable requirements of the CBC and the County of Riverside Municipal Code and any applicable building and seismic codes in effect at the time the grading plans are approved. It is also assumed that the Applicant will include a geotechnical engineering review of the Project engineering plans prior to construction as recommended in the geotechnical report. The EIR assesses Project impacts to soils and geologic hazards based on these considerations.

The EIR assesses impacts of the Project on mineral resources based on the Mineral Resource Zone and BLM identification of the mineral resources for the area. The EIR assesses the degree to which the Project would reduce the availability of mineral resource areas identified within the Project area.

3.7.4 CEQA Significance Criteria

The criteria used to determine the significance of potential geology, soils, and mineral resources impacts are based on Appendix G of the CEQA Guidelines. The Project would result in a significant impact under CEQA related to geology, soils, and mineral resources if it would:

- *Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death, involving:*
 - *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 (see Impact GEO-1a);*
 - *Strong Seismic ground shaking (see Impact GEO-1b);*
 - *Seismic-related ground failure, including liquefaction (see Impact GEO-1c); or*
 - *Landslides (see Impact GEO-1d).*

- *Result in substantial soil erosion or the loss of topsoil (see Impact GEO-2);*
- *Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse (see Impact GEO-3);*
- *Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994) [Section 1802.3.2 of the California Building Code (2007)], creating substantial direct or indirect risks to life and property (see Impact GEO-4);*
- *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 (see Impact GEO-5); or*
- *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. (see Impact MR-1).*

The County of Riverside's Environmental Assessment Form includes additional significance criteria, which were also used in the analysis. The County's form includes the same language as the first bullet of the CEQA criteria but requires that the analysis consider the County Fault Hazard Zone in addition to the Alquist-Priolo Earthquake Fault Zone. The additional criteria indicate that a project could have potentially significant impacts if it would:

- *Change topography or ground surface relief features (see Impact GEO-2);*
- *Result in grading that affects or negates subsurface sewage disposal systems (see Impact GEO-5);*
- *Change deposition, siltation or erosion that may modify the channel of a river or stream or the bed of a lake (see Impact GEO-2);*
- *Result in an increase in water erosion either on- or off-site (see Impact GEO-2);*
- *Result in an increase in wind erosion and blowsand from project either on or off site (see Impact GEO-2);*

The following CEQA significance criteria from Appendix G were not included in the analysis:

- *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.*

None of Parcel Groups A to G and none of the gen-tie lines would be located on a locally important mineral recovery site.

The following CEQA significance criteria from the County's Environmental Assessment Form were not included in the analysis:

- *Create cut or fill slopes greater than 2:1 or higher than 10 feet.*

None of Parcel Groups A to G and none of the gen-tie lines would require cut or fill slopes greater than 2:1 or higher than 10 feet.

- *Be an incompatible land use located adjacent to a State classified or designated area of existing surface mine.*

None of Parcel Groups A to G and none of the gen-tie lines would be located adjacent to an existing surface mine.

- *Expose people or property to hazards from proposed, existing or abandoned quarries or mines.*

None of Parcel Groups A to G and none of the gen-tie lines would be adjacent to a proposed, existing, or abandoned mine or quarry.

- *Be subject to geologic hazards, such as seiche, mudflow, or volcanic hazard.*

None of Parcel Groups A to G and none of the gen-tie lines would be near the geologic hazards because the sites are not near a lake or enclosed water body (seiche), sloped areas (mudflow), or volcanoes (volcanic hazards).

3.7.5 Proposed Project Impact Analysis

Issues raised during scoping related to Geology, Soils and Mineral Resources include off-site erosion during flooding and rain events and dust caused by erosion.

Impact GEO-1. The Project would directly or indirectly cause substantial adverse effects, including the risk of loss, injury, or death, involving geologic hazards.

Solar Facility and 220 kV Generation-Tie Line

(a) Rupture of a known earthquake fault. None of the Project site is located within an Alquist-Priolo Special Study Zone or a fault zone based on the County of Riverside studies so the risk of a rupture of a known fault at the site and any resulting adverse effects is low. The Project would be required to follow regulatory requirements regarding building the structures and would follow the recommendations of a geotechnical expert. Because of this, the impact would be less than significant.

(b) Strong seismic ground shaking. Although no known active or potentially active faults underlie the Project area, strong ground shaking along the active faults in the region could occur especially as the PGA for the site could result in strong shaking. This could result in damage to Project structures, including the PV solar panels, inverters/transformers, interior collection lines, on-site substations, O&M building, and gen-tie lines, which could result in adverse effects if not designed and engineered appropriately.

Potential impacts to the solar facility, gen-tie lines, and associated structures related to ground shaking would be reduced through compliance with State and local regulations and standards, and established engineering procedures. Future structures would be designed in accordance with the County of Riverside Building Code and the most recent CBC and would be consistent with the recommendations outlined in the Geotechnical Report prepared for the proposed Project. The regulatory requirements put in place prior to final Project design and construction to minimize any potential impacts related to secondary seismic effects during operation and maintenance activities. Engineering of the Project would take into consideration the results and recommendations provided in the Geotechnical Report including for any seismic concerns and as noted in the Geotechnical Report, a geotechnical engineering firm should review the final design plans and specification to provide comments. Because of the existing regulatory requirements and with implementation of the existing geotechnical recommendations, the impact would be less than significant.

(c) Seismic-related ground failure, including liquefaction. As noted in the Geotechnical Report, the Project and the gen-tie routes are mapped within a low to moderate liquefaction zone by Riverside County. Based on the anticipated depth to groundwater (70 feet below the ground surface) and subsurface conditions encountered on-site, the Geotechnical Report concludes that the potential for liquefaction at the site is considered low. The impact of seismic-related ground failure including liquefaction that would result in substantial adverse effects is less than significant.

(d) Landslides. The solar facility site is located within an area with gentle slope and landslide hazard risk is considered low. Impacts due to landslides would be less than significant.

Mitigation Measures for Impact GEO-1

No mitigation would be required.

Significance After Mitigation

This impact would be less than significant.

Impact GEO-2. The Project would change topography or ground surface or result in an increase in deposition, siltation, or wind and water erosion which could result in substantial soil erosion or loss of topsoil.

Solar Facility

Since most of the site has nearly level to gently sloping topography, no mass grading would be required; however, much of the solar facility area would be impacted by some form of ground disturbance, either from compaction, micro-grading, or disc-and-roll grading. Some of the parcels where facilities and arrays would be located would require light grubbing for leveling and trenching.

Construction would require ground disturbance for solar panel installation, substations, the O&M building if an existing building is not used, associated septic system, construction of access roads, and other features. These activities would expose soil and increase the potential for wind and water erosion. Disturbed soils accelerate erosion and increase sediment in storm water runoff to receiving waters, causing increased turbidity and sedimentation. Portions of the site (Parcel Groups A and G) are mapped for surficial deposits of Dune sands and would be expected to be especially vulnerable to wind erosion. The increase in erosion would result in a significant impact without mitigation. Mitigation Measure AQ-1 (Fugitive Dust Control Plan) would require a fugitive dust abatement plan that would mitigate the dust emissions during construction by implementing a suite of effective dust control practices, such as using soil stabilizers or watering exposed areas. Mitigation Measure HWQ-1 (Drainage Erosion and Sedimentation Control Plan [DESCP]) would ensure proper protection of water quality and soil resources, address exposed soil treatments in the solar fields for both road and non-road surfaces, and identify all monitoring and maintenance activities. Mitigation Measure HWQ-4 (Project Drainage Plan) would require hydrologic assessment of flood discharges and would show how they would be conveyed through or around the site and ensure that erosion does not leave the site and impact adjacent landowners or nearby water features. With implementation of the mitigation measures, impacts related to soil erosion would be less than significant. In addition, the Storm Water Pollution Prevention Plan (SWPPP) would also include best management practices (BMPs) that would reduce potential erosion.

Operation and maintenance activities would include daily operations and routine maintenance activities, such as PV panel washing, up to four times per year, to optimize output. Cleaning operations would not alter the drainage patterns on site and would not lead to a substantial increase in erosion or loss of topsoil. No heavy equipment use is anticipated during normal operation activities. Operation and maintenance vehicles could include trucks (pickup and flatbed), forklifts, and loaders for routine and unscheduled maintenance and water trucks for solar panel washing.

Sand Transport. Parcel Group A is surrounded by geomorphic zones with low to high sand transport importance. The parcel group itself does not support sand transport so would not result in a loss of sand transport from changing the existing use to a solar project. In addition, the eastern portion Parcel Group G is crossed by washes that are important for aeolian systems as a sand source, sand transport, and stabilizing moisture. Constructing a solar project on Parcel Group G may reduce the sand source and sand transport but because the Project would allow water to flow through the Project, it would continue to allow stabilizing moisture to reach the destination.

220 kV Generation-Tie Line

Since most of the gen-tie lines route has nearly level to gently sloping topography, no grading would be required for the gen-tie structures; however, some light grubbing may be required to clear vegetation from an approximately 12,500-square-foot area (0.3 acres) where the structure would be erected and selectively in some work areas. These activities would expose soil and increase the potential for wind and water erosion. The increase in erosion would result in a significant impact without mitigation. Mitigation Measure AQ-1 (Fugitive Dust Control Plan) would require a fugitive dust abatement plan and Mitigation Measures HWQ-1 (Drainage Erosion and Sedimentation Control Plan [DESCP]) and HWQ-4 (Project Drainage Plan) would ensure that erosion reduction techniques are incorporated and that erosion does not leave the site and impact adjacent landowners or nearby water features. With implementation of the mitigation measures, impacts related to soil erosion would be less than significant.

Sand Transport. The gen-tie connecting Parcel Group A and Parcel Group C would cross an active wash that is important for aeolian systems as a sand source, sand transport, and stabilizing moisture. Because the gen-tie line has a limited footprint, it would not impede the wash flow and would not impact the wash as a sand source, sand transport, and stabilizing moisture.

Mitigation Measures for Impact GEO-2

Mitigation Measure AQ-1 (Fugitive Dust Control Plan) would require a fugitive dust abatement plan that would mitigate the dust emissions during construction by implementing a suite of effective dust control practices, such as using soil stabilizers or watering exposed areas. Mitigation Measure HWQ-1 (Drainage Erosion and Sedimentation Control Plan [DESCP]) would ensure proper protection of water quality and soil resources, address exposed soil treatments in the solar fields for both road and non-road surfaces, and identify all monitoring and maintenance activities. Mitigation Measure HWQ-4 (Project Drainage Plan) would require hydrologic assessment of flood discharges and would show how they would be conveyed through or around the site and ensure that erosion does not leave the site and impact adjacent landowners or nearby water features. The measures would be implemented to reduce potential soil erosion impacts.

Significance After Mitigation

This impact would be less than significant after implementation of Mitigation Measures AQ-1 (Fugitive Dust Control Plan), HWQ-1 (Drainage Erosion and Sedimentation Control Plan [DESCP]) and HWQ-4 (Project Drainage Plan).

Impact GEO-3. The Project would be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the Project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse.

Solar Facility and 220 kV Generation-Tie Line

The solar facility site and gen-tie lines are located in an area that has a low landslide and lateral spreading hazard due to the gentle slope and a low liquefaction potential. However, the Project site is in an area susceptible to subsidence. The Project site was tested and shown to have moderate collapse potential when saturated. The Geotechnical Report states that based on the actual site conditions, the samples may have been disturbed prior to testing and additional tests are being performed.

Overall, the Project area has a low to moderate risk of becoming unstable and resulting in geologic impacts. Engineering of the Project would take into consideration the results and recommendations provided in the Geotechnical Report including for any seismic concerns, and as noted in the report, a geotechnical engineering firm should review the final design plans and specification to provide comments.

Because of the existing regulatory requirements and with implementation of the existing geotechnical recommendations, the impact would be less than significant.

Mitigation Measures for Impact GEO-3

No mitigation would be required.

Significance After Mitigation

This impact would be less than significant.

Impact GEO-4. The Project would be located on expansive soils creating substantial direct or indirect risks to life and property.

Solar Facility and 220 kV Generation-Tie Line

Onsite soils are not considered expansive due to their non-plastic nature. The Project would have low direct or indirect risk to life and property due to expansive soils and the impact would be less than significant.

Mitigation Measures for Impact GEO-4

No mitigation would be required.

Significance After Mitigation

This impact would be less than significant.

Impact GEO-5. The Project would have soils that are 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 or result in grading that affects or negates subsurface sewage disposal systems.

Solar Facility

The proposed Project may use one of the homes that currently exists on the solar facility site as an O&M facility or may use an existing homes' septic system to treat domestic wastewater from a new O&M building located within the solar facility site. The existing septic system would have a septic system permit from the Riverside County Department of Environmental Health Services and would be placed in soils capable of adequately supporting the septic system. The grading required for the Project would be relatively minor and consist largely of grubbing and light grading. Construction activities would not adversely affect the ability of soils to adequately support the proposed septic system as demonstrated by the permit requirements. As a result, the potential impact would be less than significant.

220 kV Generation-Tie Lines

The gen-tie line would not require a septic tank. The grading required for the gen-tie line would be relatively minor and consist largely of grubbing and light grading and construction activities would not adversely affect the ability of soils to adequately support the proposed septic system as demonstrated by the permit requirements. The potential impact would be less than significant.

Mitigation Measures for Impact GEO-5

No mitigation would be required.

Significance After Mitigation

This impact would be less than significant.

Impact MR-1. The Project would 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.

Solar Facility and 220 kV Generation-Tie Line

The solar facility and gen-tie lines are not delineated as a locally important mineral resource recovery site and is not used for mineral production or under a claim, lease, or permit for the production of locatable, leasable, or saleable mineral or mineral materials. The site is located within MRZ-4, where there is not enough information available to determine the presence or absence of mineral deposits. As such the Project would not result in the loss of availability of a known mineral resource of value to the region or residents of the state.

The Project site is underlain by sand and gravel which potentially could be used as a saleable mineral. Use of the site as a solar PV energy facility would not appreciably reduce or restrict the availability of sand and gravel resources from outside the Project area. Any potential on-site sand and gravel resources would become available again following decommissioning of the Project. The use of the Project site would result in a less than significant impact to known mineral resources.

Mitigation Measures for Impact MR-1

No mitigation would be required.

Significance After Mitigation

This impact would be less than significant.

3.7.6 Alternative 1: No Project Alternative

The No Project Alternative would not result in any new construction and/or operational activities or any new associated ground-disturbing activities (solar panel installation, substation and O&M building and construction of access roads). The No Project Alternative would not expose people or structures to adverse effects involving rupture of a known earthquake fault, seismic ground shaking, ground failure, or landslides. It would not result in increased erosion and sediment runoff nor be located on expansive soils or be incapable of adequately supporting the use of septic tanks. The No Project Alternative would not result in a loss of availability of a known mineral resource. Therefore, the No Project Alternative would not have impacts to geology and soils, while the Project would have impacts that would be less than significant or are mitigated to levels less than significant to these resources.

3.7.7 Alternative 2: Reduced Footprint Alternative

The Reduced Footprint Alternative would reduce the solar facility site by 387 acres by eliminating the development of two groups of separate parcels (Parcel Groups D and F) and would relocate Substation 4 to a new location on Parcel Group E. Because the Reduced Footprint Alternative would have the same geologic and soil features as the proposed Project, the impacts would be the same as for the proposed Project but in a reduced area. The smaller footprint and ground disturbance would result in slightly less potential soil erosion. The State and County requirements discussed under the proposed Project and the mitigation measures would be applicable to the Reduced Footprint Alternative and would ensure the impacts remain less than significant or less than significant with mitigation. There would be no change in impacts to the gen-tie line analysis.

3.7.8 Gen-Tie Segment #1 Alternative Route Option

The Gen-Tie Segment #1 Alternative Route Option would be located east of the proposed gen-tie and would be approximately 0.65 miles longer than the proposed Gen-Tie Segment #1. Because of the close proximity between the Route Option and the proposed Gen-Tie Segment #1, the impacts due to geological risk and soil erosion would be the same as for the proposed Project but along a longer route. The longer route would require additional towers and associated ground disturbance so would result in slightly more erosion. The geomorphological resources would be the same as for the proposed Gen-Tie Segment #1. The State and County requirements discussed under the proposed gen-tie route and the mitigation measures would be applicable to the Route Option and would ensure the impacts remain less than significant or less than significant with mitigation.

3.7.9 Cumulative Impacts

The geographic extent for the consideration of cumulative effects to geological resources and soils is a 1,000-foot buffer around the Project. The buffer size corresponds with impacts resulting from geologic hazards being localized in nature, despite geologic hazards, such as seismic events, being felt for great distances. Impacts resulting from erosion are also localized in nature and unlikely to extend beyond the actual Project boundaries unless an extreme event results in substantial downstream/downwind erosion for soil. The geographic area considered for impacts to sand transport is the Palen Lake sand migration zone for Parcel Groups A and G because primary sources of aeolian sands for the Palen Lake sand migration zone include the sand migration system along the western flank of the Coxcomb Mountains and alluvial washes moving northward from the Chuckwalla Mountains.

Tables 3.1-1 and 3.1-2 list existing and reasonably foreseeable projects in the region that could impact geology, soils, and minerals. The California Jupiter, LLC project, IO Solar Project, SunPower Project, Victory Pass, LLC, and Palen Solar Project would all be adjacent to the proposed Project. Existing and reasonably foreseeable projects that could impact the Palen Lake sand migration zone are the Desert Sunlight Solar Farm, the Desert Harvest Solar Project, the SunPower Project, and the Palen Solar Project. For projects that have already undergone environmental review (Desert Sunlight, Desert Harvest, and Palen Solar Project), these documents were reviewed for any effects to the sand transport; for projects that have not undergone environmental review, the projects were mapped against the geomorphic layer for sand from the DRECP. As noted in the DRECP, which amends the CDCA Plan, project specific mapping may change this determination.

The geographic extent for cumulative analysis pertaining to mineral resources would be the Project site. Due to the limited geographic extent for mineral resources, no projects listed in Tables 3.1-1 and 3.1-2 would be within the geographic extent for cumulative analysis.

Solar Facility

Geologic hazards would be site-specific impacts for the proposed Project (all sites) and each of the past, present, and reasonably foreseeable development projects listed above for the cumulative analysis study area. While the geologic risks could impact the Project infrastructure, it would be unlikely to be destroyed in a manner that would combine with the seismic impacts to adjacent projects and cause injury to a nearby person. As such, the geologic impacts would not combine to result in a cumulatively significant geologic impact.

The proposed Project is adjacent to other large solar projects that would require substantial ground disturbance. While each project's soil disturbance could result in offsite water and wind erosion, each project has or would undergo an environmental review under NEPA and CEQA and would be required to abide by

existing regulations such that they would have a DESC, Drainage Plan, and Storm Water Pollution Prevention Plan (SWPPP) that would reduce wind and water erosion and eliminate it from leaving each project's site. Because the wind and water erosion would not leave the Project site, it would not combine with the erosion from nearby projects and would not combine to create a cumulatively significant impact due to erosion.

The cumulative projects listed above have or could impact the Palen Lake sand migration zone through directly or indirectly impeding sand transport, reducing the amount of sand that flows through the Chuckwalla Valley, or reducing the amount of water needed for sand migration. Fencing and other infrastructure associated with the projects would impede sand transport and affect valuable habitat within this corridor, resulting in a cumulative blocking of the corridor along the western sides. While mitigation for existing projects or project under review and CMAs from the DRECP LUPA for future projects would reduce the effects of each individual renewable project permitted to the extent practicable, there would likely be a cumulatively significant impact. Because both Parcel Groups A and G are located within washes that feed the sand migration zone, and the design of the Project would allow continued sheet flow, the Project contribution to cumulative impacts would be less than cumulatively significant.

The Project site is not currently used for mineral production, nor is it under claim, lease, or permit for the production of locatable, leasable, or salable minerals. As the Project would have a negligible and temporary effect on the availability of sand and gravel resources, and no significant impact on the availability of geothermal or other mineral resources, no adverse cumulative impacts would result for these resources.

220 kV Generation-Tie Line

Cumulative impacts of the gen-tie lines would be the same as for the solar facility for geologic risk and erosion. The gen-tie line would not combine with the cumulative projects to result in an impact to the sand migration zone because it would be further removed from the sand transport and would not result in blockage to sand or water feeding the sand migration zone.

Mitigation Measures for Cumulative Impacts

Mitigation Measures AQ-1, HWQ-1 and HWQ-4 would be implemented to address potential soil erosion impacts for the proposed Project (see Section 3.7.10) and would reduce dust erosion through implementation of dust control practices such as soil stabilizers or watering exposed areas and water erosion by addressing all exposed soil and requiring hydrologic assessment of flood discharges and showing how they would be conveyed through or around the site in a manner that ensures they do not leave the site an impact adjacent landowners and nearby water features. No additional mitigation is required.

Significance After Mitigation

The Project contribution to cumulative impacts related to sand migration would not be cumulatively significant. There would be no significant cumulative impacts related to geologic hazards, erosion, or mineral resources with implementation of Mitigation Measures AQ-1, HWQ-1 and HWQ-4.

3.7.10 Mitigation Measures

- MM AQ-1** **Fugitive Dust Control Plan.** *See full text in Section 3.4, Air Quality.*
- MM HWQ-1** **Drainage Erosion and Sedimentation Control Plan [DESCP].** *See full text in Section 3.10, Hydrology and Water Quality.*
- MM HWQ-4** **Project Drainage Plan.** *See full text in Section 3.10, Hydrology and Water Quality.*

3.8 Greenhouse Gas Emissions

This section evaluates issues related to greenhouse gas (GHG) emissions resulting from implementation of the proposed Project. The analysis in this section: presents an overview of climate change; describes the various GHGs that have been identified as contributing to the effects of climate change; discusses the pertinent regulations for managing GHGs; identifies the criteria used for determining the significance of environmental impacts; and describes the potential GHG impacts of the Project.

3.8.1 Environmental Setting

Physical Setting

The global climate depends on the presence of naturally occurring GHG to provide what is commonly known as the “greenhouse effect” that allows heat radiated from the Earth’s surface to warm the atmosphere. The greenhouse effect is driven mainly by water vapor, aerosols, carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), and other constituents. Globally, the presence of GHG affects temperatures, precipitation, sea levels, ocean currents, wind patterns, and storm activity.

Human activity directly contributes to emissions of six primary anthropogenic GHGs: CO₂, CH₄, N₂O, hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF₆). The standard definition of anthropogenic GHG includes these six substances under the 1997 Kyoto Protocol (UNFCCC, 1998). The most important and widely occurring anthropogenic GHG is CO₂, primarily from the use of fossil fuels as a source of energy.

Effects of GHG Emissions

Changing temperatures, precipitation, sea levels, ocean currents, wind patterns and storm activity provide indicators and evidence of the effects of climate change. For the period 1950 onward, relatively comprehensive data sets of observations are available. Research by California’s Office of Environmental Health Hazard Assessment (OEHHA) documents climate change indicators by categorizing the effects as: changes in California’s climate; impacts to physical systems including oceans, lakes, rivers, and snowpack; and impacts to biological systems including humans, vegetation and wildlife. The primary observed changes in California’s climate include increased annual average air temperatures, more-frequent extremely hot days and nights, and increasing severity of drought. Impacts to physical systems affected by warming temperatures and changing precipitation patterns show decreasing snowmelt runoff, shrinking glaciers, and rising sea levels. Impacts to terrestrial, marine, and freshwater biological systems, with resulting changes in habitat, agriculture, and food supply are occurring in conjunction with the potential to impact human well-being (OEHHA, 2018).

California GHG Emissions Trends

California first formalized a strategy to achieve GHG reductions in 2008, when California produced approximately 483 million metric tons of CO₂ equivalent (MMTCO₂e) according to the official Air Resources Board inventory (ARB, 2017a). The economy-wide emissions have been declining in recent years, and California emitted approximately 440 MMTCO₂e in 2015 (ARB, 2017a). Globally, anthropogenic GHG emissions have increased by roughly 80 percent, from around 27,000 to 49,000 MMTCO₂e per year between 1970 and 2010 (IPCC, 2014). However, in this global context, California emits less than one percent of the global anthropogenic GHG.

3.8.2 Regulatory Framework

Federal

Presidential Executive Order 13783 on Promoting Energy Independence and Economic Growth, dated March 28, 2017, revoked the preceding Executive Order 13653 (Preparing the United States for the Impacts of Climate Change), dated November 1, 2013. The 2017 Order also rescinded the President's Climate Action Plan from June 2013 and the Climate Action Plan Strategy to Reduce Methane Emissions from March 2014. Further, the Order directs the Council on Environmental Quality to rescind its final guidance entitled "Final Guidance for Federal Departments and Agencies on Consideration of Greenhouse Gas Emissions and the Effects of Climate Change in National Environmental Policy Act Reviews," which is referred to in "Notice of Availability," 81 Fed. Reg. 51866 (August 5, 2016). As soon as practicable, each agency is to suspend, revise, or rescind, or publish for notice and comment proposed rules suspending, revising, or rescinding any such actions, consistent with existing law and the policies of Order 13783.

State

California Global Warming Solutions Act of 2006 [Assembly Bill 32 (AB 32)]. The California Global Warming Solutions Act of 2006 (AB 32) required that California's GHG emissions be reduced to 1990 levels by 2020. The reduction is being accomplished through an enforceable statewide cap on global warming emissions, which began in 2012. AB 32 directs the ARB to develop regulations and a mandatory reporting system to track and monitor global warming emissions levels (AB 32, Chapter 488, Statutes of 2006). The ARB Climate Change Scoping Plan, initially approved December 2008 and most recently updated by ARB in December 2017, provides the framework for achieving California's goals (ARB, 2017b).

In passing AB 32, the California Legislature found that:

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

Other major Executive Orders, legislation, and regulations adopted for the purpose of reducing GHG emissions support the implementation of AB 32 and California's climate goals, as described below.

California Governor's Executive Orders on GHG Emissions. In September 2018, Executive Order B-55-18 established a new statewide goal to achieve carbon neutrality as soon as possible, and no later than 2045, and achieve and maintain net negative emissions thereafter. The ARB was directed to develop the framework for implementing the goal of carbon neutrality. Executive Order B-30-15 (April 2015) established a California GHG reduction target of 40 percent below 1990 levels by 2030. One purpose of this interim target is to ensure California meets its target of reducing greenhouse gas emissions to 80 percent below 1990 levels by 2050. This executive order also specifically addresses the need for climate adaptation and directs state agencies to update the California Climate Adaptation Strategy to identify how climate change will affect California infrastructure and industry and what actions the state can take to reduce the risks posed by climate change. Senate Bill 32 (SB 32) of 2016 codified this GHG emissions target to 40 percent below the 1990 level by 2030.

California Renewables Portfolio Standard (RPS) Program. Electric utilities in California must procure a minimum quantity of the sales from eligible renewable energy resources as specified by RPS requirements. The Clean Energy and Pollution Reduction Act of 2015 [Senate Bill 350 (SB 350)] established California's state policy objectives on long-term energy planning and procurement as signed into law on October 7, 2015. The 100 Percent Clean Energy Act of 2018 [Senate Bill 100 (SB 100)] revised the RPS targets to establish the policy that eligible renewable energy resources and zero-carbon resources supply 100 percent of retail sales of electricity to California end-use customers and 100 percent of electricity procured to serve all state agencies by December 31, 2045. With SB 350 and SB 100, California's objectives include:

- *To set the Renewable Portfolio Standard (RPS) for the procurement of California's electricity from renewable sources at 33 percent by 2020, 50 percent by 2026, and 60 percent by 2030;*
- *To plan for 100 percent of total retail sales of electricity in California to come from eligible renewable energy resources and zero-carbon resources by December 31, 2045; and*
- *To double the energy efficiency savings in electricity and natural gas end uses by retail customers by 2030.*

Cap-and-Trade Program (17 CCR 95801 to 96022). The California Cap on Greenhouse Gas Emissions and Market-Based Compliance Mechanisms Regulation (Cap-and-Trade Program) was initially approved by ARB in 2011. The Cap-and-Trade Program applies to covered entities that fall within certain source categories, including petroleum refiners and suppliers of transportation fuels, and is triggered when facility emissions exceed 25,000 metric tons of CO₂ equivalent (MTCO₂e) in a year. The covered entities must hold compliance instruments sufficient to cover the actual GHG emissions, as evidenced through the ARB Mandatory Reporting of Greenhouse Gas Emissions requirements, also known as the mandatory reporting rule (MRR). This means that transportation fuel suppliers bear the GHG compliance obligation in the Cap-and-Trade Program for the GHG emissions from motor vehicle and off-road equipment fuels used by construction workforces and crews.

Emission Reductions of SF₆ from Gas Insulated Switchgear (17 CCR 95350 to 95359). In 2010, ARB adopted a regulation for reducing or phasing-out SF₆ emissions from electric power system gas insulated switchgear. The regulation requires owners of such switchgear to: (1) annually report their SF₆ emissions; (2) determine the emission rate relative to the SF₆ capacity of the switchgear; (3) provide a complete inventory of all gas insulated switchgear and their SF₆ capacities; (4) produce a SF₆ gas container inventory; and (5) keep all information current for ARB enforcement staff inspection and verification.

Local

County of Riverside Climate Action Plan (CAP). The Climate Action Plan, adopted December 8, 2015, establishes goals and policies for the County of Riverside to incorporate environmental responsibility into its daily management of residential, commercial and industrial growth. The CAP includes GHG inventories of community-wide and municipal sources based on the data available for the year 2008. Emissions within the scope of the inventories include transportation, electricity and natural gas use, landscaping, water and wastewater pumping and treatment, and treatment and decomposition of solid waste. The County's 2008 community-wide inventory amounted to 7.013 MMTCO₂e for the unincorporated areas, and 226,753 MTCO₂e from municipal operations (Riverside County, 2015).

The CAP also provides an implementation tool to guide future decisions made by the County, including a guidance document in Appendix F of the CAP titled "Greenhouse Gas Emissions, Screening Tables." The procedures for evaluating GHG impacts includes a threshold level of 3,000 MTCO₂e per year that allows Riverside County to identify projects that may require a project-specific technical analysis to quantify and mitigate emissions (Riverside County, 2015).

The County General Plan includes one policy directly relevant to the proposed Project, to facilitate development and siting of renewable energy facilities and transmission lines in appropriate locations (Policy AQ 20.19).

3.8.3 Methodology for Analysis

All construction- and operation-related emissions are quantified based on the best available forecast of activities. This analysis uses the California Emissions Estimator Model (CalEEMod; version 2016.3.2) software developed by the California Air Pollution Control Officers Association (CAPCOA). This is the most recent version of the CalEEMod software, and it relies upon mobile source emission factors from the Air Resources Board (ARB) OFFROAD inventory and EMFAC2014 models. Where Project-specific design features are not yet defined, default and typical settings from CalEEMod are used. Default emission factors used in this analysis appear in the CalEEMod User's Guide Appendix D (October 2017).

3.8.4 CEQA Significance Criteria

The significance criteria listed below are from the Environmental Checklist Form in Appendix G of the CEQA Guidelines. Under CEQA, the GHG emissions of the proposed Project and alternatives would have significant impacts if they would:

- *Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment (see Impact GHG-1).*
- *Conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases (see Impact GHG-2).*

Use of the Significance Criteria

The quantities of direct and indirect GHG emissions are compared against the CEQA threshold of significance for GHG emissions of 10,000 MTCO₂e per year, as recommended by the SCAQMD for evaluation of emissions from industrial facilities (SCAQMD, 2015). Project-related GHG emissions would be considered significant if total emissions (direct and indirect effects) would exceed this threshold. Construction-phase GHG emissions arising from short-term activities may be amortized over the longer-term life of the Project, defined as 30 years, and added to the operational emissions for comparison with the threshold (SCAQMD, 2008).

3.8.5 Proposed Project Impact Analysis

No issues related to greenhouse gas emissions were raised by the public during scoping.

Impact GHG-1. The Project would generate greenhouse gas emissions that may have a significant impact on the environment.

Solar Facility

The solar facility component of the proposed Project would result in GHG emissions due to construction and operation. Operation of the solar facility would produce electricity that would displace the need to produce electricity from traditional (fossil-fueled) resources. Separate discussions appear for the GHG emissions caused by construction activities, operations activities such as maintenance and inspection, the effects of land use conversion, and indirect GHG emissions reductions due to the renewable energy generated by the Project.

Emissions from Development Activities: Construction and Operations. Construction, operations, and eventual decommissioning activities would cause GHG emissions as a result of fossil-fuel combustion in the engines of construction equipment and the vehicles carrying construction materials and workers to and from the site. Diesel fuel or gasoline is used in mobilizing the heavy-duty construction equipment, site development and preparation, facility construction, and roadway construction, and eventual decommissioning. Total GHG emissions over the duration of construction would amount to 36,721 MTCO₂e, and 1,224 MTCO₂e/year, when averaged over a 30-year life of the Project, as recommended by SCAQMD guidelines. Direct on-site O&M activities would contribute an additional amount of 741 MTCO₂e/year, as shown in Table 3.8-1.

Table 3.8-1. Proposed Project GHG Emissions

Activity	One-Time During Construction (MTCO ₂ e)	Construction and Operations Combined (MTCO ₂ e per year)	Proposed Project GHG Emissions (MTCO ₂ e per year)
Off-Road Equipment (On-site)	16,656	—	—
Motor Vehicle Trips (Off-site)	20,065	—	—
Total, Duration of Construction	36,721	—	—
Construction Total, 30-year Amortized	—	1,224	1,224
Operations	—	741	741
Development Activities: Construction and Operations Combined			1,965
Related to Land Use Conversion			14,830
Avoided by Producing Electricity			-450,000
Total GHG, Construction and Operations			-433,205

Source: AQTR Attachment 2, CalEEMod Output; AQTR Attachment 4, Avoided GHG Emissions.

Emissions Related to Land Use Conversion. Installation of the proposed Project would result in ground disturbance that would disturb soils and remove vegetation that naturally provide carbon uptake. Converting a portion of the existing land would eliminate the natural sequestration of carbon because the existing soil and vegetation acts as a sink by removing CO₂ from the atmosphere. Ground disturbance and vegetation removal during construction accordingly adds to the GHG impact because a portion of the soils and vegetation onsite would no longer be present to sequester CO₂. The loss of carbon uptake depends on what fraction of natural vegetation on the site would be cleared for permanent installation of foundations, roads, or other onsite facilities, and on efforts to minimize soil erosion or protect existing ground cover to minimize the loss of carbon uptake. The actual amount of this loss is uncertain because it would depend on the particular characteristics of the site, and the available data on rates of sequestration by vegetation and soils are approximations. The loss of natural carbon uptake would not be expected to exceed 4.31 MTCO₂e per year per acre; absent a reliable factor for the Project setting, this factor is a proxy based on removing the natural sequestration capability of grassland (CalEEMod User’s Guide, 2017). At this rate, the permanent conversion of approximately 3,440 acres, due to vegetation removal, compacted soils for access roads, and impervious areas for equipment at the site, would result in 14,830 MTCO₂e per year of sequestration capability being lost. This estimate is conservatively high because a portion of the site would retain natural conditions, and some carbon sequestration capabilities would be restored within the site through revegetation efforts.

Emissions Avoided by Producing Electricity. The production of renewable power would displace power produced by carbon-based fuels that would otherwise be used to meet electricity demand. The power displaced is incremental power provided by generators elsewhere on the grid, typically from natural gas power plants.

The Proposed Project would produce over 1.2 million megawatt-hours (MWh) annually based on a typical, lower-bound capacity factor of 28 percent for a PV system without tracking in eastern Riverside County.¹ With tracking, a higher capacity factor would be achieved, and production would range up to approximately 1.4 million MWh annually. Under the “Proposed Near-Term Method for Estimating Generation Fuel Displacement by Avoided Use of Grid Electricity” (CEC, 2015), the electricity produced by the Proposed Project would displace fuel-burning by California’s flexible natural gas-fired resources. This would avoid GHG that would otherwise be emitted at a rate of roughly 450,000 MT of CO₂ in 2030.

The quantity of avoided GHG could vary somewhat from the quantity predicted here depending on whether a storage component would be included. By requiring a charging cycle for the storage component before discharging, some round-trip loss of energy would occur, and this would reduce the overall MWh-produced. The output of the storage component would have the beneficial effect of shifting the types of generating units on the grid that could be displaced, but the relative scale of avoided GHG of the proposed Project with storage would be comparable to the amount without storage. (See AQTR Attachment 4, Avoided GHG Emissions.)

The combined direct and indirect effects of the emissions quantified in Table 3.8-1 indicates that a net GHG reduction would occur with the proposed Project avoiding approximately 433,205 MTCO₂e annually. This impact would be less than significant, and no mitigation is required.

220 kV Generation-Tie Line

The gen-tie lines are a necessary component of the proposed Project to connect the Project’s substations to the region-serving grid and ultimately deliver the supply of renewable energy produced by the solar facility. The activities related to construction and operation of the gen-tie lines would generate minor quantities of GHG emissions at a rate substantially less than 10,000 MTCO₂e per year, which is a threshold recommended for industrial facilities (SCAQMD, 2015). This impact would be less than significant, and no mitigation is required.

Mitigation Measures for Impact GHG-1

No mitigation would be required.

Significance After Mitigation

This impact would be less than significant.

Impact GHG-2. The Project would conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases.
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Solar Facility

The solar facility component of the proposed Project would produce electricity in a manner that improves California’s ability to supply renewable energy to end-use customers and to achieve statewide renewable energy goals. Electricity from the solar facility would be used to serve the needs of customers and would facilitate compliance with the RPS, as set forth by SB 350 and SB 100. The GHG emissions avoided by producing electricity would be consistent with and would not conflict with the California’s GHG emissions

¹ The capacity factor may be 34 percent or higher if single-axis tracking is used according to data within the CPUC-sponsored RESOLVE spreadsheet model (September 2017 release).

reduction targets, as set forth by AB 32, SB 32, and the Climate Change Scoping Plan. Overall, the electricity produced by the Project would contribute to the continued reduction of GHG emissions in California's power supply.

Other Project activities related to construction and operation would either be exempt from or would be required to comply with ARB rules and regulations to reduce GHG emissions and would cause no other potential conflict with any applicable plan, policy, or regulation adopted for the purpose of reducing GHG emissions. As the total GHG emissions generated by construction and operation of the proposed Project would be considerably less than the GHG emissions avoided, the solar facility would lead to a net reduction in GHG emissions across the State's electricity system, which would contribute to meeting the State's GHG reduction goals under AB 32 and subsequent targets for 2030 and beyond. The proposed Project would not conflict with any applicable GHG management plan, policy, or regulation.

This impact would be less than significant, and no mitigation is required.

220 kV Generation-Tie Line

The gen-tie lines are a necessary component of the proposed Project to connect the Project's substations to the region-serving grid and ultimately deliver the supply of renewable energy produced by the solar facility. The activities related to construction and operation of the gen-tie lines would be required to comply with ARB rules and regulations to reduce GHG emissions, including SF₆ control, if gas-insulated switchgear would be used at the solar facility substations, and would cause no other potential conflict with any applicable plan, policy, or regulation adopted for the purpose of reducing GHG emissions.

Mitigation Measures for Impact GHG-2

No mitigation would be required.

Significance After Mitigation

This impact would be less than significant.

3.8.6 Alternative 1: No Project Alternative

The No Project Alternative would not develop the solar facility and gen-tie line, and it would avoid all new construction and/or operational activities. It would not result in a change in GHG emissions or any conflict with any applicable GHG management plan, policy, or regulation. Therefore, the No Project Alternative would have no GHG impacts.

3.8.7 Alternative 2: Reduced Footprint Alternative

The Reduced Footprint Alternative would not develop Parcel Groups D and F. The remaining sites of the Alternative and the gen-tie line would be developed in a manner similar to that of the proposed Project. Similar to the Project, the Reduced Footprint Alternative would have the combined direct and indirect effects of a net GHG reduction through the production of renewable power by the solar facility, although this alternative would have a lower level of electricity production. As with the proposed Project, the Reduced Footprint Alternative would not result in any conflict with any applicable GHG management plan, policy, or regulation. Overall, GHG impacts from the Reduced Footprint Alternative would be less than significant, as they would be for the proposed Project.

3.8.8 Gen-Tie Segment #1 Alternative Route Option

The Gen-Tie Segment #1 Alternative Route Option would avoid going through parcel APN 807-191-031. All remaining features of the gen-tie line and solar facility would remain the same as with the proposed Project. Similar to the Project, the Gen-Tie Segment #1 Alternative Route Option would have the combined direct and indirect effects of a net GHG reduction through the production of renewable power by the solar facility, and this alternative would not result in any conflict with any applicable GHG management plan, policy, or regulation. Overall, GHG impacts from this alternative would be less than significant and similar to those of the proposed Project.

3.8.9 Cumulative Impacts

Solar Facility and 220 kV Generation-Tie Line

This impact assessment describes the proposed Project's (solar facility and 220 kV gen-tie lines) contribution towards global climate change through GHG emissions that occur as a result of the Project. Because the direct environmental effect of GHG emissions is to influence global climate change, GHG emissions are inherently a cumulative concern. Indeed, no single project could, by itself, result in a substantial change in climate. As the analysis for the solar facility and 220 kV gen-tie lines concerns cumulative global impacts, there is no separate cumulative impacts analysis for global climate change. Furthermore, the evaluation of GHG impacts presented here evaluated the contribution of the Project to inherently cumulative climate change effects and demonstrated that the Project would result in a long-term net *reduction* of GHGs and would not conflict with GHG reduction goals. The Project-specific incremental impact on GHG emissions would therefore not be cumulatively considerable.

Mitigation Measures for Cumulative Impacts

No mitigation would be required.

Significance After Mitigation

The Project would not result in a cumulatively significant impact.

3.8.10 Mitigation Measures

No mitigation would be required.

3.9 Hazards and Hazardous Materials

This section evaluates the impacts from hazards and hazardous materials resulting from implementation of the proposed Project. The analysis in this section: presents an overview of existing conditions that influence risks associated with hazards and hazardous materials, describes the applicable regulations, identifies the criteria used for determining the significance of environmental impacts, and describes the potential impacts from hazards and hazardous materials of the proposed Project.

3.9.1 Environmental Setting

Land Use

Existing and past land use activities are commonly used as indicators of sites or areas where hazardous material storage and use may have occurred or where potential environmental contamination may exist. For example, many historic and current industrial sites have soil or groundwater contaminated by hazardous substances. Other hazardous materials sources include leaking underground tanks in commercial and rural areas, contaminated surface runoff from polluted sites, and contaminated groundwater plumes. Current and former agricultural properties commonly have herbicide, pesticide, and/or fumigant soil contamination.

The proposed Project is located primarily on disturbed lands in Riverside County, north of I-10 and approximately 4 miles east and northeast of the town of Desert Center, CA. The solar facility site is located within the County of Riverside's jurisdiction while the 220 kV gen-tie line would traverse mainly BLM-administered public lands within the Riverside East Solar Energy Zone (SEZ) of BLM's Western Solar Plan, and within the Desert Renewable Energy Conservation Plan (DRECP) Development Focus Area (DFA). The proposed Project would be constructed within the Desert Center Area Plan primarily on land designated as Open Space Rural. The proposed parcels consist of active and fallow agricultural land and some open space.

Hazards and Hazardous Materials

During construction, small amounts of hazardous materials, such as fuels and greases to fuel and service construction equipment, would be used and may be stored in temporary aboveground storage tanks or sheds located on the Project site. The fuels stored on-site would be in a locked container within a fenced and secure temporary staging area. As there would be regulated hazardous materials onsite, storage procedures would be dictated by a Hazardous Materials Management Plan that would be developed prior to construction. Spill prevention measures and secondary containment would be implemented as part of the Project where warranted. Hazardous waste and electronic waste would not be placed in a landfill, but rather would be transported to a hazardous waste handling facility (e.g., electronic-waste recycling).

The Project is not anticipated to produce, use, store, transport, or dispose of extremely hazardous substances (i.e., those governed pursuant to Title 40, Part 335 of the Code of Federal Regulations) during construction. Material Safety Data Sheets for all applicable materials present on-site would be made readily available to on-site personnel.

Naturally occurring hazardous materials include asbestos. Asbestos is a term for several minerals that form very thin mineral fibers and fiber bundles, such as chrysotile, tremolite, and actinolite (USGS and CGS, 2011). Asbestos is considered a hazardous material because when inhaled, the fibrous mineral strands embed in the lungs and have been known to cause development of lung cancer or mesothelioma. There are no mapped occurrences of naturally occurring asbestos minerals located near the proposed Project site (USGS and CGS, 2011).

Environmental Contamination

Components of the proposed Project where ground disturbance would occur would be susceptible to encountering environmental contamination, if located near commercial or industrial sites with known contamination or adjacent to sites that store and use large quantities of hazardous materials, or in agricultural areas that may have used herbicides, pesticides, or fumigants. Some ground disturbing activities for the proposed Project include compaction, micrograding, or disc-and-roll grading on the solar facility site. Some of the parcels where facilities and arrays would be located would require light grubbing for leveling and trenching. In addition, access road beds would also be grubbed, graded, and compacted and underground cables to connect panel strings would be installed using ordinary trenching techniques.

The proposed Project crosses through land designated as Agriculture, Open Space Rural, and Public Facility. Nearby areas include one existing solar facility: the Desert Sunlight Solar Farm. Otherwise, no commercial or other industrial uses are near the Project area although several solar facilities have been proposed or approved adjacent to the Project. A Phase I Environmental Site Assessment was completed by Stantec for the Project in April 2018 (see Appendix K). The report found the following types of potential environmental contamination.

- Munitions and explosives of concern and unexploded ordnance at two formerly used defense sites that overlap areas of the Project in Parcel Group A and near Parcel Groups B and E near the former military airport (Desert Center Airport). The EnviroStor database lists these sites as having potential for munitions and explosives of concerns and unexploded ordnance remaining from past military training exercises.
- Former agriculture use areas in Parcel Groups A, C, E, and current agriculture use in G due to the potential for residual pesticides and metal-based herbicides to persist in soils above the regulatory thresholds or hazardous waste levels.
- Secondary containment sump and drum/oil stained area in Parcel Group C at the site of a former produce packing house and some visibly stained soil.
- A potential underground storage tank associated with the former Desert Center Army Airfield in the eastern portion of Parcel Group B.
- A leaking aboveground storage tank and drum/oil stained area in the northern portion of Parcel Group E.
- Shooting ranges in Parcel Group G where heavy metals associated with spent bullet casings can accumulate.
- Potential lead based paint and asbestos containing materials associated with the structures on the properties.

Wildland Fires

The proposed Project area is designated as a Local Responsibility Area according to the California Department of Forestry and Fire Protection (CAL FIRE) Fire Hazard Severity Zones Map (Riverside County, 2015) and the fire severity level of the area is unzoned (CAL FIRE, 2007).

Schools

There are no schools or learning centers located within a 0.25-mile radius of the proposed Project.

Airports and Airstrips

The private Desert Center Airport is adjacent to the southern edge of Parcel Group B, approximately 0.9 miles east of Parcel Group C, and approximately 0.4 miles north of Parcel Group E (see Figure 2-2). The private airport is part of the Chuckwalla Valley Raceway and is in daily use for airplane, helicopter, and skydiving operations. A private airstrip, Julian Hinds Pump Plant Airstrip, is located about 16.3 miles southwest of the proposed Project area.

Electromagnetic Fields

Electric voltage and electric current from transmission lines create electromagnetic fields (EMF). Possible health effects associated with exposure to EMF have been the subject of scientific investigation since the 1970s, and there continues to be public concern about the health effects of EMF exposure. However, EMF is not addressed here as an environmental impact under CEQA. EMF has repeatedly been recognized as not an environmental impact to be analyzed in the context of CEQA because (1) there is no agreement among scientists that EMF does create a potential health risk, and (2) there are no defined or adopted CEQA standards for defining health risks from EMF.

3.9.2 Regulatory Framework

Hazardous substances are defined by federal and State regulations that aim to protect public health and the environment. Hazardous materials have certain chemical, physical, or infectious properties that cause them to be considered hazardous. Hazardous substances are defined in the federal Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Section 101(14), and also in the California Code of Regulations (CCR), Title 22, Chapter 11, Article 2, Section 66261, which provides the following definition:

A hazardous material is 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.

For this analysis, soil that is excavated from a site containing hazardous materials would be considered a hazardous waste if it exceeded specific CCR Title 22 criteria or criteria defined in CERCLA or other relevant federal regulations. Remediation (cleanup and safe removal/disposal) of hazardous wastes found at a site is required if excavation of these materials occurs; it may also be required if certain other activities occur. Even if soils or groundwater at a contaminated site do not have the characteristics required to be defined as hazardous wastes, remediation of the site may be required by regulatory agencies subject to jurisdictional authority. Cleanup requirements are determined on a case-by-case basis by the agency taking lead jurisdiction.

Federal Regulatory Setting

Toxic Substances Control Act. The federal Toxic Substances Control Act (1976) and the Resource Conservation and Recovery Act of 1976 (RCRA) established a program administered by the U.S. Environmental Protection Agency (EPA) for the regulation of the generation, transportation, treatment, storage, and disposal of hazardous waste. RCRA was amended in 1984 by the Hazardous and Solid Waste Act (HSWA), which affirmed and extended the “cradle to grave” system of regulating hazardous wastes. The use of certain techniques for the disposal of some hazardous wastes was specifically prohibited by HSWA.

CERCLA, including the Superfund program, was enacted by Congress on December 11, 1980. This law provided broad federal authority to respond directly to releases or threatened releases of hazardous substances that may endanger public health or the environment. CERCLA established requirements concerning closed and abandoned hazardous waste sites; provided for liability of persons responsible for releases of hazardous waste at these sites; and established a trust fund to provide for cleanup when no responsible party could be identified. CERCLA also enabled the revision of the National Contingency Plan (NCP). The NCP provided the guidelines and procedures needed to respond to releases and threatened releases of hazardous substances, pollutants, and/or contaminants. The NCP also established the National Priorities List (NPL). CERCLA was amended by the Superfund Amendments and Reauthorization Act (SARA) on October 17, 1986.

State Regulatory Setting

California Environmental Protection Agency. The California Environmental Protection Agency (Cal/EPA) was created in 1991, which unified California's environmental authority in a single cabinet-level agency and brought the Air Resources Board (ARB), State Water Resources Control Board (SWRCB), Regional Water Quality Control Boards (RWQCBs), Integrated Waste Management Board (IWMB), Department of Toxic Substance Control (DTSC), Office of Environmental Health Hazard Assessment (OEHHA), and Department of Pesticide Regulation (DPR) under one agency. These agencies were placed within the Cal/EPA "umbrella" for the protection of human health and the environment and to ensure the coordinated deployment of State resources. Their mission is to restore, protect and enhance the environment, to ensure public health, environmental quality, and economic vitality.

California Hazardous Waste Control Law. The California Hazardous Waste Control Law (HWCL) is administered by Cal/EPA to regulate hazardous wastes. While the HWCL is generally more stringent than RCRA, until the EPA approves the California program, both the State and federal laws apply in California. The HWCL lists 791 chemicals and about 300 common materials that may be hazardous; establishes criteria for identifying, packaging and labeling hazardous wastes; prescribes management controls; establishes permit requirements for treatment, storage, disposal and transportation; and identifies some wastes that cannot be disposed of in landfills.

California Department of Toxic Substance Control. DTSC is a department of Cal/EPA and is the primary agency in California that regulates hazardous waste, cleans-up existing contamination, and looks for ways to reduce the hazardous waste produced in California. DTSC regulates hazardous waste in California primarily under the authority of RCRA and the California Health and Safety Code. Other laws that affect hazardous waste are specific to handling, storage, transportation, disposal, treatment, reduction, cleanup, and emergency planning.

California Department of Industrial Relations, Division of Occupational Safety and Health Administration. The California Occupational Safety and Health Administration (Cal/OSHA) is the primary agency responsible for worker safety in the handling and use of chemicals in the workplace. Cal/OSHA standards are generally more stringent than federal regulations. The employer is required to monitor worker exposure to listed hazardous substances and notify workers of exposure (8 CCR Sections 337-340). The regulations specify requirements for employee training, availability of safety equipment, accident-prevention programs, and hazardous substance exposure warnings.

California Fire Plan. The Strategic California Fire Plan was finalized in June 2010 and directs each CAL FIRE Unit to prepare a locally specific Fire Management Plan. In compliance with the California Fire Plan, individual CAL FIRE units are required to develop Fire Management Plans for their areas of responsibility. These documents assess the fire situation within each of CAL FIRE's 21 units and six contract counties. The

plans include stakeholder contributions and priorities and identify strategic areas for pre-fire planning and fuel treatment, as defined by the people who live and work with the local fire problem. The plans are required to be updated annually.

Local Regulatory Setting

Riverside County General Plan. The intent of the Safety Element of the Riverside County General Plan is to reduce death, injuries, property damage, and economic and social impact from hazards. The following policies included in the Safety Element generally relate to the proposed Project with respect to hazards and hazardous materials (Riverside County, 2016).

- **Policy S 5.1.** Develop and enforce construction and design standards that ensure that proposed development incorporates fire prevention features through the following:
 - All proposed development and construction within Fire Hazard Severity Zones shall be reviewed by the Riverside County Fire and Building and Safety departments.
 - All proposed development and construction shall meet minimum standards for fire safety as defined in the Riverside County Building or County Fire Codes, or by County zoning, or as dictated by the Building Official or the Transportation Land Management Agency based on building type, design, occupancy, and use.
 - In addition to the standards and guidelines of the California Building Code and California Fire Code fire safety provisions, continue to implement additional standards for high-risk, high occupancy, dependent, and essential facilities where appropriate under the Riverside County Fire Code (Ordinance No. 787) Protection Ordinance. These shall include assurance that structural and nonstructural architectural elements of the building will not impede emergency egress for fire safety staffing/ personnel, equipment, and apparatus; nor hinder evacuation from fire, including potential blockage of stairways or fire doors.
 - Proposed development and construction in Fire Hazard Severity Zones shall provide secondary public access, in accordance with Riverside County Ordinances.
 - Proposed development and construction in Fire Hazard Severity Zones shall use single loaded roads to enhance fuel modification areas, unless otherwise determined by the Riverside County Fire Chief.
 - Proposed development and construction in Fire Hazard Severity Zones shall provide a defensible space or fuel modification zones to be located, designed, and constructed that provide adequate defensibility from wildfires.
- **Policy S 5.4.** Limit or prohibit development or activities in areas lacking water and access roads.
- **Policy S 5.6.** Demonstrate that the proposed development can provide fire services that meet the minimum travel times identified in Riverside County Fire Department Fire Protection and EMS Strategic Master Plan.
- **Policy S 6.1.** Enforce the policies and siting criteria and implement the programs identified in the County of Riverside Hazardous Waste Management plan, which includes the following: (AI 98)
 1. *Comply with federal and state laws pertaining to the management of hazardous wastes and materials.*
 2. *Ensure active public participation in hazardous waste and hazardous materials management decisions in Riverside County.*
 3. *Coordinate hazardous waste facility responsibilities on a regional basis through the Southern California Hazardous Waste Management Authority (SCHWMA).*

4. *Encourage and promote the programs, practices, and recommendations contained in the County Hazardous Waste Management Plan, giving the highest waste management priority to the reduction of hazardous waste at its source.*

- **Policy S 7.3.** Require commercial businesses, utilities, and industrial facilities that handle hazardous materials to: install automatic fire and hazardous materials detection, reporting and shut-off devices; and install an alternative communication system in the event power is out or telephone service is saturated following an earthquake.

Desert Center Area Plan. The intent of the Wildland Fire section of the Hazards section of the Desert Center Area Plan is address wildland fire susceptibility for improved public safety in the Desert Center area. The following policy included in the Desert Center Area Plan generally relates to the proposed Project with respect to public services and utilities (Riverside County, 2015).

- **Policy DCAP 10.1.** Protect life and property from wildfire hazards through adherence to the Fire Hazards section of the General Plan Safety Element.

Riverside County Hazardous Waste Management Plan. The Riverside County Hazardous Waste Management Plan (CHWMP) uses a framework of 24 existing and recommended programs. The CHWMP serves as the County's primary planning document for the management of hazardous substances. Although the title refers only to hazardous waste, the CHWMP is a comprehensive document containing all of the County programs for managing both hazardous materials and waste.

Riverside County Airport Land Use Compatibility Plan. The Riverside County Airport Land Use Compatibility Plan (RCALUCP) sets forth the criteria and policies that the Riverside County Airport Land Use Commission (ALUC) uses in assessing the compatibility between the principal airports in Riverside County and proposed land use development in the areas surrounding them. The RCALUCP 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 ALUC as provided in the policies identified in the RCALUCP. The ALUC does not have authority over existing incompatible land uses or the operation of any airport. (RCALUCP, 2004)

The ALUC adopts Airport Land Use Compatibility Plans for the areas surrounding the airports within its jurisdiction. Local development approvals must be found consistent with the RCALUCP unless approved by a 4/5th supermajority vote. The RCALUCP identifies Airport Influence Areas (AIAs) to protect the public from the adverse effects of aircraft noise, ensure that facilities and people are not concentrated in areas susceptible to aircraft accidents, and ensure that no structures or activities adversely affect or encroach upon the use of navigable airspace. The Desert Center Airport became private in 2004. The Desert Center Area Plan Public Review Draft dated February 2015 removes the discussion regarding the Desert Center Airport Influence Area. No Compatibility Plan has been prepared for Desert Center Airport and there are no additional compatibility policies with respect to Desert Center Airport. (RCALUCP, 2004)

Riverside County Brush Clearance. County of Riverside Ordinance No. 695 provides brush clearance requirements on unincorporated county land that are designed to reduce risks from wildland fires. The code requires that every owner, occupant, and person in control of any unimproved parcel of land clear vegetation on a 100-foot-wide strip of land at the boundary of the parcel adjacent to a roadway and/or a 100-foot-wide strip of land around any structures located on an adjacent improved parcel. The Riverside County Fire Department can require different clearance distances based upon a visual inspection of the parcel and factors including local weather conditions, fuel types, topography, and the environment where the property or adjoining structures are located.

3.9.3 Methodology for Analysis

The hazardous materials analyzed include 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 review of information State hazard databases and maps for the parcels comprising the Project area.

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, how the Applicant would use the chemicals, how they would be transported to the facility, and how the Applicant plans to store the materials on-site.

3.9.4 CEQA Significance Criteria

The criteria listed below were used to determine if the proposed Project would cause or exacerbate hazards on and in the vicinity of the solar facility. These criteria are the same as the significance criteria for Hazards and Hazardous Materials listed in the CEQA Environmental Checklist, Appendix G of the CEQA Guidelines. While CEQA does not encompass a study of the environment on the Project, the criteria were also applied to determine whether the Project or any of its components would be exposed to substantial, existing risks. Under CEQA, the proposed Project and Alternatives would have a significant impact on hazards and hazardous materials if they would:

- *Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials (see Impact HAZ-1).*
- *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 (see Impact HAZ-2).*
- *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 create a significant hazard to the public or the environment (see Impact HAZ-3).*
- *For a project located within an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, would result in a safety hazard or excessive noise for people residing or working in the project area (see Impact HAZ-4).*
- *Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan (see Impact HAZ-5).*
- *Expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires (see Impact HAZ-6).*

The following additional significance criteria from the County of Riverside Environmental Assessment Form are used in the analysis. A project could have potentially significant impacts if it would:

- *Require review by the Airport Land Use Commission (see Impact HAZ-4).*

The following CEQA significance criteria from Appendix G were not included in the analysis:

- *Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school.*

No schools are located within one-quarter mile of the Project area. The proposed Project does not include land uses that would involve the routine use, storage, or transport of hazardous materials that represent a significant hazard to the public or the environment. Therefore, the Project would not result in hazardous emissions or require the handling of hazardous materials that would adversely affect any existing schools in the site vicinity.

- *If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:*

(a) substantially impair an adopted emergency response plan or emergency evacuation plan?

(b) due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?

(c) require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?

(d) expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?

The Project would not be located in or near state responsibility areas or lands classified as very high fire hazard severity zones. The Project is on lands classified as unzoned and surrounded by areas classified as Local Responsibility Area Moderate or Other Moderate. Impacts associated with wildfire are addressed in Impact HAZ-6.

The following CEQA significance criteria from the County's Environmental Assessment Form were not included in the analysis:

- *Result in an inconsistency with an Airport Master Plan.*

The Desert Center Airport is a private airport purchased by the Chuckwalla Valley Raceway in 2004. It is no longer part of the Airport Master Plan.

3.9.5 Proposed Project Impact Analysis

Issues raised during scoping related to Hazards and Hazardous Materials include concerns raised by the California Department of Toxic Substances stating that:

- The EIR needs to determine whether current or historic uses of the site may have resulted in any release of hazardous wastes.
- A Phase I Environmental Site Assessment might be needed.
- If any environmental conditions are found to occur in the Project area, sampling and remedial action should be conducted prior to construction.
- Recommends evaluation, proper investigation, and mitigation for onsite areas with current or historic polychlorinated biphenyls (PCB)-containing transformers.
- If soil contamination is suspected, the soil should be sample prior to export/disposal; and, if the soil is determined to be contaminated, it should be disposed of properly in accordance with all applicable laws and regulations. If the Project requires importing soil to backfill excavated areas, proper evaluation should be conducted to ensure the imported soil is free of contamination.
- If soil contamination is suspected during construction, then all construction should cease, and appropriate health and safety procedures should be implemented.

- If it is determined that contaminated soil and/or groundwater exists, the EIR should identify how any required investigation and/or remediation will be conducted and the appropriate agency to provide regulatory oversight.

Impact HAZ-1. The Project would create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials.

Solar Facility

Construction of the Project would involve the use of small amounts of hazardous materials, such as fuels and greases to fuel and service construction equipment. Such substances may be stored in temporary aboveground storage tanks or sheds located on the Project site. The fuels stored on-site would be in a locked container within a fenced and secure temporary staging area. As there would be regulated hazardous materials onsite, storage procedures would be dictated by a Hazardous Materials Management Plan that would be developed prior to construction. Spill prevention measures and secondary containment would be implemented as part of the Project where warranted; however, strict compliance under 40 CFR 112 or CWA Section 311 would not be required, because there would be no discharges to waters of the U.S. (i.e., navigable waterways or shorelines).

Trucks and construction vehicles would be serviced from off-site facilities. The use, storage, transport, and disposal of hazardous materials used in construction of the facility would be carried out in accordance with federal, state, and county regulations. Project construction is not anticipated to produce, use, store, transport, or dispose of extremely hazardous substances (i.e., those governed pursuant to Title 40, Part 335 of the Code of Federal Regulations). Material Safety Data Sheets for all applicable materials present on-site would be made readily available to on-site personnel.

Throughout construction, materials would be sorted on-site and transported to appropriate waste management facilities. Hazardous waste and electronic waste would not be placed in a landfill, but would be transported to a hazardous waste handling facility (e.g., electronic-waste recycling). All contractors and workers would be educated about waste sorting, appropriate recycling storage areas, and how to reduce landfill waste. Compliance with applicable state and federal regulations would minimize the risk of damage or injury from these potential hazards to less than significant levels.

During construction, herbicides may be applied to control weed growth. Use of herbicides would occur in accordance with all recommended application procedures as identified on product labels as well as under the direct supervision of a licensed Certified Pesticide Applicator. The proposed Project would not contain a residential or commercial component that would expose people to potential pesticides or herbicides; as a result, application of herbicides during construction would have a less than significant impact.

The Phase I Environmental Site Assessment identified a number of potential environmental contaminants including munitions and explosives of concern and unexploded ordnance, former and current agriculture use areas, secondary containment sump and drum/oil stained areas, potential underground storage tanks, a leaking aboveground storage tank, and potential lead-based paint and asbestos containing materials.

Because of the potential for environmental contaminants above regulatory thresholds resulting from agriculture, the secondary containment sump and oil stained areas, the potential underground storage tanks, and the leaking aboveground storage tank, construction of the Project could result in impacts to workers, future workers, or visitors. The implementation of Mitigation Measures HAZ-1 (Soil Investigation) and HAZ-2 (Worker Environmental Awareness Program [WEAP]) would ensure that the potential impacts associated with residual pesticides or agricultural chemicals would be less than significant.

As noted in the Phase I ESA, the Project site is nearby to the Palen Pass maneuvering area and the historic World War II training camps. Therefore, during construction, maintenance, and closure and decommissioning activities associated with the proposed Project, land disturbance activities could unearth unexploded World War II-era and more recent vintage munitions, including conventional and unconventional land mines, personnel mines, and bullets, the detonation of which would pose a safety risk to the construction workers. For example, surface and shallow sub-surface unexploded ordnance (UXO) could be disturbed by vehicles, walkers, and excavation using shovels or similar hand tools, and deeper sub-surface UXO could be disturbed by the earth movement and excavation processes that would be required for development of the Project. Implementation of proposed Mitigation Measure HAZ-3 (UXO Training and Reporting Plan), would formalize UXO training, investigation, removal, and disposal to ensure that potential UXO impacts would be less than significant.

As noted in the Phase I ESA, a number of structures and debris may contain lead-based paint and/or asbestos. Both these contaminants have the potential to result in impacts to workers, future workers, or visitors if not addressed appropriately. Mitigation Measure HAZ-4 (Pre-demolition Surveys and Appropriate Hazardous Materials Removal) would require surveys for lead based paint and asbestos prior to demolition of structures and appropriate removal in accordance with all applicable regulations and would reduce the impact to less than significant.

The Project may use a variety of PV technologies including, but not limited to cadmium telluride panels, crystalline silicon panels or copper indium gallium selenide panels. None of the panels being considered contain materials that are classified as hazardous wastes because the chemicals within PV modules are highly stable and would not be available for release to and interaction with the environment. If a panel is broken, the pieces would be cleaned up completely and returned to the manufacturer for recycling.

During operation and maintenance of the proposed Project, a variety of hazardous materials would be transported to the site and used and stored on-site for miscellaneous, general maintenance activities. Hazardous materials are expected to include consumer-sized containers of oils, grease, paints, and solvents. Small quantities of diesel fuel and gasoline may also be used and stored at the facility for use in off-road service vehicles and generators. Dielectric insulating oil would be used in some electrical equipment, such as the on-site transformer(s). Oil-containing equipment would be installed with a spill containment system designed to contain all the oil in the event of a leak. If diesel-fueled back-up pumps are required for fire protection, appropriate secondary containment would be provided for the diesel fuel tank. Operation and maintenance of the proposed Project would also include vegetation, weed, and pest management, which could require the use of herbicides and pesticides similar to those used during construction. Proper application of herbicides or pesticides would ensure people are not exposed to harmful these chemicals during maintenance activities. In addition, compliance with applicable state, and federal regulations would minimize the risk of damage or injury from these potential hazards to less than significant levels during operation.

220 kV Generation-Tie Line

The application and types of hazardous materials used for the construction and operation of the solar facility would be similar to those used for construction and operation of the gen-tie line. Compliance with applicable state, and federal regulations would minimize the risk of damage or injury from potential hazards and hazardous materials to less than significant levels. The potential presence of low concentrations of agricultural chemicals in the Project area would be evaluated through implementation of Mitigation Measures HAZ-1 (Soil Investigation) and HAZ-2 (WEAP), which would ensure that the potential impacts associated with residual pesticides or agricultural chemicals would be less than significant. As stated in the Integrated Weed Management Plan included in the Athos POD (Appendix F), no herbicides would be

used on BLM lands to control weeds. All weed control on BLM lands would be conducted by mechanical control methods. Similar to the solar facility site, potential impacts associated with encountering UXO along the gen-tie routes would be reduced to less than significant with implementation of Mitigation Measure HAZ-3 (UXO Identification, Training and Reporting Plan).

Mitigation Measures for Impact HAZ-1

Implementation of Mitigation Measures HAZ-1 (Soil Investigation) that would require a Phase II soil investigation to evaluate the potential presence of residual contaminants and remove those necessary, HAZ-2 (Worker Environmental Awareness Program) that would require environmental health and safety training to reduce construction risks to workers, HAZ-3 (UXO Identification, Training and Reporting Plan) that would train all workers in recognition and avoidance/reporting of military waste debris, and HAZ-4 (Pre-demolition Surveys and Appropriate Hazardous Materials Removal) that would require a survey and removal of any lead based paint and asbestos to eliminate risk to workers would mitigate Impact HAZ-1 (see Section 3.9.10 below).

Significance After Mitigation

This impact would be less than significant with implementation of mitigation.

Impact HAZ-2. The Project would 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.

Solar Facility

As discussed above, the use of hazardous materials, such as fuels and greases to fuel and service construction equipment, could result in the accidental release of these materials if not managed appropriately. As there would be regulated hazardous materials onsite, storage procedures would be dictated by a Hazardous Materials Management Plan that would be developed prior to construction and spill prevention measures and secondary containment would be implemented as part of the Project where warranted. A Storm water Pollution Prevention Plan (SWPPP) or SWPPP equivalent document would be prepared by a qualified engineer or erosion control specialist and would be implemented before and during construction. The SWPPP would be designed to reduce potential impacts related to erosion and surface water quality during construction activities and throughout the life of the Project. It would include Project information and best management practices (BMP). The BMPs would include storm water runoff quality control measures, concrete waste management, storm water detention, watering for dust control, and construction of perimeter silt fences, as needed. The implementation of Mitigation Measure HAZ-2 (WEAP) would further ensure that any impact from accidental releases of hazardous materials into the environment would be less than significant by ensuring that workers would be trained on site-specific spill prevention, emergency response, and safe material handling.

220 kV Generation-Tie Line

The application and types of hazardous materials used for the construction and operation of the solar facility would be similar to those used for construction and operation of the gen-tie line and, therefore, the risk of accident conditions involving the release of hazardous materials into the environment that could create a significant hazard to the public or the environment is also similar. As stated above, a Hazardous Materials Management Plan that would be developed that would contain storage procedures and spill prevention measures. In addition, a SWPPP would reduce potential impacts from spills to surface

water quality. The implementation of Mitigation Measure HAZ-2 (WEAP) would also further ensure that any impact from accidental releases of hazardous materials into the environment would be less than significant.

Mitigation Measures for Impact HAZ-2

Implementation of Mitigation Measure HAZ-2 (WEAP) that would require environmental health and safety training to reduce construction risks to workers would mitigate Impact HAZ-2 (see Section 3.9.10 below).

Significance After Mitigation

This impact would be less than significant with implementation of mitigation.

Impact HAZ-3 The Project would 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 create a significant hazard to the public or the environment.

Solar Facility

The Project area was not identified specifically on the California Department of Toxic Substances and Control (DTSC) database. However, according to the Phase I report, there are a number of potentially toxic substances located on the site that could result in impacts to workers, nearby residents or visitors. Mitigation Measures HAZ-1 through HAZ-4 would reduce this impact to less than significant by requiring appropriate studies and surveys to further understand and remediate the potential environmental hazard.

220 kV Generation-Tie Line

Other than on the Project sites, the gen-tie lines cross vacant, undeveloped lands that would not be expected to have the types of environmental contaminants found on the Project sites. As such, they would not result in a significant impact to the public or environment based on hazardous contaminants.

Mitigation Measures for Impact HAZ-1

Implementation of mitigation measures (Soil Investigation) that would require a Phase II soil investigation to evaluate the potential presence of residual contaminants and remove those necessary, HAZ-2 (WEAP) that would require environmental health and safety training to reduce construction risks to workers, HAZ-3 (UXO Identification, Training and Reporting Plan) that would train all workers in recognition and avoidance/reporting of military waste debris, and HAZ-4 (Pre-demolition surveys and appropriate hazardous materials removal) that would require a survey and removal of any lead based paint and asbestos to eliminate risk to workers would mitigate Impact HAZ-3 (see Section 3.9.10 below).

Significance After Mitigation

This impact would be less than significant with implementation of mitigation.

Impact HAZ-4. The Project is located within 2 miles of a public use airport and would result in a safety hazard or excessive noise for people residing or working in the Project area.

Solar Facility

The proposed Project is within 2 miles of the Desert Center Airport. The Desert Center Airport was previously covered by the RCALUCP but was purchased by the Chuckwalla Valley Raceway and is no longer included in the Riverside County Circulation Element. As can be seen in Figure 2-2, Project Area, about

half of the proposed Project's PV panel structures (i.e., Parcel Groups B, C, D, and E) would be located within 5,000 feet of Desert Center Airport, which is considered Compatibility Zone E for an airport. No other components of the solar facility would be within 5,000 feet of the airport.

Compatibility Zone E is defined as the area wherein 10 to 15 percent of near-airport accidents occur and where concern for risks applies to uses for which potential consequences are severe (e.g. very-high-intensity activities in a confined area). For uses in Compatibility Zone E, Riverside County Airport Land Use Commission review is required for objects greater than 100 feet tall. Because the Desert Center Airport is no longer part of the General Plan and does not have an influence area this review is not required. None the less, the only components of the solar facility that would be potentially over 100 feet tall are the substation power inverters and transformers. The closest substation to the airport would be Substation 3, over 3,500 feet from the runway. The owners of the airport, Chuckwalla Valley Raceway, are aware of the Project and would coordinate any landings at the airport including advising any planes as to the potential nearby structures. Impacts to the airport due to the Project structures are less than significant.

The PV solar panels for the proposed Project would not create adverse impacts from reflection and glare (see Section 3.2, *Aesthetics*). The proposed Project would result in less than significant impacts associated with reflection and glare impacts to the Desert Center Airport. As mentioned in Section 3.2, *Aesthetics*, a Glare Study was prepared that analyzed potential light and glare/reflection impacts that would result from the solar arrays. The glare study was completed to determine if glare would be visible from the landing approach of the runway used at the Desert Center Airport. According to the model results, no flight path receptors would be impacted by glare from the solar panels.

With respect to fire risks near the Desert Center Airport due to the proposed Project, the solar facility would be designed and constructed to industry safety design standards (i.e., Institute of Electrical and Electronic Engineers, National Electric Code) and Riverside County Building and Safety Department requirements to reduce the risk of electrical fires at the site. A Fire Prevention Plan would be prepared in consultation with the Riverside County Fire Department and other appropriate first responders to reduce the risk of an electrical fire on-site. Any impacts due to fire risk would therefore be less than significant.

The Project would result in noise during construction and operations as described in Section 3.12.5 (Noise: Proposed Project Impact Analysis). The noise analysis includes mitigation measures to ensure the noise from construction and operation of the Project is below County applicable standards. The Project would not result in excessive noise for people residing or working in the Project area.

Overall, any impacts to the safety for people residing or working in the Project area would be less than significant.

220 kV Generation-Tie Line

The Project gen-tie lines would be located within a 100-foot right-of-way (ROW), and would be constructed with either monopoles, lattice steel structures, or wooden H-frame poles. For the overhead gen-tie line, structure foundations would be excavated to a depth of 35 feet or more and include concrete supports depending on final engineering. Gen-tie structures would be on average 90 feet tall and the total number of gen-tie support structures would be up to 120 structures. To minimize disturbance and other environmental impacts, the proposed Athos gen-tie lines have been routed to most directly connect its Project substations and to parallel the gen-ties associated with other existing and proposed solar projects in the area to the maximum extent feasible.

The proposed Gen-Tie Segment #1 and Segment #2 would be located within Compatibility Zone E for the Desert Center Airport. The gen-tie structure would be on average 90 feet tall and no components of the

gen-tie line would be greater than 100 feet tall, the criteria of impact in Compatibility Zone E. In addition, there is no limit to the number of people allowed within Compatibility Zone E at one time and the workforce at any given time would not exceed the RCALUCP Zone average occupancy criteria.

Any impacts to the safety for people residing or working in the Project area would be less than significant.

Mitigation Measures for Impact HAZ-4

No mitigation would be required.

Significance After Mitigation

This impact would be less than significant.

Impact HAZ-5. The Project would impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.

Solar Facility

The proposed Project site is located in a remote area. Access to the solar facility site would be provided from Highway 177 and would be maintained throughout construction, and appropriate detours would be provided in the event of potential road closures. The Project would require new access roads, 24 feet wide with a two-foot-wide shoulder on each side, for a total width of approximately 30 feet. In some cases, access would be via improved existing BLM open routes and agricultural roads, rather than new route construction.

Construction of the solar facility is not expected to require any temporary lane closures that could restrict the movements of emergency vehicles. The Project site would have controlled access points for ingress and egress into the parcel groups. These access points would allow for emergency vehicle access into and through the site. Once constructed, maintenance activities would occur as needed at the solar facility but are not expected to require any temporary travel lane closures that could restrict emergency vehicle movements. As the solar facility would be staffed, entrance into the site through closed gates would be available. See Section 3.17, *Traffic and Transportation*, for detailed discussions regarding access in and around the Project area.

Thus, the proposed Project would result in less than significant impacts related to impairment of the implementation of or physical interference with an adopted emergency response plan or emergency evacuation plan.

220 kV Generation-Tie Line

Similar to the solar facility, access to the gen-tie line segments would be provided from Highway 177. The gen-tie line would use the same 7 new access roads as the solar facility. Construction and operation of the gen-tie line are not expected to require any temporary lane closures that could restrict the movements of emergency vehicles. As discussed above, the Project site would have controlled access points for ingress and egress into the site. The gen-tie line would therefore result in less than significant impacts related to impairment of the implementation of or physical interference with an adopted emergency response plan or emergency evacuation plan.

Mitigation Measures for Impact HAZ-5

No mitigation would be required.

Significance After Mitigation

This impact would be less than significant.

Impact HAZ-6. The Project would expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires.

Solar Facility

The Project area is not located within an area of high/very high fire hazard, as determined by CAL FIRE. The proposed Project area is designated as a Local Responsibility Area according to the CAL FIRE Fire Hazard Severity Zones Map and the fire severity level of the area is unzoned. The Project area consists of active and fallow agricultural land and some open space, with minimal native or ruderal vegetation. The solar facility would be designed and constructed to industry safety design standards (i.e., Institute of Electrical and Electronic Engineers, National Electric Code) and Riverside County Building and Safety Department requirements to reduce the risk of electrical fires at the site. Solar arrays are fire-resistant, as they are constructed largely out of steel, glass, aluminum, or components housed within steel enclosures. Substation equipment and inverters would be sited on concrete foundations and inverters would be housed in steel and concrete equipment enclosures, minimizing the risk of electrical sparks that could ignite during equipment failure. In the event of a fire or accident, the complete facility alternating current (AC) power system could be shut down, and each power block could be isolated and shut down individually. The inverters automatically shut down when they no longer sense voltage from the grid.

Overall, the construction, operation, and maintenance of the proposed Project would result in a minimal increased risk of wildfires in the Project area. The proposed Project would comply with all applicable wildland fire management plans and policies established by CAL FIRE and the Riverside County Fire Department. Implementation of a WEAP, as required under Mitigation Measure HAZ-2, would further reduce wildfire risks to less than significant levels. Accordingly, the proposed Project is not expected to expose people or structures, directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires. Therefore, impacts would be less than significant with mitigation.

220 kV Generation-Tie Line

Similar to the solar facility, the Project area is not located within an area of high/very high fire hazard, as determined by CAL FIRE. The proposed gen-tie line would be co-located with other existing and proposed high-voltage transmission lines and would not introduce a new obstruction that would adversely impact fire suppression efforts. Overall, the construction, operation, and maintenance of the gen-tie line would result in a minimal increased risk of wildfires in the Project area. Compliance with all applicable wildland fire management plans and policies established by CAL FIRE and the Riverside County Fire Department and implementation of a WEAP, as required under Mitigation Measure HAZ-2 (WEAP), would further reduce wildfire risks to less than significant levels. With mitigation, the risk of loss, injury, or death involving wildland fires due to the Project would be less than significant.

Mitigation Measures for Impact HAZ-6

Implementation of Mitigation Measure HAZ-2 (WEAP) that would require environmental health and safety training to reduce construction risks to workers would mitigate Impact HAZ-6 (see Section 3.9.10 below).

Significance After Mitigation

This impact would be less than significant with implementation of mitigation.

3.9.6 Alternative 1: No Project Alternative

The No Project Alternative would not result in any new construction and/or operational activities or any new associated ground-disturbing activities (solar panel installation, substation and O&M building, and construction of access roads and gen-tie line). The No Project Alternative would not expose people, the environment, or structures to any hazards and hazardous materials associated with the proposed Project. The No Project Alternative would not introduce risks associated with accidental spills of hazardous materials, impacts to aviation, impacts to emergency response in the area, or increased occurrences of wildland fires. The No Project Alternative would not have impacts hazards and hazardous materials, while the proposed Project would have impacts that are less than significant with mitigation incorporated for both the proposed solar facility and gen-tie line. Under the No Project Alternative, it is probable that other solar energy-related projects would be implemented within the site in lieu of the proposed Project. A different solar energy project would potentially result in similar impacts due to hazards as those identified for the proposed Project.

3.9.7 Alternative 2: Reduced Footprint Alternative

Similar to the proposed Project, the Reduced Footprint Alternative would include the construction, operation, maintenance, and decommissioning of a solar facility and associated infrastructure, and associated interim public services and utilities-related actions. The Reduced Footprint Alternative would reduce the solar facility site by 387 acres by eliminating the development of Parcel Groups D and F and would relocate Substation 4 to a new location on Parcel Group E. Parcel Groups B, C, and E would still be located within 5,000 feet of Desert Center Airport, which is considered Compatibility Zone E for an airport. Thus, the impacts from the Reduced Footprint Alternative would be the same as for the proposed Project but in a reduced area. The smaller footprint and ground disturbance would potentially result in slightly less impacts due to hazards and hazardous materials from the development of the solar facility in the Project area; however, Parcel Groups D and F were undeveloped desert, so the risk of agriculture hazards would remain the same. Impacts would remain less than significant with the same mitigation measures implemented as proposed for the proposed Project.

There would be no change in impacts to the gen-tie line analysis and impacts would remain less than significant with mitigation.

3.9.8 Gen-Tie Segment #1 Alternative Route Option

Gen-Tie Segment #1 Alternative Route Option would be located east of the proposed gen-tie and would be approximately 0.65 miles longer than the proposed Gen-Tie Segment #1. There would be no change to the amount of solar infrastructure constructed and operated compared to the proposed Project. Because Route Option is located in the same general vicinity near Parcel Group A as the proposed Gen-Tie Segment #1 and would require a similar workforce and construction and operation activities, the impacts due to hazards and hazardous materials from both the solar facility and gen-tie lines would be the same as for the proposed Project. The impacts remain less than significant with the mitigation measures proposed.

3.9.9 Cumulative Impacts

The geographic scope considered for cumulative impacts from health, safety, and hazardous materials/fire and fuels management is the area extending one mile from the boundary of the Project site. One mile is the American Society of Testing and Materials standard search distance for hazardous materials. Tables 3.1-1 and 3.1-2 list existing and reasonably foreseeable projects in the region. The Desert Sunlight Solar

Project; Desert Harvest Solar Farm; DC 50 Solar Project; California Jupiter, LLC Project; IO Solar Project; Victory Pass, LLC Project; SunPower Project, and Palen Solar Project are projects that would all be within one mile from the boundary of the Project site and could therefore combine with the proposed Project and result in a cumulatively considerable impact.

Solar Facility

The transport, use, and disposal of hazardous materials during construction would be limited to the areas where concurrent construction is occurring or where concurrent roads are being used for construction traffic. Operation and maintenance of the proposed Project, including the proposed substations and O&M building, would involve periodic and routine transport, use, and disposal of minor amounts of hazardous materials, primarily petroleum products (fuels and lubricating oils) and motor vehicle fuel. The implementation of Mitigation Measure HAZ-2 (WEAP) and agency regulations that address the handling of hazardous materials would ensure that the Project would not create a significant hazard to the public or the environment related to the handling or accidental release of hazardous materials. Past, present, and reasonably foreseeable future projects are also subject to existing agency regulations that address the handling and accidental release of hazardous materials; therefore, existing regulations would ensure that the combined effects to hazards and hazardous materials from the cumulative projects within the geographic scope of analysis would not be considered cumulatively significant.

Construction of the Project could encounter previously documented and un-documented hazardous materials sites within the Project area. Since portions of the proposed Project site are located in areas with a history of agricultural production, there is a potential for residual, low-level concentrations of pesticides and other agricultural chemicals to be present in shallow soils and/or groundwater. The implementation of Mitigation Measures HAZ-1 (Soil Investigation) and HAZ-2 (WEAP) would address potential impacts associated with residual pesticides or agricultural chemicals, Mitigation Measure HAZ-4 (Pre-demolition Surveys and Appropriate Hazardous Materials Removal) would address hazards during removal of existing structures, which along with Mitigation Measure HAZ-3 (UXO Identification, Training and Reporting Plan) to address potential encounter of UXO, would help minimize the Project-specific health and safety hazards to a less than significant level. Projects DC50 and Victory Pass would be located on land with a history of agriculture production so may have a similar potential for residual agricultural chemicals and UXO, and would also likely require a WEAP and/or similar measures to minimize impacts on and off the sites. Because of the history of contamination in this area, the projects collectively could help reduce the overall impacts due to hazards once they are operational and have implemented hazardous material remediation. Under cumulative conditions, implementation of the Project in conjunction with development of projects listed in Table 3-2 is not anticipated to present a cumulatively significant impact to public health and safety hazard to residents.

Additionally, the Project and related projects would all involve the storage, use, disposal, and transportation of hazardous materials to varying degrees during construction and operation. Impacts from these activities would be less than significant because the storage, use, disposal, and transportation of hazardous materials are extensively regulated by various federal, State, and local laws, regulations, and policies. It is foreseeable that the Project and other cumulative projects would implement and comply with these existing hazardous materials laws, regulations, and policies. Therefore, the related projects impacts would not be considered cumulatively significant.

Potential fire hazards associated with the proposed Project facilities would be required to comply with applicable Riverside County requirements relating to fire hazards. In addition, projects in the cumulative scenario would similarly be required to comply with fire hazard policies and therefore, the related projects impacts would not be considered cumulatively significant. In addition, the proposed Project would result

in cumulatively insignificant impacts related to impairment of the implementation of or physical interference with an adopted emergency response plan or emergency evacuation plan because no aspect of the Project would interfere with emergency response (e.g., construction is not expected to require any temporary lane closures that could restrict the movements of emergency vehicles).

The only cumulative project within Compatibility Zone E for the Desert Center Airport that could potentially combine with impacts from the Athos Project is the SunPower Project. While the Desert Center Airport does not have an official zone of influence, it is anticipated that the Chuckwalla Valley Raceway would be aware of the SunPower Project and would coordinate with the applicant to ensure no impacts would occur to pilots. Therefore, it would not combine with the impacts from the proposed Project to result in cumulatively significant impacts to airports. As noted, the proposed Project would not result in glare to pilots as they land so would not combine with other solar projects to result in a cumulative impact due to glare.

220 kV Generation-Tie Line

The gen-tie line component of the proposed Project would connect with other off-site proposed and planned transmission infrastructure and would run parallel to these facilities. As a result of this circumstance, the cumulative projects would be contained within the same ROW as the proposed Project facilities and would not subject additional land areas to hazards associated with hazardous materials and fuels management. Thus, the Project's incremental contribution to any potential cumulative impacts would not be cumulatively considerable.

Mitigation Measures for Cumulative Impacts

Implementation of Mitigation Measures HAZ-1 (Soil Investigation) that would require a Phase II soil investigation to evaluate the potential presence of residual contaminants and remove those necessary, HAZ-2 (WEAP) that would require environmental health and safety training to reduce construction risks to workers, HAZ-3 (UXO Identification, Training and Reporting Plan) that would train all workers in recognition and avoidance/reporting of military waste debris, and HAZ-4 (Pre-demolition surveys and appropriate hazardous materials removal) that would require a survey and removal of any lead based paint and asbestos to eliminate risk to workers would mitigate potential cumulative impacts of the proposed Project (see Section 3.9.10 below).

Significance After Mitigation

With implementation of mitigation, there would be no significant cumulative impacts related to hazards and hazardous materials.

3.9.10 Mitigation Measures

MM HAZ-1 **Soil Investigation.** Prior to issuance of a grading permit, a Phase II soil investigation shall be prepared by a qualified environmental consultant to evaluate the potential presence of residual contaminants as recommended in the Phase I report (see Appendix K). Any soils found to contain residual contaminants in exceedance of regulatory action levels that are determined by the consultant to represent a potential hazard to construction workers or future workers and visitors shall be removed from the site in accordance with Riverside County Department of Environmental Health oversight.

MM HAZ-2 **Worker Environmental Awareness Program.** The Worker Environmental Awareness Program (WEAP) shall include a personal protective equipment (PPE) program, an Emergency Action Plan (EAP), and an Injury and Illness Prevention Program (IIPP) to address health

and safety issues associated with normal and unusual (emergency) conditions. It will be reviewed by the County and BLM for their respective jurisdictions. Construction-related safety programs and procedures shall include a respiratory protection program, among other things. Construction would be undertaken sequentially in accordance with a Construction Plan that shall include the final design documents, work plan, health and safety plans, permits, Project schedule, and operation and maintenance manuals. Construction Plan documents shall relate at least to the following:

- Environmental health and safety training (including, but not limited, to training on the hazards of Valley Fever, including the symptoms, proper work procedures, how to use PPE, and informing supervisor of suspected symptoms of work-related Valley Fever)
- Site security measures
- Site first aid training
- Construction testing (non-destructive examination, hydro, etc.) requirements
- Site fire protection and extinguisher maintenance, guidance, and documentation
- Furnishing and servicing of sanitary facilities records
- Trash collection and disposal schedule/records
- Disposal of hazardous materials and waste guidance in accordance with local, state, and federal regulations

MM HAZ-3 **UXO Identification, Training and Reporting Plan.** Where ground disturbance work is involved, contractor(s) should be OSHA HAZWOPER-trained in accordance with standard 29CFR1910.120 and hold a current certification. The Applicant shall prepare a UXO Identification, Training and Reporting Plan to properly train all site workers in the recognition, avoidance and reporting of military waste debris and ordnance. The Applicant shall submit the plan to the County and BLM for review and approval for their respective jurisdictions prior to the start of construction. The plan shall contain, at a minimum, the following:

- A description of the training program outline and materials, and the qualifications of the trainers; and
- Identification of available trained experts that will respond to notification of discovery of any ordnance (unexploded or not); and
- Work plan to recover and remove discovered ordnance, and complete additional field screening, possibly including geophysical surveys to investigate adjacent areas for surface, near surface or buried ordnance in all proposed land disturbance areas.

MM HAZ-4 **Pre-demolition surveys and appropriate hazardous materials removal.** Prior to the removal of any structures, perform a survey for lead based paint and asbestos containing materials. If found, all lead based paint must be removed from the property prior to construction/demolition activities with the potential to disturb painted surfaces and disposed of in accordance with all applicable laws. If the activities would not disturb painted surfaces, the entire structure with lead base paint must be disposed of in accordance with all applicable laws. If found, all asbestos containing materials must be disposed of in accordance with all applicable laws.

3.10 Hydrology and Water Quality

This section describes the water resources baseline for the Athos Renewable Energy Project. The Project site is in the Chuckwalla Valley of Riverside County near the community of Desert Center, California. Although it is in the Mojave Desert Geomorphic Province, the Project lies within the Sonoran Desert ecoregion, a broad interior region of isolated mountain ranges separated by expanses of desert plains. The Project site is part of an interior enclosed drainage system, meaning there is no outlet to the ocean. Drainage is to shallow lake beds which, being dry most of the time, are known as dry lakes or playas.

The Project consists of seven separate groups of solar array parcels as shown in Figure 2-2. The southernmost arrays lie on alluvial fans emanating from the Chuckwalla Mountains to the south. The northernmost array (Parcel Group A) lies on an alluvial fan emanating from the Coxcomb and Eagle Mountains to the north and west. The Chuckwalla Valley in the area of the Project is bisected by a broad drainage system that extends southwest between the Chuckwalla and Coxcomb mountains to the Palen Dry Lake located a short distance north of the easternmost solar array. The elevation of Chuckwalla Valley ranges from about 530 feet above mean sea level (amsl) at the easternmost solar array to approximately 630 feet amsl at the easternmost solar array west of Desert Center. The surrounding mountains rise to approximately 3,000 and 5,000 feet amsl (BLM, 2011).

The ground surface of the solar array sites south of Highway 177 slopes gently downward to the north and east at an average gradient of 1 to 2 percent. Ground surface at the northern solar array site (Parcel Group A) slopes gently to the south and east at a similar gradient.

3.10.1 Environmental Setting

Climate and Precipitation

The Chuckwalla Valley, being part of the Sonoran Desert ecoregion, is characterized by high aridity, low precipitation, hot summers, and cool winters. Average maximum temperature is 108 degrees Fahrenheit (°F) in July. Average minimum temperature is 66.7 °F in December (BLM, 2011). Average annual precipitation, based on the gauging station at Blythe Airport, is approximately 3.6 inches, with August recording the highest monthly average of 0.64 inches and June recording the lowest monthly average of 0.02 inches. Most rainfall occurs during the winter months, or in association with summer tropical storms which tend to be of shorter duration and higher intensity than winter storms (BLM, 2011). The Project area is currently (May 2018) classified by the National Oceanic and Atmospheric Administration (NOAA) as being in a severe to extreme drought (U.S. Drought Monitor, 2018).

Groundwater

Groundwater Overview

A Water Supply Assessment (WSA) has been prepared for the Athos Project (see EIR Appendix G). The information presented below is from the WSA. References used are cited in the WSA.

The Athos Project overlies the Chuckwalla Valley Groundwater Basin (CVGB). The CVGB covers an area of 940 square miles in eastern Riverside County, California. The basin underlies the Palen and Chuckwalla Valleys, and is bounded by consolidated rocks of the Chuckwalla, Little Chuckwalla, and Mule Mountains on the south, of the Eagle Mountains on the west, and of the Mule and McCoy Mountains on the east. The Coxcomb, Granite, Palen, and Little Maria Mountains bound the valley on the north and extend ridges into the valley. The CVGB is also bordered by the Orocopia Valley Groundwater Basin on the west, the

Palo Verde Mesa Groundwater Basin on the east, the Arroyo Seco Groundwater Basin on the southeast, the Chuckwalla and Little Chuckwalla Mountains on the south, small portions of the Cadiz Valley, and Ward Valley, and Rice Valley Groundwater Basins on the north, and the Pinto Valley Groundwater Basin on the northwest.

There are no perennial streams in the Chuckwalla Valley. Palen, Ford, and several smaller dry lakes are at topographic low-points. The surface watershed contributing to the area of the CVGB is 1,344 square miles, comprised of the Chuckwalla Valley (940 square miles) and the surrounding bedrock mountains (404 square miles).

Total groundwater storage available to wells was originally estimated at 9,100,000 acre-feet (af), and more recently at 15,000,000 af. The estimate of 15,000,000 af was made by the CDWR based on multiplying specific yield times saturated thickness times basin size. Saturated thickness was obtained by subtracting the average depth to water from the average thickness of alluvial sediments, or 500 feet, whichever is smaller. The 15,000,000 estimate, being the more recent, is used in this baseline description.

The CVGB is an unadjudicated groundwater basin considered very low priority under the California Sustainable Groundwater Management Act. Owners of property overlying the basin have the right to pump groundwater from the basin for reasonable and beneficial use, provided that the water rights were never severed or reserved. Groundwater production in the basin is not managed by an entity and no groundwater management plan has been submitted to the California Department of Water Resources. There is no Urban Water Management Plan for the area, and there is no Integrated Regional Water Management Plan.

Groundwater Trends

Groundwater levels range from the ground surface to about 400 feet below ground surface within the CVGB. Groundwater contour data from 1979 shows that CVGB groundwater moves from the north and west toward the gap between the Mule and McCoy Mountains at the southeastern end of the valley. Groundwater levels were stable up to about 1963. The CDWR reported total groundwater extraction of 9,100 afy in 1966.

The direction of groundwater movement is not expected to have changed since 1979, but there have been changes in groundwater levels, especially locally in the areas of extraction. The National Park Service has noted that groundwater levels have been trending downward for several decades. However, well data show that groundwater levels in the eastern portion of the basin have been relatively stable over the years, with local declines in the western portion in the vicinity of Desert Center. Extractions for agriculture in the Desert Center area of the western CVGB exceeded 20,000 afy from the mid-1980s to the early 1990s. This rate of extraction was well above the historic usage for that area (up to 9,100 afy) and resulted in local groundwater declines. Basin wide pumping declined significantly since 1986, resulting in recovery of groundwater levels to approximately those of the early.

Data on water levels over time for ten wells in the Chuckwalla Valley show that wells within the vicinity of Desert Center had generally declining water levels from about 1970 (or before) to about 1992, after which water levels began to recover. One well, located on or adjacent to Parcel Group A (see Figure 2-2 for parcel locations), had a stable water level from the early 1960s to 1980, followed by a five-year decline, after which there was no more data shown.

The groundwater level trends derived from the available data show a general trend toward stability, but the analysis is inconclusive because the data are not complete, there are gaps in the record, and well locations do not cover the entire CVGB. The monitoring wells that show the most prominent historic

declines are in agricultural or prison areas where a local drawdown would occur from intense use but would not necessarily be representative of the CVGB.

Baseline Groundwater Budget

The baseline groundwater budget is the groundwater budget for the CVGB in the absence of the proposed Project and all other known cumulative projects not already in place. For the purposes of this analysis, agricultural uses are considered as part of the baseline budget, as is the Prison Water Use, and the Genesis Solar Project. There are no manufacturing water uses in the area.

Table 3.10-1 provides a baseline normal groundwater budget (see Appendix G for the derivation of this budget). This budget indicates a safe yield, which is the maximum quantity of water that can be continuously withdrawn from a groundwater basin without adverse effect. The baseline safe yield for the CVGB is estimated at 2,390 afy (Budget Balance from Table 3.10-1), meaning the basin is currently close to capacity in terms of groundwater extraction. This budget would be for a normal (average) year, in terms of precipitation and water use.

Because of uncertainty in CVGB inflow rates, Table 3.10-2 provides the same analysis using lower inflow rates that have been used by the National Park Service (NPS; see Appendix G). This baseline budget shows the CVGB to be in deficit, with a loss of approximately 6,685 afy in the groundwater resource, meaning groundwater levels would be expected to drop as the resource is depleted over the years.

Table 3.10-1. Estimated Baseline Groundwater Budget for the Chuckwalla Valley Groundwater Basin

Budget Components	Acre-Feet per Year
Inflow	
Recharge from Precipitation	8,588
Underflow from Pinto Valley and Orocopia Valley Groundwater Basins	3,500
Irrigation Return Flow	800
Wastewater Return Flow	831
Total Inflow	13,719
Outflow	
Groundwater Extraction	-10,579
Underflow to Palo Verde Mesa Groundwater Basin	-400
Evapotranspiration at Palen Dry Lake	-350
Total Outflow	-11,329
Budget Balance (Inflow – Outflow)	2,390

Table 3.10-2. Estimated Baseline Groundwater Budget for the Chuckwalla Valley Groundwater Basin Using NPS Estimates of Precipitation and Subsurface Inflow.

Budget Components	Acre-Feet per Year
Inflow	
Recharge from Precipitation	2,060
Underflow from Pinto Valley and Orocopia Valley Groundwater Basins	953
Irrigation Return Flow	800
Wastewater Return Flow	831
Total Inflow	4,644

Table 3.10-2. Estimated Baseline Groundwater Budget for the Chuckwalla Valley Groundwater Basin Using NPS Estimates of Precipitation and Subsurface Inflow.

Budget Components	Acre-Feet per Year
Outflow	
Groundwater Extraction	-10,579
Underflow to Palo Verde Mesa Groundwater Basin	-400
Evapotranspiration at Palen Dry Lake	-350
Total Outflow	-12,755
Budget Balance (Inflow – Outflow)	-6,685

Groundwater Quality

Groundwater quality is variable throughout the basin. TDS content across the basin ranges from 274 to 12,300 mg/L (DWR, 1979). Groundwater to the south and west of Palen Dry Lake is typically sodium chloride to sodium sulfate-chloride in character. The best water quality is found in the western portion of the basin, where TDS content ranges from 275 to 730 mg/L (DWR, 2004).

Sulfate, chloride, fluoride, and TDS concentrations are high for domestic use (DWR, 2004). High boron and TDS concentrations, and high sodium impair groundwater for irrigation use (DWR, 2004). TDS content north of Palen Dry Lake ranges from 2,960 to 4,370 mg/L (DWR, 2004).

Surface Water

Hydrology and Flooding

The Athos Project is located within the Chuckwalla Valley Drainage Basin. All surface water in the western portion of the valley flows to Palen Dry Lake, located approximately 10 miles east of the community of Desert Center. Surface water in the eastern portion of the valley flows to Ford Dry Lake, located approximately 10 miles southeast of the Palen Dry Lake. All the Project parcels drain to the Palen Dry Lake.

Off-site storm water flows impacting the site are from a series of desert washes originating from the Coxcomb Mountains, Eagle Mountains, and Chuckwalla Mountains. Major named drainage courses affecting the Project include the Pinto Wash, which flows southeastward into the Chuckwalla Valley from between the Eagle and Coxcomb Mountains, the Big Wash, which flows eastward into the Chuckwalla Valley from the Eagle Mountains, and the Corn Springs Wash, which flows northeastward into the Chuckwalla Valley from the Chuckwalla Mountains. Numerous other unnamed watercourses drain into the Chuckwalla Valley from these same mountain ranges.

At the location of the Athos Project, all the desert watercourses exhibit characteristics of alluvial fans. Water from a single source such as a mountain canyon discharges onto the alluvial desert floor outside the mountains and spreads into a series of relatively unconsolidated channels and sheet flow which can inundate wide areas. Flood depths are generally (though not always) shallow resulting from the inability of the small, braided drainage channels to contain large flows. Flow patterns, as exhibited by visible watercourses, can shift over time, even within the duration of a single flood, as existing channels fill in and new channels form.

Federal Emergency Management Agency (FEMA) flood insurance rate maps have not been prepared for the Project site or surrounding lands and the site does not lie within a federally mapped floodplain. However, all of Parcel Group A and portions of Parcel Groups F and G are within the California Department of Water Resources Flood Awareness zone (Westwood, 2018). All the Project parcels would be subject to flooding from the watercourses named above and from other unnamed watercourses that cross the property.

A preliminary hydrology study has been performed by Westwood Professional Services (Westwood, 2018), using a two-dimensional flow analysis appropriate for unconsolidated alluvial fan flooding. This study showed that all the Project parcels would be subject to 100-year flooding to some degree. The 100-year flood, used as a regulatory flood by FEMA and Riverside County, has a one percent chance of occurring in any year. Although the probability of occurrence remains the same (1 percent) for any given year, on average, a flood of this magnitude can be expected to occur once every 100 years.

Figure 3.10-1 shows that Parcel Group A is entirely subject to 100-year flooding at depths that range from 1 to 5 feet. Flooding of this parcel is primarily from the Pinto Wash and tributaries. Flow is in a south-easterly direction toward the Palen Dry Lake. Flow velocities range from 1 to 4 feet per second. Parcel B is entirely subject to flooding at depths that range from 2 to 6 feet. Flooding of this parcel is primarily from the Big Wash and tributaries. Flow is in an easterly direction toward the Palen Dry Lake. Flow velocities range from one to 4 feet per second. Approximately two-thirds of Parcel Group C is subject to flooding, with most flooding on the northern portion of the parcel at depths of 1 to 2 feet. Flooding of this parcel group is primarily from the Big Wash and tributaries. Flow is in an easterly direction toward the Palen Dry Lake. Flow velocities range from 1 to 3 feet per second. Parcel Groups D and E are shown in Figure 3.10-1 as mostly not subject to flooding. Flow velocities are projected to be 1 to 1.5 feet per second. Approximately 1/3 of Parcel Group F is subject to flooding (Figure 3.10-1). Flood depths are approximately one foot. Flooding in Parcel Groups D, E and F originates in the Chuckwalla Mountains, and in particular the Corn Springs wash for Parcel Group F. Flow velocities are mainly 1 to 1.5 feet per second.

The Westwood floodplain study shows major sources of flooding on the Project parcels on a fixed-boundary terrain using a two-dimensional model grid with 100-foot cells. The model is therefore an overview of the major sources of flooding of the site. Aerial photos show minor desert watercourses (washes) affecting all of the parcels, including those not shown in Figure 3.10-1 as subject to flooding. The drainage area to these washes may be small, and the flood potential therefore minor, but there remains a potential for these entire parcels to be affected by flooding to some degree. There is also a potential for the alluvial washes to shift their courses during a large flood which would result in the need to remap the floodplains.

Parcel Group A is currently protected from flooding by earthen berms along the west and north property lines. These berms are made of earth and direct flow approaching the western property line to the south to enter the main wash that passes just to the south of Parcel Group A. Flow approaching the northern property line is directed east and discharged into a wash that continues southeast from the northeast corner of Parcel Group A. Rice Road appears to direct flows to a point near and crossing into the northernmost portion of Parcel Group C. A portion of the western boundary of Parcel Groups B and C appear to be protected by berms, and there are earthen berms directing water north and east along the western and southern boundaries of Parcel Group E and the southern boundary of Parcel Group G. The berms all appear to have been placed there to protect past agricultural operations, and from the appearance of the drainage patterns created by the berms, they have been in place for many years. The structural integrity of the berms is not known. It appears they may be effective at diverting normal flows away from these parcels, but it is not known whether they would withstand a large flood. They can therefore not be considered to provide 100-year protection for the property. The Westwood floodplain study assumed the berms, as well as other structures such as roads, would be overtopped.

Water Quality

The Athos Project is under the jurisdiction of the Colorado River Basin Regional Water Quality Control Board (RWQCB). The Water Quality Control Plan (Basin Plan) developed by the RWQCB establishes water quality objectives, including narrative and numerical standards, to protect the beneficial uses of surface

and ground waters in the region. The Basin Plan describes implementation plans and other control measures designed to ensure compliance with Statewide plans and policies and documents comprehensive water quality planning.

Beneficial uses of waters, also designated by the RWQCB, are of two types: consumptive and non-consumptive. Consumptive uses are those normally associated with people's activities, primarily municipal, industrial and irrigation uses that consume water and cause corresponding reduction and/or depletion of water supply. Non-consumptive uses include swimming, boating, waterskiing, fishing, hydropower generation, and other uses that do not significantly deplete water supplies.

Historical beneficial uses of water within the Colorado River Basin Region have largely been associated with irrigated agriculture and mining. Industrial use of water has become increasingly important in the Region, particularly in the agricultural areas (RWQCB, 2017).

The RWQCB Basin Plan (RWQCB, 2017) lists specific beneficial uses for surface waters and groundwater. The surface waters on the Project site would be classified as washes (ephemeral streams) for which beneficial uses are:

- Groundwater Recharge (GWR),
- Non-Contact Water Recreation (REC II),
- Warm Freshwater Habitat (WARM) (to be established on a case-by-case basis), and
- Wildlife Habitat (WILD).

Beneficial uses of the CVGB are:

- Municipal and Domestic Supply (MUN),
- Industrial Service Supply (IND), and
- Agriculture Supply (AGR).

All surface and ground waters are considered suitable, or potentially suitable, for municipal or domestic water supply with the exception of (SWRCB, 2006):

- Surface and ground waters where: the TDS exceed 3,000 mg/L, and it is not reasonably expected by the Regional Board to supply a public water system; or
- There is contamination, either by natural process or by human activity, that cannot be treated for domestic use using either Management Practices or best economically achievable treatment practices; or
- The water source does not provide sufficient water to supply a single well capable of producing an average, sustained yield of 200 gallons per day.

The RWQCB sets water quality objectives to ensure the protection of beneficial uses and the prevention of nuisance, although it is understood that water quality can be changed to some degree without unreasonably affecting beneficial uses (RWQCB, 2017). Current objectives for surface water in the Project area include those for aesthetic qualities, tainting substances, toxicity, temperature, pH, dissolved oxygen, suspended and settleable solids, dissolved solids, bacteria, biostimulatory substances, sediment, turbidity, radioactivity, chemical constituents, and pesticide wastes. Specific information on these objectives is provided in the Basin Plan (RWQCB, 2017). Groundwater objectives include those for taste and odors, bacteriological quality, chemical and physical quality, brines, and radioactivity. The RWQCB has objectives for groundwater overdraft for several specific groundwater basins, but the CVGB is not listed among these.

Section 303(d) of the Clean Water Act requires states to assess surface water quality and prepare a list of waters (known as the Section 303(d) list of water quality limited segments) considered to be impaired by not meeting water quality standards and not supporting their beneficial uses. Impairment may result from point-source pollutants or non-point source pollutants. None of the waters in or near the proposed Project are currently listed as impaired (SWRCB, 2018).

3.10.2 Regulatory Framework

Federal Regulations

Clean Water Act (CWA) (33 USC Section 1251 et seq.). Formerly the Federal Water Pollution Control Act of 1972, the CWA was enacted with the intent of restoring and maintaining the chemical, physical, and biological integrity of the waters of the United States. The CWA, enforced by the United States Environmental Protection Agency (EPA), requires states to set standards to protect, maintain, and restore water quality through the regulation of point source and certain non-point source discharges to surface water.

Section 402 of the CWA requires that direct and indirect discharges and storm water discharges into waters of the United States be pursuant to a National Pollutant Discharge Elimination System (NPDES) permit for industrial or construction activities. NPDES permits contain industry-specific, technology-based limits and may include additional water quality-based limits, and pollutant-monitoring requirements. An NPDES permit may include discharge limits based on Federal or State water quality criteria or standards. NPDES permitting authority is delegated to, and administered by, the California State Water Resources Control Board (SWRCB) and its nine regional water quality control boards (RWQCBs) as described below under State regulations.

Section 404 of the CWA authorizes the U.S. Army Corps of Engineers to regulate the discharge of dredged or fill material to the waters of the U.S. and adjacent wetlands. Discharges to waters of the U.S. must be avoided where possible and minimized and mitigated where avoidance is not possible. Permits are issued by the Corps of Engineers. The Corps of Engineers has determined that waters on the proposed site are not jurisdictional under Section 404. Coverage under Section 404 would not be required.

Section 401 of the CWA requires that any activity that may result in a discharge into waters of the U.S. be certified by the RWQCB. This certification ensures that the proposed activity follow State and/or federal water quality standards. The Corps of Engineers has determined that waters on the proposed site are not jurisdictional under Section 404. Coverage under Section 404 would not be required. Therefore, coverage under Section 401 would not be required.

National Flood Insurance Act/Flood Disaster Protection Act. The National Flood Insurance Act of 1968 made flood insurance available for the first time. The Flood Disaster Protection Act of 1973 made the purchase of flood insurance mandatory for the protection of property located in Special Flood Hazard Areas. These laws led to mapping of regulatory floodplains and to local management of floodplain areas according to federal guidelines which include prohibiting or restricting development in flood hazard zones.

Colorado River Accounting Surface. Based on the Colorado River Compact of 1922, and the 1928 apportionment of lower Colorado River water by the U.S. Congress, groundwater in the river aquifer beneath the floodplain is considered to be Colorado River water, and water pumped from wells on the floodplain is presumed to be river water and is accounted for as Colorado River water (USGS, 2009). The accounting-surface method was developed in the 1990s by the U.S. Geological Survey, in cooperation with the Bureau of Reclamation, to identify wells outside the floodplain of the lower Colorado River that yield water that will be replaced by water from the river. This method was needed to identify which wells require an entitlement

for diversion of water from the Colorado River and need to be included in accounting for consumptive use of Colorado River water as outlined in the Consolidated Decree of the United States Supreme Court in *Arizona v. California*. The method is based on the concept of a river aquifer and an accounting surface within the river aquifer. Wells within the CVGB that draw water from below the accounting surface require an entitlement for the use of that water (USGS, 2009). Within the Project area, the accounting surface is at elevation 238 to 240 feet (USGS, 2009). Extractions of water below that elevation are prohibited without an entitlement. Entitlements to extract and use the groundwater below the accounting surface are granted by the USBR through their designated representative in California, the Colorado River Board of California.

State Regulations

California Streambed Alteration Agreement. Sections 1600–1616 of the California Fish and Game Code require that any entity that proposes an activity that will substantially divert or obstruct the natural flow of any river, stream or lake, or substantially change or use any material from the bed, channel, or bank of, any river, stream, or lake, or deposit material into any river, stream, or lake, must notify the California Department of Fish and Wildlife (CDFW). If the CDFW determines the proposed alteration will impact a jurisdictional river, stream or lake, a Lake or Streambed Alteration Agreement (LSAA) will be prepared. The LSAA includes conditions necessary to protect those resources. The Agreement applies to any stream including ephemeral streams and desert washes.

California Porter Cologne Water Quality Control Act. The Porter Cologne Water Quality Control Act of 1967, Water Code Section 13000 et seq., requires the SWRCB to adopt water quality criteria to protect State waters. Each RWQCB has developed a Water Quality Control Plan (Basin Plan) specifying water quality objectives, beneficial uses, numerical standards of pollution concentrations, and implementation procedures for Waters of the State. Waters of the State is defined by the Porter Cologne Water Quality Control Act as “any surface water or groundwater, including saline waters, within the boundaries of the State.” General objectives of the Basin Plans state that all waters (of the State) shall be maintained free of toxic substances in concentrations which are toxic to, or which produce detrimental physiological responses in, human, plant, animal, or aquatic life. The water quality control plans are intended to protect designated beneficial uses of waters, avoid altering the sediment discharge rate of surface waters, and avoid introducing toxic pollutants to the water resource. The Porter Cologne Water Quality Control Act requires anyone proposing to discharge waste that could affect the quality of the waters of the State to report the waste discharge to the appropriate RWQCB.

SWRCB Storm Water Program Construction General Permit (General Construction Storm Water Permit). The Construction General Permit, required by the federal Clean Water Act, regulates storm water runoff from construction sites of one acre or more in size. The Construction General Permit is a statewide, standing permit. Qualifying construction activities, which would include the Athos Project, must obtain coverage under the permit by filing a Notice of Intent with the Regional Water Quality Control Board, and development of and compliance with a Storm Water Pollution Prevention Plan (SWPPP) describing Best Management Practices the discharger will use to protect storm water runoff. 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 Section 303(d) list (described below) for sediment.

The General Permit prohibits the discharge of pollutants other than storm water and non-storm water discharges authorized by the General Permit or another NPDES permit and prohibits all discharges which contain a hazardous substance in excess of reportable quantities established in 40 C.F.R. §§ 117.3 and 302.4 (pursuant to Section 311 of the Clean Water Act), unless a separate NPDES Permit has been issued

to regulate those discharges. In addition, the General Permit incorporates discharge prohibitions contained in water quality control plans, as implemented by the nine Regional Water Boards. Discharges to Areas of Special Biological Significance are prohibited unless covered by an exception that the State Water Board has approved. Authorized non-storm water discharges must be: infeasible to eliminate; comply with Best Management Practices (BMPs) as described in the SWPPP; filtered or treated using appropriate technology; meet the established numeric action levels for pH and turbidity; and, not cause or contribute to a violation of water quality standards. Discharges to storm water that cause or threaten to cause pollution, contamination, or nuisance are prohibited. Pollutant controls must utilize best available technology economically achievable (BAT) for toxic pollutants and non-conventional pollutants and best conventional pollutant control technology (BCT) for conventional pollutants.

The CWA provides definitions for the types of controls that can be used to satisfy BAT and BCT requirements. Specific BAT and BCT pollution controls and Best Management Practices may include runoff control, soil stabilization, sediment control, proper stream crossing techniques, waste management, spill prevention and control, and a wide variety of other measures depending on the site and situation.

SWRCB Industrial Storm Water General Permit. The Industrial Storm Water General Permit regulates discharges to surface waters associated industrial activities and would be required for Project operations. The General Industrial Permit requires the implementation of management measures that will achieve the performance standard of BAT and BCT. The General Industrial Permit also requires the development of a SWPPP and a monitoring plan. Through the SWPPP, sources of pollutants are to be identified and the means to manage the sources to reduce storm water pollution are described.

BMPs may include, but not be limited to, spill and overflow protection, storm water control, covering of fueling areas, proper clean-up methods, spill prevention, preventative maintenance on equipment, inspections, and training. Specific best management practices vary by situation and site. Guidance on the use of BMPs is available from the SWRCB.

Water Rights. California water law is embodied in the California Water Code and the Water Commission Act of 1914. There are two basic kinds of rights to surface water: riparian and appropriative. As the Athos Project does not propose the use of surface waters, these rights are not relevant to the Project. Percolating groundwater, under which category the CVGB falls, has no SWRCB permit requirement, and supports two kinds of rights: (a) overlying rights, a correlative right of equal priority shared by all who own overlying property and use groundwater on the overlying property; and (b) groundwater appropriative rights for use of the overlying property or on overlying property for which the water rights have been severed (BLM, 2018). The right to use groundwater on property that is not as an overlying right is junior to all overlying rights but has priority among other appropriators on a first in time use basis. Overlying users cannot take unlimited quantities of water without regard to the needs of other users (BLM, 2018).

The California Water Code allows any local public agency that provides water service whose service area includes a groundwater basin or portion thereof that is not subject to groundwater management pursuant to a judgment or other order, to adopt and implement a groundwater management plan (California Water Code Sections 10750 et seq.) Groundwater Management Plans often require reports of pumping and some restrictions on usage. There is no Groundwater Management Plan for the CVGB listed on the DWR website on Groundwater Management Plans (BLM, 2018).

The California Legislature has found that by reason of light rainfall, concentrated population, the conversion of land from agricultural to urban uses and heavy dependence on groundwater, the counties of Riverside, Ventura, San Bernardino and Los Angeles have certain reporting requirements for groundwater pumping. Any person or entity that pumps in excess of 25 af of water in any one year must file a "Notice of Extraction and Diversion of Water" with the SWRCB. (California Water Code Sections 4999 et seq.)

The Athos Project is located on land that overlies the CVGB, for which a method was developed by the USGS, in cooperation with the USBR, to identify groundwater wells outside the floodplain of the lower Colorado River that yield water that will be replaced by water from the river. The specific method to determine whether wells draw water from the Colorado River (referred to as the accounting surface) has not been promulgated by the USBR. However, wells placed into the groundwater beneath the Project site that extract groundwater may, depending on whether the groundwater surface is above or below the accounting surface, be considered as drawing water from the Colorado River and require an entitlement to extract groundwater. Entitlements to extract and use the groundwater beneath the site are granted by the USBR through their designated representative in California, the Colorado River Board of California. After eligibility for groundwater extraction has been approved by the USBR, a contract must be established with the City of Needles to acquire the water. In California, the City of Needles monitors the use of water extracted from the river aquifer and is the designated contracting agent for the USBR.

California Senate Bill (SB) 610. SB 610, passed in 2002, amended the California Water Code to require detailed analysis of water supply availability for certain types of development projects, and to improve the link between information on water supply availability and certain land use decisions made by cities and counties. SB 610 requires detailed information regarding water availability to be provided to the city and county decision-makers prior to approval of specified large development projects. This information is to be included in the administrative record that serves as the evidentiary basis for an approval action by the city or county on such projects. SB 610 requires that a project be supported by a Water Supply Assessment if the Project is subject to the California Environmental Quality Act, and would demand an amount of water equivalent to, or greater than, the amount of water required by a 500-dwelling unit project. According to SB 610 Guidelines, one dwelling unit typically consumes 0.3 to 0.5 afy, which would amount to 150 to 250 acre-feet per year for 500 units.

State Water Resources Control Board Policies. The Anti-Degradation Policy (Resolution No. 68-16). Requires the RWQCB, in regulating the discharge of waste, to: (a) maintain existing high quality Waters of the State until it is demonstrated that any change in quality will be consistent with maximum benefit to the people of the State, will not unreasonably affect present and anticipated beneficial uses, and will not result in water quality less than that described in State or Regional Water Boards policies; and (b) require that any activity which produces or may produce a waste or increased volume or concentration of waste and which discharges or proposes to discharge to existing high quality waters to meet waste discharge requirements which will result in the best practicable treatment or control of the discharge necessary to assure that: (a) a pollution or nuisance will not occur and (b) the highest water quality consistent with maximum benefit to the people of the State will be maintained (BLM, 2018).

Sources of Drinking Water Policy (Resolution No. 88-63). This policy designates all groundwater and surface Waters of the States as potential sources of drinking water, worthy of protection for current or future beneficial uses, except where: (a) the total dissolved solids are greater than 3,000 milligrams per liter, (b) the well yield is less than 200 gallons per day (gpd) from a single well, (c) the water is a geothermal resource, or in a water conveyance facility, or (d) the water cannot reasonably be treated for domestic use using either best management practices or best economically achievable treatment practices (BLM, 2018).

Policies and Procedures for Investigations and Clean-up and Abatement of Discharges Under CWC Section 13304 (Resolution No. 92-49). This policy establishes requirements for investigation and cleanup and abatement of discharges. Under this policy, clean-up and abatement actions are to implement applicable provisions of Title 23 CCR Chapter 15, to the extent feasible. The policy also requires the application of

Section 2550.4 of Chapter 15 when approving any alternative cleanup levels less stringent than background. It requires remediation of the groundwater to the lowest concentration levels of constituents technically and economically feasible, which must at least protect the beneficial uses of groundwater, but need not be more stringent than is necessary to achieve background levels of the constituents in groundwater (BLM, 2018).

Local Regulations

Riverside County Ordinance No. 682 (As Amended Through 682.4) an Ordinance of The County of Riverside Regulating the Construction, Reconstruction, Abandonment and Destruction of Wells and Incorporating by Reference Ordinance No. 725. This ordinance provides minimum standards for construction, reconstruction, abandonment and destruction of all wells to: (a) protect underground water resources; and (b) provide safe water to persons within Riverside County.

Ordinance No. 650 (As Amended Through 650.5) an Ordinance of the County of Riverside Amending Ordinance No. 650 Chapter 8.124 of the Riverside County Code Regulating the Discharge of Sewage in the Unincorporated Areas of the County of Riverside and Incorporating by Reference Ordinance No. 725 protects water quality and public health by establishing regulations for the installation, replacement, and performance of Onsite Wastewater Treatment Systems.

Ordinance No. 458: An Ordinance of the County of Riverside Regulating Flood Hazard Areas and Implementing the National Insurance Program was developed to comply with Title 44 CFR Part 65 regarding requirements for the identification and mapping of areas identified as FEMA Special Flood Hazard Areas. The ordinance is applicable to development within unincorporated areas of Riverside County and is integrated into the process of application for development permits under other county ordinances. The Project site does not lie within a designated FEMA 100-year or 500-year floodplain. However, as described in Section 3.10.1 large portions of the site, including areas designated by the California Department of Water Resources as flood hazard zones, would be subject to flooding and subject to Ordinance No. 458.

3.10.3 Methodology for Analysis

The impact analysis analyzes potential direct, indirect and cumulative impacts of the proposed Project and alternatives on water resources, including the Project's potential to adversely affect groundwater supplies, alter geomorphic features/processes, modify drainage and flooding conditions, induce erosion and sedimentation, and degrade water quality. The analysis also considers the potential for incremental impacts of the Project to combine with impacts of other projects and activities to adversely affect water resources. Mitigation measures to avoid or reduce potential impacts are identified, and the potential for residual impacts is evaluated.

3.10.4 CEQA Significance Criteria

The criteria used to determine the significance of potential hydrology and water quality impacts are based on Appendix G of the CEQA Guidelines. The Project would result in a significant impact under CEQA related to hydrology and water quality if the project would:

- *Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality (See Impact HWQ-1).*
- *Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin (See Impact HWQ-2).*

- *Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:*
 - *result in substantial erosion or siltation on- or off-site (See Impact HWQ-3);*
 - *substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite (See Impact HWQ-4);*
 - *create or contribute runoff water which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff (See Impact HWQ-5); or*
 - *impede or redirect flood flows (Impact HWQ-6).*
- *Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan (See Impact HWQ-1).*

The County of Riverside’s Environmental Assessment Form includes additional significance criteria, which were also used in the analysis. The additional criteria indicate that a project could have potentially significant impacts if it would:

- *Cause changes in absorption rates or the rate and amount of surface runoff (See Impact HWQ-4);*
- *Cause changes in the amount of surface water in any water body (See Impact HWQ-3 and HWQ-4);*
- *Substantially degrade water quality (See Impact HWQ-1); or*
- *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 (See Impact HWQ-6).*

Effects Found Not to Be Significant

The following CEQA significance criteria from Appendix G were not included in the analysis:

- *In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation.*

There is no body of water in the area that could produce a tsunami or seiche. There is therefore no impact related to seiche or tsunami. Although there could be sediment transported by floods that could impact the Project area, the site is on flat terrain at least 1.5 miles from the nearest mountain slopes (Coxcomb and Chuckwalla mountains) that could potentially produce a mudflow or project inundation.

The following CEQA significance criteria from the County’s Environmental Assessment Form were not included in the analysis:

- *Include new or retrofitted Storm water Treatment Control BMPs (e.g., water quality treatment basins, constructed treatment wetlands), the operation of which could result in significant environmental effects (i.e., increased vectors and/or odors).*

The Project would not include new or retrofitted storm water treatment control BMPs as no such storm water control features are required for the Project. Therefore, no impact would occur.

3.10.5 Proposed Project Impact Analysis

The scoping effort conducted by the Riverside County Planning Department revealed several public concerns related to hydrology and water quality. Public concerns related in the scoping process involved flooding and groundwater. There were several concerns raised regarding flash floods and the potential for the Project to increase the potential for flood damage in the area. Concerns included berm destruction, berm maintenance, flood diversions, access during flooding (specifically Loma Verde Road which was

described as becoming “river” in big rain events), and flood damage to access roads. Groundwater concerns arose from the local reliance on groundwater. There were concerns regarding the Project water use, the potential of lowering the water table and the potential for interfering with the availability of and cost of obtaining water.

Impact HWQ-1. The Project would violate water quality standard or waste discharge requirements or otherwise substantially degrade surface or groundwater quality, or conflict with the implementation of a water quality control plan.

Solar Facility Impacts

Surface Water

Construction of the Project would require excavation and grading for the solar panels, access roads, buildings, substations, and other features. Disturbance of soil during construction could result in soil erosion and lowered water quality through increased turbidity and sediment deposition into local streams. Downstream beneficial uses (see Section 3.10.1.3) could be adversely affected through violation of RWQCB water quality standards and objectives for suspended solids, total dissolved solids, sediment and turbidity.

Accidental spills or disposal of harmful materials used during construction could wash into and pollute surface waters or groundwater. Materials that could contaminate the construction area or spill or leak include lead-based paint flakes, diesel fuel, gasoline, lubrication oil, cement slurry, hydraulic fluid, antifreeze, transmission fluid, lubricating grease, and other fluids. Downstream beneficial uses could be adversely affected through violation of RWQCB water quality objectives for toxicity and chemical constituents.

The dry nature of most of the surface streams is such that should material spills occur during construction, these could easily be cleaned up prior to water being contaminated. Groundwater is well below the maximum depth of excavation, resulting in little likelihood that groundwater could be affected from spills into surface water during construction. Fuel and greases for construction equipment would be stored in temporary aboveground storage tanks or sheds located on the Project site. The fuels stored on-site would be in a locked container within a fenced and secure temporary staging area.

Development and adherence to an SWPPP in conformance with the California General Construction Storm Water Permit (See Section 3.10.2 and Section 2.3.3) will require best management practices to prevent and control erosion and siltation during construction, prevent, contain and mitigate accidental spills during construction, and prevent violation of water quality objectives or damaging beneficial uses identified in the water quality control plan. Compliance with Sections 401 and 404 of the Clean Water Act will also minimize this impact.

Potential threats to surface water quality during operation and maintenance activities include potential increases in erosion and associated sediment loads to adjacent washes, and accidental spills of hydrocarbon fuels, greases and other materials associated with operation of equipment on site. The Project will include electrical transformers, electrical substations, an operations and maintenance building and battery storage systems. There would be regulated hazardous materials onsite. These materials are not intended to be released to the environment, but if spilled or otherwise accidentally released they could have the potential to contaminate surface or ground water. Secondary containment is proposed, as is a Hazardous Materials Business Plan, and these materials would be subject to the regulatory requirements described in Section 3.9.2. These impacts would also be mitigated by compliance with the California Industrial Storm Water General Permit described in Section 3.10.2.

Decommissioning of the Project is expected to result in adverse impacts related to water resources similar to construction impacts: Work could result in potential increases in sediment loads to adjacent streams and washes; and/or accidental spills of hydrocarbon fuels and greases and other materials associated with motorized equipment and construction work. A closure, Decommissioning, and Reclamation Plan is proposed that would be designed to ensure public health and safety, environmental protection and compliance with all applicable laws, ordinances, regulations, and standards, including those related to water quality.

Existing state and Federal water quality regulations, including the proposed SWPPP, are intended to ensure that water quality standards and waste discharge standards not be violated during construction or operations. However, large portions of the site will be subject to flooding at depths up to 6 feet. Although mass grading is not proposed, substantial ground disturbance is expected, and the solar panels and proposed other structures will be placed in areas that are subject to flooding, creating a potential for erosion and sedimentation leading to potential water quality impacts during operations. Mitigation Measure HWQ-1 requires the development of a Drainage Erosion and Sedimentation Plan that would address and mitigate erosion impacts during construction and operations. With Mitigation Measure HWQ-1 in place, this impact is less than significant.

Groundwater

Groundwater quality impacts could occur during construction if contaminated or hazardous materials used during construction were to be released and migrate to the groundwater table. With adherence to the Hazardous Materials Business Plan and an NPDES General Permit for Construction Activities, the potential for such impacts to groundwater quality are low.

The Project would produce sanitary wastewater from the O&M building, treated and disposed at the site using an existing septic disposal system. It is not known whether the existing system is idle or in use, nor whether the proposed use would exceed the level of previous use. The federal government (U.S. EPA), state and local (Riverside County Department of Environmental Health) have requirements for septic system design, including requirements for percolation, vertical distance from the groundwater table, and setback from the nearest groundwater well. The use and application of septic fields is an established practice as a method of wastewater treatment. A continued use of an existing septic system that is currently in use would not be an impact unless the new use exceeds the capacity of the system. A renewed use of a permitted septic system is not expected to result in substantial degradation of the groundwater underlying the Project site, but Mitigation Measure HWQ-2 (Septic System Rehabilitation) would allow the County to ensure that it is in line with County and EPA regulations and protective of water quality. With Mitigation Measure HWQ-2 in place, the water quality impact to groundwater is less than significant.

220 kV Generation-Tie Line

Construction of the gen-tie line would involve excavation for tower foundations and grading of access roads. Equipment used would be similar to the equipment used for the solar array and would result in similar potential impacts to water quality through ground disturbance and potential spills. Adherence to the SWPPP, and Mitigation Measure HWQ-1 (Drainage Erosion and Sedimentation Control Plan (DESCP)) would mitigate these construction impacts. Operations impacts would be minimal. The gen-tie line would be situated on towers well above the ground surface and would require minimal maintenance. With Mitigation Measure HWQ-1 in place, this impact would be less than significant. Groundwater impacts from the gen-tie line would be less than significant. Construction-related impacts to groundwater would be mitigated by compliance with water quality regulations. There would be no operations-related activity that would affect groundwater.

Mitigation Measures for Impact HWQ-1

Implementation of Mitigation Measures HWQ-1 (Drainage Erosion and Sedimentation Control Plan [DESCP]) and HWQ-2 (Septic System Rehabilitation) would mitigate Impact HWQ-1 by requiring measures to control erosion, a best management practices plan to control storm water runoff and sediment transport, and rehabilitation of the septic system according to County standards (see Section 3.10.10 below).

Significance after Mitigation

Impact HWQ-1 would be less than significant with implementation of Mitigation Measures HWQ-1 and HWQ-2.

Impact HWQ-2. The Project would substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin.

Solar Facility and 220 kV Generation-Tie Line

Construction water use is expected to be 500 acre-feet per year during the anticipated 30-month construction period. The average total annual water usage during operation is estimated to be 15 to 40 acre-feet per year (afy). Water use during operations would be primarily for panel washing, restrooms and general maintenance activities.

The Project's water needs would be met by use of groundwater pumped from wells on the plant site or purchased from a local water purveyor. Whether purchased or pumped from onsite, all water needs would be met by groundwater from the Chuckwalla Valley Groundwater Basin (CVGB).

A Water Supply Assessment (WSA) has been prepared (Appendix G) that concluded the Athos Project's use of water, which would be 200 afy during construction and 40 afy during operations, would be well below the estimated CVGB surplus of 2,390 afy (Table 3.10-1). The Athos Project alone would therefore not cause nor contribute to a groundwater deficit nor impact the sustainable groundwater management of the basin. However, as described in the WSA and Section 3.10.1.2, there is substantial uncertainty regarding the baseline groundwater budget. Using the NPS estimates of baseline recharge, the CVGB is already in overdraft. Assuming NPS estimates, the Athos Project operations would contribute about 1 percent to the groundwater overdraft. This would not be a substantial increase in groundwater use.

One concern is that Project-related groundwater use could affect the adjacent Palo Verde Mesa Groundwater Basin (PVMGB) by inducing flows from the Colorado River into that basin. Any resulting use of Colorado River water without an entitlement would be illegal. However, given the distance of the Project from the Colorado River, and the pumping elevation, the Project would not likely result in direct impacts to the PVMGB, and wells drawing groundwater for Project use would not induce flow from the Colorado River. Nonetheless, because uncertainty regarding an induced flow from the Colorado River, Mitigation Measure HWQ-3 (Mitigation of Impacts to the Palo Verde Mesa (PVMGB) Groundwater Basin) is required to reduce the possibility of impacts related to Colorado River water. With Mitigation Measure HWQ-3 in place, Impact HWQ-2 is less than significant.

Mitigation Measures for Impact HWQ-2

Implementation of Mitigation Measure HWQ-3 (Mitigation of Impacts to the Palo Verde Mesa (PVMGB) Groundwater Basin) would mitigate Impact HWQ-2 by requiring a plan to prevent or offset any impacts that may occur to the PVMGB (see Section 3.10.10 below).

Significance after Mitigation

Impact HWQ-2 would be less than significant with implementation of Mitigation Measure HWQ-3.

Impact HWQ-3. The Project would substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would result in substantial erosion or siltation on- or off-site.

Solar Facility

Earthwork for Project construction would require the use of heavy machinery for vegetation grubbing, grading, and installation of roads, pipelines, generation facilities, transmission facilities, administration buildings, the solar field, the energy storage system, and other facilities. Construction of these facilities would involve the use of bulldozers, graders, trucks, and various other types of heavy equipment, and would involve changes to on site topography. These activities would loosen existing surface soils and sediments, increasing the potential for erosion during storm events, along with associated effects such as increased downstream sediment yields from on-site disturbed areas. Increased impervious areas could also lead to erosion by increasing the rate and frequency of runoff.

Grading effects that could lead to soil disturbance will be minimized by the proposed grading plan, which will minimize the required volume of earth movement, as described in Chapter 2. It is therefore anticipated that existing drainage patterns will not be substantially altered. However, much of the solar facility would be impacted by some form of ground disturbance, either from compaction, micro-grading, or disc-and-roll grading. There would be some light grubbing for leveling and trenching. Access road beds would also be grubbed, graded, and compacted. Impervious groundcover would be limited to the solar panel foundations, compacted roads, buildings, parking areas, energy storage system, and the substations.

Because of the proposed plan of minimal grading, alteration of the existing drainage pattern, and any associated erosion or siltation, should be minimal. However, the final site plans are not yet complete, and there remains a potential for alteration of drainage patterns and the potential for erosion. Drainage alterations could occur through diversions by the proposed security fences, placement of structures in drainage areas, or grading to control high flow concentrations.

Erosion protection management measures would be required by adherence to a SWPPP in compliance with the Clean Water Act and the California General Construction Permit. Riverside County requires natural drainage to be maintained to the maximum extent possible and prohibits obstructing fences perpendicular to existing drainage patterns. Fences must allow runoff to pass unencumbered. Compliance with these measures is generally sufficient to reduce erosion impacts to a minimum. A Drainage Erosion and Sedimentation Control Plan (DESCP) is proposed in Mitigation Measure HWQ-1 to further address potential Project-related water erosion impacts. This plan would include applicable measures, such as best management practices (BMPs), to reduce erosion and siltation impacts. With Mitigation Measure HWQ-1 in place, Impact HWQ-3 would be less than significant.

220 kV Generation-Tie Line

The gen-tie line would cross several watercourses, but no alteration of drainage is anticipated. The access roads would be at grade, and the towers would provide insufficient obstruction to flow to alter drainage patterns. With HWQ-1 in place, this impact is less than significant.

Mitigation Measures for Impact HWQ-3

Implementation of Mitigation Measures HWQ-1 (Drainage Erosion and Sedimentation Control Plan [DESCP]) would mitigate Impact HWQ-3 by requiring development and implementation of a plan to control drainage, erosion and sediment (see Section 3.10.10 below).

Significance after Mitigation

Impact HWQ-3 would be less than significant with implementation of Mitigation Measure HWQ-1.

Impact HWQ-4. The Project would substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site.

Solar Facility

The evaluation of this impact also addresses the Riverside County significance criteria of causing changes in absorption rates or the rate and amount of surface runoff or changes in the amount of surface water in any water body.

There is a minor potential for the Project to increase the magnitude and frequency of runoff rates through the construction of impervious areas and by altering the ground surface characteristics through grading and removal of vegetation. Impervious areas will be minimal and limited to the foundations for the proposed solar panels, the proposed buildings, parking areas, energy storage system, and substations. The proposed roadways will be compacted, which will increase the runoff potential. Together, these features are anticipated to be only a small portion of the 3,400-acre site. Additionally, the Project proposes to leave drainage patterns relatively intact. Therefore, the increase in runoff is expected to be minimal, though an impact potential remains. Depending on final engineering analysis of post-construction hydrology, retention basins may be necessary according to Riverside County standards to reduce increased discharges created by the Project.

Alteration of the existing drainage pattern should be minimal because of the minimal grading proposed. Some alterations could occur through diversions by the proposed security fences, which could become barriers to flow by the accumulation of debris, in which case substantial diversions of offsite sheet flow could occur. Structures placed in drainage areas, or grading to control high flow concentrations, could also lead to flow diversions which could adversely affect the flood potential within or outside the property. Some of these potential diversions may already occur as part of the baseline conditions due to the berms described in Section 3.10.1.3. Riverside County requires natural drainage to be maintained to the maximum extent possible and prohibits obstructing fences perpendicular to existing drainage patterns. Fences must allow runoff to pass unencumbered.

Several scoping comments raised the issue of flooding related to berm destruction berm maintenance, flood diversions, access during flooding, and flood damage to access roads. As described in the scoping comments, some of the damage, for instance to Loma Verde Road, is already occurring and would not necessarily be caused by the Project. Existing berms that are on the Project site could be affected by grading, which could cause alterations of flood flows.

Although minimal alteration of drainage patterns is expected, the final site plans are not yet complete, and there remains a potential for the Project to cause flooding either of adjacent property or within the site itself. Mitigation Measure HWQ-1 requires the development of a DESCP which would address erosion-related impacts. The Westwood study has a broad assessment of the flood potential on the site. As the

site design is completed, additional drainage information would be required to ensure that the design addresses drainage and flooding conditions on each parcel. Mitigation Measure HWQ-4 requires a project drainage report and plans to address onsite flooding and the potential for the Project to induce flooding on adjacent property. With Mitigation Measures HWQ-1 and HWQ-4 in place, Impact HWQ-4 would be less than significant.

220 kV Generation-Tie Line

The gen-tie line would cross several watercourses, but no alteration of drainage is anticipated. The access roads would be at grade, and the towers would provide insufficient obstruction to flow to alter drainage patterns. There would be negligible increase in impervious area. With HWQ-1 and HWQ-4 in place, this impact is less than significant.

Mitigation Measures for Impact HWQ-4

Implementation of Mitigation Measures HWQ-1 (Drainage Erosion and Sedimentation Control Plan [DESCP]) and HWQ-4 (Project Drainage Plan) would mitigate Impact HWQ-4 by requiring a detailed assessment of drainage patterns and flood hazards and developing and implementing plans to prevent flood-related damage to the site or to adjacent property (see Section 3.10.10 below).

Significance after Mitigation

Impact HWQ-4 would be less than significant with implementation of Mitigation Measure HWQ-1 and Mitigation Measure HWQ-4.

Impact HWQ-5. The Project would substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would create or contribute runoff water which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff.

Solar Facility

There are no existing or planned storm water drainage systems at or downstream of the property. Drainage in the area and downstream of the Project consists of natural desert with natural watercourses. Some increase in runoff potential is possible due to increased impervious area and compacted roadway surfaces, but a large increase is not anticipated due to the small amount of new impervious areas and compacted roadways. Any increase in runoff would be addressed in the DESCP and Riverside County detention regulations. With Mitigation Measures HWQ-1 (Drainage Erosion and Sedimentation Control Plan (DESCP)) and HWQ-4 (Project Drainage Plan) in place, this impact is less than significant.

220 kV Generation-Tie Line

There would be negligible increase in impervious area with the gen-tie line, and no increase in runoff water. With Mitigation Measures HWQ-1 and HWQ-4 in place, this impact is less than significant.

Mitigation Measures for Impact HWQ-5

Implementation of Mitigation Measures HWQ-1 (Drainage Erosion and Sedimentation Control Plan [DESCP]) and HWQ-4 (Project Drainage Plan) would mitigate Impact HWQ-5 by requiring a detailed assessment of drainage patterns and flood hazards and developing and implementing plans to prevent flood-related damage to the site or to adjacent property (see Section 3.10.10 below).

Significance after Mitigation

Impact HWQ-5 would be less than significant with implementation of Mitigation Measure HWQ-1 and Mitigation Measure HWQ-4.

Impact HWQ-6. The Project would substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would impede or redirect flood flows.

Solar Facility

The Project will include perimeter fencing which, if clogged with debris normally carried by natural flood flows in the desert, could divert flood flows and substantially increase the flood potential on other property. However, such diversions already occur along many of the upstream parcel boundaries. Parcel Group A (See Figure 3.10-1) is situated such that it has the greatest potential for diverting flood flows. However, the west and north sides of this parcel, which would receive incoming flows, have existing earthen berms that would likely be more effective at diverting flows than would the fence. Placing a fence along the property line is therefore unlikely to create a new flood impact for Parcel Group A. The same may be true for a portion of the western boundary of Parcel Groups B and C, the southern and western boundaries of Parcel Group E, and the southern boundary of Parcel Group G. Parcel Group F appears to have no existing berm. Fence-induced diversions along the southern boundary of Parcel Group F could cause flooding of the property to the east.

The flood depths described in the Westwood study (Westwood, 2018) are substantial for Parcel Groups A, B and C. Depths are estimated at up to 6 feet. It is not known whether the existing berms could withstand such a flood. Since the berms appear to be constructed of earth, it is possible they could be overtopped, or breached by erosion, in which case the perimeter fence would receive the flows and either continue to divert the flows previously diverted by the berm or be brought down by scour and the force of the flood water, allowing flooding of the Project site. The Westwood study ignored the berms and assumed flooding of the Project site. Since the berms are of earth and of uncertain integrity, it is reasonable to assume the site would be subject to flooding as described in the Westwood study even though there appear to be existing flood diversions caused by the berms.

Mitigation Measure HWQ-4 (Project Drainage Plan) is proposed to ensure that fence-related diversions of flow be less than significant by being addressed in the DESCP and by creating fence openings sufficient to allow pass-through flow in places where there are no demonstrable existing flood diversions.

Much of the Project, as described in Section 3.10.1.3, would be subject to flooding with depths up to 6 feet. Any structures placed in those areas would be subject to flood damage. The solar panels will be on posts at least 4 feet above the ground, and in most cases would be above the anticipated flood depth but would be subject to scour as the flood flows pass the support posts. The substations on Parcel Groups A, C, F and G would be subject to flooding of approximately 1 to 2 feet based on Figure 3.10-1. The operations and maintenance building, depending on location, could be subject to flooding, as well as the inverters, battery (or flywheel) storage system, internal power lines, telecommunications system, and access roads. The access roads, being at-grade, would require maintenance after a flood event. The internal power lines would be protected from flooding by burying or being installed on poles, but if on poles could be subject to flood-related scour. The substations, O&M building and other features could be subject to flood damage. Mitigation Measures HWQ-1 (Drainage Erosion and Sedimentation Control Plan (DESCP)) and HWQ-4 (Project Drainage Plan) would ensure that the site design include consideration of flood flows. Mitigation

Measure HWQ-5 (Flood Protection) is proposed to ensure that all Project structures be protected from flooding and flood-related scour.

220 kV Generation-Tie Line

The gen-tie line would install transmission towers in the floodplain, but the footprint of these towers is negligible. Any redirection of flood flows would be minor and local. The access roads would be at grade and not disturb drainage patterns. With Mitigation Measures HWQ-1 (Drainage Erosion and Sedimentation Control Plan (DESCP)) and HWQ-4 (Project Drainage Plan) in place, this impact is less than significant.

Mitigation Measures for Impact HWQ-6

Implementation of Mitigation Measures HWQ-1 (Drainage Erosion and Sedimentation Control Plan [DESCP]), HWQ-4 (Project Drainage Plan) and HWQ-5 (Flood Protection) would mitigate Impact HWQ-6 by requiring a detailed assessment of drainage patterns and flood hazards, developing and implementing plans to prevent flood-related damage to the site or to adjacent property, and ensuring that all onsite structures are protected from flooding (see Section 3.10.10 below).

Significance after Mitigation

Impact HWQ-6 would be less than significant with implementation of Mitigation Measures HWQ-1, HWQ-4, and HWQ-5.

3.10.6 Alternative 1: No Project Alternative

There would be no construction under the No Project alternative. Therefore, no impacts to hydrology and water quality would result. The area water quality would remain in the existing condition, as would flood patterns. There would be no potential for increasing flood potential either on-site or off-site. By comparison, the proposed Project would result in mitigated impacts that would be less than significant.

3.10.7 Alternative 2: Reduced Footprint Alternative

The Reduced Project Alternative would eliminate Parcel Groups D and F from the Project footprint, thereby reducing the renewable energy generation capacity to 450 MW. A substation would be constructed at the southwestern corner of Parcel Group E. All other Project features would be the same as the proposed Project. Parcel Groups D and F are currently subject to minor flooding (Figure 3.10-1), resulting in a slightly reduced flood damage potential onsite and offsite. The Reduced Footprint Alternative would still result in substantial construction and the addition of the solar array, substations, O&M building, and other Project features as described for the proposed Project. Impacts, including groundwater impacts, would remain the same as for the proposed Project, but slightly reduced in magnitude due to the elimination of the two parcel groups. The Reduced Project Alternative would require the same mitigation measures to be implemented as would be required for the proposed Project, with the same impact significance. Therefore, because both the proposed Project and Alternative 2 would result in less than significant impacts with adherence to all applicable regulations and mitigation measures, impacts to hydrology and water quality from Alternative 2 would be similar to those of the proposed Project.

3.10.8 Gen-Tie Segment #1 Alternative Route Option

From a hydrology and water quality perspective, the Gen-Tie Segment #1 Alternative Route Option would be essentially identical to the proposed Project, though slightly longer. Impacts are as described for the proposed Project.

3.10.9 Cumulative Impacts

Solar Facility and 220 kV Generation-Tie Line

Surface Water and Water Quality

Solar Facility. The Project is in the Chuckwalla Hydrologic Unit which drains entirely to the Palen and Ford Dry Lakes. There is no natural outlet for this flow to other hydrologic units. Therefore, the area for cumulative hydrology and water quality analysis is confined to this hydrologic unit. All the cumulative projects shown in Figure 2-5 are located within this same hydrologic unit which has relatively uniform drainage and water quality characteristics.

Cumulative impacts to hydrology and water quality include the impacts of the Project together with those likely to occur from other existing, proposed, and reasonably foreseeable projects, all of which are similar solar power projects. These cumulative projects have the potential to contribute to cumulative hydrologic and water quality impacts in the Chuckwalla Valley Hydrologic Unit.

Because the cumulative projects are within a similar hydrologic setting, and several would involve the installation of similar features, impacts for all cumulative projects would be similar to those described for the proposed Project. These cumulative projects have the potential to introduce new or exacerbate existing pollutant generation associated with construction and operation. These projects could contribute to increased runoff due to increases in impervious surfaces. All cumulative projects are crossed by water-courses that could generate flooding, with similar flooding impacts as described for the proposed Project.

All foreseeable future projects in the Chuckwalla Valley Hydrologic Unit would be subject to similar measures as the proposed Project when obtaining the required permits that implement compliance with State and Federal clean water regulations and Riverside County floodplain development regulations. As all projects would go through an environmental review process, they would be subject to similar mitigation measures as those proposed to address potential water quality impacts for the Athos Project. Because the projects are in a similar hydrologic setting and most are similar types of projects, individual project impacts are expected to be reduced to less than significant. Therefore, the combined effects to water quality from the cumulative projects within the geographic scope would not be considered significant.

Given that the proposed Project area proposes minimal grading and minimal alteration of drainage patterns (with mitigation) and water quality impacts would be reduced to less than significant with the implementation of mitigation, the Project's incremental contribution to cumulative impacts would be minimal and not substantial enough to affect cumulative hydrology or water quality impacts.

220 kV Generation-Tie Line. The same conclusion is valid for the gen-tie line, which as shown above would have no significant impacts. Cumulative projects would involve the construction of similar power lines which would be constructed in a similar manner as for the proposed Project and likely cross drainage features. The gen-tie line will have negligible hydrology and water quality impact due to compliance with mitigation measures and existing regulations. These would not be substantial enough, considering cumulative projects, to significantly affect hydrology or water quality.

Groundwater

A cumulative groundwater analysis has been performed in the WSA (EIR Appendix G). The results show that with the Athos Project and all cumulative projects in place, and assuming the adopted inflow estimates presented in Table 3.10-1, and assuming construction starts in 2020, there would be an initial groundwater overdraft of up to 12,673 af in the year 2023. The CVGB would then begin to slowly recover.

By the end of the 30-year period of analysis, the cumulative groundwater deficit would be approximately 10,601 acre-feet (approximately 0.07 percent of total storage). Without the Athos Project and all other cumulative projects in place, there would be a surplus of 71,700 acre-feet at the end of the 30-year period (Approximately 0.48 percent of total storage). Under this scenario, though there would be an initial overdraft of approximately 0.08 percent of total CVGB storage, cumulative Project water use would be slightly less than the current CVGB surplus, meaning the cumulative impact would be less than significant.

The same analysis using NPS infiltration and underflow estimates (Table 3.10-2) would result in a total cumulative deficit of about 282,851 acre-feet (1.9 percent of total storage), of which the Athos Project would contribute about 0.6 percent, or 1,600 acre-feet. Using these inflow estimates, the CVGB would not recover the overdraft within 30-years period, with or without the Project. Without the Athos or any other project in place, using NPS infiltration and underflow estimates, the 30-year deficit would be 200,550 af, or about 1.3 percent of total storage. The cumulative projects would add 82,301 af to this deficit, or about 0.6 percent of the total CVGB storage. Although this would be an impact, it is not substantial considering the amount of groundwater available in storage.

During operation, the gen-tie line would not use groundwater and would not contribute to cumulative groundwater use.

Mitigation Measures for Cumulative Impacts

Mitigation Measures HWQ-1 through HWQ-5 would be implemented to address the proposed Project's potential cumulative impacts to hydrology and water quality.

Significance after Mitigation

The Project contribution to cumulative impacts related to hydrology and water quality would not be cumulatively significant. There would be no significant cumulative impacts related to hydrology and water quality with implementation of Mitigation Measures HWQ-1 through HWQ-5.

3.10.10 Mitigation Measures

MM HWQ-1 Drainage Erosion and Sedimentation Control Plan (DESCP). Prior to site mobilization, the Applicant shall submit to the County of Riverside a Drainage Erosion and Sedimentation Control Plan (DESCP) for managing storm water during Project construction and operations. The DESCPC must ensure proper protection of water quality and soil resources, address exposed soil treatments in the solar fields for both road and non-road surfaces, and identify all monitoring and maintenance activities. The plan must also cover all linear Project features such as the proposed gen-tie line for which the plan must also be reviewed by the BLM. The DESCPC shall contain, at minimum, the elements presented below that outline site management activities and erosion and sediment-control Best Management Practices (BMPs) to be implemented during site mobilization, excavation, construction, and post construction (operating) activities.

- A. *Vicinity Map* – A map(s), at a minimum scale 1 inch to 500 feet, shall be provided indicating the location of all Project elements with depictions of all significant geographic features including swales, storm drains, drainage concentration points and sensitive areas.
- B. *Site Delineation* – All areas subject to soil disturbance for the proposed Project shall be delineated showing boundary lines of all construction areas and the location of all existing and proposed structures and drainage facilities.

- C. *Clearing and Grading Plans* – The DESCPC shall provide a delineation of all areas to be cleared of vegetation and areas to be preserved. The plan shall provide elevations, slopes, locations, and extent of all proposed grading as shown by contours, cross sections, or other means. The locations of any disposal areas, fills, or other special features shall also be shown. Existing and proposed topography shall be illustrated by tying in proposed contours with existing topography.
- D. *Clearing and Grading Narrative* – The DESCPC shall include a table with the estimated quantities of material excavated or filled for the site and all Project elements, whether such excavation or fill is temporary or permanent, and the amount of such material to be imported or exported.
- E. *Erosion Control* – The plan shall address exposed soil treatments to be used during construction and operation including specifically identifying all chemical-based dust palliatives, soil bonding, and weighting agents appropriate for use that would not cause adverse effects to vegetation. BMPs shall include measures designed to prevent wind and water erosion including application of chemical dust palliatives after rough grading to limit water use.
- F. *Best Management Practices Plan* – The DESCPC shall identify on the topographic site map(s) the location of the site specific BMPs to be employed during each phase of construction (initial grading, Project element excavation and construction, and final grading/stabilization). BMPs shall include measures designed to control dust, stabilize construction access roads and entrances, and control storm water runoff and sediment transport.
- G. *Best Management Practices Narrative* – The DESCPC shall show the location, timing, and maintenance schedule of all erosion- and sediment-control BMPs to be used prior to initial grading, during excavations and construction, final grading/stabilization, and operation. Separate BMP implementation schedules shall be provided for each Project element for each phase of construction. The maintenance schedule shall include post-construction maintenance of structural-control BMPs, or a statement provided about when such information would be available.

The DESCPC shall be prepared, stamped and sealed by a professional engineer or erosion control specialist. The DESCPC shall include copies of recommendations, conditions, and provisions from the County of Riverside and/or BLM.

MM HWQ-2 Septic System Rehabilitation. Before the start of construction, the Applicant shall submit to the County an evaluation of the existing septic system to ensure that the proposed use of the system is consistent with the existing use, and if necessary shall make modifications to the system to ensure that it would have capacity for any increased use without creating additional impacts to groundwater.

MM HWQ-3 Mitigation of Impacts to the Palo Verde Mesa (PVMGB) Groundwater Basin. If water for the Project is to be obtained from onsite wells, the Applicant shall develop a Colorado River Water Supply Plan (Plan) to monitor groundwater extractions and prevent, replace or mitigate Project impacts that deplete the PVMGB groundwater budget. The amount of PVMGB depletion requiring mitigation shall be equal to the amount of withdrawals from below the Colorado River Accounting Surface. The Plan shall identify measures that will be taken to replace water on an acre-foot to acre-foot basis, if the Project results in

consumption of any water from within or below the Colorado River Accounting Surface, towards the purpose of ensuring that no allocated water from the Colorado River is consumed without entitlement to that water.

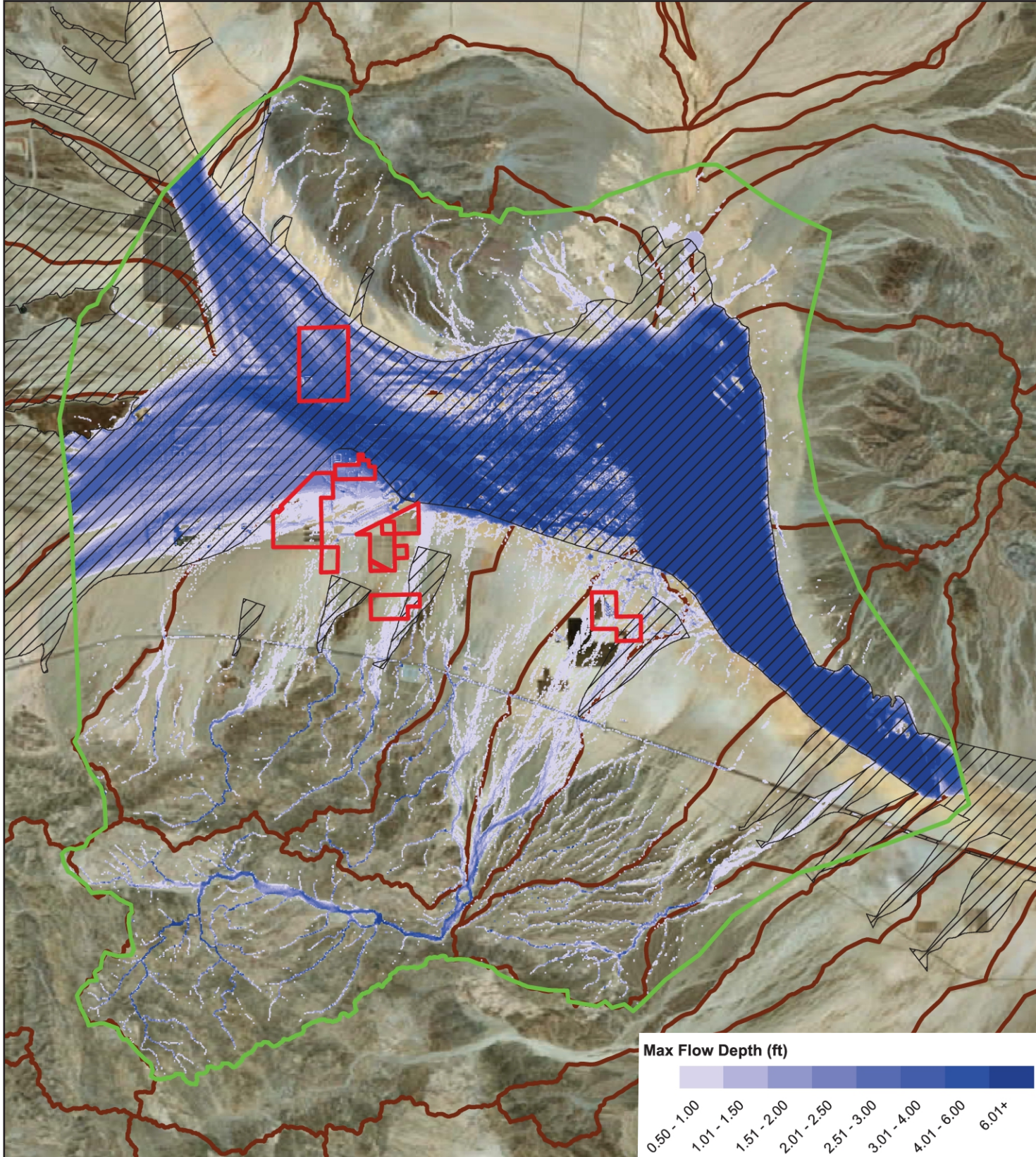
The Plan shall be submitted to the United States Bureau of Reclamation for review and approval and is required at any time that groundwater withdrawals will likely reach the Accounting Surface during the life of the Project. Should an approved plan for mitigation or replacement not be in place at the time groundwater withdrawals reach the Accounting Surface, all groundwater pumping shall cease until a mitigation/replacement plan is approved.

MM HWQ-4 Project Drainage Plan. The Project owner shall provide Riverside County with a drainage plan, for review and approval prior to construction, which includes the following information:

- A. Hydrologic assessment of flood discharges affecting each parcel.
- B. A detailed onsite hydraulic analysis utilizing FLO-2D or similar two-dimensional hydraulic model acceptable to the Riverside County which models pre- and post-development flood conditions for the 10- and 100-year storm events. The post-development model must include all proposed Project features, contours, and drainage improvements. Graphical output must include depth and velocity mapping as well as mapping which graphically shows the changes in both parameters between the pre- and post-development conditions.
- C. The Drainage Plan shall show the location of all watercourses, drainage concentration points and drainage ditches as they enter, cross and exit the site. It shall include pre-development and post-development peak flow estimates. It shall include hydraulic calculations to determine flood conditions, floodplain limits, flood depths and velocities. It shall show the relationship of drainage and flood features to the features of the proposed Project, including buildings, fences, substations, access roads, culverts, linear features and panel supports, demonstrating adequate design to protect from flooding, erosion and scour, and to do so without adversely affecting adjacent property, inducing erosion or concentrating or diverting flows.
- D. The Plan shall show how drainage will be conveyed through the site without adversely affecting other property, either through increased flood hazard or increased potential for scour and erosion. No flow obstructing fences (chain link, block wall, etc.) shall be constructed perpendicular to existing drainage patterns. Proposed fencing shall allow runoff to traverse the project site unencumbered.
- E. The Plan shall include an assessment of existing diversion berms and channels around parcel perimeters and the magnitude and frequency of flood that would be diverted by these existing features, and the probable integrity of these features to withstand flows. It shall show how those that are on the Project site will be affected by Project grading. It shall include an assessment of flows approaching proposed perimeter fences, whether or not adjacent to existing berms, and make design recommendations to avoid diversion of flows by these fences. Design recommendations may include creating fence openings large enough to allow the passage of debris-laden flows without the potential for diversions to other property.

- F. The Plan shall have detailed design of flood retention features necessary to avoid any increase in downstream flood peak flow rates.
- G. Drainage of Project Site Narrative – The Plan shall include a narrative of the measures necessary to protect the site and Project features from flooding, erosion and sedimentation, and measures taken to prevent Project-induced erosion and flooding of adjacent property.

MM HWQ-5 Flood Protection. Substations, the O&M Building, energy storage system, and all other Project buildings shall either be situated outside of the 100-year floodplain or sufficiently protected against dislodgement by flooding where placement outside the floodplain is not practical. Flood protection shall consist of elevating the structures on fill to at least the highest anticipated adjacent flood level per County requirements. Solar panels shall be situated at least one foot above the highest anticipated local flood level per County requirements. All structures using posts or poles for foundations, including transmission poles or towers, shall be designed to protect against substantial scour from the 100-year flood event. The Project must comply with Riverside County Ordinance No. 458 for projects within a Special Flood Hazard Area or floodplain: electrical, heating, ventilation, plumbing, and air conditioning equipment and other service facilities must be designed or located to prevent water from entering or accumulating within the components during flooding.



Source: Westwood, 2018.

- Project Boundary
- HUC 12 Boundary
- FLO-2D Model Boundary
- CA DWR Flood Awareness Layer
- County Boundary

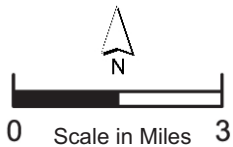


Figure 3.10-1
100-Year Maximum
Water Depth Map

3.11 Land Use and Planning

This section describes existing land uses and land use plans and policies in the Project area on private and public land. Land use can be assessed by analyzing current land activities, land ownership, zoning, and consistency with existing land use plans, ordinances, regulations, and policies.

3.11.1 Environmental Setting

The Project area is in eastern Riverside County, about 1.5 miles east of Lake Tamarisk in Desert Center (see Figure 2-2, Project Area, in Chapter 2). The Project area is surrounded primarily by BLM land with some scattered rural residences and farms. The existing Desert Sunlight Solar Farm and the proposed Desert Harvest Solar Project are located 0.5 miles northwest and west of the Project respectively. The Chuckwalla Valley Raceway is located south of Parcel Group B and north of Parcel Group E. The Project is south of the Joshua Tree National Park. Other development in the surrounding area consists of active and fallow agricultural fields, residences, solar development, and electrical transmission lines. Surrounding areas also include undeveloped desert land that is largely federally owned.

Solar Facility

The Project is located within the Desert Center Area Plan (DCAP), a subset of the Riverside County General Plan. Most of the Project site is located on land designated by the General Plan as Open Space Rural (Parcel Groups A through G), with a small portion (some of Parcel Group B) located on land designated as Public Facilities (the designation for the previous Desert Center Airport, now the Chuckwalla Valley Raceway), and a small portion (some of Parcel Group C) located on land designated as Agriculture, see Figure 3.11-1. According to the Area Plan, little new development is envisioned for the planning horizon (through 2020), except for infill and/or revitalization of the Eagle Mountain Townsite and contiguous expansion of the Desert Center and Lake Tamarisk communities, which are located outside of the Project area.

Under the Riverside Zoning Ordinance, all or some of the land within each of Parcel Groups A through G are zoned W-2-10 (Controlled Development Areas [10-acre minimum]), with a small portion (some of Parcel Group G) zoned N-A (Natural Assets), a small portion (some of Parcel Group B) zoned M-H (Manufacturing–Heavy), and a small portion (some of Parcel Group C) zoned A-1-20 (Agriculture); see Figure 3.11-2. The zoning designations allow solar power projects on lots of 10 acres or more.

Parcel Group A. Parcel Group A was previously used for agriculture and is currently fallow. It is located 0.5 miles east of the existing Desert Sunlight Solar Farm and 0.5 miles east of the approved Desert Harvest Solar Project site. It is primarily surrounded by undeveloped desert on BLM-administered public lands within the Riverside East Solar Energy Zone (SEZ) of BLM’s Western Solar Plan, and within the Desert Renewable Energy Conservation Plan (DRECP) Development Focus Area (DFA), which amended the California Desert Conservation Area (CDCA) Plan to allow for development of solar energy generation and appurtenant facilities. Parcel Group A is also adjacent to (south of) BLM-administered land designated for conservation (i.e., designated as an Area of Critical Environmental Concern and National Lands Conservation System land). Parcels to the south of Parcel Group A are a right-of-way owned in fee by the Metropolitan Water District (MWD). To the southeast and east are private lands currently used for agriculture. Rural residences are located approximately 100 feet east and 1,500 feet west of Parcel Group A. A date palm farm is included adjacent to the residences located 1,500 feet from Parcel Group A.

Parcel Group B. Some of Parcel Group B was previously used for agriculture but is currently fallow, and some is undeveloped desert. It is located south of the MWD right-of-way and private land used for agriculture and north of the Chuckwalla Valley Raceway. It is located east of BLM-land designated as DFA and west of undeveloped private land.

Parcel Group C. Parcel Group C was previously used for agriculture and is currently fallow. It is located south and east of the State Route 177, rural residences, and the Green Acres Mobile Park with 27 mobile home spaces. It is located north and west of BLM-land designated as DFA, and west of the Chuckwalla Valley Raceway access road. Additional rural residences are located near Parcel Group C especially along the State Route 177 and near the Lake Tamarisk community.

Parcel Group D. Parcel Group D is undeveloped desert located south, east, and north of undeveloped BLM-land designated as DFA. It is located west of an undeveloped private parcel, designated as Open Space Rural by the General Plan and zoned as W-2-10.

Parcel Group E. Parcel Group E was previously used for agriculture and is currently fallow. It is located south of the Chuckwalla Valley Raceway and surrounds an undeveloped parcel under the jurisdiction of the California State Lands Commission. It is adjacent to some BLM-land to the east, west and south, which are designated as DFA. Additional land to the east and west are undeveloped private land designated as Open Space Rural by the General Plan and zoned as W-2-10.

Parcel Group F. Parcel Group F is undeveloped desert and is surrounded almost entirely by BLM-land designated as DFA. A parcel of private land, located southeast of Parcel Group F, is designated as Open Space Rural by the General Plan and zoned as W-2-10.

Parcel Group G. Parcel Group G is a date farm and is surrounded almost entirely by BLM-land designated as DFA. A parcel of private land is located southwest of Parcel Group G that is used as a date farm and is designated as Open Space Rural by the General Plan and zoned as N-A.

Gen-Tie Transmission Lines

The 220 kV gen-tie lines would traverse mainly BLM-administered public lands within the Riverside East SEZ, and within a DRECP DFA. A portion of the gen-tie lines north and south of the I-10 corridor would also be sited within the Section 368 Federal Energy Corridor as established by the Westwide Energy Corridor Final Programmatic Environmental Impact Statement (PEIS) and Record of Decision. Gen-tie Segment #4 would cross the Chuckwalla ACEC south of the I-10, paralleling an existing overhead transmission corridor and within an existing BLM utility corridor.

Gen-tie Segment #1 crosses BLM land and two private parcels that are not part of the proposed solar facility. The private parcels are designated as Open Space Rural in the General Plan and zoned as W-2-10 and N-A. One parcel is a right-of-way owned in fee by the MWD. Transmission infrastructure is permitted in any zone classification provided a permit is granted.

Gen-tie Segments #2, #3, and #4, are either located on the proposed solar facility or undeveloped BLM-land. Portions of Gen-tie Segment #2 would parallel the existing Desert Sunlight Solar Farm gen-tie line, and Gen-tie Segment #3 would parallel the proposed Palen Solar Project gen-tie line. Gen-tie Segment #4 would parallel both Desert Sunlight and the Palen gen-tie lines and would be located partially within an existing BLM utility corridor.

3.11.2 Regulatory Framework

Federal

Federal Land Policy and Management Act, 1976 As Amended. The U.S. Congress passed the FLPMA in 1976. Title V, "Rights-of-Way (ROW)," of the FLPMA establishes public land policy and guidelines for admin-

istration, provides for management, protection, development, and enhancement of public lands, and provides the BLM authorization to grant ROWs. 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 ROWs “to the extent practical.” FLPMA, Title V, Section 501(a)(6) states, “[t]he 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 USC 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.” The primary directive guiding all of BLM’s decisions under FLPMA is to put public lands to their highest and best use.

The Applicant is requesting a grant of ROW approval from the BLM (Palm Springs-South Coast Field Office) for the portion of the gen-tie line on land under the jurisdiction of the BLM.

California Desert Conservation Area Plan, 1980 As Amended. Section 601 of the FLPMA required preparation of a long-range plan for the CDCA. The CDCA Plan was adopted in 1980 to provide for the use of public lands and resources of the CDCA in a manner that enhances, wherever possible, and 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 (about half) of this total are public lands administered by the BLM on behalf of the CDCA.

The CDCA Plan 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.

The Project’s gen-tie line would be partially located within BLM Designated Utility Corridor K, as identified in the CDCA Plan. The CDCA Plan designated utility Corridor K for “multi-modal use,” allowing for new electrical gen-tie towers and cables of 161 kV or above. Utility Corridor K is also designated as Section 368 Federal Energy Corridor 30-52 in the Record of Decision for the West-Wide Energy Corridor (WWEC) PEIS. Energy Corridor 30-52 is identified for “multi-modal use,” which allows for electricity transmission and distribution facilities. Section 368 corridors are identified with a numeric designation and are often overlain on locally designated corridors, as is the case with the east-west Section 368 two-mile-wide Corridor 30-52 overlying BLM Designated Utility Corridor K.

Western Solar Plan. The Departments of the Interior and Energy identified Solar Study Areas determined to have high potential for development of solar energy facilities. After the release of these maps, the BLM filed an application for withdrawal with the Secretary of the Interior that identified 676,048 acres of land in Arizona, California, Colorado, Nevada, New Mexico, and Utah to be “withdrawn from settlement, sale, location or entry under the general land laws, including the mining laws, on behalf of the BLM to protect and preserve solar energy study areas for future solar energy development.” The BLM issued the Final Programmatic EIS for Solar Energy Development in those six states in July 2012 and signed the associated Record of Decision on October 12, 2012. The Western Solar Plan analyzed was adopted through the Approved Resource Management Plan Amendments/ROD for Solar Energy Development in Six Southwestern States in October 2012. As part of the Western Solar Plan, the BLM identified priority development areas called solar energy zones (SEZs) to preserve these sites for future solar energy development. Included in this amendment was the Riverside East SEZ in Riverside County. The Gen-tie line is in this SEZ. SEZs are “developable” areas for solar power development.

Desert Renewable Energy and Conservation Plan Amendment to the CDCA. The Desert Renewable Energy Conservation Plan is a collaboration between the California Energy Commission, California Department of Fish and Game, Bureau of Land Management, and the U.S. Fish and Wildlife Service. The Record of Decision for the DRECP Land Use Plan Amendment, Phase I of the larger collaboration, was signed in 2016 and is intended to facilitate the development of utility-scale renewable energy and transmission projects in the Mojave and Colorado deserts in California to reach federal and state energy targets while conserving sensitive species and habitats as well as cultural, scenic, and social resources. The LUPA applies to nearly 11,000,000 acres of BLM-managed federal lands. The Project is located within an area designated as a Development Focus Area.

Local

Riverside County General Plan. The Riverside County General Plan (RCGP) was adopted on October 7, 2003. Through a series of resolutions, the Board of Supervisors adopted an update on December 8, 2015. The RCGP consists of a vision statement and the following elements: Land Use, Circulation, Multi-purpose Open Space, Safety, Noise, Housing, Air Quality, and Administration. The RCGP sets forth County land use policies and guidance for implementation. The RCGP is augmented by more detailed Area Plans covering the County's territory. Area Plans provide a clear and more focused opportunity to enhance community identity within the County and stimulate quality of life at the community level.

RCGP land use designations within the Project area include Open Space Rural and some Agriculture. The Open Space-Rural land use designation is applied to remote, privately owned open space areas with limited access and a lack of public services. Single-family residential uses are permitted at a density of one dwelling unit per 20 acres. The extraction of mineral resources subject to an approved surface mining permit may be permissible, provided that the proposed Project can be undertaken in a manner that is consistent with maintenance of scenic resources and views from residential neighborhoods and major roadways and that the Project does not detract from efforts to protect endangered species.

The Agriculture land use designation is established to help conserve productive agricultural lands within the County. These include row crops, nurseries, citrus groves and vineyards, dairies, ranches, poultry and hog farms, and other agriculture-related uses. Areas designated AG generally lack infrastructure that is supportive of urban development. This land use designation allows one single-family residence per 10 acres except as otherwise specified by a policy or an overlay.

Policies at the General Plan and Area Plan levels implement the vision and goals of Riverside County. The County of Riverside Vision details the physical, environmental, and economic qualities that the County aspires to achieve by the year 2020. Using that Vision as the primary foundation, the RCGP establishes policies for development and conservation within the entire unincorporated County territory. The General Plan's policy goals that are potentially relevant to land use for the Project are provided below.

Land Use Element:

- **Policy LU 2.1.c.** The County shall provide a broad range of land uses, including a range of residential, commercial, business, industry, open space, recreation and public facility uses.
- **Policy LU 5.1.** Ensure that development does not exceed the ability to adequately provide supporting infrastructure and services, such as libraries, recreational facilities, educational and day care centers, transportation systems, and fire/police/medical services
- **Policy LU 7.1.** Require land uses to develop in accordance with the Riverside County General Plan (RCGP) and area plans to ensure compatibility and minimize impacts.

- **Policy LU 8.1.** The County shall accommodate the development of a balance of land uses that maintain and enhance the County’s fiscal viability, economic diversity and environmental integrity (General Plan LU-26).
- **Policy LU 9.1.** Provide for permanent preservation of open space lands that contain important natural resources, cultural resources, hazards, water features, watercourses including arroyos and canyons, and scenic and recreational values.
- **Policy LU 9.2.** Require that development protect environmental resources by compliance with the Multipurpose Open Space Element of the RCGP and federal and state regulations such as CEQA, NEPA, the Clean Air Act, and the Clean Water Act.
- **Policy LU 10.1.** Require that new development contribute their fair share to fund infrastructure and public facilities such as police and fire facilities.
- **Policy LU 14.1.** The County shall preserve and protect outstanding scenic vistas and visual features for the enjoyment of the traveling public.
- **Policy LU 14.5.** Require new or relocated electric or communication distribution lines, which would be visible from Designated and Eligible State and County Scenic Highways, to be placed underground.
- **Policy LU 17.2** Permit and encourage, in an environmentally and fiscally responsible manner, the development of renewable energy resources and related infrastructure, including but not limited to, the development of solar power plants in the County of Riverside.
- **Policy LU 26.3** Ensure that development does not adversely impact the open space and rural character of the surrounding area. (AI 3)
- **Policy LU 26.4** Encourage parcel consolidation. (AI 29)
- **Policy LU 26.5** Provide programs and incentives that allow Open Space-Rural areas to maintain and enhance their existing and desired character. (AI 9)

Multi-Purpose Open Space Element

- **Policy OS 11.1** Enforce the state Solar Shade Control Act, which promotes all feasible means of energy conservation and all feasible uses of alternative energy supply sources.
- **Policy OS 11.2** Support and encourage voluntary efforts to provide active and passive solar access opportunities in new developments.
- **Policy OS 11.3** Permit and encourage the use of passive solar devices and other state-of-the-art energy resources.
- **Policy OS 11.4** Encourage site-planning and building design that maximizes solar energy use/potential in future development applications.

Desert Center Area Plan. The Project is located within the Desert Center Area Plan. The Desert Center Area Plan provides customized direction specifically for this portion of the County and guides the evolving character of the agricultural and desert area. The Area Plan envisioned little new development for the planning horizon (through 2020), except for infill and/or revitalization of the Eagle Mountain Townsite and contiguous expansion of the Desert Center and Lake Tamarisk communities. It was written in 2010 before widespread development of utility-scale renewable projects and as a result is largely silent on such development.

Riverside County Land Use Ordinance. Ordinance No. 348.4705 amends Ordinance No. 348 to authorize solar power plants on lots 10 acres or larger, subject to a conditional use permit in the following zone classifications: General Commercial (C-1/C-P), Commercial Tourist (C-T), Scenic Highway Commercial

(C-P-S), Rural Commercial (C-R), Industrial Park (I-P), Manufacturing Servicing Commercial (M-SC), Medium Manufacturing (M-M), Heavy Manufacturing (M-H), Mineral Resources (M-R), Mineral Resource and Related Manufacturing (M-R-A), Light Agriculture (A-1), Light Agriculture with Poultry (AP), Heavy Agriculture (A-2), Agriculture-Dairy (A-D), Controlled Development (W-2), Regulated Development Areas (R-D), Natural Assets (N-A), Waterways and Watercourses (W-1), and Wind Energy Resource Zone (W-E).

The Development Standards of Zone N-A state that no building shall exceed 20 feet in height (Section 15.201). The Development Standards of Zone W-2 state that no structure shall exceed 105 feet in height unless a variance is approved pursuant to Section 18.27 of the Land Use Ordinance.

The Project would require the following discretionary actions by the County to implement the Project:

- **Conditional Use Permit (CUP 180001)** is proposed for the construction, operation, and decommissioning of the proposed solar facility, electrical storage equipment, and portions of the gen-tie line within the County of Riverside's jurisdiction.
- **Public Use Permit (PUP 180001)** is proposed for the portions of the 220 kV gen-tie line that would traverse County roads (SR-177/Rice Road).
- **Variance (VAR190001)** will be necessary for all structures located within the Natural Assets (N-A) zone that would be higher than 20 feet and in the Controlled Development Area (W-2) zone that would exceed 105 feet.
- **Tentative Parcel Map (TPM37700 through TPM37705)**. The Applicant is planning to propose to vacate the facility's interior roadways and merge contiguous Project parcels within the Project area into a contiguous area. Roads along the Project perimeter on the solar facility lands would remain dedicated public access.

Board of Supervisors Policy B-29. The purpose of Policy B-29 is to ensure that the County does not disproportionately bear the burden of solar energy production and ensure the County is compensated in an amount it deems appropriate for the use of its real property. It requires a development agreement between the Board of Supervisors and solar power plant owners. The policy states that the solar power plant owner shall annually pay the County \$150 for each acre of land involved in the power production process. It also lists requirements for solar power plant owners relating to sales and use taxes payable in connection with the construction of a solar power plant.

3.11.3 Methodology for Analysis

Evaluation of potential land use conflicts of the proposed Project was based on a review of relevant planning documents, including, but not limited to, the RCGP, Riverside County Zoning Ordinance, the CDCA Plan, and a review of the proposed solar facility site and surrounding area. The focus of the land use analysis is on land use conflicts that would result from implementation of the Project. Land use conflicts are identified and evaluated based on existing or authorized 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 issues. 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. Land use conflicts that would result from the Project's construction, operation, maintenance, and decommissioning are evaluated in this section.

3.11.4 CEQA Significance Criteria

The criteria used to determine the significance of potential land use impacts are based on Appendix G of the CEQA Guidelines. The Project would result in a significant impact under CEQA related to land use if it would:

- *Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect (see Impact LU-1); or*

The County of Riverside's Environmental Assessment Form includes additional significance criteria, which were also used in the analysis. The additional criteria indicate that a project could have potentially significant impacts if it would:

- *Result in a substantial alteration of the present or planned land use of an area (see Impact LU-1);*
- *Be inconsistent with the site's existing or proposed zoning (see Impact LU-1);*
- *Be incompatible with existing surrounding zoning (see Impact LU-1);*
- *Be incompatible with existing and planned surrounding land uses (see Impact LU-1); or*
- *Be inconsistent with the land use designations and policies of the General Plan (including those of any applicable specific plan) (see Impact LU-1).*

The following CEQA significance criteria from Appendix G were not included in the analysis:

- *Physically divide an established community.*

None of the Project sites (Parcel Groups A to G) and none of the gen-tie lines would divide an established community because the Project sites are all located on individual, undeveloped parcels that would not interrupt the existing use of the area.

The following CEQA significance criteria from the County's Environmental Assessment Form were not included in the analysis:

- *Affect land use within a city sphere of influence and/or within adjacent city or county boundaries.*

The proposed Project would be located only within the unincorporated community of Desert Center and therefore it would not impact a city sphere of influence or adjacent city or county boundaries.

- *Disrupt or divide the physical arrangement of an established community (including a low-income or minority community).*

None of the Project sites (Parcel Groups A to G) and none of the gen-tie lines would disrupt or divide the physical arrangement of an established community because the Project sites are all located on individual, undeveloped parcels that would not divide a community.

3.11.5 Proposed Project Impact Analysis

Issues raised during scoping related to Land Use and Planning include concerns expressed by nearby residents and the community from noise, traffic and access, night lighting, and dust.

Impact LU-1. The Project would cause a significant environmental impact due to conflict with applicable land use plans, policies, or regulations; result in an alteration of the present or planned land use of an area; or be inconsistent or incompatible with the site's existing, proposed or surrounding zoning or land uses.

Solar Facility

The Project would be subject to the RCGP, Desert Center Area Plan, CDCA Plan as Amended, and the County Ordinances. Table 3.11-1, Conflicts with Regional and Local Land Use Plans, Policies, and Regulations, describes how the Project would be consistent with applicable local land use plans, policies, or regulations.

Table 3.11-1. Consistency with Regional and Local Land Use Plans, Policies, and Regulations

Policy/Regulations/ Goals	Description	Consistency Analysis
Land Use Element		
LU 2.1.c	Requires a broad range of land uses, including a range of residential, commercial, business, industry, open space, recreation and public facility uses.	Consistent. The Project would not limit the range of land uses.
LU 5.1	Requires development does not exceed the ability to adequately provide supporting infrastructure and services	Consistent. The Project would not result in a permanent increase in population or associated infrastructure or services. Roads and other infrastructure that must be improved to accommodate the project will be improved as needed by the applicant.
LU 7.1	Require land uses to develop in accordance with the RCGP and area plans to ensure compatibility and minimize impacts	Consistent. The Project would be consistent with the RCGP and Desert Center Area Plan.
LU 8.1	Develop a balance of land uses that maintain and enhance the County's fiscal viability, economic diversity and environmental integrity	Consistent. The Project would help maintain and enhance the County's fiscal viability by increasing the revenue of the County
LU 9.1	Provide for permanent preservation of open space lands that contain important natural resources, cultural resources, hazards, water features, water-courses including arroyos and canyons, and scenic and recreational values.	Consistent. The Project is not within an area with important natural resources.
LU 9.2	Require that development protect environmental resources by compliance with the Multipurpose Open Space Element of the RCGP and federal and state regulations such as CEQA, NEPA, the Clean Air Act, and the Clean Water Act	Consistent. The Project would comply with CEQA, NEPA, and other federal and local resource conservation laws and regulations.
LU 10.1	Require that new development contribute their fair share to fund infrastructure and public facilities such as police and fire facilities	Consistent. The Project is not anticipated to cause additional impacts to public facilities and would coordinate with the County for any additional public needs.
LU 14.1	Preserve and protect outstanding scenic vistas and visual features for the enjoyment of the traveling public	Consistent. The Project would be located on disturbed lands that are near an existing solar project and existing electrical facilities. See Section 3.2, Aesthetics, of this EIR for more information.
LU 14.5	Require new or relocated electric or communication distribution lines, which would be visible from Designated and Eligible State and County Scenic Highways, to be placed underground	Consistent. The Project may have views from County-eligible scenic highway I-10, but near the I-10, where views will be more substantially impacted, the Project would parallel existing electrical facilities and be located in an existing utility corridor.
LU 17.2	Permit and encourage, in an environmentally and fiscally responsible manner, the development of renewable energy resources and related infrastructure, including but not limited to, solar power plants in the County of Riverside	Consistent. The Project is a renewable energy project and will be reviewed under CEQA to reduce the environmental impacts of the Project.
LU 26.3	Ensure that development does not adversely impact the open space and rural character of the surrounding area.	Consistent. The Project is located on disturbed agriculture and near to an existing solar project. The nature of the use is compatible with open space and it will not impair the rural character of the surrounding area.
LU 26.4	Encourage parcel consolidation.	Consistent. The Project includes parcel consolidation.

Table 3.11-1. Consistency with Regional and Local Land Use Plans, Policies, and Regulations

Policy/Regulations/Goals	Description	Consistency Analysis
LU 26.5	Provide programs and incentives that allow Open Space-Rural areas to maintain and enhance their existing and desired character	Consistent. The Project would be located on disturbed agriculture near an existing solar project. Some open space areas will be impacted, but the project will not introduce urban uses into the area and because it is time limited, open space areas will be able to maintain their character in the future.
Multi-Purpose Open Space Element		
OS 11.1	Enforce the state Solar Shade Control Act, which promotes all feasible means of energy conservation and all feasible uses of alternative energy supply sources	Consistent. The Project would be a renewable energy solar project.
OS 11.2	Support and encourage voluntary efforts to provide active and passive solar access opportunities in new developments	Consistent. The Project would be a renewable energy solar project.
OS 11.3	Permit and encourage the use of passive solar devices and other state-of-the-art energy resources	Consistent. The Project would be a renewable energy solar project.
OS 11.4	Encourage site-planning and building design that maximizes solar energy use/potential in future development applications	Consistent. The Project would be a renewable energy solar project.
Desert Center Area Plan		
Desert Center Area Plan (DCAP) 3.1	Protect farmland and agricultural resources in Desert Center through adherence to the Agricultural Resources section of the General Plan Multipurpose Open Space Element and the Agriculture section of the General Plan Land Use Element, as well as the provisions of the agriculture land use designation	Consistent. While the Project would be located on land available for agricultural use, most of the parcels have not been actively farmed recently because the lands were not able to be sustained at an operational scale. At the conclusion of the Project, the land could be returned to agricultural use. See Section 3.3.
DCAP 4.1	When outdoor lighting is used, require the use of fixtures that would minimize effects on the nighttime sky and wildlife habitat areas, except as necessary for security reasons.	Consistent. Security lights around the substation, inverters, gates, and along the perimeter fencing would be motion sensitive and directional. All lighting would be shielded and directed downward to minimize the potential for glare or spillover onto adjacent properties.
DCAP 5.2	Maintain Riverside County's roadway Level of Service standards as described in the Level of Service section of the General Plan Circulation Element.	Consistent. With implementation of mitigation in Section 3.17 (Traffic and Transportation), the Project is not anticipated to impact the County roadway level of service.
DCAP 8.1	Protect the scenic highways within the Desert Center Area Plan from change that would diminish the aesthetic value of adjacent properties through adherence to the policies found in the Scenic Corridors sections of the General Plan Land Use, Multipurpose Open Space, and Circulation Elements.	Consistent. The Project would be located on disturbed lands that are near an existing solar project and approximately 0.8 miles from the I-10. The Project gen-tie would cross the I-10 parallel to existing electrical facilities. See Section 3.2, Aesthetics, of this EIR for more information.
DCAP 9.1	Encourage clustering of development for the preservation of contiguous open space.	Consistent. The Project would be located near an existing solar project and several proposed or approved solar projects.
DCAP 9.2	Work to limit off-road vehicle use within the Desert Center Area Plan.	Consistent. The Project would not encourage off-road vehicle use.
DCAP 9.3	Require new development to conform with Desert Tortoise Critical Habitat designation requirements	Consistent. The Project would not be located in Desert Tortoise Critical Habitat.

Table 3.11-1. Consistency with Regional and Local Land Use Plans, Policies, and Regulations

Policy/Regulations/ Goals	Description	Consistency Analysis
Riverside County Zoning Ordinance		
Section 15.1.d. (32) Uses Permitted in W-2 Zone (Controlled Development Areas)	This zone permits a solar power plant on lot 10 acres or larger upon issuance of a CUP	Consistent. With approval of the CUP and a variance, the Project would be an allowable use under this zone.
Section 15.200 Uses Permitted in N-A Zone (Natural Assets)	This zone permits a solar power plant on lot 10 acres or larger upon issuance of a CUP	Consistent. With approval of the CUP and a height variance, the Project would be an allowable use under this zone.
Section 13.1.c (12) Uses permitted in A-1 Zone (Light Agriculture)	This zone permits a solar power plant on lot 10 acres or larger upon issuance of a CUP	Consistent. With approval of the CUP, the Project would be an allowable use under this zone.
Section 12.2.c (18) Uses permitted in M-H Zone (Manufacturing – Heavy)	This zone permits a solar power plant on lot 10 acres or larger upon issuance of a CUP	Consistent. With approval of the CUP, the Project would be an allowable use under this zone.

Riverside County General Plan

The Project would be a conditionally permitted use within the land use designation Open Space Rural (OS-RUR), Public Facilities, and Agriculture and zoning Natural Assets (N-A), Manufacturing-Heavy (M-H) and Agriculture (A-1-20) with approval of a CUP and completion of an environmental review. Table 3.11-1 describes how the Project would be consistent with the Land Use and Multi-Purpose Open Space Elements.

The applicant is also seeking to vacate interior roadways and merge contiguous Project parcels. Roads along the Project perimeter on the solar facility lands would remain dedicated public access. This merger would be consistent with LU 26.4, encourage parcel consolidation, and because the perimeter roads would remain open to the public, it would not result in a loss of access.

The existing and planned land uses surrounding the Project are similar in nature to those identified for the Project, primarily Open Space Rural and Public Facilities but with some areas of Agriculture, Low Density Residential and Commercial Retail along Highway 177 adjacent to or near the Project. The parcels closest to the solar facility are zoned N-A, W-2-10, A-1-20 (Light Agriculture [20-acre minimum]), C-P-S (Scenic Highway Commercial), M-H (Manufacturing Heavy), all of which allows solar power development with a conditional use permit on a lot 10 acres or larger.

Although the Project is consistent with the surrounding zoning and land use, nearby residences expressed concerns regarding impacts to their lifestyle from noise, traffic and access, night lighting, and dust. Noise is address in Section 3.12 (Noise), traffic and access are addressed in Section 3.17 (Traffic and Transportation), night lighting is addressed in Section 3.2 (Aesthetics), and dust is addressed in Section 3.4 (Air Quality). Those sections include mitigation to reduce the concerns expressed by the public including dust abatement, public notification, and traffic plans.

Desert Center Area Plan and Riverside County Zoning Ordinance

The proposed Project would be a conditionally permitted use under the W-2-10, M-H, A-1-20 and N-A zones. The Project would not conflict with the Desert Center Area Plan and Riverside County Zoning Ordinance, see Table 3.11-1.

Board of Supervisors Policy B-29. The Project is subject to Policy B-29, and the developer would need to enter into a development agreement with the County following the guidelines noted in the regulatory setting. Once the agreement is enacted, the Project would comply with this policy.

Federal Policies, Regulations, and Goals

The solar facility would be located entirely on private land so would not be subject to the federal policies, regulations, and goals. Nevertheless, the solar facility sites are located adjacent to BLM-administered land designated as DFA in the DRECP, areas where renewable energy generation is an allowable use, incentivized and could be streamlined under the DRECP Land Use Plan Amendment. The Project would not conflict with this designation.

220 kV Generation-Tie Line

The proposed gen-tie line would be a conditionally permitted use in any zone. It would not conflict with the Desert Center Area Plan and Riverside County Zoning Ordinance, see Table 3.11-1. The existing and planned land uses and zoning would be the same for the gen-tie line as for the solar facility.

Federal Policies, Regulations, and Goals

Gen-tie Segments #1 to #4 cross BLM land designated as DFA in the DRECP LUPA to the CDCA. The DFA designation allows for the development of renewable energy facilities and associated infrastructure including gen-tie lines without requiring a land use plan amendment. The Gen-tie Segments would all be consistent with the DRECP LUPA and CDCA. Gen-tie Segment #4 would cross land designated as an ACEC in the DRECP LUPA within a designated utility corridor. Designated utility corridors allow for transmission infrastructure without requiring a land use plan amendment. The gen-tie line would not conflict with federal policies, regulations, and goals.

Because the proposed Project (solar facility and gen-tie line) would not conflict with applicable land use plans, policies, and regulations, and would not result in an alteration of the present or planned land use of an area, or be inconsistent or incompatible with the site's existing, proposed or surrounding zoning or land use, there would be no impact.

Mitigation Measures for Impact LU-1

No mitigation would be required.

Significance After Mitigation

There would be no impact to land use.

3.11.6 Alternative 1: No Project Alternative

The No Project Alternative would not develop the solar facility and gen-tie line or require new construction and/or operational activities. It would not conflict with any existing or future land use plans or zoning, nor would it conflict with any applicable habitat conservation plan or natural community conservation plan. Therefore, as with the proposed Project, the No Project Alternative would not have impacts to land use.

3.11.7 Alternative 2: Reduced Footprint Alternative

The Reduced Footprint Alternative would not develop Parcel Groups D and F, both designated as Open Space Rural and zoned as W-2-10. The remaining sites of the Alternative and the gen-tie line would have the same designation and zoning as the proposed Project. The Reduced Footprint Alternative would require a CUP and PUP, similar to the Project. With approval of all discretionary requests, both the proposed Project and the Reduced Footprint Alternative would be consistent with the land use and zoning designations at the Project site, and neither would conflict with any applicable land use plans, policies, or regulations. The Reduced Footprint Alternative would not conflict with a habitat conservation plan or natural community conservation plan. Because both the proposed Project and the Reduced Footprint Alternative would require approval of discretionary requests to maintain consistency with all applicable land use plans, impacts from the Reduced Footprint Alternative would be similar to those of the proposed Project.

3.11.8 Gen-Tie Segment #1 Alternative Route Options

Gen-Tie Segment #1 Alternative Route Option A

The Gen-Tie Segment #1 Alternative Route Option A would avoid going through parcel APN 807-191-031, designated as Open Space Rural and zoned N-A. All remaining designations and zoning along the gen-tie line would remain the same as with the proposed Project, which includes land use designation Open Space Rural and zoning N-A. Because the land use designations and zoning along the gen-tie line would not change and because the land use designations and zoning surrounding the gen-tie line would not change, as with the proposed Project, this alternative would have no impacts to land use resources.

Gen-Tie Segment #1 Alternative Route Option B

The Gen-Tie Segment #1 Alternative Route Option B would avoid going through parcel APN 807-191-031, designated as Open Space Rural and zoned N-A and parcel APN 811-121-003, designated as Open Space Rural and zoned W-2-10. It would include use of parcel APN 811-122-009, designated Public Facility and zoned M-H. All remaining designations and zoning along the gen-tie line would remain the same as with the proposed Project, which includes land use designation Public Facility and zoning M-H. Because the land use designations and zoning along the gen-tie line would not change and because the land use designations and zoning surrounding the gen-tie line would not change, as with the proposed Project, this alternative would have no impacts to land use resources.

3.11.9 Cumulative Impacts

Solar Facility

Impacts resulting from construction, operation, maintenance, and decommissioning of the Project could result in a cumulative effect on land use with other past, present, or reasonably foreseeable future actions. The geographic scope of the cumulative effects analysis for land use consists of eastern Riverside County. This is based on the jurisdictional boundaries within which the impacts of land use decisions of the Athos Project and other projects described in Table 3.1-2 could be additive or synergistic.

The timeframe refers to the duration over which impacts associated with land use would occur: short-term or long-term. Short-term impacts to land use would occur during the construction and decommissioning period. Long-term impacts associated with land use would result from developing a solar facility in the Project area and the associated change in land use over its operational life (approximately 40 years or more).

Past development has increased human use of land in the geographic scope of the area at issue. However, because of the limited availability of water, human development in the geographic scope has been limited to small scattered communities and cities among large tracts of undeveloped land. Past and present projects occurring near the Project site on private lands primarily include agricultural operations with some rural residences. Past projects also include the Kaiser Mine, northwest of the Project. Public lands have been and continue to be primarily undeveloped with some large-scale solar. Additionally, many solar renewable projects have been proposed on both BLM-administered land and private land (see Table 3.1-2). The projects on public land are in DFAs and the ones on private land are primarily on land designated as agriculture or open space. With appropriate permitting each project would not result in impacts to land use. However, the Desert Center Area Plan did not anticipate the potential development of multiple solar projects within or adjacent to the plan area. If many of the projects were built, they could conflict with the goals of the Desert Center Area Plan and result in the loss of open space which the Area Plan and the General Plan strive to preserve. This would be considered a cumulatively significant impact to land use.

Potential land use impacts require evaluation on a case-by-case basis because of the interactive effects of a specific development and its surrounding land use environment. The Athos Project would be consistent with the goals and policies of the Riverside County General Plan, and other applicable local land use plans, policies, and regulations and with the Federal plans. In addition, with approval of all discretionary requests, the Project would be an allowable use that would not conflict with the land use or zoning classifications for the site. Therefore, Project's incremental contribution to cumulative impacts to land use would not be considerable.

220 kV Generation-Tie Line

The cumulative impacts of the gen-tie line would be the same as for the solar facility because the gen-tie line would also result in an additive or cumulative impact with the other renewable energy development in Eastern Riverside County.

Mitigation Measures for Cumulative Impacts

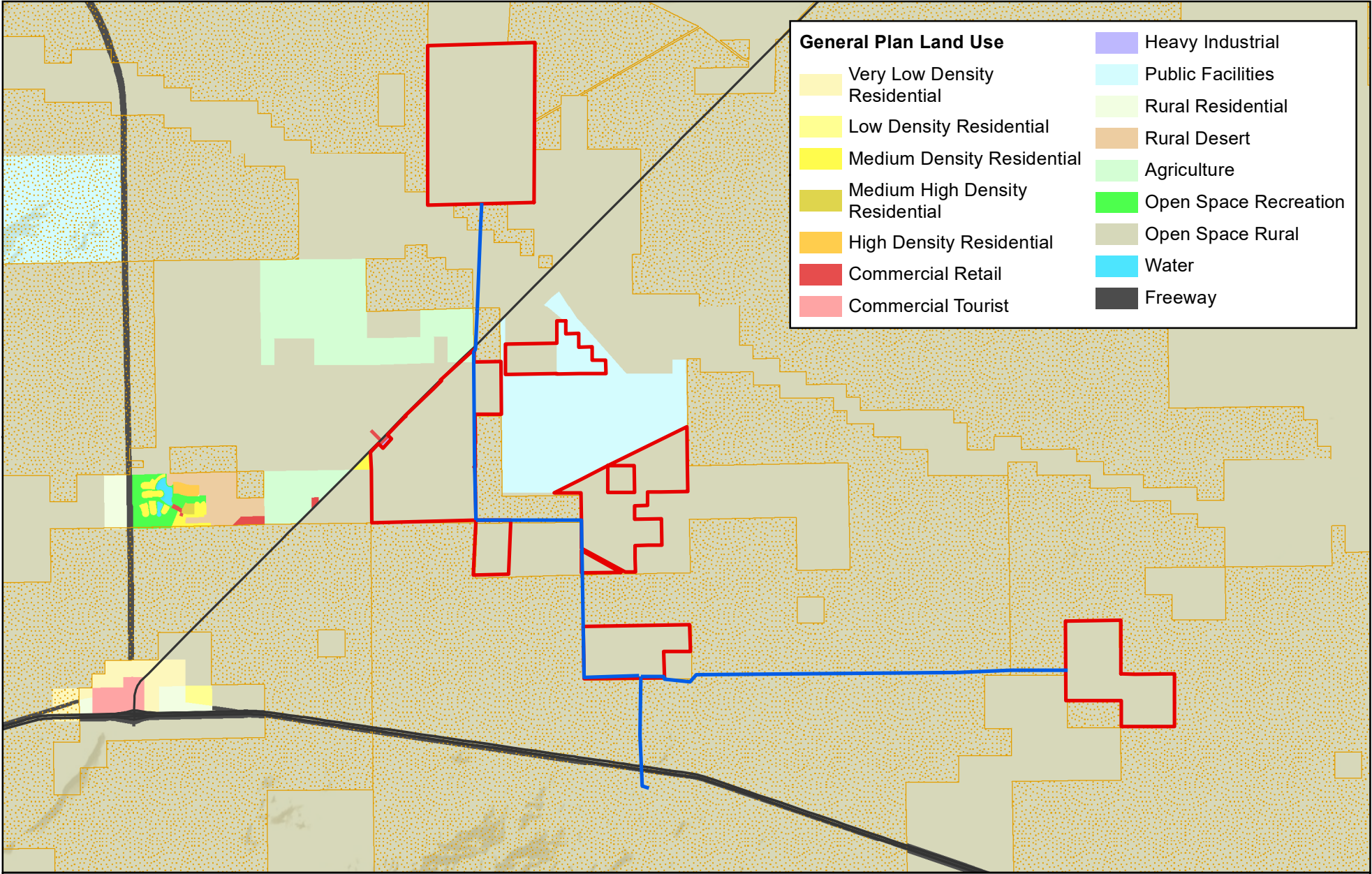
No mitigation would be required.

Significance After Mitigation

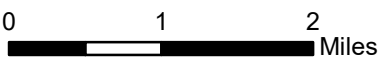
The Project's incremental contribution to impacts to land use would not be cumulatively considerable.

3.11.10 Mitigation Measures

No land use mitigation would be required.



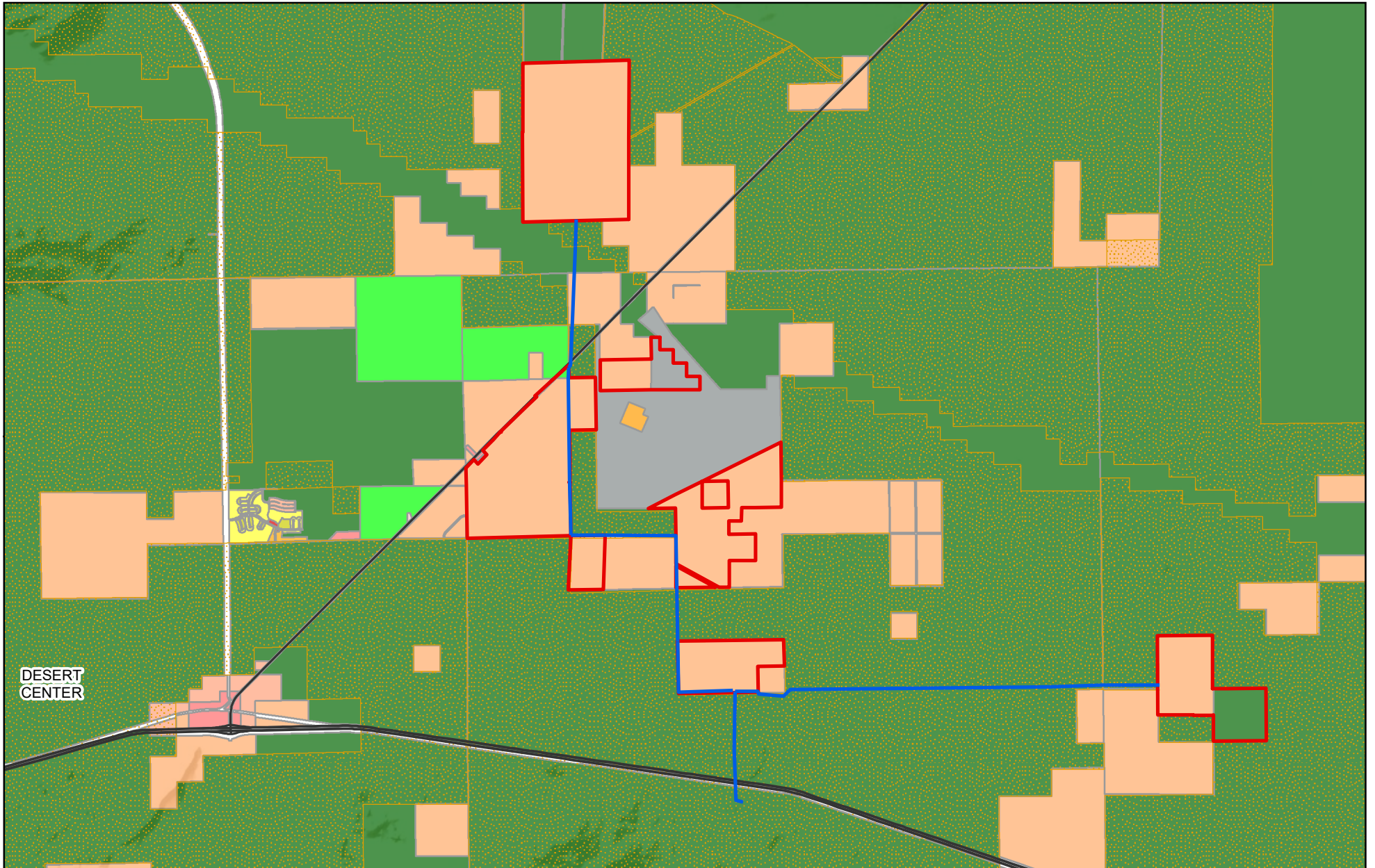
General Plan Land Use	
	Very Low Density Residential
	Low Density Residential
	Medium Density Residential
	Medium High Density Residential
	High Density Residential
	Commercial Retail
	Commercial Tourist
	Heavy Industrial
	Public Facilities
	Rural Residential
	Rural Desert
	Agriculture
	Open Space Recreation
	Open Space Rural
	Water
	Freeway



- Proposed Gen-Tie
- Project Area
- BLM Land Overlay

Figure 3.11-1

Land Use



DESERT CENTER



0 0.75 1.5
 Miles

- | | | | | |
|---------------------------|---------|--------|----------|---------|
| — Proposed Gen-Tie Zoning | C-P-S | N-A | R-1-20 | W-2 |
| ▭ Project Area | C-R | A-1-20 | R-1 | W-2-10 |
| ▭ BLM Land Overlay | C-1/C-P | M-H | R-1-10 | W-2-20 |
| | | | R-2-5000 | W-2-M-1 |
| | | | R-3 | |

Figure 3.11-2

Zoning

3.12 Noise

This section evaluates the environmental impacts caused by the noise and ground-borne vibration levels resulting from implementation of the proposed Project. The analysis in this section: presents an overview of the existing noise environment; describes the applicable policies and ordinances; identifies the criteria used for determining the significance of environmental impacts; and describes the potential noise impacts of the Project. Noise impacts to wildlife are addressed in this EIR in Section 3.5, *Biological Resources*.

3.12.1 Environmental Setting

The Project site is in the Colorado Desert in the eastern part of Riverside County, north of Interstate 10 (I-10) and approximately 3 miles east of the junction of I-10 with State Highway 177 (SR-177). The Project site is in an area of primarily undeveloped land, with open space and some land developed with isolated rural residences. The Lake Tamarisk community is about 1.5 miles west of the site and the nearest school is the Eagle Mountain School, over 7 miles northwest of the Project site.

Fundamentals of Community Noise

To describe environmental noise and to assess Project impacts on areas that are sensitive to community noise, a measurement scale that simulates human perception is used. The A-weighted scale of frequency sensitivity accounts for the sensitivity of the human ear, which is less sensitive to low frequencies, and correlates well with human perceptions of the annoying aspects of noise. The A-weighted decibel scale (dBA) is cited in most noise criteria. Decibels are logarithmic units that can be used to conveniently compare wide ranges of sound intensities.

Community noise levels can be highly variable from day to day as well as between day and night. For simplicity, sound levels are usually best represented by an equivalent level over a given time period (Leq) or by an average level occurring over a 24-hour day-night period (Ldn). The Leq, or equivalent sound level, is a single value (in dBA) for any desired duration, which includes all of the time-varying sound energy in the measurement period, usually one hour. The L50, is the median noise level that is exceeded fifty per cent of the time during any measuring interval. The Ldn, or day-night average sound level, is equal to the 24-hour A-weighted equivalent sound level with a 10-decibel penalty applied to nighttime sounds occurring between 10:00 p.m. and 7:00 a.m. Community Noise Equivalent Level (CNEL) is another metric that is the average equivalent A-weighted sound level during a 24-hour day, obtained after addition of five decibels to sound levels in the evening from 7:00 p.m. to 10:00 p.m. and after addition of 10 decibels to sound levels in the night from 10:00 p.m. to 7:00 a.m. To easily estimate the day-night level caused by any noise source emitting steadily and continuously over 24-hours, the Ldn is 6.4 dBA higher than the source's Leq. For example, if the expected continuous noise level from equipment is 50.0 dBA Leq for every hour, the day-night noise level would be 56.4 dBA Ldn.

Community noise levels are usually closely related to the intensity of human activity. Noise levels are generally considered low when below 45 dBA, moderate in the 45 to 60 dBA range, and high above 60 dBA. In wilderness areas, the Ldn noise levels can be below 35 dBA. In small towns or wooded and lightly used residential areas, the Ldn is more likely to be around 50 or 60 dBA. Levels around 75 dBA are more common in busy urban areas, and levels up to 85 dBA occur near major freeways and airports. Although people often accept the higher levels associated with very noisy urban residential and residential-commercial zones, they nevertheless are considered to be adverse to public health.

Surrounding land uses dictate what noise levels would be considered acceptable or unacceptable. Lower levels are expected in rural or suburban areas than what would be expected for commercial or industrial

zones. Nighttime ambient levels in urban environments are about seven decibels lower than the corresponding daytime levels. In rural areas away from roads and other human activity, the day-to-night difference can be considerably less. Areas with full-time human occupation and residency are often considered incompatible with substantial nighttime noise because of the likelihood of disrupting sleep. Noise levels above 45 dBA at night can result in the onset of sleep interference. At 70 dBA, sleep interference effects become considerable (U.S. EPA, 1974).

Fundamentals of Ground-borne Vibration

Vibration is an oscillatory motion through a solid medium. In contrast to airborne noise, ground-borne vibration is not a common environmental problem. It is unusual for individuals to perceive vibration from sources such as buses and trucks, even in locations near major roads. However, some common vibration sources produce ground-borne vibration that can be felt (e.g., construction activities such as blasting, pile driving, and operating heavy equipment).

There are several methods employed to quantify vibration. The measurement used in this analysis — peak particle velocity (PPV) — is defined as the maximum instantaneous peak of the vibration signal. PPV is used to describe vibration impacts on buildings and structures and is expressed in inches per second (in/sec). Typically, ground-borne vibration generated by human activity attenuates rapidly with distance from the source of the vibration. Sensitive receptors for vibration include people (residents, especially the elderly and sick), structures (especially historic masonry structures), and buildings housing vibration-sensitive equipment such as hospitals and research labs.

Existing Noise Environment

Ambient noise measurements were not conducted for this analysis because the environmental setting can be described from information drawn from previous studies in the area. The noise environment of the Project area depends on the proximity of the receiver to noise from vehicular traffic on SR-177 or I-10. Locations away from these highways experience very low levels of noise.

Historically, noise surveys conducted for the Riverside County General Plan found locations along I-10 to be exposed to noise over 60 dBA Ldn, for any location within approximately 750 feet of the I-10 centerline. For other major highways, the 60 dBA traffic noise contour was projected to be approximately 410 feet from the centerline (Riverside County, 2008). Locations along SR-177 are exposed to lower noise levels. Data collected for SR-177 in the Project area shows roughly 2,800 vehicles daily and 7.5 percent of the baseline traffic as trucks (Caltrans, 2016); with this mix of baseline traffic the 60 dBA Ldn contour is approximately 230 feet from the centerline of SR-177 (noise level calculations appear in EIR Appendix M).

The setting for noise also includes the private Desert Center Airport and Chuckwalla Raceway, which offers use of the track for a fee and hosts motor sports events primarily on weekends. The raceway is located with the Desert Center Airport, which is infrequently used. The Riverside County Airport Land Use Compatibility Plan Policy Document (2004) showed an average of fewer than one aircraft operation per day at the Desert Center Airport, and the 55 dBA CNEL noise contour is limited to the immediate vicinity of the runway (Riverside County, 2004).

Because few human-induced sources of noise occur around the Project site parcels, the noise environment is generally serene and quiet. In 2009, ambient noise levels were measured at two isolated residences near the easternmost Project site parcels. For these residences more than 1.5 miles from I-10, the daytime average noise levels were found to be 43 dBA Leq, and nighttime average noise levels were 34 dBA Leq (CEC, 2010).

Noise Sensitive Receptors

In the Riverside County Noise Ordinance and Noise Element, “noise-sensitive” land uses include but are not limited to residences, passive recreation areas, schools, hospitals, rest homes, places of worship and cemeteries (Riverside County, 2015). Noise sensitive areas are places where quiet is necessary for the intended use of the land, such as residences where noise can interfere with sleep, concentration, and communication, and where excessive noise can cause physiological and psychological stress and hearing loss. In addition, wildlife management areas where breeding could be disturbed are considered sensitive receptors to noise.

There are scattered residences in the Project area, namely near SR-177/Rice Road, with at least one residence less than 100 feet from the Project parcel boundary. The Lake Tamarisk community is about 1.5 miles west of the site, and the nearest school is the Eagle Mountain School, over 7 miles northwest of the Project site.

Specifically, the residences nearest to the proposed Project boundaries include:

- Two residences, approximately 100 feet east and 1,500 feet west of Parcel Group A.
- Cabins and recreational vehicle (RV) trailer parking at the Chuckwalla Valley Raceway, approximately 750 feet south of Parcel Group B, and agriculture and rural residences 1,400 feet north of Parcel Group B.
- Residence at 25750 Rice Road and at 25950 Rice Road, and the Green Acres Mobile Home Park, which would be surrounded by Parcel Group C.

Two existing residences are located on Parcel Group G, but they would become part of the proposed development area of the solar facility. Figure 2-2 (Project Area) shows the locations of the Project parcel groups of the proposed development area.

3.12.2 Regulatory Framework

Regulating environmental noise is generally the responsibility of local governments. The U.S. EPA once published guidelines on recommended maximum noise levels to protect public health and welfare (U.S. EPA, 1974), and the State of California maintains recommendations for local jurisdictions in the General Plan Guidelines published by the Governor’s Office of Planning and Research (OPR, 2017). The following summarizes the local requirements.

To protect workers from excessive onsite noise levels, the Occupational Safety and Health Act of 1970 (OSHA) sets onsite occupational noise exposure levels, which are regulated in California via the California Occupational Safety and Health Administration (Cal/OSHA). The maximum time-weighted average noise exposure level of workers is 90 dBA over an eight-hour work shift (29 CFR Section 1910.95).

Riverside County General Plan Noise Element

Land Use Compatibility. The County’s General Plan Noise Element (2015) provides the guidelines on Land Use Compatibility for Community Noise Exposure, which are used to evaluate potential noise impacts and to set the criteria for environmental impact findings and conditions for project approval. Land use compatibility defines the acceptability of a land use in a specified noise environment. The land use compatibility criteria adopted by Riverside County as part of the Noise Element of the General Plan appear in Table 3.12-1.

Table 3.12-1. Riverside County Land Use Compatibility Standards

Land Use	CNEL or Ldn Noise Level			
	Normally Acceptable	Conditionally Acceptable	Normally Unacceptable	Clearly Unacceptable
Residential – Low-density (single-family, duplex, mobile homes)	Up to 60 dBA	55–70 dBA	70–75 dBA	Over 75 dBA
Residential – Multiple-family	Up to 65 dBA	60–70 dBA	70–75 dBA	Over 75 dBA
Transient lodging, motels, hotels	Up to 65 dBA	60–70 dBA	70–80 dBA	Over 80 dBA
Schools, libraries, churches, hospitals, nursing homes	Up to 70 dBA	60–70 dBA	70–80 dBA	Over 80 dBA
Auditoriums, concert halls, amphitheaters	Category not used	Up to 70 dBA	Over 65 dBA	Category not used
Sports arenas, outdoor spectator sports	Category not used	Up to 75 dBA	Over 70 dBA	Category not used
Playgrounds, neighborhood parks	Up to 70 dBA	Category not used	67.5–75 dBA	Over 72.5 dBA
Golf courses, riding stables, water recreation, cemeteries	Up to 75 dBA	Category not used	70–80 dBA	Over 80 dBA
Office buildings, business commercial, professional	Up to 70 dBA	67.5–77.5 dBA	Category not used	Over 75 dBA
Industrial, manufacturing, utilities, agriculture	Up to 75 dBA	70 – 80 dBA	Category not used	Over 75 dBA

Source: Noise Element Table N-1 (Riverside County, 2015).

Policies for Noise Compatibility. The following General Plan Noise Element (2015) policies protect noise-sensitive land uses from noise emitted by outside sources, and prevent new projects from generating adverse noise levels on adjacent properties.

- **Policy N 1.1** Protect noise-sensitive land uses from high levels of noise by restricting noise-producing land uses from these areas. If the noise-producing land use cannot be relocated, then noise buffers such as setbacks, landscaping, or block walls shall be used.
- **Policy N 1.2** Guide noise-tolerant land uses into areas irrevocably committed to land uses that are noise-producing, such as transportation corridors or within the projected noise contours of any adjacent airports.
- **Policy N 1.4.** Determine if existing land uses will present noise compatibility issues with proposed projects by undertaking site surveys.
- **Policy N 1.5.** Prevent and mitigate the adverse impacts of excessive noise exposure on the residents, employees, visitors, and noise-sensitive uses of Riverside County.
- **Policy N 1.6.** Minimize noise spillover or encroachment from commercial and industrial land uses into adjoining residential neighborhoods or noise-sensitive uses.
- **Policy N 1.8** Limit the maximum permitted noise levels that cross property lines and impact adjacent land uses, except when dealing with noise emissions from wind turbines.
- **Policy N 3.2.** Require acoustical studies and subsequent approval by the Planning Department and the Office of Industrial Hygiene, to help determine effective noise mitigation strategies in noise-producing areas.

- **Policy N 3.3.** Ensure compatibility between industrial development and adjacent land uses. To achieve compatibility, industrial development projects may be required to include noise mitigation measures to avoid or minimize project impacts on adjacent uses.
- **Policy N 3.5.** Require that a noise analysis be conducted by an acoustical specialist for all proposed projects that are noise producers. Include recommendations for design mitigation if the project is to be located either within proximity of a noise-sensitive land use, or land designated for noise sensitive land uses.
- **Policy N 3.6.** Discourage projects that are incapable of successfully mitigating excessive noise.
- **Policy N 3.7.** Encourage noise-tolerant land uses such as commercial or industrial, to locate in areas already committed to land uses that are noise-producing.

Temporary Construction. The Noise Element of the General Plan includes numerous policies intended to minimize noise-related conflicts between adjacent types of land uses. Policies addressing “temporary construction” activities include:

- **Policy N 13.1.** Minimize the impacts of construction noise on adjacent uses within acceptable practices.
- **Policy N 13.2.** Ensure that construction activities are regulated to establish hours of operation in order to prevent and/or mitigate the generation of excessive or adverse noise impacts on surrounding areas.
- **Policy N 13.4.** Require that all construction equipment utilize noise reduction features (e.g., mufflers and engine shrouds) that are no less effective than those originally installed by the manufacturer.

Stationary Sources of Noise. The Noise Element of the General Plan also identifies preferred noise standards for stationary noise sources that affect residential land uses, as shown in Table 3.12-2.

Table 3.12-2. Stationary Source Land Use Noise Standards

Land Use	Time of Day	Interior Noise Standard	Exterior Noise Standard
Residential	10:00 p.m. to 7:00 a.m.	40 Leq, 10-minute	45 Leq, 10-minute
Residential	7:00 a.m. to 10:00 p.m.	45 Leq, 10-minute	65 Leq, 10-minute

Source: Noise Element Table N-2 (Riverside County, 2015).

Note: The Noise Element of the General Plan indicates that these levels are preferred standards; final decision will be made by the Riverside County Planning Department and Office of Public Health.

Vibration. Ground-borne vibrations can be a source of annoyance to people or a source of structural damage to some types of buildings. Although vibration measurements can be presented in many different forms, PPV is the unit of measure used most often to assess building damage potential. Table 3.12-3 describes human reaction to typical vibration levels.

The General Plan Noise Element (2015) includes consideration of ground-borne vibrations. Residential areas, schools, and sensitive research operations are among the land uses that are vibration sensitive.

Riverside County Noise Ordinance

The County Noise Ordinance allows for different levels of acceptable noise depending upon land use. The Noise Ordinance or Ordinance No. 847 (Regulating Noise) is

Table 3.12-3. Human Reaction to Typical Vibration Levels

Vibration Level PPV (inches/second)	Human Reaction
0.0059–0.0188	Threshold of perception, possibility of intrusion
0.0787	Vibrations readily perceptible
0.0984	Continuous vibration begins to annoy people
0.1968	Vibrations annoying to people in buildings
0.3937–0.5905	Vibrations considered unpleasant when continuously subjected and unacceptable by some walking on bridges

Source: Caltrans data in Noise Element Table N-3 (Riverside County, 2015).

incorporated in the County Code as Chapter 9.52 (Noise Regulation). The standards in Chapter 9.52.040 (and also Section 4 of Ordinance No. 847) limit noise sources on any property from causing excessive exterior noise on any other nearby occupied property. The maximum decibel level standards depend on the receiving land use, such that sound levels in a low-density “Rural Community” shall not exceed 55 dBA L_{max} during the daytime hours (7:00 a.m. to 10:00 p.m.) or 45 dBA during the nighttime hours (10:00 p.m. to 7:00 a.m.). These County standards protect the noise-sensitive receptors within the very low-density rural area surrounding the Project site.

Exceptions to the noise standards can be requested for construction-related reasons. Section 2 of Ordinance No. 847 specifies that the following construction activities are exempt from the provisions of the noise ordinance:

- Private construction projects located a quarter mile or more from the nearest inhabited dwelling; and
- Private construction projects located within a quarter mile of an inhabited dwelling provided that construction activities are limited to 6:00 a.m. to 6:00 p.m. during the months of June through September and are limited to 7:00 a.m. to 6:00 p.m. during the months of October through May.

3.12.3 Methodology for Analysis

Analysis of noise and vibration levels was performed through quantitative estimates of expected noise levels, review of agency policies and regulatory requirements, and qualitative analyses for issues that do not readily lend themselves to quantitative evaluation. Quantitative analyses were prepared to address noise and vibration from use of construction equipment onsite, noise from construction-related traffic, and noise from facility operations.

The area of interest for noise and vibration issues is typically localized. Airborne noise dissipates fairly rapidly with increasing distance from the noise source. The distances involved depend primarily on the intensity of the noise generated by the source, and partly on weather conditions such as wind speed and direction, the height and strength of temperature inversions, and the height of cloud cover. Sound is detectable somewhat further downwind than upwind of a noise source. Temperature inversions and cloud cover can reflect or refract sound that is radiated upwards; this effect can increase noise levels at locations that receive the reflected or refracted sound. Such reflection and refraction effects are important primarily for high intensity sounds. For noise sources such as construction activity and vehicle traffic, although potentially audible over large distances, the region of greatest influence is typically less than 0.25 miles (1,320 feet) from the noise source.

Ground-borne vibrations similarly dissipate rapidly with increasing distance from the vibration source. The distances involved depend primarily on the intensity of the vibrations generated by the source, and partly on soil and geologic conditions. Detectable vibrations will travel the greatest distance through solid rock and the least distance through loose, unconsolidated soils or saturated soils. For vibration sources such as construction activity and vehicle traffic, the region of influence is typically less than 200 feet from the vibration source.

3.12.4 CEQA Significance Criteria

The significance criteria listed below are from the Environmental Checklist Form in Appendix G of the CEQA Guidelines. Under CEQA, the proposed Project and alternatives would have significant impacts on noise if they would result in:

- *Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies (see Impact N-1); or*
- *Generation of excessive groundborne vibration or ground-borne noise levels (see Impact N-2).*

The County of Riverside's Environmental Assessment Form includes additional significance criteria, which were also used in the analysis. The additional criteria indicate that a project could have potentially significant impacts if it would:

- *Result in impacts from railroad noise.*
- *Result in impacts from highway noise (see Impact N-1).*
- *Result in impacts from other noise.*

The proposed Project includes no new noise-sensitive receptors near any existing railroad, highway or other noise source, and the Project would not cause any change in railroad noise. The changes in noise levels due to Project equipment permanently installed at the site and the changes in noise levels due to Project traffic on highways are discussed under Impact N-1.

The following CEQA significance criterion from Appendix G were not included in the analysis:

- *For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within 2 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; or*

There are two private airstrips in the general Project vicinity. The Desert Center Airport is a private airstrip adjacent to the proposed Project site parcels, and the Eagle Mountain Airstrip is about 6.5 miles to the northwest of the Project site. Both airstrips have very low use levels. According to the County's 2004 Airport Land Use Compatibility maps, complete parcels and portions of the proposed Project site parcels that are within 5,000 feet of the runway would be within the Airport Influence Area (from Appendix L-1 of the General Plan); however, because the proposed Project includes no noise-sensitive uses, no airport/land use noise compatibility criteria would apply. All proposed Project features would be outside the airfield properties, and none of the Project alternatives could expose residential land uses to noise from aircraft. Because the proposed Project would not expose people to noise from an airport or airstrip, the topics of airport-related noise issues are not discussed further.

Use of the Significance Criteria

Each CEQA lead agency has discretion to establish thresholds for when a noise level increase would be considered substantial. Typically, an increase in noise level of at least 5 dBA is noticeable by most people and in a residential setting would not be a substantial adverse impact. An increase in noise level of 10 dBA is judged by most people as a doubling of the sound level, which would be considered a substantial adverse impact. Other factors that are considered in determining adverse noise impacts include: (1) the resulting combined noise level; (2) the duration and frequency of the noise; (3) the number of people affected; and (4) the land use designation of the affected receptor sites. Mitigation measures must be considered if significant impact to noise would occur from the construction, operation and maintenance, or decommissioning of the Project.

Typically, noise impacts due to construction activities are not considered substantial as long as construction activities are temporary, intermittently affect any one location, limit the use of heavy equipment and noise activities to daytime hours, and implement all industry standard noise abatement measures for noise-producing equipment.

A PPV threshold of 0.20 inches per second (in/sec) is a level of vibration impacts that can create adverse human reactions and a risk of damage to nearby buildings or structures, as shown in the Riverside County General Plan Noise Element (2015). This PPV threshold was used in this analysis to determine whether construction-related vibration levels could cause a significant impact.

3.12.5 Proposed Project Impact Analysis

Issues raised during scoping related to Noise include the following topics:

- Noise would result in potentially adverse effects by disrupting residences near Parcel Group A and near Parcel Group C [APNs 811-260-007, 811-260-008, and 811-260-009], the Green Acres Mobile Home Park and camping at Chuckwalla Valley Raceway near Parcel Group B of the proposed solar facility, and for residences near the proposed gen-tie lines that create corona noise.
- Noise would be especially disruptive to more-sensitive populations nearby, especially residences with post-traumatic stress disorder.
- The environmental setting includes noise from Chuckwalla Raceway, and Project-related solar panels could interfere and possibly amplify racetrack noise, by potentially reflecting it.
- Plans for mitigating noise pollution would need to be described.

Construction-Phase Noise

The proposed Project would require a 30-month duration of construction activities that include mobilizing construction equipment, crews, and materials, site preparation, installing the PV and electric facilities, and site restoration. The construction activities would require use of vehicles and heavy-duty equipment capable of generating noise along the proposed gen-tie alignment, at the proposed staging and work areas, within the site parcels, and along the roadways used to access these locations, including SR-177. The types of construction equipment used at work sites would include trucks, impact pile drivers, backhoes, loaders, drill rigs, cranes, and small welders, pumps and generators. On area roadways, increased traffic noise would be caused by vehicles transporting equipment and supplies to the site parcels, trucks removing debris, and workers commuting to and from the Project area. Construction traffic could generate up to 1,140 average daily vehicle trips that would need to access the site. To compare with baseline traffic, SR-177 carries approximately 2,800 vehicles daily in the Project area.

Construction would temporarily increase the noise levels within the Project area over the 30-month duration. Construction activities would create both intermittent and continuous noises. Intermittent noise would be caused by periodic, short-term equipment operation. For example, site preparation would involve light grading, and following that, PV panel structures would require pile installation using a pile driver, similar to a hydraulic rock hammer attachment on the boom of a rubber-tired backhoe or excavator. Underground cables would require ordinary trenching and backfilling techniques. These activities would gradually move as they proceed within the site. Other equipment such as a concrete batch plant, would remain at one location for much of the duration. While most equipment would be used intermittently, continuous noise would emanate from some equipment over longer periods, such as power generators or trucks applying water or moving material within the site.

The source of highest noise levels would be the impact or vibratory pile driver for installing PV panel structural posts. The maximum intermittent noise levels from a construction work spread without a pile driver would typically range up to 84 dBA at 50 feet. Higher noise levels of up to 94 dBA would be expected near work spreads where pile driving occurs. These would be the highest levels expected for development of the proposed Project. Because sound fades over distance, these levels would diminish over additional

distance. At 100 feet from a work spread with pile driving, continuous noise levels could range up to 88 dBA and at 200 feet, up to 82 dBA. Table 3.12-4 summarizes the typical noise levels for individual pieces of construction equipment.

Construction would also cause noise away from Project site parcels, primarily from trucks needed to bring materials to the sites and from the traffic of commuting workers. Haul trucks would make trips to bring equipment, water and materials to the sites and remove waste. The noise levels associated with passing trucks and commuting worker vehicles would be approximately 71 to 76 dBA at 50 feet, and would be concentrated along the area highways and the access roads leading to individual work areas.

Operation and Maintenance Noise

The operation phase of the proposed Project would include solar module washing, vegetation management, security, and other routine O&M. The proposed Project would include stationary sources of noise in the form of motors for tracking modules and the inverters and transformers that operate when the solar panels produce electricity in the daytime. Each of the inverters would include a battery enclosure and, at the Applicant’s option, the solar facility could include a battery or flywheel storage system capable of storing up to 500 MW of electricity. The proposed Project would be subject to the standards within the Noise Ordinance in the Riverside County Code as Chapter 9.52 (Noise Regulation).

The dominant noise sources would depend on the ultimate design of the solar facility. Without energy storage, the equipment that could generate the most prominent stationary source noise would be the inverter stations with pad mount transformers and on-site Project substations. For energy storage, the proposed Project could use any commercially available battery technology, with the specification that the battery system would be operationally silent, and flywheel systems would have a noise source level of less than 45 dBA (as in EIR Section 2.2.3). Depending on the selected energy storage technology, battery enclosures may require insulation and air conditioning to provide an optimum operating temperature for the battery. Operation of the air conditioning equipment could become a dominant noise source, depending on the design and configuration of the system ultimately selected.

The inverters and transformers at substations would be more likely to create noticeable noise than the tracker motors and mechanisms that allow the solar panels to tilt and track the path of the sun on a single axis throughout the day. Tracker motors and actuators would not operate on a continuous basis or in unison. For example, each set of actuators would operate for a few seconds and then pause for five minutes before operating again. This process would occur only during daylight hours, with a return to the starting position at sunrise. Although final design would determine the actual specifications for the motors, based on similar projects, noise from each motor and actuator would be about 62 or 63 dBA at the source or a distance of 3.28 feet (1 meter). At the Project site boundary, the noise level from this source would be below the daytime ambient levels.

Table 3.12-4. Typical Noise Levels for Individual Construction Equipment

Equipment	Typical Lmax (dBA, at 50 ft)	Typical Leq (dBA, at 50 ft)
Pile driver	101	94
Hoe ram impact hammer	90	83
Drill rig, auger	84	77
Crane	81	74
Backhoe	78	74
Excavator	81	77
Compactor	83	76
Dump truck, haul truck, concrete mixer truck	76-79	73-76
Pickup truck, crew truck	75	62-71
Helicopter, for gen-tie (lifting, Kaman Kmax)	Estimate 84 dBA at 250 feet	

Source: FHWA, 2006; CPUC, 2015.
Lmax: Maximum noise level from Actual Measured in Roadway Construction Noise Model (RCNM).
Leq: Equivalent noise level for one hour incorporating the Acoustical Usage Factor.
Helicopter estimates are for approximately 15 minutes of use in one hour (equivalent to L25 over one hour).

The noise produced by the inverters and transformers, including those at up to 4 substations, would depend on the final equipment selected and the ultimate locations of the equipment. The typical performance specification of a commercial or utility-scale inverter with cooling system and enclosure would be to achieve a design standard of 66 dBA at a distance of 32.8 feet (10 meters), based on a 2,200 kilowatt-rated unit (SMA, 2015). Auxiliary equipment for inverters and transformers usually includes cooling fans and pumps that operate depending on the internal temperature of the transformer oil, and these may be supported by a standby or backup generator engine that would run occasionally during an outage of distribution line power. This type of noise would have a broad-band spectrum and would not include simple tones or a “hum.” The inverters would not operate at nighttime. Because inverter equipment would not be positioned near the site boundary, the noise from the inverters would be confined within the site. Proposed Project substations and switchyards would be located near the boundaries of Project site parcels. Near each of the on-site Project substations or switchyards, noise from transformers would diminish over the distance to levels comparable to daytime ambient levels for any location at least 800 feet from this equipment (noise level calculations appear in EIR Appendix M).

Noise from site maintenance, panel washing, and cleaning of the facility would be created by traffic and mobile sources within the site and on area roadways. The proposed Project would be operated by up to 10 permanent staff on the site periodically. Additionally, light utility vehicles with water trailers would be used within the site occur for panel washing up to four times each year. The result would be temporary noise from activity within the site and a limited increase in the average daily traffic noise on area roadways. Along roadway segments accessing the Project site, operations and maintenance-related Project traffic would not cause a notable change from existing conditions.

Electrical Interconnection Noise

Construction of the gen-tie structures would require use of a truck-mounted auger and concrete mixing and pouring for the foundations, and installation of poles and conductors would use a line truck, crane, or helicopter. At each pole site, the construction spread would require a small crew, using equipment capable of generating noise at levels noise up to 84 dBA at 50 feet, which is comparable to those from a work spread within the proposed Project site.

Helicopters could be needed to lift and install portions of gen-tie structures and to string the conductors for the overhead line. Helicopter use could occur at any location along the gen-tie. Helicopter activity would cause temporary noise impacts as helicopters string conductors or deliver loads and then leave the area. Each helicopter operation would be expected to come as near as 250 feet from the ground and/or residences near the Project substations or switchyards and the gen-tie alignments. Residences and other locations adjacent to the gen-tie would experience approximately 84 dBA Leq (1-hour) during times of nearby helicopter hovering; this result assumes that the helicopter would hover near the work site for a 15-minute period within an hour. Because Project-related helicopter operations would occur only occasionally and only along the gen-tie alignment, long-term and day-night noise levels would not substantially change at locations that are separated by distance from the gen-tie alignment.

Routine operation of electric transmission lines can generate a small amount of sound energy as a result of the corona effect. Corona occurs with all transmission lines, as the localized electric field near energized components and conductors produces an electric discharge that causes the surrounding air molecules to ionize or undergo a localized change of electric charge. Under fair weather conditions, the audible noise from corona is minor and rarely noticed. During wet and humid conditions, water drops collect on the conductors and increase corona activity. Under these conditions, a crackling or humming sound may be heard in the immediate vicinity of the gen-tie lines. This noise increases with the load carried by the line, irregularities on the conductor surface caused either by age or moisture, and wet ambient meteorological

conditions, such as when high humidity, fog, or rain occur. At the ground level, directly underneath a single 220 kV circuit, the typical audible noise level with wet conductors is about 40 dBA (CPUC, 2015).

Decommissioning and Repowering Noise

Equipment used during decommissioning activities would be similar to those used during construction, including cranes, excavators, and hydraulic hammers. Decommissioning activities would generate a temporary, localized increase in ambient noise levels that would be similar, but less than, noise generated during construction. Decommissioning activities would be less intense than construction, over a shorter duration.

Impact N-1. The Project would generate a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of established standards.

This criterion assesses whether the proposed Project would result in a substantial permanent increase in ambient noise levels and whether the increase would be in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies.

Solar Facility

Construction-Phase Impact. Temporary or periodic increases in ambient noise levels would occur during construction, and the construction noise would affect the receptors closest to the Project site where the increase in noise levels could be perceptible and could represent an adverse impact. The noise levels existing without the Project are measured to be 43 dBA Leq in the daytime (see Section 3.12.1).

The maximum intermittent noise levels from a construction work spread without a pile driver would typically range up to 84 dBA at 50 feet. Higher noise levels of up to 94 dBA would be expected near work spreads where pile driving occurs. The construction noise impact to ambient noise levels would be intermittent and variable in nature, depending on day-to-day activities, and it would naturally attenuate or diminish over distance. While limited to the duration of work, approximately 30 months, use of construction equipment at the site would result in a readily perceptible, but temporary, increase in daytime environmental noise. Construction would be readily perceptible in the setting of low ambient noise, and the increase in noise levels would be sufficient to create annoyance.

The majority of construction activities within the site would be far from area residences because the proposed development area would span 7 groups of non-contiguous parcels, some separated by multiple miles, and the number of receptors in the vicinity is limited. The intermittent and variable nature of construction noise limits the potential for adverse effects such as annoyance to be experienced by off-site receptors. Sleep interference would not be a concern because night-time construction would be avoided. While readily perceptible for the nearest receptors, these considerations indicate that the resulting noise levels due to construction would not be considered substantial.

Construction would also cause off-site noise due to traffic, primarily from commuting workers and from trucks bringing materials to the project site. The peak noise levels associated with passing trucks and commuting worker vehicles would be approximately 70 to 75 dBA at 50 feet, and this noise would be concentrated along the roads that access the site, primarily SR-177. Although construction-related traffic would increase traffic noise, the amount of traffic must generally double to increase noise levels by three dB (Caltrans, 2013). Over a typical full 24-hour period, construction would not double the baseline level of daily traffic volumes. However, Project construction peak hour traffic near access driveways would more than double over the existing volumes. Locations along SR-177 that may experience baseline day-

time traffic noise levels of 63 to 65 dBA Leq could experience an increase to 69 dBA Leq during the construction-phase peak hours of Project deliveries (noise level calculations appear in EIR Appendix M). Night-time traffic noise levels would not change notably with construction, which would be focused to occur in the daytime. With the addition of construction-related daily vehicle trips, day-night noise levels due to traffic noise over a 24-hour period would increase by an amount of less than three dBA and would not be considered substantial.

The Riverside County Noise Ordinance allows noise from construction activities, and designates this noise as exempt, when: (a) the construction project is located a quarter mile or more from the nearest inhabited dwelling, or (b) when the construction project is located within a quarter mile of an inhabited dwelling and the activities are limited to certain daytime hours. Figure 2-2 (Project Area) shows the parcel groups of the proposed development area. The closest resident would be approximately 100 feet from the proposed project boundary. Because residences are within a quarter mile, the construction would need to be limited to certain daytime hours to be consistent with the County Noise Ordinance. Although most development and construction activities would be more than a quarter mile from inhabited dwellings, the noise from construction would cause an increase over the noise levels that exist without the Project.

Typical construction activity and the associated noise increase would occur between the hours of 7:00 a.m. and 6:00 p.m. Monday through Friday. The Riverside County Noise Ordinance allows construction noise to be exempt between the hours of 7:00 a.m. and 6:00 p.m., so the Project would be in compliance. The Noise Element of the General Plan includes no threshold noise levels (in terms of dBA) for temporary construction, but policies require implementation of acceptable practices to minimize the effects of adverse construction noise. Mitigation Measure N-1 (Construction Restrictions) is recommended to ensure that any construction activities outside of the schedule of the Noise Ordinance would be limited to light-duty equipment and vehicles. Mitigation Measures N-2 (Public Notification Process) and N-3 (Noise Complaint Process) are also recommended to ensure that nearby residents are provided advance notification of potentially adverse noise conditions and to ensure that complaints are resolved. With recommended mitigation measures, construction would not result in a substantial increase in noise levels in excess of standards established in the local general plan or noise ordinance or applicable standards of other agencies, and this impact with mitigation would be less than significant.

Operational-Phase Impact. The site is in a setting of low ambient noise levels, measured to be 43 dBA Leq in the daytime (see Section 3.12.1). Permanent noise sources occurring with the solar facility, without the optional energy storage system, would be limited to the trackers and the inverters and transformers that operate in the daytime when the solar panels produce electricity and the occasional vehicular noise from crews for operations and maintenance, including panel washing and security patrols. These activities would normally involve only a small crew, and the Project-related traffic would be sporadic so that it would result in a barely perceptible noise increase of less than three dBA over conditions that exist without the proposed Project.

Scoping comments introduced a concern that development of the solar facility could alter the characteristics of the Project site, which is exposed to baseline noise from the private Desert Center Airport and Chuckwalla Raceway. Noise from these facilities would normally be reflected by the desert surface with some loss, and adding the solar facility could increase the ability for noise to travel by increasing surface reflectivity, although this effect would be small compared with the ability for the baseline noise to dissipate over the distances of the open areas of the desert.

The dominant stationary source of noise could be air conditioning units, if necessary for the optional battery system. The proposed Project would specify that the battery system would be operationally silent, and flywheel systems would have a noise source level of less than 45 dBA (as in EIR Section 2.2.3). However, a typical cooling system, if necessary, could generate 81 dBA at a distance of 10 feet, which would

result in about 46 dBA level for locations within about 800 feet of this source. This could cause a noticeable change in ambient noise levels.

The increase in ambient noise levels caused by other stationary equipment associated with the power blocks would be generated by the tracker motors, the inverters, and on-site substations. Inverters and the on-site substations would typically achieve a design standard of 66 dBA at a distance of 32.8 feet (10 meters), based on a 2,200 kilowatt-rated unit (SMA, 2015). Inverter equipment would not be positioned near the site boundary. The off-site noise levels caused by the proposed power blocks and inverters would be approximately 43 dBA Leq for locations about 800 feet away from inverters within power blocks, and this would match the low ambient noise levels of the area (noise level calculations appear in EIR Appendix M).

Proposed Project substations and switchyards would be located near the boundaries of Project site parcels. Near each of the on-site Project substations or switchyards, noise from transformers would be perceptible and could represent an adverse impact. However, as with other Project components, noise from a substation or switchyard would diminish over distance. For locations more than 800 feet from substations or switchyards, the increase over the daytime ambient levels would not be noticeable. Locations within 800 feet of inverters or transformers could experience a change in daytime noise levels that would be noticeable.

Nighttime noise would not be noticeably changed by the proposed solar facility. Operating tracker motors, the inverters, and on-site substations within the Project site boundaries would not create a permanent increase in noise levels that would substantially change surrounding day-night ambient noise levels. Without air conditioning equipment for energy storage, Project-related equipment would not create noise during the nighttime. Nighttime use of air conditioning for energy storage could cause a noticeable change in ambient noise levels.

To prevent a substantial permanent increase in daytime noise from solar facility components, including the energy storage system, inverters or transformers, mitigation would be necessary to ensure that preventative considerations are included during final Project design and implementation (Mitigation Measure N-4 [Noise Restrictions]). If any noise generating components would be sited within 800 feet of residential land uses, these would require sufficient noise controls, and these controls would need to be verified by a noise survey of as-built conditions, to achieve a daytime goal of 43 dBA Leq, measured at or near the nearest residence.

The applicable standards in the Noise Ordinance (Chapter 9.52.040 and also Section 4 of Ordinance No. 847) limits noise sources from causing excessive exterior noise on any nearby occupied property. It ensures that noise levels at any receiving land use that is a low-density "Rural Community" shall not exceed 55 dBA Lmax during the daytime hours (7:00 a.m. to 10:00 p.m.) or 45 dBA during the nighttime hours (10:00 p.m. to 7:00 a.m.). The standards set forth in the Noise Element of the General Plan for stationary sources of noise are less-stringent than these in the Noise Ordinance. All mobile and stationary equipment on the Project site would be required to comply with the stationary source noise standards of the Noise Ordinance.

The dominant stationary source of noise could be air conditioning units, if necessary for the optional battery system. These units would be subject to the 45 dBA Lmax standard of the Noise Ordinance, if operational at night. To comply with that target, final Project design and implementation should avoid placing components of the energy storage system near any receiving land use that is a low-density "Rural Community." This recommendation is included as Mitigation Measure N-4 (Noise Restrictions) to avoid a substantial permanent increase in noise levels.

Low levels of daytime noise would occur from other stationary sources within the site including the batteries without air conditioning systems, the tracker motors, the inverters, and on-site substations; essentially none of these stationary sources of noise would operate on the site during the nighttime. Inverters would not be positioned near the site boundary, and each of the proposed on-site substations would not be adjacent to any nearby residence. For locations more than 200 feet away from the inverters and on-site substations, the resulting noise level would be within the 55 dBA standard for residences.

Along with the stationary equipment, use of vehicles for operations and maintenance activities, such as panel-washing, vegetation treatment, and movement of equipment and crews within the solar facility site, would generate minimal noise that would be intermittent and would not be expected to generate adverse off-site noise effects. The resulting operational-phase noise levels from the facility would be less than the most-stringent property line standard of 55 dBA for daytime noise and 45 dBA for nighttime noise as defined in the Noise Ordinance. With recommended Mitigation Measure N-4 (Noise Restrictions), the noise from operation of the proposed Project would not cause a substantial permanent increase in ambient day-night noise levels for any sensitive receptors near the Project. The mitigation would ensure that operations and maintenance would not result in 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, and this impact with mitigation would be less than significant.

220 kV Generation-Tie Line

Construction of the gen-tie structures and installation of poles and conductors would involve a line truck, crane, or helicopter. Near each pole site, the equipment in the gen-tie construction spread and brief overhead helicopter operations would generate noise at levels noise up to 84 dBA. Gen-tie construction noise would result in a readily perceptible, but temporary, increase in daytime environmental noise. The construction activities would only intermittently affect any one location.

Gen-tie construction noise could occur within a quarter mile of inhabited dwellings, and therefore, the construction activity would need to occur during daytime hours to be considered exempt from the Riverside County Noise Ordinance. Mitigation Measure N-1 (Construction Restrictions) would ensure that construction activities outside of the schedule of the Noise Ordinance would be limited to light-duty equipment and vehicles, and Mitigation Measures N-2 (Public Notification Process) and N-3 (Noise Complaint Process) would also ensure that nearby residents are provided advance notification of potentially adverse noise conditions and to ensure that complaints are resolved. For construction of the gen-tie, this impact with mitigation would be less than significant.

The proposed Project would also introduce the permanent stationary source of noise from the audible corona noise that occurs with normal and routine operation of the 220 kV gen-tie lines. Corona noise would occur along the alignments of the proposed gen-tie lines, and the typical resulting noise level near each gen-tie line with wet conductors would about 40 dBA. The noise from the gen-tie lines would not cause a substantial permanent increase in ambient day-night noise levels and would be less than the most-stringent property line standards in the Noise Ordinance. Therefore, for operation of the gen-tie, this impact would be less than significant.

Mitigation Measures for Impact N-1

Implementation of Mitigation Measures N-1, N-2, N-3, and N-4 would mitigate Impact N-1 (see Section 3.12.10 below).

Mitigation Measure N-1 (Construction Restrictions) would limit the daily hours of construction activity and specify additional steps to be taken to avoid construction noise.

Mitigation Measure N-2 (Public Notification Process) would require the Project owner to notify all nearby residents of the commencement of Project construction and the provide the means for reporting undesirable noise conditions.

Mitigation Measure N-3 (Noise Complaint Process) would require the Project owner to document, investigate, evaluate, and attempt to resolve all noise complaints.

Mitigation Measure N-4 (Noise Restrictions) would ensure that the Project design and implementation includes appropriate noise mitigation measures to ensure that stationary noise sources of the Project do not exceed an average of 43 dBA Leq measured at or near an inhabited dwelling.

Significance After Mitigation

This impact would be less than significant with implementation of mitigation.

Impact N-2. The Project would result in excessive groundborne vibration or groundborne noise levels.

This criterion assesses whether the proposed Project would result in exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels.

Solar Facility

Construction-Phase Impact. During construction, the impact or vibratory pile drivers used for installing posts would have the greatest radius of potential groundborne vibration impacts. When necessary to install posts near the proposed Project site boundaries, use of pile drivers could result in vibration that is perceptible and potentially annoying, for occupants of structures within 100 feet of the source. The upper range of groundborne vibration from an impact pile driver could exceed 1.5 inches per second PPV near the source, but at a distance of 100 feet the level would attenuate to 0.19 in/sec or below the County PPV threshold for adverse human reactions of 0.20 in/sec (calculations appear in EIR Appendix M). Other construction activities would create lower levels of vibration and would not have the potential to create annoyance at distances of 50 feet or more from the equipment in use.

Residential structures near the boundaries of Parcel Group A and Parcel Group C could be near enough to pile driving activity to experience potentially annoying levels of construction vibration. This impact would be limited to the duration of installing PV panel structural posts, if necessary in the immediate vicinity of the residences. Other routine construction would be sufficiently far from the nearest residences to avoid causing a vibration annoyance. Project-related vibrations would not cause adverse physical effects to structures because no structures susceptible to damage are known to be nearby. When vibration levels are low enough to avoid causing an annoyance, they would be unlikely to cause structural damage. Impacts from vibration would be localized and temporary (i.e., infrequently recurring during the limited duration of construction near residences), and therefore, would not be excessive, resulting in a less than significant impact.

Operational-Phase Impact. Operation of the solar facility would not generate perceptible levels of vibration in the surrounding area. There would be no permanent source or potential to change vibration levels, except during unscheduled maintenance or repair activities, which are similar to construction. This impact would be less than significant.

220 kV Generation-Tie Line

Construction activities to install the gen-tie line towers and poles would cause vibration levels that could cause some persons to become annoyed, and this could temporarily impact persons in residential structures,

if any occur within about 50 feet of construction equipment. No residential structures would be near enough to the proposed alignments of the gen-tie lines to experience excessive construction vibration from moving equipment or vehicles. Impacts from vibration would be localized and temporary (i.e., infrequently recurring during the limited duration of construction near residences), and therefore, would not be excessive, resulting in a less than significant impact

Mitigation Measures for Impact N-2

No mitigation would be required.

Significance After Mitigation

This impact would be less than significant.

3.12.6 Alternative 1: No Project Alternative

The No Project Alternative would not develop the solar facility and gen-tie line, and it would avoid all new construction and/or operational activities. It would not result in any change in ambient noise levels or generate noise from any new sources. Therefore, the No Project Alternative would have no noise impacts.

3.12.7 Alternative 2: Reduced Footprint Alternative

The Reduced Footprint Alternative would not develop Parcel Groups D and F. The remaining sites of the Alternative and the gen-tie line would be developed in a manner similar to that of the proposed Project. By avoiding development near Parcel Group F, this alternative might avoid some localized noise effects for one sensitive receptor near there. Similar to the Project, the Reduced Footprint Alternative would have the potential to generate noise levels in excess of applicable standards, and implementation of Mitigation Measures N-1 (Construction Restrictions), N-2 (Public Notification Process), and N-3 (Noise Complaint Process) would be necessary. Also similar to the Project, to prevent a substantial permanent increase in daytime noise from solar facility components, including the energy storage system, inverters or transformers, mitigation would be necessary to ensure that preventative considerations are included during final Project design and implementation (Mitigation Measure N-4 [Noise Restrictions]). Overall, noise impacts from the Reduced Footprint Alternative would be similar to those of the proposed Project, and mitigation identified for the Project would be applicable to this alternative.

3.12.8 Gen-Tie Segment #1 Alternative Route Option

The Gen-Tie Segment #1 Alternative Route Option would avoid going through parcel APN 807-191-031. All remaining features of the gen-tie line and solar facility would remain the same as with the proposed Project. Compared with the Project, the route of this gen-tie option would bring additional construction noise closer to residences near Parcel Group A. Similar to the Project, the Gen-Tie Segment #1 Alternative Route Option would have the potential to generate noise levels in excess of applicable standards, and implementation of Mitigation Measure N-1 (Construction Restrictions), N-2 (Public Notification Process), and N-3 (Noise Complaint Process) would be necessary. Also similar to the Project, to prevent a substantial permanent increase in daytime noise from solar facility components, including the energy storage system, inverters or transformers, mitigation would be necessary to ensure that preventative considerations are included during final Project design and implementation (Mitigation Measure N-4 [Noise Restrictions]). Overall, noise impacts from this alternative would be similar to those of the proposed Project, and mitigation identified for the Project would be applicable to this alternative.

3.12.9 Cumulative Impacts

As discussed in Section 3.1.2 (Cumulative Impact Scenario), the geographic scope for cumulative analysis of noise and vibration is generally localized. Noise sources attributable to cumulative projects may cause adverse effects within approximately one mile of a project site including truck routes, but the region of greatest influence is typically within 0.5 miles from the boundary of the Project site. Similarly, vibration sources that typically occur with construction activity or vehicle traffic have a region of influence that is limited to approximately 200 feet.

This geographic scope for cumulative noise and vibration effects includes the West-wide Section 368 Energy Corridors and the Desert Renewable Energy Conservation Plan, existing, past and present projects built in the area, and the following, probable future projects (listed in Table 3.1-2):

- Cumulative Project H: Desert Harvest Solar Farm
- Cumulative Project I: DC 50 Solar Project
- Cumulative Project J: California Jupiter, LLC Jupiter solar application (CACA 56477)
- Cumulative Project K: IO Solar Project (CACA 56782)
- Cumulative Project L: SunPower Project
- Cumulative Project M: Victory Pass I, LLC
- Cumulative Project N: Palen Solar Project

Solar Facility

The cumulative projects that occur in the geographic scope for noise and vibration include planning documents and the probable future solar energy projects that are similar in nature to the proposed solar facility. The planning efforts would not themselves create actions that increase noise or vibration levels. The noise and vibration effects of the equipment used for construction of solar energy facilities that are cumulative projects would depend on the site-specific needs and schedules, and may or may not overlap spatially and temporally with those of the proposed Project.

Limited areas of cumulative project construction activities could be within 0.5 mile of the proposed Project, or would have the potential to cause overlapping construction noise impacts with construction of the proposed solar facility. Active pieces of construction equipment normally cause no more than 85 dBA when measured 50 feet from the source. Construction-phase noise impacts would be short-term and limited in nature, with construction activities for all cumulative projects normally being limited to the daytime. The duration of construction work for the proposed Project would be approximately 30 months, and after that time, few notable permanent sources of noise would occur with the proposed solar facility and the cumulative solar energy facilities.

All cumulative project operations would generate noise from employee vehicles accessing the sites, power inverters, and other power system infrastructure. These sources may cause localized cumulative effects where multiple projects or shared transportation routes occur adjacent to a sensitive receptor.

Cumulative noise impacts would be reduced through compliance with local laws and regulations and implementation of typical mitigation to protect sensitive receptors from noise and implement feasible noise controls. Cumulative renewable energy projects and other development that is subjected to the environmental permitting process would have a detailed analysis of noise and land use conflicts as part of the Project-level environmental review. The permitting process normally requires each project to comply with local standards and to avoid noise-related land use conflicts. This means that all projects, even if unrelated to the proposed Project, would need to comply with the local community noise standards, such

as the Riverside County Noise Ordinance. Additional mitigation may be applied to the cumulative projects through environmental permitting by lead agencies. Although sources of noise associated with cumulative project operations, including employee vehicles accessing the sites, power inverters, and other power system infrastructure could impact residences that are near the proposed Project, the mitigation recommended in this analysis would ensure that the Project's incremental contribution to the cumulative noise impact would not be considerable.

Cumulative effects due to groundborne vibration would occur only if there were sources of the vibration within 200 feet from the boundaries between the proposed Project site and cumulative project sites. Boundaries of cumulative projects occur within 200 feet of the proposed solar facility site but not where there are existing residences. The areas of potential overlap of cumulative project construction-related vibration would not be likely to create a cumulative vibration impact at residences near the proposed Project, and no cumulative effects would be likely from groundborne vibration.

220 kV Generation-Tie Line

The proposed gen-tie line would be built near cumulative projects that occur in the geographic scope for noise and vibration. The noise and vibration effects of the equipment used for construction of the proposed gen-tie line and the cumulative projects may or may not overlap spatially and temporally. As with the proposed solar facility, cumulative noise impacts of the gen-tie would be reduced through compliance with local laws and regulations and implementation of typical mitigation to protect sensitive receptors from noise and implement feasible noise controls. Cumulative effects due to groundborne vibration would occur only if gen-tie line construction would create vibration adjacent to a cumulative Project site. The areas of potential overlap of gen-tie noise and vibration and cumulative project construction-related effects would not be likely to create a cumulative noise or vibration impact at residences near the proposed Project, and no cumulative effects would be likely from gen-tie noise or vibration.

Mitigation Measures for Cumulative Impacts

Mitigation Measures N-1 through N-4 would be implemented to address potential noise and vibration impacts for the proposed Project (see Section 3.12.10). No additional mitigation is required.

Significance After Mitigation

The Project's incremental contribution to impacts to noise would not be cumulatively considerable.

3.12.10 Mitigation Measures

MM N-1 Construction Restrictions. Heavy equipment operation and noisy construction work relating to any Project features shall be restricted to the times delineated below, unless a special permit has been issued by the County of Riverside:

- June through September: 6 a.m. to 6 p.m.
- October through May: 7 a.m. to 6 p.m.

Haul truck engines and other engines powering fixed or mobile construction equipment shall be equipped with adequate mufflers. Haul trucks shall be operated in accordance with posted speed limits. Truck engine exhaust brake use shall be limited to emergencies.

The construction contractor shall locate equipment staging in areas to create the greatest distance between construction-related noise sources and noise sensitive receivers near-

est the Project site during Project construction. Where feasible, the construction contractor shall place all stationary construction equipment so that emitted noise is directed away from the noise sensitive receptors nearest the Project site. No music or electronically reinforced speech from construction workers shall be audible at noise-sensitive properties.

MM N-2 Public Notification Process. At least 15 days prior to the start of ground disturbance, the Project owner shall notify all residents within one mile of the Project site and the linear facilities, by mail or by other effective means, of the commencement of Project construction. At the same time, the Project owner shall establish a telephone number for use by the public to report any undesirable noise conditions associated with the construction and operation of the Project. If the telephone is not staffed 24 hours a day, the Project owner shall include an automatic answering feature, with date and time stamp recording, to answer calls when the phone is unattended. This telephone number shall be posted at the Project site during construction where it is visible to passersby. This telephone number shall be maintained until the Project has been operational for at least one year.

MM N-3 Noise Complaint Process. Throughout the construction and operation of the Project, the Project owner shall document, investigate, evaluate, and attempt to resolve all Project-related noise complaints. The Project owner or authorized agent shall:

1. Use a Noise Complaint Resolution Form, or other documentation procedure acceptable to the County, to record and report the Project owner's response to resolving each noise complaint;
2. Attempt to contact the person(s) making the noise complaint within 24 hours;
3. Conduct an investigation to determine the source of noise in the complaint;
4. If the noise is Project-related, take all feasible measures to reduce the source of the noise; and
5. Submit a report to the County documenting the complaint and actions taken. The report shall include: a complaint summary, including the final results of noise reduction efforts and, if obtainable, a signed statement by the complainant stating that the noise problem has been resolved to the complainant's satisfaction.

MM N-4 Noise Restrictions. The Project design and implementation shall include appropriate noise mitigation measures adequate to ensure that the operation of the Project will not cause the noise levels due to plant operation alone to exceed an average of 43 dBA Leq measured at or near an inhabited dwelling.

No new pure-tone components shall be caused by the power inverters or transformers associated with the Project. No single piece of equipment shall be allowed to stand out as a source of noise that draws legitimate complaints.

The Project design in site plans shall avoid placing stationary sources of noise within 800 feet of an inhabited dwelling. If the final design of the Project includes any battery or flywheel, air conditioner, inverter, transformer, substation or switchyard within 800 feet of an inhabited dwelling, then the following adaptive management measures shall be required:

- A. When the Project first achieves a sustained output of 85% or greater of rated capacity, the Project owner shall conduct a 25-hour community noise survey by monitoring levels at locations of any affected inhabited dwelling, or at a closer location acceptable to the County.

The measurement of power plant noise for the purposes of demonstrating compliance with this mitigation measure may alternatively be made at a location, acceptable to the County, closer to the plant (e.g., 100 feet from power inverters or transformers) and this measured level then mathematically extrapolated to determine the plant noise contribution at the affected dwelling.

- B. If the results from the noise survey indicate that the power plant noise at the affected receptor site exceeds the above value during the above time period, mitigation measures shall be implemented to reduce noise to a level of compliance with this limit.

3.13 Paleontological Resources

This section describes the existing paleontological resources and the possibility of discovery of fossil resources within the area where the proposed Project and alternatives would be implemented. The Project study area for paleontology encompasses all resources that could be affected by ground disturbance related to the construction and operation of the Athos Renewable Energy Project (Athos or Project). Paleontological resources are any fossilized remains, traces, or imprints of organisms that are preserved in the Earth's crust and are of paleontological interest and provide information about the history of life on Earth. Fossil remains may include bones, teeth, shells, leaves, and wood. They are found in geological deposits within which they were originally buried. Paleontological resources include not only the actual fossils, but also the collecting localities and the geological deposits that contain the fossils. Paleontological resources are considered nonrenewable resources because the organisms they represent no longer exist. Thus, once destroyed, these resources can never be replaced. The following discussion is based on two paleontological studies prepared for the Project meeting Riverside County and BLM requirements respectively: *Paleontological Identification Report for the Athos Renewable Energy Project Riverside County, California* (Applied Earthworks, 2018a) and *Paleontological Resource Assessment for the Athos Renewable Energy Project, Riverside County, California* (Applied Earthworks, 2018b).

3.13.1 Environmental Setting

Regional Geology

The Project is in the Chuckwalla Valley of eastern Riverside County at the boundary between the Mojave Desert and eastern Transverse Range geomorphic provinces. Basin and range topography, typical of the eastern Mojave Desert and eastern California, extends to the north and east, while mountains comprising part of the eastern Transverse Ranges occur to the west and south. Mountain ranges surrounding the Chuckwalla Valley and the Project include the Palen and Coxcomb ranges to the north, the Eagle Mountains to the west, and the Chuckwalla Mountains to the south. The Palen and Coxcomb ranges exhibit typical basin and range topography, characterized by narrow faulted mountain chains separated by subsiding flat alluvial basins, a pattern that continues north into the Mojave Desert Geomorphic Province. The Eagle Mountains are within the easternmost extent of the Transverse Ranges.

The oldest rock units in this region are Proterozoic-age (2,500 to 541 million years ago) gneiss and granite, forming the core of the Chuckwalla and Big Maria mountains. These units may be overlain by Paleozoic-age (541 to approximately 252 million years ago) quartzite, silicate rocks, marble, and schist as well as Triassic- (approximately 252 to 201 million years ago) or Jurassic-age (approximately 201 to 145 million years ago) sedimentary rocks with shallow-water (marine and nonmarine) strata of schist, quartzite, and metaconglomerate. Large intrusive masses of Triassic and Jurassic granites are found in many ranges. Regionally extensive Jurassic volcanics consist of highly deformed and metamorphosed rocks of intermediate to silicic composition (such as rhyolite). Limited exposures of Cenozoic-age (66 million years ago to present, subdivided into three periods — Paleogene, Neogene, and Quaternary) rocks in the valley include fanglomerates and sedimentary breccias and undifferentiated volcanics. Cenozoic volcanics include olivine basalt flows and dikes in the Palen Pass area, rhyolitic to basaltic lava flows, flow breccias, air-fall tuff, ash-flow tuff, domes of the Chuckwalla Mountains, and felsic intrusive rocks consisting of hypabyssal rhyolitic to dacitic composition.

The Chuckwalla Valley is a broad, alluviated, and enclosed tectonic basin or bolson, which is an alluvium-filled internally drained structural depression with outlets blocked by alluvial divides. The valley is filled with Pliocene- to Quaternary-age deposits divided into the Bouse Formation (Pliocene age), Pinto Formation

(Pleistocene age), and Pleistocene- and Quaternary-age alluvium. The Bouse Formation is generally a limestone overlain by interbedded clay, silt, sand, and tufa; the Pinto Formation is composed of coarse conglomerate with boulders interbedded with lacustrine clay; and the overlying alluvium is fine to coarse sands interbedded with gravel, silt, and clay.

The Middle and Late Pleistocene (781,000 to 11,700 years ago) were characterized by periods of high precipitation in this part of the continent. Large pluvial (perennial) lakes in the Basin-Range and Mojave Desert resulted, in part, from glacial melting until the Terminal Pleistocene, about 11,700 years ago. While not certain, it is possible that ancient Palen and Ford lakes in the Chuckwalla Valley could represent the remnants of one of the southernmost of these large pluvial lakes. Kenney postulates dates as old as 15,000 to 20,000 years ago for the high-water stands at Ford Dry Lake. In contrast to longer-lived pluvial lakes, playa (dry) lakes are ephemeral with lifespans of one to a few tens of years. Considerable climatic variability is now thought to have characterized the Middle Holocene and continues today in the Late Holocene.

Today, four playa lakes are present within the Chuckwalla Valley basin: Palen Dry Lake, which is closest to the Project area, Ford Dry Lake, Hayfield Dry Lake, and an unnamed playa between the McCoy Range and Mule Mountain. The eastern end of the valley is on a drainage divide at the base of the Mule and McCoy mountains where Palo Verde Mesa extends eastward. Alluvial fan deposits derived from these surrounding highlands fill the basin and some host numerous dry lake beds separated by sand dunes.

Since the late Miocene Epoch (approximately 23 to 5.3 million years ago), northward movement along the San Andreas fault has resulted in clockwise rotation of the eastern Transverse Ranges by approximately 41 degrees with east-west displacement along these faults of roughly 40 kilometers increasing the elevation of the alluvial divide and resulting in geographic separation of Ford and Palen Lakes. Near the Palen Range, blocks are tilted with uplifted northern and eastern margins and dropped southern and western sides, suggesting the valley is either actively subsiding or has subsided in the past.

Geology and Paleontology of the Project Area

The Project area is mapped at a scale of 1:250,000 by Jennings (1967). The northern portion of the Project area is mapped at a scale of 1:62,500 by Dibblee and Minch (2008). According to these published maps, surface exposures of Pleistocene- to Holocene-age sedimentary rocks are distributed across the Project area.

Dune Sands (Qs) – Holocene

The “Qs” symbology is utilized by Jennings (1967) to represent active dune sands, which are present at the surface in the northern and easternmost portions of the Project area. These accumulated in a desert playa setting. Although these deposits are too young to include in situ fossilized material, they may overlie potentially significant fossiliferous geologic units at shallow depths.

Alluvium (Qal/Qa) – Holocene

Holocene-age alluvium (described by Jennings “Qal” and by Dibblee and Minch as “Qa”) covers most of the Project area’s present ground surface. This alluvium occurs in fans derived from erosion of the surrounding mountain ranges. The fan deposits typically consist of silt, sand, and gravel. Holocene alluvial deposits similar to those mapped at the surface of the Project area, particularly those less than 5,000 years old, are generally too young to contain fossilized material (SVP, 2010). While these alluvial deposits do not typically yield significant and intact fossil material, they may shallowly overlie older Pleistocene-age alluvium, which can produce significant fossil material.

Other Surficial Deposits (Qc, Qco) – Pleistocene

Pleistocene-age surficial deposits (described by Jennings as “Qc”) mapped in the Project area are comprised of moderately bedded nonmarine alluvial gravels and sands. Jennings described some of these localized concentrations of nonmarine alluvium as consisting of the Ocotillo Conglomerate (Qco). While Gilbert (2018) reports significant fossils have been found elsewhere in the Ocotillo Conglomerate, Jennings (1967) describes the formation as a gray boulder conglomerate, grading basinward into pink sand and clay. The boulder conglomerate is not conducive to the preservation of fossils, while the pink clays may have the potential to preserve fossils.

Subsurface Deposits (Qpb, Qp) and Paleosols – Older Pleistocene

Other Pleistocene-age deposits are mapped near the Project area. While they do not occur at the surface in the Project area, they may occur at unknown depths. The Pinto Formation, which consists of lacustrine clays, sandstones, and gravels is mapped nearby to the northwest of the Project area (Dibblee and Minch describe this as “Qpb”). It is known to be fossiliferous and red where interstratified with basalt flows. According to McLeod (2018), lacustrine deposits associated with an expanded ancient Palen Dry Lake (Jennings, 1967: “Ql”; Stone and Pelka, 1989: “Qp”) also may occur at depth in the eastern and northern portions of the Project area and may contain significant fossil vertebrates.

Aron et al. (2015) report reddish paleosols at or just below the present ground surface within the Desert Sunlight project area (west-southwest of the Athos Project area) in locations Jennings (1967) mapped as Holocene-age (Qal) and Pleistocene-age (Qc) alluvium. These fossilized soil horizons yielded significant fossils, including several Pleistocene-age large mammal fossils.

Aron et al. (2015) conclude that these fossils, which were discovered in surface and near-surface contexts, likely originated in deeper paleosols that were subsequently exhumed and transported by erosional forces and ultimately became incorporated into the younger sedimentary deposits.

3.13.2 Regulatory Framework

Paleontological resources are afforded protection under state and federal environmental laws, and most notably by the 1906 Federal Antiquities Act, the 2009 Paleontological Resources Preservation Act (PRPA), other subsequent federal legislation and policies, and by the State of California’s Environmental Quality Act (CEQA Section 15064.5). Professional standards for assessment and mitigation of adverse impacts on paleontological remains have been established by the Society of Vertebrate Paleontology.

Federal

There are a number of federal statutes that specifically address paleontological resources. These statutes generally become applicable to a specific project if the project involves: (1) a federal agency license, permit, approval, or funding; and/or (2) if the project crosses federal lands. Federal legislative protection for paleontological resources stems from the Antiquities Act of 1906 as amended (PL 59-209; 34 Stat. 225; 16 USC 431-43), which calls for protection of historic landmarks, historic and prehistoric structures, and other objects of historic or scientific interest on federal lands.

State

The CEQA Guidelines (Title 14, California Code of Regulations Sections 15000 et seq.) define procedures, types of activities, persons, and public agencies required to comply with CEQA. Appendix G to Section 15023 includes an “Environmental Checklist” of questions that a lead agency should address if relevant to

a project's environmental impacts, including: "Will the proposed project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?" The Environmental Checklist also asks: "Does the project have potential to eliminate important examples of the major periods of California history or pre-history?" Fossils are important examples of periods of California pre-history.

Other state requirements for paleontological resources management are included in Public Resources Code sections 5097.5. This statute prohibits the removal of any paleontological site or feature from state public lands without permission of the jurisdictional agency, defines the removal of paleontological sites or features as a misdemeanor, and require reasonable mitigation of adverse impacts to paleontological resources from developments on public (state) lands. These protections would apply to the Project only if the state were to obtain ownership of Project lands during the term of its license.

Local

Riverside County General Plan

The Multipurpose Open Space Element of the Riverside County General Plan identifies a number of policies intended to minimize impacts to paleontological resources. It also includes a Paleontological Sensitivity Resources map indicating lands with low, undetermined, or high potential for finding paleontological resources. The following policies apply to the portions of the Project area within County- and privately owned lands (Riverside County, 2015):

- **OS 19.6** – Whenever existing information indicates that a site proposed for development has high paleontological sensitivity as shown on Figure OS-8, a paleontological resource impact mitigation program (PRIMP) shall be filed with the County Geologist prior to site grading. The PRIMP shall specify the steps to be taken to mitigate impacts to paleontological resources.
- **OS 19.7** – Whenever existing information indicates that a site proposed for development has low paleontological sensitivity as shown on Figure OS-8, no direct mitigation is required unless a fossil is encountered during site development. Should a fossil be encountered, the County Geologist shall be notified and a paleontologist shall be retained by the project proponent. The paleontologist shall document the extent and potential significance of the paleontological resources on the site and establish appropriate mitigation measures for further site development.
- **OS 19.8** – Whenever existing information indicates that a site proposed for development has undetermined paleontological sensitivity as shown on Figure OS-8, a report shall be filed with the County Geologist documenting the extent and potential significance of the paleontological resources on site and identifying mitigation measures for the fossil and for impacts to significant paleontological resources prior to approval of that department.
- **OS 19.9** – Whenever paleontological resources are found, the County Geologist shall direct them to a facility within Riverside County for their curation, including the Western Science Center in the City of Hemet.

Paleontological Resource Classifications

Riverside County

Riverside County has been inventoried for geologic formations known to potentially contain paleontological resources. Lands with high, low, or undetermined potential for finding paleontological resources are

mapped (County of Riverside, 2015a: Figure OS-8). These guidelines define the various levels of paleontological resource potential (i.e., “sensitivity”) and provide detailed protocols for the mitigation of adverse impacts to fossil resources during project development.

High Potential. Sedimentary rock units with high potential for containing significant non-renewable paleontological resources include rock units in which vertebrate or significant invertebrate fossils have been found or determined likely to be present. These units include, but are not limited to, sedimentary formations which contain significant non-renewable paleontological resources anywhere within their geographical extent and sedimentary rock units temporally or lithologically suitable for the preservation of fossils. High sensitivity includes not only the potential for yielding abundant vertebrate fossils, but also for production of a few significant fossils that may provide new and significant data. High sensitivity areas are mapped as either “High A” or “High B,” according to the following criteria:

- **High Sensitivity A (Ha):** Based on geologic formations or mapped rock units that are known to contain or have the correct age and depositional conditions to contain significant paleontological resources. These include rocks of Silurian or Devonian age and younger that have potential to contain remains of fossil fish, and Mesozoic and Cenozoic rocks that contain fossilized body elements and trace fossils such as tracks, nests and eggs.
- **High Sensitivity B (Hb):** Equivalent to High A but is based on the occurrence of fossils at a specified depth below the surface. This category indicates fossils that are likely to be encountered at or below 4 feet of depth and may be impacted during construction activities.

The qualified paleontologist approved by the County (“Project Paleontologist”) will create and implement a project-specific paleontological resource impact mitigation program (PRIMP) to be approved by the County Geologist prior to the issuance of a grading permit. Construction monitoring and details covering the treatment of fossil discoveries are included in the PRIMP. Any significant specimens discovered will need to be prepared, identified, and curated into a museum. A final report documenting the significance of the finds will also be required.

Low Potential. Lands for which previous field surveys and documentation demonstrate as having a low potential for containing significant paleontological resources subject to adverse impacts. The mapping of low potential was determined based on actual documentation and was not generalized to cover all areas of a particular rock unit on a geologic map.

Mitigation is not typically required unless a fossil is encountered during site development. If a fossil is encountered, the County Geologist shall be notified, and a paleontologist shall be retained by the project proponent. In such cases, the paleontologist shall document the extent and potential significance of the paleontological resources on the site and establish appropriate mitigation measures for further site development.

Undetermined Potential. Areas underlain by sedimentary rocks for which literature or unpublished studies are not available have undetermined potential for containing significant paleontological resources.

A field survey is required prior to the commencement of construction activities by a qualified vertebrate paleontologist to assess the unit’s paleontological potential as either High or Low.

Fossil Yield Classification System

The BLM has a different paleontological resource assessment system (the PFYC) system. The PFYC system classifies geologic units based on the relative abundance of vertebrate fossils or scientifically significant invertebrate or plant fossils and their sensitivity to adverse impacts, with a higher class number indicating

a higher potential. This classification is applied to the geologic formation, member, or other distinguishable unit, preferably at the most detailed mappable level. The BLM uses the PFYC system to assess the potential for discovery of significant paleontological resources or the impact of surface disturbing activities to such resources by using a five class ranking system.

Class 1 – Very Low. Geologic units that are not likely to contain recognizable fossil remains. This class usually includes units that are igneous or metamorphic, excluding reworked volcanic ash units; or units that are Precambrian in age or older.

Management concern for paleontological resources in Class 1 units is usually negligible or not applicable. Assessment or mitigation is usually unnecessary except in very rare or isolated circumstances. The probability for impacting any fossils is negligible. Assessment or mitigation of paleontological resources is usually unnecessary. The occurrence of significant fossils is nonexistent or extremely rare.

Class 2 – Low. Sedimentary geologic units that are not likely to contain vertebrate fossils or scientifically significant nonvertebrate fossils. This class typically includes vertebrate or significant invertebrate or plant fossils not present or very rare; units that are generally younger than 10,000 years before present; recent aeolian deposits; and sediments that exhibit significant physical and chemical changes (i.e., diagenetic alteration).

Management concern for paleontological resources is generally low. Assessment or mitigation is usually unnecessary except in rare or isolated circumstances. The probability for impacting vertebrate fossils or scientifically significant invertebrate or plant fossils is low. Assessment or mitigation of paleontological resources is not likely to be necessary. Localities containing important resources may exist, but would be rare and would not influence the classification. These important localities would be managed on a case-by-case basis.

Class 3 – Moderate or Unknown. Fossiliferous sedimentary geologic units where fossil content varies in significance, abundance, and predictable occurrence; or sedimentary units of unknown fossil potential. This class is often marine in origin with sporadic known occurrences of vertebrate fossils, as well as vertebrate fossils and scientifically significant invertebrate or plant fossils known to occur intermittently. The predictability of the fossils within these units is known to be low or poorly studied and/or poorly documented. Potential yield cannot be assigned without ground reconnaissance. Class 3 is subdivided into two groups:

- **Class 3a – Moderate Potential.** Units are known to contain vertebrate fossils or scientifically significant nonvertebrate fossils, but these occurrences are widely scattered. Common invertebrate or plant fossils may be found in the area, and opportunities may exist for hobby collecting. The potential for a project to be sited on or impact a significant fossil locality is low, but is somewhat higher for common fossils.
- **Class 3b – Unknown Potential.** Units exhibit geologic features and preservation conditions that suggest significant fossils could be present, but little information about the paleontological resources of the unit or the area is known. This may indicate the unit or area is poorly studied, and field surveys may uncover significant finds. The units in this Class may eventually be placed in another Class when sufficient survey and research is performed. The unknown potential of the units in this Class should be carefully considered when developing any mitigation or management actions.

For Class 3, the management concern for paleontological resources is moderate; or cannot be determined from existing data. Surface-disturbing activities may require field assessment to determine appropriate course of action. This classification includes a broad range of paleontological potential. It includes geologic units of unknown potential, as well as units of moderate or infrequent occurrence of significant fossils.

Management considerations cover a broad range of options as well, and could include pre-disturbance surveys, monitoring, or avoidance. Surface-disturbing activities will require sufficient assessment to determine whether significant paleontological resources occur in the area of a proposed project, and whether the action could affect the paleontological resources. These units may contain areas that would be appropriate to designate as hobby collection areas due to the higher occurrence of common fossils and a lower concern about affecting significant paleontological resources.

Class 4 – High. Geologic units containing a high occurrence of significant fossils. Vertebrate fossils or scientifically significant invertebrate or plant fossils are known to occur and have been documented, but may vary in occurrence and predictability. Surface disturbing activities may adversely affect paleontological resources in many cases. This class is subdivided into two groups, based primarily on the degree of soil cover.

- **Class 4a** – Unit is exposed with little or no soil or vegetative cover. Outcrop areas are extensive with exposed bedrock areas often larger than 2 acres. Paleontological resources may be susceptible to adverse impacts from surface disturbing actions. Illegal collecting activities may impact some areas.
- **Class 4b** – These are areas underlain by geologic units with high potential but have lowered risks of human-caused adverse impacts and/or lowered risk of natural degradation due to moderating circumstances. The bedrock unit has high potential, but a protective layer of soil, thin alluvial material, or other conditions may lessen or prevent potential impacts to the bedrock resulting from the activity.

The management concern for paleontological resources in Class 4 is moderate to high, depending on the proposed project. A field survey by a qualified paleontologist is often needed to assess local conditions. Management prescriptions for resource preservation and conservation through controlled access or special management designation should be considered. Class 4 and Class 5 units may be combined as Class 5 for broad applications, such as planning efforts or preliminary assessments, when geologic mapping at an appropriate scale is not available. Resource assessment, mitigation, and other management considerations are similar at this level of analysis, and impacts and alternatives can be addressed at a level appropriate to the application.

Mitigation considerations must include assessment of the disturbance, such as removal or penetration of protective surface alluvium or soils, potential for future accelerated erosion, or increased ease of access resulting in greater looting potential. If impacts to significant fossils can be anticipated, on-the-ground surveys prior to authorizing the surface disturbing action will usually be necessary. On-site monitoring or spot-checking may be necessary during construction activities.

Class 5 – Very High. Highly fossiliferous geologic units that consistently and predictably produce vertebrate fossils or scientifically significant invertebrate or plant fossils, and that are at risk of human-caused adverse impacts or natural degradation.

- **Class 5a** – Unit is exposed with little or no soil or vegetative cover. Outcrop areas are extensive with exposed bedrock areas often larger than two contiguous acres. Paleontological resources are highly susceptible to adverse impacts from surface disturbing actions. Unit is frequently the focus of illegal collecting activities.
- **Class 5b** – These are areas underlain by geologic units with very high potential but have lowered risks of human-caused adverse impacts and/or lowered risk of natural degradation due to moderating circumstances. The bedrock unit has very high potential, but a protective layer of soil, thin alluvial material, or other conditions may lessen or prevent potential impacts to the bedrock resulting from the activity.

Management concern for paleontological resources in Class 5 areas is high to very high. A field survey by a qualified paleontologist is usually necessary prior to surface disturbing activities or land tenure adjustments. Mitigation will often be necessary before and/or during these actions. Official designation of areas of avoidance, special interest, and concern may be appropriate. The probability for impacting significant fossils is high. Vertebrate fossils or scientifically significant invertebrate fossils are known or can reasonably be expected to occur in the impacted area. On-the-ground surveys prior to authorizing any surface disturbing activities will usually be necessary. On-site monitoring may be necessary during construction activities.

Combining Paleontological Resource Classifications

The two resource classification systems have distinctly different categories to evaluate paleontological resources. Generally, these two classification systems are compatible (see Table 3.13-1). However, because PFYC classification 3 falls in between the Riverside County high and low categories it can potentially be rated by two different Riverside County ratings (high or low). As the Athos Project includes land under both Riverside County and BLM jurisdiction, both systems are included in the paleontological analysis below.

Table 3.13-1. Comparison of Riverside County and PFYC Paleontological Sensitivity Ratings

PFYC Rating	Riverside County Rating
1 Very Low	Low Potential
2 Low	Low Potential
3a Moderate	High A, High B or Low Potential
3b Unknown	Undetermined
4a High	High A Potential
4b High	High B Potential
5a Very High	High A Potential
5b Very High	High B Potential

3.13.3 Methodology for Analysis

Due to the nature of the fossil record, paleontologists cannot know either the quality or the quantity of fossils present in a given geologic unit prior to natural erosion or human-caused exposure. Therefore, in the absence of surface fossils, it is necessary to assess the sensitivity of rock units based on their known potential to produce scientifically significant fossils elsewhere within the same geologic unit (both within and outside of the study area) or a unit representative of the same depositional environment.

Previous Research

A review of previous research in the Athos Project vicinity was conducted. These efforts included a literature and record search, and a review of studies associated with nearby energy projects.

Literature and Record Search

For this Project, a museum records search was conducted at the Natural History Museum of Los Angeles County (NHMLAC). The museum records search was supplemented by a search of the University of California Museum of Paleontology’s online database (UCMP) for Riverside County as well as a review of previous technical reports of work conducted in the vicinity. The Records Search Area consisted of a 5-mile buffer around the Project Area.

A review of previous paleontological research conducted in the Project vicinity showed that the region is poorly understood. Very few comprehensive studies have taken place, and few finds have been reported to local museums. The NHMLAC and UCMP database searches yielded no records for previously identified vertebrate localities within the Project Area. However, the NHMLAC has records for at least three localities near the Project area from the same or similar sedimentary deposits as those in the Project area. The

closest fossil locality, LACM 5977, has specimens of fossilized kangaroo rat and pocket mouse from Pleistocene-age Quaternary deposits. This locality is east-southeast of the proposed Project area, north of I-10 on the southwest side of Ford Dry Lake.

The NHMLAC also reported two additional Pleistocene-age localities from the Pinto Formation northwest of the Project area between the Eagle and Coxcomb mountains: LACM (CIT) 208 and LACM 3414. These localities yielded tortoise, horse, camel, and llama fossils. Depths for each locality are unreported.

Several fossil localities within Quaternary deposits in Riverside County are recorded in the UCMP's online database. However, these database entries have limited usefulness for one of two reasons: (1) either the fossils are from the Bautista Beds, which are not mapped near the Project area, or (2) the records have unspecified localities.

Recent Projects in the Desert Center Vicinity

In addition to the museum and online database search results, technical reports from field surveys conducted in the vicinity of the Project Area also provided information pertinent to the Athos Project Area. There has been an influx of paleontological information associated with the large energy projects proposed and under construction in the Chuckwalla Valley.

Palen Solar Power Projects. Five nonsignificant fossil occurrences were reported for the adjacent Palen Solar Power Project. Of these, four were specimens of petrified wood and one was nondiagnostic vertebrate material. All specimens were discovered *ex situ* in unconsolidated Holocene-age alluvium (Jennings, 1967: "Qal;" Stone and Pelka, 1989: "Qya") and Pleistocene intermediate-age alluvium (Stone and Pelka, 1989: "Qia"), having been transported an unknown distance from their original geologic contexts (DeBusk and Corsetti, 2009). In his discussion of paleontological resources in support of a petition to amend the Palen Solar Electric Generating System, Nials (2013) concludes that the area is unlikely to produce significant fossils in the shallow subsurface.

Desert Harvest Solar Project. Additional fossil occurrences of undetermined significance were encountered among three geologic units mapped within the Desert Harvest project area (Roeder, 2012):

- Quaternary dune sands (Qs): no fossils were observed from within the sand dunes, but fossil bones were recorded on the edge of the possible playa deposits (Ql).
- Quaternary alluvium (Qal): specimens included a mineralized tortoise shell fragment and mineralized bone fragment (possible from a large mammal pelvis).
- Quaternary lake deposits (Ql): fossilized tortoise, rodent, bird, and rabbit specimens. Roeder interpreted these specimens to have been collected from either the surface of ancient Palen Dry Lake during high stand (Ql or Qp) or from reworked pond deposits between sand dunes in a blown-out area. Such deposits may have been deposited initially prior to 5,000 years ago and subsequently eroded and redeposited into dunes of relatively modern age (Nials, 2013).

Two additional geologic units encountered by Roeder (2012) were Quaternary nonmarine deposits (Qc) and older Pleistocene nonmarine deposits (Qco). Neither of these units yielded paleontological resources, but Roeder does note paleosols in both. In addition, Roeder suggests possible Plio-Pleistocene playa sediments (QT) occur at depth in the Desert Harvest project area. Roeder assigned all the geologic units to High sensitivity.

Desert Sunlight Solar Farm Project. The geologic units within the project footprint: Quaternary dune sand (Qs), Holocene alluvium (Qal), and Quaternary older alluvium (Qoa) as well as Mesozoic and Cenozoic volcanic bedrock. The analysis concludes that the bedrock has no potential for paleontological resources and that surficial units would be unlikely to preserve significant fossils, although lacustrine and low-energy

fluvial deposits in the subsurface could have a higher potential for significant fossils (BLM, 2011). No PFYC assignments were made.

Aron et al. (2015) noted that four nonsignificant fossil localities were found during the preconstruction survey for the Desert Sunlight project. However, during construction monitoring for the project, paleontological field monitors recognized 23 fossil localities: 13 significant and 10 nonsignificant (Aron et al., 2015). The specimens included carapace fragments of desert tortoise and poorly preserved tortoise shell fragments, skeletal remains of reptiles (e.g., gopher snake, horned lizard, and desert iguana), birds (e.g., finch), mammals (e.g., saber-toothed cat, bighorn sheep, kit fox, camel, llama, rabbit, gopher, kangaroo rat, ground squirrel, harvest mouse, and pocket mouse), and undetermined bones.

Pleistocene-age fossils were collected on the surface or in the shallow subsurface in reddish paleosols found within sediments mapped by Jennings (1967) as “Qal” Holocene-age alluvium (but referred to as “Qa” by Aron et al. [2015]) and also in Pleistocene-age nonmarine alluvium (Qc). As the ages of the fossils conflict with the distribution of the Holocene-age “Qal” in the Desert Sunlight project area, Aron et al. (2015) suggest an amendment to the Jennings (1967) map to expand the distribution of geologic unit “Qc.” Furthermore, they suggest the fossils found on the ground surface likely originated elsewhere in deeper paleosols that were exhumed from unknown depths by erosional forces and reincorporated into younger sediments.

Field Studies

Pedestrian Survey

A pedestrian survey for Athos was conducted in May 2018 (Applied Earthworks 2018a, b). Those areas currently mapped by Riverside County as high or undetermined paleontological sensitivity were examined closely. The field crew also inspected locations where subsurface stratigraphy was exposed from incision by ephemeral streams or mechanical ground disturbance. Areas mapped low sensitivity for paleontological resources by Riverside County were spot checked.

The sedimentary deposits across the ground surface and in near-surface contexts across the Project Area are characterized by poorly sorted, angular to subangular, poorly consolidated coarse-grained sands to boulders, which are indicative of high-energy and relatively recent deposition. Both factors are generally incompatible with good fossil preservation. Published literature and museum records searches indicate there may be older fossiliferous alluvium beneath the younger alluvium (McLeod, 2018); however, the thickness of the younger alluvium is unknown at this time.

Only one fossil specimen was observed during the reconnaissance field survey. This specimen was an indeterminate vertebrate bone fragment with evidence of mineralogical replacement found ex situ in unconsolidated alluvium in Solar Facility B. The fossil is not considered significant and was not collected. However, this discovery supports the high paleontological sensitivity rankings for the Project area indicated by Riverside County maps.

Geotechnical Trenching

Paleontological monitors also examined subsurface geology exposed as part of geotechnical trenching at 33 of 40 locations on private land throughout the Project Area in the spring of 2018. Each trench was 10 feet long by 2 feet wide by 10 feet deep. Paleontological staff drew stratigraphic profiles of 14 trenches, visually examined geotechnical spoils piles for 33 trenches for the presence/absence of large-fraction fossils, and screened a sample of excavated sediments from 33 trenches through a 2-millimeter mesh sieve for small-fraction fossils. No fossils were encountered in any of the geotechnical trenches.

Precise discernment of the Holocene-age surficial alluvium (Qal/Qa) from the potential subsurface deposits (Qpb, Ql/Qp) by purely observational methods was hampered by the lack of fossils, the overall ubiquity of poorly sorted deposits, and inconsistencies in the thicknesses of similar layers, even between neighboring trenches. Nevertheless, findings support the regional surface geology as mapped by Jennings (1967) and Dibblee and Minch (2008) and allow a refinement in paleontological sensitivity determinations for the Project Area discussed below.

Paleontological Sensitivity in the Project Area

According to the County's map, the Project Area consists of locations with high A (Ha), low, and undetermined paleontological sensitivities. The majority of the Project Area is characterized by High A paleontological sensitivity (66%), followed in acreage by Low (33%) and Undetermined paleontological sensitivities (1%). The field studies described above allowed a refinement of these characterizations shown in Figure 3.13-1, which indicates that the Project Area is primarily High sensitivity (71%, 2593 acres), followed by Low sensitivity (27 %, 996 acres) and Undetermined (2%, 71 acres).

High Potential

The majority of the Project Area (71%, 2,593 acres) is assigned to High Potential. Solar facilities in this category include the south half of Block A, and all of Blocks B, C, D, E and G. Gen-Ties and access roads considered High Potential include all of Gen-Tie Segment #1, Gen-Tie Alternative Segment #1, Gen-Tie Segments #2a and #2b, the east end of Gen-Tie Segment #3, the north-south connection to SR-177, and the westernmost third of the east-west connection to SR-177. These areas were assigned this sensitivity because of the presence at depth of deposits conducive to fossil preservation (i.e., the Pinto Formation, dry lake deposits, and paleosols that have previously yielded significant paleontological material outside but near the Project area). Although geologic units with this paleontological sensitivity were not observed in surface or near-surface contexts within the Project area, fossiliferous geologic units likely will be encountered at unknown depths in the subsurface at these locations. These subareas all contain reddish sediments at depth, sometimes in thick layers that may either be deposits of the Pinto Formation or paleosols.

Low Potential

Approximately 27 percent (996 acres) of the Project Area is assigned to Low Potential. This includes the north half of Block A, the easternmost two-thirds of the east-west connection to SR-177, almost all of Block F, and most of Gen-Tie Segments #4 and #5. These subareas were delineated on the basis of their relative absence at depth of deposits conducive to fossil preservation or low likelihood of deposits that would contain in situ significant and intact fossils (e.g., dune sands). The vast majority of the surficial deposits in the Project area consist of Holocene-age alluvium with some dune sands in the north, both of which are generally too young to preserve fossils. Although it is possible that dune sands may contain reworked older sediments any fossils found within reworked sediments would be removed from their primary geologic context and unlikely to be significant. At depth, these subareas contain coarse-grained sand and gravel with occasional boulders, which would not be conducive to fossil preservation.

Undetermined Potential

Three small subareas at the south end of the Project area (2%, 71 acres) are Undetermined potential. These include areas in and around Block F, including the pull-tensioners at the Red Bluff Substation (south end of Gen-Tie Segment #5) and also a pull-tensioner on Gen-Tie Segment #4 just east of Block F. The Pleistocene- age nonmarine deposits (Qc/Qco), which are present at the surface here, consist of coarse-

grained sands, gravels, and boulders that are not conducive to fossil preservation because of the high energy of the depositional environment. However, “Qc” is a relatively generalized unit of alluvium derived from various sources and may contain fossiliferous paleosols at depth or even at the surface in some areas. Furthermore, the Ocotillo Conglomerate that is present in Block F grades rather abruptly into fine sand at depth, which some scholars consider potentially fossiliferous. As such, these subareas require additional study.

3.13.4 CEQA Significance Criteria

The CEQA Significance Criteria section describes the criteria used to determine which impacts should be considered potentially significant. Significance thresholds are based on criteria identified in Appendix G of the CEQA Guidelines (CCR, Title 14, Division 6, Chapter 3, Sections 1500-15387). A paleontological resources impact is considered significant if implementation of the proposed Project would:

- *Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature (see Impact PAL-1).*

As defined, significant paleontological resources are determined to be fossils or assemblages of fossils that are unique, unusual, rare, uncommon, or diagnostically important.

Most impacts on paleontological resources are direct impacts, resulting from ground disturbance activities that would damage or destroy resources. The result of resource recovery is scientific net gains in the discovery of previously unrecorded paleontological resources. Indirect impacts include the potential for increased unauthorized collection of fossils and other paleontological resources resulting from larger numbers of people in the vicinity (i.e., personnel involved in construction and operation of Project facilities). Areas with high potential for paleontological resources are evaluated for the amount, and type of disturbance and activities that would result in impacts to paleontological resources.

3.13.5 Proposed Project Impact Analysis

No issues related to Paleontology were raised by the public during scoping.

Impact PAL-1. Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.

Solar Facility

Desktop and field studies of Project Area indicate that sediments containing significant paleontological resources would be encountered during ground disturbance associated with solar facility construction and operation. Construction of the Project would include grading, foundation and ditch excavation, utility trenching, and possibly drilled shafts. These activities could damage or destroy paleontological resources. The probability of encountering paleontological resources on the ground surface is considered low, but the probability increases substantially as depth increases. Impacts before implementation of mitigation measures would be significant. Known and unknown sensitivity of some of the formations and paleontological resources on the solar facility necessitates the implementation of a Paleontological Resources Impact Mitigation Program (PRIMP) and a worker awareness training to minimize the impact of construction-related activities. With implementation of Mitigation Measures PAL-1 through PAL-5 potential adverse impacts on paleontological resources within the Project area during construction and operation of the solar facilities would be reduced to less than significant.

Indirect effects include the potential for increased unauthorized collection of fossils and other paleontological resources resulting from the presence of larger numbers of people in the Project vicinity during construction. Implementation of Mitigation Measures PAL-1 through PAL-5 in addition to the installation of fencing around the perimeter of the Project facility, would minimize the potential for indirect impacts from solar facility construction to paleontological resources by limiting unauthorized access to the site, putting in place a monitoring program to ensure fossil identification and recording during construction, and providing an educational program to workers so that paleontological resources are avoided or reported to qualified professionals.

220 kV Generation-Tie Line

Sediments potentially containing significant paleontological resources are present along all gen-tie lines, but particularly Lines 1-3. Ground disturbance associated with the construction and operation of the Gen-tie lines could also result in direct impacts to surficial and buried paleontologically sensitive geologic rock units which could adversely impact significant non-renewable paleontological resources. Impacts before implementation of mitigation measures would be significant. These potential impacts would be mitigated through implementation of the PRIMP (Mitigation Measure PAL-1). With implementation of Mitigation Measures PAL-1 through PAL-5 potential adverse impacts on paleontological resources within the Project area during construction and operation of the Gen-tie lines would be reduced to less than significant.

Indirect effects include the potential for increased unauthorized collection of fossils and other paleontological resources resulting from the presence of larger numbers of people in the Project vicinity during construction. Implementation of Mitigation Measure PAL-1 through PAL-5 would minimize the potential for indirect impacts from construction to paleontological resources by putting in place a monitoring program to ensure fossil identification and recording during construction and providing an educational program to workers so that paleontological resources are avoided or reported to qualified professionals.

Mitigation Measures for Impact PAL-1

Implementation of Mitigation Measures PAL-1 through PAL-5 would mitigate Impact PAL-1 (see Section 3.13.11 below).

PAL-1 (Project Paleontologist) would identify the people who would implement all of the mitigation measures and ensure they have the appropriate qualifications.

PAL-2 (Paleontological Resource Impact Mitigation Program) would provide for the preparation and implementation of the mitigation program and address the details of all activities and would provide procedures that must be followed in order to reduce the impacts to paleontological resources.

PAL-3 (Paleontological Monitoring) would ensure that that an adequate number of qualified paleontological monitors are onsite to ensure all earth moving activities within the appropriate sediments are monitored.

PAL-4 (Paleontological Awareness Training) would ensure that a qualified paleontologist is hired to provide Awareness Training for all construction personnel and would specify the content of that training.

PAL 5 (Paleontological Monitoring Report Requirement) would establish reporting standards summarizing the results of monitoring and any post review fossil discovery situations.

Significance After Mitigation

This impact would be less than significant with implementation of mitigation.

3.13.6 Alternative 1: No Project Alternative

The paleontological impacts associated with the proposed Project, as presented in Section 3.13.6, would not occur under the No Project Alternative. There would be no direct or indirect impacts associated with the destruction of sensitive paleontological resources. Under the No Project Alternative, it is probable that other solar energy-related projects would be implemented within the site in lieu of the proposed Project because the demand for solar energy continues to increase and the site offers excellent solar potential. A different solar energy project would potentially result in similar impacts to paleontological resources as those identified for the proposed Project.

3.13.7 Alternative 2: Reduced Footprint Alternative

Under this alternative, approximately 387 acres of undisturbed land would be removed from overall Project site boundary and the alternative would generate 450 MW (compared with 500 MW with the proposed Project). The overall length of the gen-tie lines under the proposed Project and this alternative would be the same. Overall, the amount of proposed ground disturbance would be less than under the Proposed Project.

Therefore, the impacts for the Reduced Footprint Alternative for both the solar facility and gen-tie lines would be similar but less than under the proposed Project (as presented in Section 3.13.6). However, the Reduced Footprint Alternative would require identical mitigation measures to ensure impacts to paleontological resources would be reduced to less than significant levels.

3.13.8 Gen-Tie Segment #1 Alternative Route Option

The Gen-Tie Segment #1 Alternative Route Option would be approximately 0.65 miles longer than the proposed Gen-Tie Segment #1. There would be no change to the remaining segments of the gen-tie lines compared to the proposed Project. Overall, the amount of proposed ground disturbance would be slightly more than the Proposed Project. Therefore, the impacts for the Alternative Route Option for both the solar facility and gen-tie lines would be similar, but slightly greater than the proposed Project (as presented in Section 3.13.6). However, the Gen-Tie Segment #1 Alternative Route Option would require identical mitigation measures to ensure impacts to paleontological resources would be reduced to less than significant levels.

3.13.9 Cumulative Impacts

Geographic Scope

All projects in the cumulative scenario that would be located on the same geologic units within eastern Riverside County are considered within the geographic scope of analysis with respect to cumulative impacts on paleontological resources. This is because the ground disturbance caused by individual projects in the cumulative scenario, if not properly mitigated, could combine to cause a cumulative loss of scientific information through disturbance or destruction of potentially significant fossil resources. All projects listed in Section 3.1.2 could cause impacts that may combine.

Paleontological resources are non-renewable; any loss or physical damage to these resources is permanent. They would be subject to direct impacts primarily during Project construction; however, impacts could occur during any ground-disturbing activities during operation and maintenance and decommissioning. Projects in the cumulative scenario could affect paleontological resources regardless of their timing. For purposes of the cumulative analysis, the temporal impact scope is the life of the Project.

Cumulative Impact Analysis

Cumulative development in eastern Riverside County in the Desert Center region of Southern California has the potential to directly or indirectly destroy paleontological resources, particularly during earth moving activities such as grading and excavation in areas containing Quaternary alluvium, which contain a high potential for significant paleontological resources. In addition, collection of fossil materials, dislodging of fossils from their preserved environment, and/or physical damage of fossil specimens could also adversely affect paleontological resources. Together these potential direct and indirect impacts associated with development in the cumulative scenario could result in a cumulatively significant impact to paleontological resources.

Solar Facility and 220 kV Generation-Tie Line

As discussed above, there is a potential for paleontological resources on the Athos solar facilities and generation tie lines to be impacted during ground disturbing activities associated with the proposed Project (Impact PAL-1). However, with the implementation of Mitigation Measures PAL-1 through PAL-5, paleontological resource impacts would be reduced to a less than significant level. The proposed Project, as well as other development projects, would be required to provide mitigation for any impacts to paleontological resources in accordance with provisions of CEQA, as well as with regulations currently implemented by the County of Riverside and the proposed guidelines of the SVP. Therefore, the Athos Project incremental contribution to cumulative impacts for paleontological resources would not be cumulatively considerable based on the degree of protection afforded by these requirements.

Mitigation Measures for Cumulative Impacts

Implementation of Mitigation Measures PAL-1 through PAL-5 would address cumulative impacts for the Project (see Section 3.13.11 below).

Significance After Mitigation

The Project's incremental contribution to impacts to paleontological resources would not be cumulatively considerable with the implementation of mitigation.

3.13.10 Mitigation Measures

MM PAL-1 **Project Paleontologist.** Prior to issuance of grading permits the applicant shall retain a qualified paleontologist ("Project Paleontologist") approved by the County of Riverside to create and implement a Project-specific plan for monitoring site grading/earthmoving activities.

MM PAL-2 **Paleontological Resource Impact Mitigation Program.** Prior to issuance of grading permits the Project Paleontologist retained shall prepare a Paleontological Resource Impact Mitigation Program (PRIMP). The PRIMP shall be submitted to the Riverside County Geologist for review and approval prior to issuance of a grading permit by the county. The project Owner may consider the PRIMP approved if the County's Geologist does not respond within 60 days of submittal of the draft PRIMP. Information to be contained in the PRIMP, at a minimum and in addition to other industry standard and Society of Vertebrate Paleontology standards, are as follows:

- Description of the proposed site and planned grading operations.
- Description of the level of monitoring required for all earthmoving activities in the Project area.

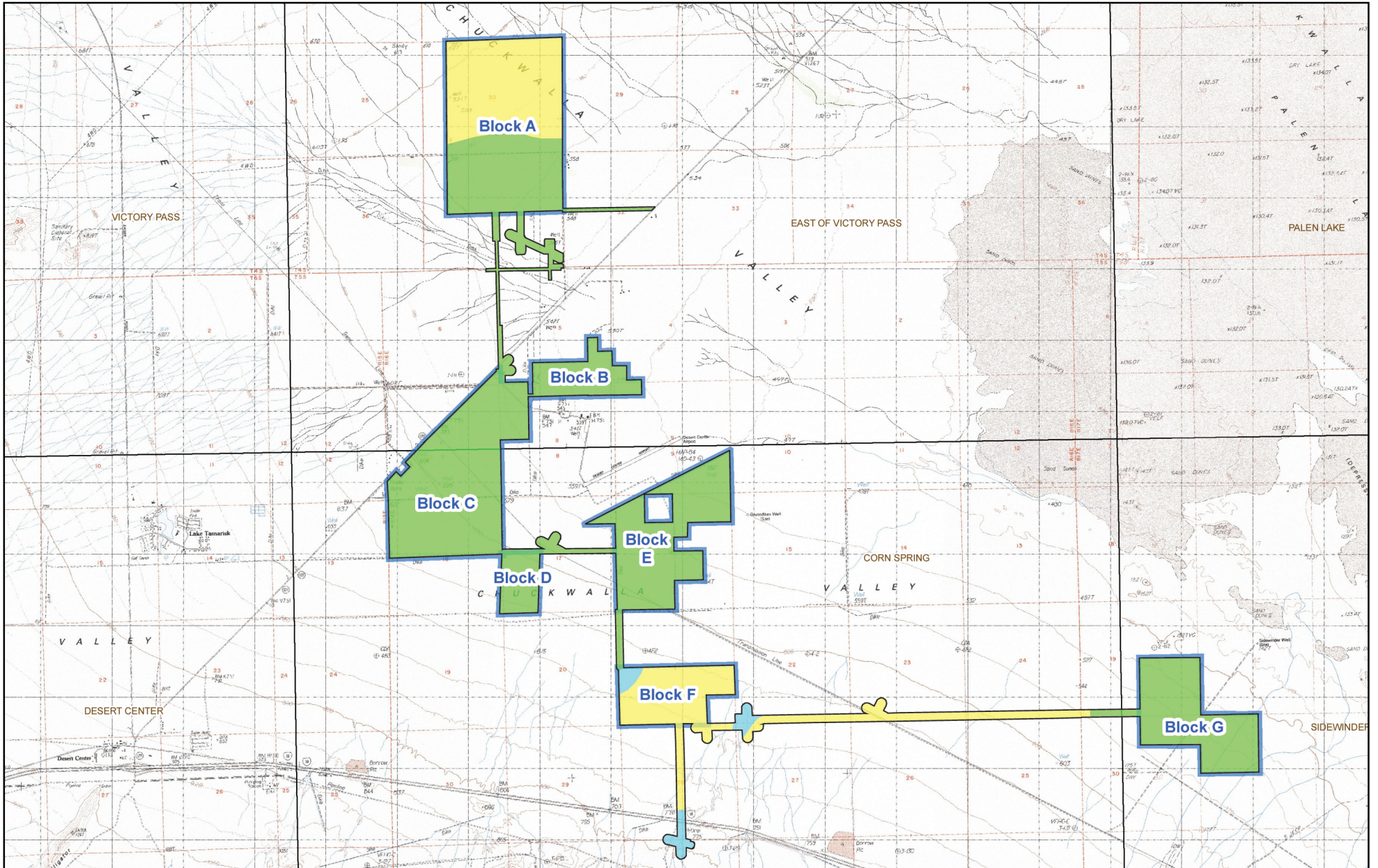
- Identification (name) and qualifications of the qualified paleontological monitor to be employed for grading operations monitoring.
- Identification of personnel with authority and responsibility to temporarily halt or divert grading equipment to allow for recovery of large specimens.
- Direction for any fossil discoveries to be immediately reported to the property owner who in turn will immediately notify the Riverside County Geologist of the discovery.
- Means and methods to be employed by the paleontological monitor to quickly salvage fossils as they are unearthed to avoid construction delays.
- Sampling of sediments that are likely to contain the remains of small fossil invertebrates and vertebrates.
- Procedures and protocol for collecting and processing of samples and specimens.
- Fossil identification and curation procedures to be employed.
- Identification of the permanent repository to receive any recovered fossil material. The County of Riverside must be consulted on the repository or museum to receive the fossil material and a written agreement between the property owner/developer and the repository must be in place prior to site grading.
- All pertinent exhibits, maps and references.
- Procedures for reporting of findings.
- Identification and acknowledgement of the developer for the content of the PRIMP as well as acceptance of financial responsibility for monitoring, reporting and curation fees.

MM PAL-3 Paleontological Monitoring. Full-time monitoring by a qualified paleontological monitor will take place during all ground disturbing activities in sediments classified as High or Undetermined sensitivity. The supervising paleontologist will have the authority to reduce monitoring once he/she determines the probability of encountering any additional fossils has dropped below an acceptable level.

MM PAL-4 Paleontological Awareness Training. Prior to ground disturbance, the developer/permit applicant shall enter into an agreement with the Project Paleontologist to provide Paleontological Awareness Training. A qualified paleontologist designated by the Project Paleontologist shall provide Paleontological Awareness Training for all construction personnel as a part of the Project's Worker Environmental Awareness Training. Training will include a brief review of the paleontological sensitivity of the Project and the surrounding area; what resources could potentially be identified during earthmoving activities; the protocols that apply in the event unanticipated paleontological resources are identified, including who to contact and appropriate avoidance measures until the find(s) can be properly evaluated; and any other appropriate protocols. This is a mandatory training and all construction personnel must attend prior to beginning work on the Project site. A copy of the agreement and a copy of the sign-in sheet shall be submitted to the County Paleontologist to ensure compliance with this condition of approval.

MM PAL-5 Paleontological Monitoring Report Requirement. The Applicant shall submit to the Riverside County Geologist one wet-signed copy of the Paleontological Monitoring Report prepared for site grading operations at the site. The report shall be certified by the professionally qualified Project Paleontologist responsible for the content of the report. The

Project Paleontologist must be on Riverside County's Paleontology Consultant List. The report shall contain a discussion of findings made during all site grading activities and an appended itemized list of fossil specimens recovered during grading (if any) and proof of accession of fossil materials into the pre-approved museum or other repository. In addition, all appropriate fossil location information shall be submitted to the Western Information Center, the San Bernardino County Museum and the Los Angeles County Museum of Natural History, at a minimum, for incorporation into their Regional Locality Inventories.



Source: xx, 2018.

Legend

- Solar Facility Block
- Project Area
- Paleontological Sensitivity**
- High B (Hb)
- Low
- Undetermined



0 3,000 6,000
Feet

Figure 3.13-1

Paleontological Sensitivity in the Project Area

3.14 Population and Housing

This section evaluates the impacts on population and housing resulting from implementation of the proposed Project. The analysis in this section: presents an overview of existing conditions that influence population and housing, describes the applicable regulations, identifies the criteria used for determining the significance of environmental impacts, and describes the potential impacts to population and housing from the proposed Project.

3.14.1 Environmental Setting

Population

The proposed Project area is in Riverside County, which is the fourth most populous county in California (CA DOF, 2018a). Table 3.14-1 provides a summary of the existing population, housing, and employment conditions for Desert Center, CA (the general location of the proposed Project) and Riverside County and San Bernardino County (counties where the construction workforce would largely be recruited).

Table 3.14-1. Year 2017 Existing Conditions – Population, Housing, and Employment: Desert Center, Riverside County, and San Bernardino County

Location	Population	Housing Units		Employment	
		Total Units	Vacancy Rate	Total Employed ¹	Unemployment Rate
Desert Center	189	213	71.8%	67	0%
Riverside County	2,415,955	840,904	13.2%	1,016,200	5.2%
San Bernardino County	2,174,938	719,911	10.5%	904,200	4.9%

1: Accounts for population greater than 16 years of age and in Labor Force.
Source: CA DOF, 2018a; CA EDD, 2018; U.S. Census Bureau 2018a, 2018b, and 2018c.

Population estimates, future projections, and average annual growth rates for Riverside County and San Bernardino County are summarized in Table 3.14-2. There was no data available for Desert Center regarding population projections, so it has not been included in Table 3.14-2. Populations from 2015 through 2045 are listed with an average annual growth number and rate for the communities within the study area. The population growth in both Riverside County and San Bernardino County are expected to increase slowly during the next three decades, with Riverside County projected to have a slightly higher annual growth rate than San Bernardino County.

Table 3.14-2. Population Estimates, Projections, and Average Annual Growth Rates

	Riverside County	San Bernardino County
Population, 2015	2,331,960	2,128,499
Projected Population, 2020	2,500,975	2,230,602
Average Annual Growth Rate, 2015-2020	1.45%	0.96%
Projected Population, 2025	2,686,242	2,352,322
Average Annual Growth Rate, 2020-2025	1.48%	1.09%
Projected Population, 2035	3,015,808	2,606,040
Average Annual Growth Rate, 2025-2035	1.23%	1.08%
Projected Population, 2045	3,262,467	2,829,159
Average Annual Growth Rate, 2035-2045	0.82%	0.86%

Source: CA DOF, 2018b.

Housing

The current occupied and vacant housing estimates are presented in Table 3.14-1 for communities and counties within the study area of Desert Center, Riverside County, and San Bernardino County. The vacancy rate of Desert Center is high with about 72% of the total housing units vacant. Riverside County and San Bernardino County have relatively low vacancy rates, with approximately 13% and 10% of the total housing units vacant, respectively.

3.14.2 Regulatory Framework

There are no federal, state or local regulations, plans, and standards for population and housing that apply to the proposed Project.

3.14.3 Methodology for Analysis

The regulations implementing CEQA state that economic or social factors of a project may be included in a CEQA document but shall not be treated as significant effects on the environment. However, economic or social effects of a project may be used to determine the significance of physical changes caused by the Project. Additionally, economic, social, and housing factors should be considered by public agencies together with technological and environmental factors in deciding whether changes in a project are feasible to reduce or avoid the significant effects on the environment.

To determine whether the proposed Project would induce population growth, the availability of the local workforce and population in the region was analyzed. It was assumed that most construction workers would be drawn from communities located within Riverside County and San Bernardino County, which have the largest concentration of construction workers in proximity to the proposed Project area. It is anticipated that most projected construction workforce would likely seek housing closer to the proposed Project area (within an hour driving distance) or seek temporary housing (such as seasonal, recreational, or occasional use housing; long-term visitor areas; and hotel and motels) during the week and commute an average 150 miles round trip per day and commute home over the weekend.

3.14.4 CEQA Significance Criteria

The significance criteria listed below are from the Environmental Checklist Form in Appendix G of the CEQA Guidelines. Under CEQA, the proposed Project and alternatives would have significant impacts on population and housing if they would result in:

- *Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure) (see Impact PH-1).*

The following additional significance criteria from the County of Riverside Environmental Assessment form are used in this analysis. A project could have potentially significant impacts if it would:

- *Cumulatively exceed official regional or local population projections (see Section 3.14.9, Cumulative Impacts)*

The following CEQA significance criteria from Appendix G were not included in the analysis:

- *Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere.*

There are several existing structures on the proposed solar facility parcels. These include two abandoned residential trailers, at least 6 vacant residential and related buildings, a cluster of small abandoned houses in rows, and two existing residences, as well as other primarily agricultural-related structures (see Appendix K, Section 5.2 for a full list of structures onsite). The Applicant may utilize one of these homes as an O&M building and others may be removed. However, the property owners of the solar facility parcels have voluntarily entered into option agreements with the Applicant for construction of the solar facility. Thus, any removal of structures would not be substantial, nor would it cause displacement necessitating construction of replacement housing elsewhere. The gen-tie corridor does not contain residential housing that would be displaced by the Project.

The following CEQA significance criteria from the County's Environmental Assessment Form were not included in the analysis:

- *Create a demand for additional housing, particularly housing affordable to households earning 80% or less of the County's median income.*

The proposed Project would not create a demand for additional housing due to the temporary nature of Project construction activities and the nominal workforce required during Project operation. During construction, workers would commute to the Project site from nearby communities in Riverside County and San Bernardino County.

- *Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere.*

Similar to the above, the proposed Project would not displace substantial existing housing or people due to the fact that minimal existing housing and other structures exist on the proposed solar facility parcels and all but a couple of the ones that do have been abandoned. As a result, the construction of replacement housing is not necessary. In addition, the Project workforce would be sourced locally, the proposed Project does not contain a residential component.

- *Affect a County Redevelopment Project Area.*

The proposed Project area and its immediate vicinity would not be within a County Redevelopment Project Area.

3.14.5 Proposed Project Impact Analysis

Issues raised during scoping related to Population and Housing include concerns about how many people would be involved in construction and where the construction workers will live and shop.

Impact PH-1. The Project could induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure).

Solar Facility

During the 30-month construction period of the proposed Project, the on-site workforce is expected to reach peak of approximately 530 individuals with an average construction-related on-site workforce of 320 individuals. The construction workforce would largely be recruited from within Riverside and San Bernardino Counties. Riverside County has the largest concentration of construction workers close to the Project area. It is anticipated that many workers are likely to engage in weekly commuting or otherwise temporarily relocate to the Desert Center region while working at the Project area.

In 2017, Desert Center's unemployment rate averaged 0 percent, Riverside County's unemployment rate averaged 5.2, and San Bernardino County's unemployment rate averaged 4.9 percent. Based on the most recent unemployment rates, it is anticipated that most construction, operation, and maintenance workforce would come from the existing labor pool in nearby communities in Riverside or San Bernardino Counties.

As illustrated in Table 3.14-1, Year 2017 Existing Conditions – Population, Housing, and Employment: Desert Center, Riverside County, and San Bernardino County, vacancy rates in the study areas are high, ranging from about 10 to 72 percent. Within the Desert Center area, there are approximately 153 vacant units. Riverside County as a whole has approximately 110,984 vacant units. There are sufficient vacant housing units within the local communities to support the number of construction workers to the extent that they are not drawn from local communities. The proposed Project would not trigger the need for new housing and would not induce substantial permanent growth to the regional population levels.

During operation of the proposed Project, up to 10 permanent staff could be on the site at any one time for ongoing facility maintenance and repairs. Alternatively, approximately 2 permanent staff and 8 Project operators would be located off-site and would be on call to respond to alerts generated by the monitoring equipment at the Project site. Security personnel would be on-call. These staff would also be sourced from nearby communities in Riverside County and San Bernardino County. The permanent staff are not anticipated to increase the local population and vacancy rates within the study area offer ample available housing to operational employees wishing to relocate within the local study area.

Decommissioning of the proposed Project would require removal of the solar equipment and facilities and transportation of all components off site. Decommissioning activities would require similar equipment and workforce as construction but would be substantially less intense.

Overall, the proposed Project's impact on population growth in the Project area and demand for additional housing from construction, operation, and decommissioning would be less than significant.

220 kV Generation-Tie Line

Similar to the solar facility, workers for the gen-tie line (a peak of up to 40 workers for a 6-month period) would be sourced from nearby communities in Riverside County and San Bernardino County. Given the unemployment and vacancy rates in the Desert Center area and Riverside County and San Bernardino County as a whole, any potential population growth in the Project area would either be temporary or insubstantial during construction and operation of the proposed Project and the existing vacant housing units would be sufficient to support the project; impacts would be less than significant.

Mitigation Measures for Impact PH-1

No mitigation would be required.

Significance After Mitigation

This impact would be less than significant.

3.14.6 Alternative 1: No Project Alternative

The No Project Alternative would not result in any new construction and/or operational activities or any new associated ground-disturbing activities (solar panel installation, substation and O&M building, and construction of access roads and gen-tie line). The No Project Alternative would not impact population growth or demand for additional housing in the Project area. Therefore, the No Project Alternative would

not have impacts to population and housing, while the proposed Project would have impacts that are less than significant to these resources. Under the No Project Alternative, it is probable that other solar energy-related projects would be implemented within the site in lieu of the proposed Project. A different solar energy project would potentially result in similar impacts to population and housing as those identified for the proposed Project.

3.14.7 Alternative 2: Reduced Footprint Alternative

Similar to the proposed Project, the Reduced Footprint Alternative would include the construction, operation, maintenance, and decommissioning of a solar facility and associated infrastructure, and associated interim population and housing-related actions. The Reduced Footprint Alternative would reduce the solar facility site by 387 acres by eliminating the development of two Parcel Groups D and F and would relocate Substation SS4 to a new location on Parcel Group E. Because the Reduced Footprint Alternative would be constructed on lands with the same population and housing characteristics as the proposed Project, the impacts would be the same as for the proposed Project but in a reduced area. The smaller footprint and ground disturbance would potentially result in slightly less impacts to population and housing in the Project area if the average or peak workforce is reduced due to the smaller footprint. The impacts would remain less than significant. There would be no change in impacts to the gen-tie line analysis.

3.14.8 Gen-Tie Segment #1 Alternative Route Option

Gen-Tie Segment #1 Alternative Route Option would be located east of the proposed Gen-Tie and would be approximately 0.65 miles longer than the proposed Gen-Tie Segment #1. There would be no change to the amount of solar infrastructure constructed and operated compared to the proposed Project. Because the Route Option is located in the same population and housing study area as the proposed Gen-Tie Segment #1 and would require a similar workforce, the impacts to population and housing from both the solar facility and gen-tie lines would be the same as for the proposed Project. The impacts remain less than significant.

3.14.9 Cumulative Impacts

The geographic scope of the cumulative impacts analysis includes populated areas within a two-hour worker commute distance of the proposed Project site near Desert Center, which would extend out into the rest of Riverside County and into San Bernardino County. This geographic scope would include all projects listed in Tables 3.1-1 and 3.1-2.

Solar Facility

Short-term cumulative impacts to population and housing would occur during the construction and decommissioning periods when overlapping construction schedules of multiple projects create a demand for workers that may not be met by the local labor force, thereby inducing in-migration of non-local labor and their households. Operational cumulative population and housing impacts could occur when multiple projects cause a substantial increase in population in an area that leads to demand for housing that exceeds available capacity.

Construction of the present and reasonably foreseeable future projects as shown in Tables 3.1-1 and 3.1-2 may overlap with construction of the proposed Project. Under the conservative assumption that peak construction periods overlap for all reasonably foreseeable projects there would be an increased demand for temporary housing units in the cumulative area. As discussed under Section 3.14.1, the

vacancy rates for housing units are moderately high (13%) and there are number of temporary housing options available as well. There is an ample supply of housing units to accommodate workers drawn from outside the two-hour commute area. Therefore, cumulative impacts in the cumulative scenario on housing are projected to be less than significant. The proposed Project would contribute an additional peak labor need of approximately 530 individuals. Given the availability of housing units, the incremental effects of the Project, when considered together with other past, present, and reasonably foreseeable future projects, would not result in a cumulatively significant impact.

220 kV Generation-Tie Line

Cumulative impacts of the gen-tie line would be the same as for the solar facility with regards to impacts to population and housing in the study area. The gen-tie line would not combine with the cumulative projects to result in a cumulatively considerable impact because any potential population growth in the Project area due to the construction and operation of the Project gen-tie line would either be temporary or insubstantial during construction and operation of the proposed gen-tie line.

Mitigation Measures for Cumulative Impacts

No mitigation would be required.

Significance After Mitigation

The Project's incremental contribution to impacts to population and housing would not be cumulatively considerable.

3.14.10 Mitigation Measures

No mitigation would be required.

3.15 Public Services and Utilities

This section evaluates the impacts on public services and utilities resulting from implementation of the proposed Project. The analysis in this section: presents an overview of existing conditions that influence public services and utilities, describes the applicable regulations, identifies the criteria used for determining the significance of environmental impacts, and describes the potential impacts on public services and utilities of the proposed Project.

3.15.1 Environmental Setting

Fire Protection

Riverside County Fire Department, in cooperation with California Department of Forestry and Fire Protection (CAL FIRE), provides fire and emergency services to residents of unincorporated areas of Riverside County (Riverside County Fire Department, 2018a). The closest Riverside County Fire Department/CAL FIRE station to the proposed Project location in the Desert Center area is Station 49 – Lake Tamarisk Station, located at 43880 Lake Tamarisk, Desert Center, about 3.5 miles southwest of the Project (Riverside County Fire Department, 2018b).

Police Protection

The Riverside County Sheriff's Department's Colorado River Station provides service to the unincorporated area from Red Cloud Road on the west, to the Arizona state line on the east, and county line to county line on the north and south, which includes the Desert Center area (Riverside County Sheriff-Coroner, 2018). The Colorado River Station is located at 260 North Spring Street, Blythe, CA (Riverside County Sheriff-Coroner, 2018), approximately 52 miles west of the proposed Project area.

The California Highway Patrol (CHP) is the primary law enforcement agency for State highways and roads. The CHP division covering highways within the Desert Center area is the Border Division. The California Highway Patrol Blythe Area serves the East Riverside County Region and is located at 430 South Broadway, Blythe, CA. This office patrols Interstate 10, State Route 78, and U.S. Route 95, as well as 500 miles of unincorporated Riverside County roadways (CHP, 2018).

Emergency Medical Services

The Palo Verde Hospital, located at 250 North 1st Street, Blythe, CA, is the closest hospital to the proposed Project area near Desert Center. It provides intensive care and radiology services as well as surgery. The hospital has 51 patient beds, consisting of 4 intensive care beds, 6 perinatal beds, and 41 medical-surgical beds (Palo Verde Hospital, 2018). It is located approximately 52 miles west of the proposed Project area.

Desert Regional Medical Center, located about 70 miles to the west of Desert Center at 1150 North Indian Canyon Drive in Palm Springs, CA, is the second closest hospital to the proposed Project area. The medical center is the only designated Level II trauma center in the Coachella Valley and is equipped with 385 beds. The facility includes tertiary acute care services, critical care services, and a skilled nursing unit (Desert Care Network, 2018).

Parks

There are no recreation facilities, developments, or specific recreational attractions on the Project site. However, the surrounding area offers multiple outdoor recreational opportunities, including off-highway

vehicle use, camping, rock hounding, and hiking. The Project is east of the Joshua Tree National Park and is near other recreational areas, such as the Palen-McCoy Wilderness Area and the Chuckwalla Mountains Wilderness Area. No local parks or Riverside County regional parks are in or near the vicinity of the Project area near Desert Center. (RPOSD, 2018)

See Section 3.16, Recreation, for more information about recreation resources near the Project area.

Schools

The Desert Center Unified School District serves the Desert Center area where the proposed Project is located. The closest school to the Project area is Eagle Mountain School, which serves kindergarten through eighth grade students (Desert Center Unified School District, 2018) and is located approximately 7 miles northwest of the Project area.

Libraries

The Riverside County Library System serves all Riverside County. The closest library branch to the proposed Project area is the Lake Tamarisk Branch located at 43-880 Tamarisk Drive, Desert Center, CA (Riverside County Library System, 2018), about 5 miles south of the Project area.

Solid Waste Services

The following Table 3.15-1 lists the capacities of the active landfills near the Desert Center area. The closest landfill to the Project area is the Desert Center Landfill, located approximately 3 miles west of Parcel Group A.

Table 3.15-1. Landfill Capacities

Landfill Name	Total Capacity (cu.yd.)	Remaining Capacity (cu.yd.)	Remaining Capacity (percent)	Maximum Throughput (tons/day)
Blythe Sanitary Landfill (Cease operation estimated 2047)	6,229,670	3,834,470	61.55	400
Desert Center Landfill (Cease operation estimated 2041)	115,341	35,714	40.0	60
Mecca Landfill II (Cease operation estimated 2098)	452,182	6,371	1.41	400

Sources: CalRecycle, 2018a, 2018b, 2018c.

Utilities

Water in the Desert Center area is primarily provided from well water or Riverside County Service Area 51. Wastewater is generally collected in septic tanks and are not transported and treated at a centralized treatment plant. Southern California Edison provides electricity to the Desert Center and surrounding areas (CEC, 2015). Southern California Gas provides natural gas to the area (CEC, 2017). Telecommunications are provided by AT&T, T-Mobile, Verizon, and Sprint (CPUC, 2018).

3.15.2 Regulatory Framework

There are no federal or local regulations, plans, and standards for public services and utilities that apply to the proposed Project.

State

2010 Strategic Fire Plan for California. The 2010 Strategic Fire Plan for California was developed in coordination with the State Board of Forestry and Fire Protection and CAL FIRE to reduce and prevent the impacts of fire in California. Goal 6 of the Plan sets objectives to determine the level of suppression resources (staffing and equipment) needed to protect private and public state resources. Specific objectives include, but are not limited to, maintaining an initial attack policy which prioritizes life, property, and natural resources; determining suppression resources allocation criteria; analyzing appropriate staffing levels and equipment needs in relation to the current and future conditions; increasing the number of CAL FIRE crews for fighting wildfires and other emergency response activities; maintaining cooperative agreements with local, state, and federal partners; and implementing new technologies to improve firefighter safety, where available (State Board of Forestry and Fire Protection). The standards outlined are applicable to the fire protection agency serving unincorporated Riverside County.

California Integrated Waste Management Act of 1989. Assembly Bill 939 codified the California Integrated Waste Management Act of 1989 in the Public Resources Code and established a hierarchy to help the California Integrated Waste Management Board (CIWMB) and local agencies implement three major priorities under the Integrated Waste Management Act: source reductions; recycling and composting; and environmentally safe transformation and land disposal. Waste diversion mandates are included under these priorities. The duties and responsibilities of the CIWMB have since been transferred to the California Department of Resources Recycling and Recovery (CalRecycle) after the abolishment of the CIWMB in 2010, but all other aspects of the Act remain unchanged.

The Act requires all local and county governments to adopt a waste reduction measure designed to manage and reduce the amount of solid waste sent to landfills. This Act established reduction goals of 25 percent by the year 1995 and 50 percent by the year 2000. Senate Bill 1016 (2007) streamlines the process of goal measurement related to Assembly Bill 939 by using a disposal-based indicator: the per capita disposal rate. The per capita disposal rate uses only two factors: the jurisdiction's population (employment can be considered in place of population in certain circumstances) and the jurisdiction's disposal as reported by disposal facilities. CalRecycle encourages reduction measures through the continued implementation of reduction measures, legislation, infrastructure, and support of local requirements for new developments to include areas for waste disposal and recycling on-site.

California Code of Regulations (Title 27). Title 27 (Environmental Protection) of the California Code of Regulations defines regulations and minimum standards for the treatment, storage, processing, and disposal of solid waste at disposal sites. The State Water Resources Control Board maintains and regulates compliance with Title 27 (Environmental Protection) of the California Code of Regulations by establishing waste and site classifications and waste management requirements for solid waste treatment, storage, or disposal in landfills, surface impoundments, waste piles, and land treatment units. The compliance of the proposed Project would be enforced by the Colorado River RWQCB Region 7 and the California Department of Resources Recycling and Recovery (CalRecycle) (formerly the California Integrated Waste Management Board). Compost facilities are regulated under CCR Title 14, Division 7, Chapter 3.1 Section 17850 through 17895, by CalRecycle. Permit requests, Reports of Waste Discharge, and Reports and Disposal Site Information are submitted to the RWQCB and CalRecycle, and are used by the two agencies to review, permit, and monitor these facilities.

3.15.3 Methodology for Analysis

This section considers the potential impact to and disruption of public services and utilities in the Desert Center area during Project construction and operation. Many public services and utilities would experi-

ence minor impacts. However, because of the potential need to disrupt services for extended periods of time during construction, some of the impacts may be moderate. The metrics used to compare alternatives would be the length of time required for construction of the different alternatives and whether that would result in a longer disruption time. If an alternative required a substantially longer construction timeframe than others or required substantially more services than others, this would also be used to compare impacts to public services.

3.15.4 CEQA Significance Criteria

The significance criteria listed below are from the Environmental Checklist Form in Appendix G of the CEQA Guidelines. Under CEQA, the proposed Project and alternatives would have significant impacts on public services and utilities if they would:

- *Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities; and/or result in the need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services, which include (see Impact PSU-1):*
 - *Fire Protection;*
 - *Police Protection;*
 - *Schools;*
 - *Parks; and*
 - *Other Public Facilities.*
- *Require or result in the relocation or construction of new or expanded water, wastewater treatment, or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental issues (see Impact PSU-2).*
- *Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years (see Impact PSU-3).*
- *Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals (see Impact PSU-4).*
- *Comply with federal, state, and local management and reduction statutes and regulations related to solid waste (see Impact PSU-4).*

The following additional significance criteria from the County of Riverside Environmental Assessment Form are used in the analysis. A project could have potentially significant impacts if it would:

- *Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities; and/or result in the need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services, which include (See Impact PSU-1):*
 - *Sheriff Services;*
 - *Libraries; or*
 - *Health Services.*

- *Not comply with federal, state and local statutes and regulations related to solid wastes including the County Integrated Waste Management Plan (CIWMP) (see Impact PSU-4).*

The following CEQA significance criteria from Appendix G were not included in the analysis:

- *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 not require a determination by a wastewater treatment provider regarding an adequate capacity to serve the Project's projected demand in addition to the provider's existing commitments during construction, operation, maintenance, and decommissioning because the Project would not be connected to a public sewer system.

The following CEQA significance criteria from the County's Environmental Assessment Form were not included in the analysis:

- *Result in construction of new facilities or the expansion of the existing following facilities:*
 - *Electricity;*
 - *Natural gas;*
 - *Communications systems;*
 - *Storm water drainage;*
 - *Street lighting;*
 - *Maintenance of public facilities, including roads; or*
 - *Other governmental services.*

The proposed Project would generate renewable energy that would have an overall beneficial effect on the electricity supply. The Project would not use any sources of natural gas. The Project would not require expansion of existing or new street lighting, storm water drainage, or other public facilities, including roads.

- *Conflict with any adopted energy conservation plans.*

The proposed Project would progress the goals of the California Renewable Portfolio Standard (RPS) and other similar renewable programs in the state. The Project operation would have an overall beneficial effect on the electricity supply to the grid and would help decrease reliance on coal power.

3.15.5 Proposed Project Impact Analysis

Issues raised during scoping related to Public Services and Utilities include concerns about trash and proper waste disposal in the Project area and concerns about water usage the solar facility would require.

Impact PSU-1. The Project would result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities; and/or result in the need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for public services.

Solar Facility and 220 kV Generation-Tie Line

Construction is anticipated to occur over a 30-month period and require an average construction-related on-site workforce of 320 individuals, with the peak workforce reaching approximately 530 individuals. Of the total workers, an average of approximately 20 individuals and a peak of 40 workers would be

associated with the gen-tie line construction. As discussed in Section 3.14, *Population and Housing*, it is anticipated that the construction workforce would be drawn from communities within Riverside County and San Bernardino County and would not induce substantial permanent growth to the regional population levels.

After the construction phase, up to 10 permanent staff could be on the site at any one time for ongoing facility maintenance and repairs. These 10 operation personnel would also come from local communities and would not contribute to a significant population increase.

Decommissioning is anticipated to require a workforce similar to or slightly less than that required for construction. The workforce would be drawn from communities within Riverside County and San Bernardino County and would not induce substantial permanent growth to the regional population level.

Fire Protection

The Project area is not within a designated area of very high or high fire hazard, according to the CAL FIRE Fire Hazard Severity Zones Map (Riverside County, 2015). In addition, no residential structures would be retained as residences or would be constructed as part of the proposed Project. An existing residential structure may be used as the O&M building and others may be removed.

During construction, there is the potential for both small fires and major structural fires. Electrical sparks, combustion of fuel oil, hydraulic fluid, mineral oil, or insulating fluid at substations, or flammable liquids, explosions, and over-heated equipment may cause small fires. The proposed Project would result in an increase in demand for fire protection services over existing levels during construction. The proposed Project would not cause population growth sufficient to generate a need for new or expanded fire protection facilities. Impacts would be less than significant, and no mitigation would be required.

The Fire Prevention Plan, developed as part of the BLM Plan of Development (POD) and reviewed by Riverside County Fire Department (RCFD), will identify potential hazards and accident scenarios that would exist at the facility during construction. The Fire Prevention Plan would decrease the risk of fires and include fire response measures that employees would implement before emergency responders arrive on-site.

Increases in long-term demand for fire protection services typically are associated with substantial permanent increases in population. Approximately 320 to 530 daily workers would be present on site during the 30-month construction period. As discussed in Section 3.14, *Population and Housing*, it is anticipated that the construction workforce will be drawn from communities within Riverside County and San Bernardino County, and therefore would not induce substantial growth even during the construction period such that the demand for fire protection services, aside from that mentioned for activities taking place at the construction project itself, would increase. After the construction phase, up to 10 permanent staff could be on the site at any one time for ongoing facility maintenance and repairs. These 10 operation personnel would not contribute to a significant population increase, resulting in an increase to the demand for fire protection services, or require new or altered facilities. Additionally, the proposed Project would include emergency access and other safety features and plans for fire protection, and impacts would be less than significant. Overall, the Project's impact to the RCFD's ability to maintain acceptable service ratios, response times, or other performance objectives relating to technical rescue services would be less than significant.

Police Protection and Sheriff Services

The temporary increase of construction workers could increase demands on police services. Although an addition of up to 530 construction personnel would alter the current protection service ratio, because

Project construction is not anticipated to permanently increase the local population, no new or expanded law enforcement facilities or increased staff levels within the Project regional or local study area would be required. In addition, during construction, on-site security would include trained, uniformed, and unarmed personnel whose primary responsibility would be to control ingress and egress of personnel and vehicles, perform fire and security watch during off hours, and perform security badge administration, all of which would minimize the potential need for assistance from the Riverside County Sheriff's Department or the CHP.

Construction of the proposed Project would generate truck and employee traffic along haul routes and at the Project area, which could temporarily increase the accident potential in these areas or affect response times or other service performance over the approximate 30-month construction period. The additional volume of traffic associated with workers commuting to the sites during construction would be temporary and it is anticipated that personnel and equipment from the Riverside County Sheriff's Department or the CHP would suffice to respond to incidents in the Project area. In addition, Project construction is not expected to adversely affect the CHP's ability to patrol the highways. Once operational, the Project area would include perimeter fencing, controlled access gates, and security cameras and lighting, which would minimize the potential need for the police assistance.

Overall, Project construction and operation would not result in the need for new or physically altered police or sheriff protection facilities to maintain acceptable service ratios, response times, or other performance objectives. Impacts would be less than significant.

Schools

As described above and in Section 3.14, *Population and Housing*, there are sufficient vacant housing units within the nearby communities to support the number of construction workers and the proposed Project would not trigger the need for new housing. Up to 10 permanent staff could be on the site at any one time for ongoing facility maintenance and repairs. These 10 operation personnel would come from the local labor force and would not contribute to a significant population increase. The Project would not displace populations or existing housing, and it would not necessitate construction of replacement housing elsewhere. Therefore, the temporary addition of construction workers and operation personnel to the Project area's population is not anticipated to increase school enrollment sufficiently to require new schools to be constructed or existing schools to be physically altered to allow for a Project-related increase in enrollment, where the physical alteration of the school could result in adverse environmental impacts. Impacts would be less than significant.

Parks

As discussed above, no local parks or Riverside County regional parks are in or near the vicinity of the Project area near Desert Center. The required construction workforce of the Project would be hired from the available regional workforce. There would be temporary in-migration that would increase the local population during construction; however, it would not warrant the need for new or expanded parks and recreational facilities within the Project regional or local study area. It is anticipated that some or most of the workforce would temporarily relocate to near the Project site and would commute home on the weekends so are unlikely to use the recreation facilities. Although some workers may use recreational areas during Project construction and operation, increased use would be minimal and/or temporary and would not contribute substantially to the physical deterioration of existing facilities. Less than significant impacts would occur. Park and other recreational facilities are discussed in detail in Section 3.16, *Recreation*.

Other Public Facilities

Health Services. The RCFD would provide first responder emergency medical care. The nearest RCFD fire stations are staffed full-time, 24 hours, 7 days a week, with a minimum three-person crew, including paramedics. Once a patient is transported, local area hospitals are available to provide emergency medical care.

While a high number of construction employees would be located on site, local area emergency medical facilities are expected to adequately handle any worksite accidents requiring their attention. Minor injuries could be treated at Palo Verde Hospital in Blythe. Injuries resulting in significant trauma would be treated at the Desert Regional Medical Center in Palm Springs. Project construction and operation would therefore not require new or physically altered hospital facilities or personnel or result in the increase in emergency responder staff levels within the Project regional or local study area; impacts would be less than significant.

Libraries. Consistent with the impacts previously discussed for other public facilities, although Project construction would temporarily increase the number of people with the Palo Verde Valley, it would not substantially increase the population. The permanent addition of 10 full-time staff and the operation- and maintenance-related demands of the Project would also not substantially increase the population. New or expanded library facilities within the area are not required and impacts would be less than significant.

Mitigation Measures for Impact PSU-1

No mitigation would be required.

Significance After Mitigation

This impact would be less than significant.

Impact PSU-2. The Project would require or result in the relocation or construction of new or expanded water, wastewater treatment, storm water drainage, electric power, natural gas, or telecommunications facilities, which could cause significant environmental effects.

Solar Facility and 220 kV Generation-Tie Line

The Project would not require or result in the relocation or construction of new water, wastewater treatment, or natural gas facilities during construction, operation, maintenance, and decommissioning because the Project would not be connected to a public sewer system and would not use natural gas.

The Project would construct a new electric solar power facility that includes a SCADA and telecommunications system. The construction of the Project would cause significant environmental effects as described in detail in Sections 3.2 through 3.18 of this Environmental Impact Report. The EIR includes mitigation measures to reduce the effects to the extent feasible and complies with CEQA.

Construction of the proposed Project would require ground-disturbing activities, including solar array installation, substation and O&M building construction, construction of access roads, and construction of the gen-tie line. Since most of the site has nearly level to gently sloping topography, no mass grading would be required; however, much of the solar facility would be impacted by some form of ground disturbance, either from compaction, micro-grading, or disc-and-roll grading. Grading could alter naturally occurring drainage patterns and result in soil erosion, sedimentation, long-term siltation, and increased storm water runoff. Vegetation removal for road clearance and construction areas decrease the ability of the soil to absorb water, which also increases storm water runoff from such disturbed areas.

Most of the original grades and natural drainage features at the Project area would be maintained and no added storm drainage control would be required. As part of the Project, a Storm water Pollution Prevention Plan (SWPPP) or SWPPP equivalent document would be prepared by a qualified engineer or erosion control specialist and would be implemented before and during construction. The SWPPP would be designed to reduce potential impacts from storm water runoff and existing drainage patterns. In addition, the SWPPP would include best management practices (BMP). The BMPs would include storm water runoff quality control measures, concrete waste management, storm water detention, watering for dust control, and construction of perimeter silt fences, as needed. The SWPPP and associated BMPs are not considered to be a mitigation measure for PSU-2. However, it nevertheless ensures that the proposed Project would not 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, and impacts would be less than significant.

Mitigation Measures for Impact PSU-2

No mitigation would be required.

Significance After Mitigation

This impact would be less than significant.

Impact PSU-3. The Project would have insufficient water supplies available to serve the Project and reasonably foreseeable future development during normal, dry and multiple dry years.

Solar Facility and 220 kV Generation-Tie Line

During the construction phase of both the solar facility and generation-tie line, it is anticipated that a total of up to 500 acre-feet would be used over the 30-month construction timeframe for dust suppression, truck wheel washing, and other purposes. Restroom facilities for the construction workforce would be provided by portable units to be serviced by licensed providers. During operation, water would be required for panel washing and maintenance and for substation restroom facilities. The proposed Project would require water for panel washing up to four times per year and other uses resulting in the use of approximately 15 to 40 acre-feet annually. Water used during panel washing would be absorbed into the surrounding soil or would evaporate. Water would also be used for fire safety and the implementation of BMPs and mitigation measures.

Water for construction and operations would be obtained from several potential sources, including an on-site or off-site groundwater well or trucked from an offsite water purveyor, all of which would tap into the Chuckwalla Valley Groundwater Basin. The estimated volumes of water use would be nominal in comparison to the estimated Groundwater Basin surplus (See Section 3.10, *Hydrology and Water Quality*, for detailed discussion of groundwater resources in the Project area including for cumulative groundwater use). Construction and operation along with future foreseeable development water use would not significantly impact water supply availability in the area. Impacts would be less than significant.

Mitigation Measures for Impact PSU-3

No mitigation would be required.

Significance After Mitigation

This impact would be less than significant.

Impact PSU-4. The Project would generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals.

Solar Facility and 220 kV Generation-Tie Line

The Project would generate solid waste during construction, operation, maintenance, and decommissioning. Riverside County must comply with the California Green Building Standards Code which includes mandatory recycling. Section 5.408 of the Code requires that 65 percent of the nonhazardous waste be recycled or salvaged for reuse. Section 5.408.3 (Excavated soil and land clearing debris) requires that 100 percent of trees, stumps, rocks, and associated vegetation and soils resulting from land clearing shall be reused or recycled.

The Project site consists of relatively flat topography. All required cut and fill soils associated with construction-related grading activities is anticipated to be approximately balanced; minimal import and export (to a landfill) would be necessary. Construction materials would be sorted on-site throughout construction and transported to appropriate waste management facilities. Recyclable materials would be separated from non-recyclable items and stored until they could be transported to a designated recycling facility. It is anticipated that at least 20 percent of construction waste would be recyclable, and 50 percent of those materials would be recycled. Additionally, wooden construction waste (such as wood from wood pallets) would be sold, recycled, or chipped and composted. The date palm trees removed on the solar facility site may be mulched and spread across the project site, and other compostable materials, such as vegetation, might be composted off-site. Non-hazardous construction materials that cannot be reused or recycled would likely be disposed of at the municipal county landfills. Hazardous waste and electronic waste would not be placed in a landfill, but rather would be transported to a hazardous waste handling facility (e.g., electronic-waste recycling). All contractors and workers would be educated about waste sorting, appropriate recycling storage areas, and how to reduce landfill waste.

Non-hazardous waste generated during Project operations would be limited to office uses associated with the proposed O&M building and include paper, aluminum, food, and plastic and would be managed similarly to during construction with non-hazardous items being recycled where possible or otherwise disposed of at the municipal county landfills.

The closest landfill to the Project area is the Desert Center Sanitary Landfill, with a remaining capacity of 35,714 cubic yards. It is estimated to operate until year 2041 (CalRecycle, 2018b). The other nearest landfill: Blythe Sanitary Landfill has over 3.8 million cubic yards remaining. The Project would comply with applicable federal, State, and local regulations related to solid waste and sufficient capacity is anticipated at the three nearest waste disposal sites. Overall, impacts related to solid waste would be less than significant and no mitigation would be required.

Mitigation Measures for Impact PSU-4

No mitigation would be required.

Significance After Mitigation

This impact would be less than significant.

3.15.6 Alternative 1: No Project Alternative

The No Project Alternative would not result in any new construction and/or operational activities or any new associated ground-disturbing activities (solar panel installation, substation and O&M building, and construction of access roads and gen-tie line). The No Project Alternative would not impact population

growth or demand for additional housing in the Project area and therefore would not put any strain on the availability and performance of government facilities, including fire protection, police protection, schools, parks, medical facilities, and libraries. In addition, the No Project Alternative would not require new storm water drainage facilities or expansion of existing facilities. There is water supply and landfill capacity for wastes. The No Project Alternative would not have impacts to public services and utilities, while the proposed Project would have impacts to these resources that are less than significant. Under the No Project Alternative, it is probable that other solar energy-related projects would be implemented within the site in lieu of the proposed Project. A different solar energy project would potentially result in similar impacts to public services and utilities as those identified for the proposed Project.

3.15.7 Alternative 2: Reduced Footprint Alternative

Similar to the proposed Project, the Reduced Footprint Alternative would include the construction, operation, maintenance, and decommissioning of a solar facility and associated infrastructure, and associated interim public services and utilities-related actions. The Reduced Footprint Alternative would reduce the solar facility site by 387 acres by eliminating the development of two Parcel Groups D and F and would relocate Substation SS4 to a new location on Parcel Group E. Because the Reduced Footprint Alternative would be constructed on lands within the same public service and utilities jurisdictions as the proposed Project, the impacts would be the similar as with the proposed Project but in a reduced area. This may result in slightly less construction waste depending on the final amount of development for the alternative. The smaller footprint and ground disturbance would potentially result in slightly less impacts to public services and utilities in the Project area if the workforce is reduced due to the smaller footprint. The impacts would remain less than significant. There would be no change in impacts to the gen-tie line analysis.

3.15.8 Gen-Tie Segment #1 Alternative Route Option

Gen-Tie Segment #1 Alternative Route Option would be located east of the proposed Gen-Tie and would be approximately 0.65 miles longer than the proposed Gen-Tie Segment #1. There would be no change to the amount of solar infrastructure constructed and operated compared to the proposed Project. Because the Route Option is in the same public service and utilities jurisdictions as the proposed Gen-Tie Segment #1 and would require a similar workforce and construction materials and therefore waste, the impacts to public services and utilities from both the solar facility and gen-tie lines would be the same as for the proposed Project. The impacts remain less than significant.

3.15.9 Cumulative Impacts

The geographic scope of the cumulative impacts analysis includes the service areas of each of the providers serving the proposed Project. This geographic scope would include all projects listed in Tables 3.1-1 and 3.1-2. The proposed Project and other projects in the cumulative scenario, together, could increase demand for public services and utilities in eastern Riverside County due to increases in workers within the area during construction; this could result in a significant cumulative impact to public services and utilities.

Solar Facility

Fire Protection, Law Enforcement, and Health Services

Construction of present and reasonably foreseeable future projects may overlap with construction of the Project. The other present and reasonably foreseeable cumulative projects that fall within the geo-

graphic scope for fire and law enforcement services are primarily made up of energy projects, including utility-scale solar and transmission projects. The greatest potential for fires and fire hazards would exist at these sites during construction because the on-site workforce would be at its peak, which would create human presence-related hazards, including with the variety of equipment used that could create sparks or other potential fire hazards. The combined effects of the increased cumulative demand for fire, law enforcement, and emergency medical services from the cumulative projects within the geographic scope of analysis could result in a cumulatively significant impact. The implementation of Project-specific Fire Prevention Plan would reduce the Project-related demand for fire, law enforcement, and emergency medical services from construction, such that the residual demand would not exceed established service ratios or require new or physically altered facilities, the construction of which could cause environmental impacts. The incremental effects of the Project would therefore be reduced to less than cumulatively considerable. The incremental effects of the proposed Project from up to 10 permanent staff during operations would also not be cumulatively considerable because the very low number of workers would also not lead to the exceedance of established service ratios or require new or physically altered facilities.

Cumulative operational and maintenance-related impacts to public services including fire, hazardous materials handling, and medical resources and facilities related to the Project would be less than related demands during construction and would not be cumulatively significant due to the low number of employees required to support projects in the cumulative scenario. No significant cumulative effect would result.

At the end of the 40-year operational period of the proposed Project, the Athos components would be decommissioned and deconstructed; the site would be restored to its pre-solar facility conditions and made available for agricultural use. Similar to construction (but to a lesser degree), the greatest potential need for public services would be associated with fire hazards. Fire hazards would be greatest during this time because the on-site workforce would be at its peak which could create a potential demand for fire and police services. Under cumulative conditions, implementation of the Project in the context of past projects and in conjunction with development of projects listed in Tables 3.1-1 and 3.1-2 are not anticipated to cause a demand on public services or utilities such that the construction of new or physical alteration of existing facilities would be required because the payment of development fees now and into the future is expected to substantially offset the public service-related demands of currently proposed and reasonably foreseeable future projects. Therefore, no significant adverse cumulative impact would result.

Schools and Libraries

Due to the temporary nature of construction, it is not likely that any of the workers and their families for any of the cumulative projects would relocate to the area. Any potential impact to school and libraries from the minimal number of operations personnel for each solar project would be negligible especially as the workers would be sourced from local communities and would likely commute. There would be no significant cumulative impact to schools or public libraries.

Utilities

Cumulative operational impacts to utilities would not be cumulatively considerable. The proposed Project would utilize an on-site or off-site groundwater well or water trucked from an offsite water purveyor and would not generate wastewater. There is no potential for the Project to contribute to cumulative impacts to water or wastewater systems. In addition, due to the existing and remaining capacity at existing landfills, the Project's incremental solid waste-related impact during construction and operation, when combined with the contributions of past, other present, and reasonably foreseeable future projects would not be cumulatively significant.

220 kV Generation-Tie Line

Cumulative impacts of the gen-tie line would be the same as for the solar facility with regards to impacts to public services and utilities in the study area. The gen-tie line would not combine with the cumulative projects to result in a cumulatively considerable impact because the incremental impacts to public services and utilities due to the construction and operation of the Project gen-tie line would either be temporary or insubstantial during construction and operation of the proposed gen-tie line.

Mitigation Measures for Cumulative Impacts

No mitigation would be required.

Significance After Mitigation

The Project's incremental contribution to impacts to public services and utilities would not be cumulatively considerable.

3.15.10 Mitigation Measures

No mitigation measures are required.

3.16 Recreation

This section describes the environmental setting and regulatory framework for recreational resources near the proposed Project. The study area for the recreation includes recreational areas and opportunities within 20 miles of the Project site. This is an appropriate study area for recreation because it captures all major recreation resources that contribute to baseline conditions and could be affected by activities related to the Project.

3.16.1 Environmental Setting

The Project area is in eastern Riverside County surrounded primarily by BLM land with some scattered rural residences and farms. The nearest BLM land is identified as a DFA in the DRECP Land Use Plan Amendment, which is an area suitable for renewable development. The BLM land has traditionally been used for a range of recreation activities such as hiking, horseback riding, rockhounding, noncompetitive vehicle touring, and other events on “designated open” routes of travel. Additionally, the Project is near the Joshua Tree National Park.

Regional Recreation Areas and Opportunities

The Project is in the Desert Center area in the Chuckwalla Valley. Desert Center has no community parks and there are no regional or State parks in the Chuckwalla Valley. Lake Tamarisk, located 2 miles north of Desert Center, is a 55 member-owned community for active seniors with 150 mobile homes spaces, mobile home rentals, dry campground, heated pool and club house. The Chuckwalla Valley Raceway is located south of Parcel Group B and north of Parcel Group E on private land. It was built in 2010 on over 1,100 acres, and has a 17-turn, 2.68-mile track for beginner to experienced racers. It also includes an area for camping and has 40 cabins.

The BLM administers wilderness areas; campgrounds, including long-term visitor areas; trails; interpretive sites; and an extensive network of backcountry approved travel and off-highway vehicle (OHV) routes near the Project. Areas of Critical Environmental Concern (ACECs) and wilderness provide dispersed recreation opportunities in the region. In general, recreation use on BLM lands in the California desert is limited to the cooler months of September through May, with little use in the summer.

In 2017, the BLM received three special recreation permit requests for commercial OHV tours to the Palen Dunes ACEC using a BLM-designated route (DC950) that is approximately 1 mile from Parcel Group G. Camping or backpacking is not common. According to the BLM Recreation Management Information System (RMiS) Report 23(c), between October 1, 2015 and September 30, 2016, the total Visitor Days for Eastern Riverside County Recreation Management Area is 842,319; of which Corn Springs campground (approximately 6 miles south of the Project) is 6,896 and dispersed use — Eastern Riverside County is 775,200. The most attractive recreational area is Joshua Tree National Park, with the closest boundary less than one mile north of Parcel Group A. The main recreational users of the Project Area and vicinity are local residents from Desert Center and Blythe, or visitors stopping for short periods while traveling along I-10 (BLM, 2018).

Recreation areas within 20 miles of the Project site are identified in Table 3.16-1 and discussed below. This information was adapted from the Palen Solar Project environmental review (BLM, 2018).

Table 3.16-1. Recreation Areas and Special Designations with Recreational Opportunities

Recreation Area	Direction from Project Site	Distance from Project Site (miles)	Approximate Size (acres)	Status
Chuckwalla Special Recreation Management Area	south	0.1 (from Gen-tie Seg. #1) 1.25 (from Parcel Group F)	228,480	Designated in the DRECP
Palen-Ford Playa Dunes ACEC	north, east, and south	0.5 (from Parcel Group G)	41,370	Designated in the DRECP
Chuckwalla Desert Wildlife Management Area ACEC	south	Crossed by Gen-tie Segment #4 1.25 (from Parcel Group F)	514,400	Expanded under the DRECP
Palen Dry Lake ACEC	southeast	4.3 (from Parcel Group G)	3,630	Designated
Chuckwalla Mountains Wilderness	south	1.5 (from Gen-tie Seg. #4)	99,550	Designated
Palen-McCoy Wilderness	northeast	3.15 (from Parcel Group G)	236,490	Designated
Corn Springs ACEC	southwest	4.5 (from Gen-tie Seg. #4)	2,470	Designated
Alligator Rock ACEC	west	5 (from Gen-tie Seg. #4)	7,750	Designated
Desert Lily Preserve ACEC	northwest	1.2 (from Parcel Group A)	2,060	Designated
Joshua Tree National Park	northwest	0.8 (from Parcel Group A)	1,017,750	Designated
Joshua Tree Wilderness	northwest	0.8 (from Parcel Group A)	549,500	Designated
Little Chuckwalla Mountains Wilderness	southeast	17 (from Parcel Group G)	28,030	Designated
Chuckwalla Valley Dune Thicket ACEC	southeast	15.5 (from Gen-tie Seg. #4)	2,270	Designated
Corn Springs Campground	southwest	6.5 (from Gen-tie Seg. #4)	9 camping units	Designated
Bradshaw Trail Back Country Byway	south	17 (from Gen-tie Seg. #4)	65 miles	Designated

Source: BLM, 2018.

Joshua Tree National Park

The National Park Service administers the Joshua Tree National Park (Park). The southeast end of the Park is located about 0.8 miles northeast of Parcel Group A. The Park comprises 1,017,748 acres, mostly federally administered, and is used for hiking, mountain biking and rock climbing, and includes nine campgrounds. Other recreational opportunities within the Park include wildflower viewing and bird-watching. The eastern part of the park, closest to the Project, contain dark skies with little light pollution that draw stargazers and amateur astronomers and the Park has applied to be designated as a “dark Sky Park” by the International Dark Sky Association. The Park is open year-round, with peak visitation occurring in April. Over 2 million people visited the Park in 2015 (NPS, 2016).

Wilderness Areas

The Wilderness Act limits recreation on wilderness lands to those that are primitive and unconfined, depend on a wilderness setting, and do not degrade the wilderness character of the area. Motorized or mechanized vehicles or equipment for recreational purposes are not permitted in wilderness (916 USC 1133(c)). The BLM regulates such recreation on lands within its jurisdiction in accordance with the policies, procedures and technologies set forth in the Code of Federal Regulations (43 CFR 6300), BLM Manual 6340 (*Management of Designated Wilderness Areas*), and BLM’s Principles for Wilderness Management in the California Desert.

Four wilderness areas are located within 20 miles of the Project site: the Chuckwalla Mountains Wilderness, Palen-McCoy Wilderness, Joshua Tree Wilderness, and Little Chuckwalla Mountains Wilderness.

They have no developed trails, parking/trailheads, or other visitor use facilities. These areas are generally steep, rugged mountains, with no permanent natural water sources, thus limiting extensive hiking or backpacking opportunities. Visitor use within the wilderness areas is very light although the BLM has no visitor use counts. Five nearby mountain peaks are occasionally used by the Desert Peaks Section of the Sierra Club's Angeles Chapter (BLM, 2018). None of the peaks directly overlook the Project site, although the site may be visible from certain peaks, depending on elevation and topography.

Observations by staff and Law Enforcement Rangers indicate only 100 to 200 hikers per year within all the wilderness areas near the Project site. More popular is vehicle camping along roads that are adjacent to the wilderness areas. RV camping near wilderness areas, with associated hiking, OHV use, photography, sightseeing, etc., accounts for up to 2,000 visitors per year (BLM, 2018).

Areas of Critical Environmental Concern

Seven ACECs are located near the Project site: Chuckwalla Desert Wildlife Management Area ACEC, Palen Dry Lake ACEC, Corn Springs ACEC, Alligator Rock ACEC, Desert Lily Preserve ACEC, and Chuckwalla Valley Dune Thicket ACEC. The Palen-Ford Playa Dunes ACEC was most recently designated in the DRECP. Recreation activities allowed in ACECs are determined by the resources and values for which the ACECs were established, and by the associated ACEC Management Plan. Most ACECs allow low-intensity recreation that is compatible with protection of the relevant values (BLM, 2015).

The Alligator Rock ACEC and the Corn Springs ACEC primarily protect cultural resources. The Chuckwalla Desert Wildlife Management Area (DWMA) and Desert Lily ACEC protect sensitive wildlife and plant species, while Chuckwalla Valley Dune Thicket and Palen Dry Lake ACECs protect both natural and cultural resources. The Palen-Ford Playa Dunes ACEC maintains the integrity of essential fringe-toed lizard habitat and essential ecological processes. Only the Corn Springs and the Palen-Ford Playa Dunes ACECs have recreation use facilities; however, they are signed to inform visitors of the special values of the areas and associated protection measures. Between October 1, 2015 and September 30, 2016, the Corn Springs Campground received 5,546 visits, the Desert Lily Preserve received 1,320 visits, and eastern Riverside County received over 1.29 million visits (BLM, 2018). [The Palen-Ford ACEC overlaps with the Chuckwalla Special Recreation Management Area (SRMA) (BLM, 2015)].

Long Term Visitor Areas

The BLM manages seven Long Term Visitor Areas (LTVA's), where camping is available from September 15 to April 15. A seasonal individual special recreation permit is required allowing visitors to stay in any of the six LTVAs in California or two LTVAs in Arizona: Imperial Dam LTVA near Yuma and La Posa LTVA near Quartzsite. In California, camping is allowed in the LTVA between April 16th – September 14th at no cost with the standard 14-day camping limit. Mule Mountains LTVA is 2,805 acres, an estimated 33 miles east of Parcel Group G, and includes the Wiley's Well and Coon Hollow campgrounds. Mule Mountains LTVA received 20,537 visits in 2015-2016 (BLM, 2018). Midland LTVA is 135 acres, an estimated 45 miles east of the Project site, and received 17,964 visits in 2015-2016 (BLM, 2018).

Special Recreation Management Areas

A SRMA is an administrative unit where the existing or proposed recreation opportunities and recreation setting characteristics are recognized for their unique value, importance, or distinctiveness, especially compared to other areas used for recreation. SRMAs are units of public land identified for directing available recreation funding and personnel to specific, structured recreation opportunities. They are managed to protect and enhance a targeted set of activities, experiences, benefits, and desired recreation.

The DRECP LUPA has designated one SRMA less than 1,000 feet south of the Project site on the south side of the I-10, the Chuckwalla SRMA. This area is to provide opportunities for area residents, visitors, and commercial recreation providers to engage in motorized and non-motorized recreation activities that are compatible with recovery efforts for the desert tortoise and other resource values. The primary activities for the Chuckwalla SRMA are motorized recreation touring and other recreational activities that rely on motorized vehicles to access public lands.

The Bradshaw Trail

The Bradshaw Trail is a 70-mile Back Country Byway in southeastern Riverside County, with a small segment in Imperial County. This east-west trail is located about 17 miles south of the Project site and extends from about 12 miles east of the community of North Shore near the Salton Sea State Recreation Area to about 14 miles southwest of Blythe near the Colorado River.

The Bradshaw Trail was the first road through Riverside County, blazed by William Bradshaw in 1862 as an overland stage route beginning in San Bernardino, California, and ending at Ehrenberg, Arizona. The trail was used extensively between 1862 and 1877 to transport miners and passengers. The trail is a dirt road that traverses mostly public land between the Chuckwalla Mountains and the Chocolate Mountain Aerial Gunnery Range. Four-wheel-drive vehicles are recommended due to stretches of soft sand. Recreational opportunities along the Bradshaw Trail include four-wheel driving, wildlife viewing, plant viewing, birdwatching, and scenic drives. All commercial activities require a land use or special recreation permit from the BLM. Fourteen-day camping limits apply on public lands.

Off-highway Vehicle Routes

The CDCA Plan and NECO Plan Amendment state that vehicle access is among the most important recreation issues in the desert. A primary consideration of the recreation program is to ensure that access routes necessary for recreation enjoyment are provided. Under the CDCA Plan, as amended, BLM-administered public lands within the CDCA are designated as Open, Limited or Closed. Within open areas, motorized vehicles may travel anywhere; in closed areas, such travel is prohibited. There are no BLM-designated open OHV areas in Riverside County. In limited areas, motorized-vehicle access is allowed only on certain routes of travel, defined to include roads, ways, trails, and washes. The DRECP LUPA does not change the status of the routes within the Project area (BLM, 2015).

The BLM defines OHV routes as follows (BLM, 2018):

- *Open Route:* Access by all types of motorized vehicles is allowed generally without restriction.
- *Limited Route:* Access by motorized vehicles is allowed, subject to limitations on the number and types of vehicles allowed and restrictions on time or season and speed limits.
- *Closed Route:* Access by motorized vehicles is prohibited except for certain official, emergency, or otherwise authorized vehicles.

A route has high significance if it provides access to other routes, historical sites, or recreational areas such as the backcountry driving, photography, camping, rock hounding and hiking opportunities in eastern Riverside County.

The Desert Center region has several OHV open routes. The BLM has no traffic counters or other means to determine accurate usership numbers of routes in the vicinity of the Project. Observations by BLM staff and Law Enforcement Rangers report that use is relatively low on routes within the vicinity of the Project site, not exceeding 300 visits per year (BLM, 2018). Recreation and vehicle use generally is limited to the cooler months of September through May. Use is nearly non-existent during the summer.

Washes Open Zones

Under the NECO Plan, all MUC-M areas are considered “washes open zones” unless specifically designated limited or closed. The use of washes within “washes open zones” is restricted to those considered “navigable,” unless it is determined that vehicle use must be further limited. Navigable washes in “washes open zones” are designated “open” as a class, that is, washes are not individually designated unless they are identified as specific routes in the NECO route inventory. In this context, the term “wash” is defined as a watercourse, either dry or with running or standing water, which by its physical nature, width, soil, slope, topography, vegetative cover, etc., permits the passage of motorized vehicles, thereby establishing its navigability (BLM, 2018).

The BLM has not inventoried or analyzed specific washes in the Project area as to their navigability, but by the above definition, all or portions of washes in the Desert Center area may be considered navigable. As is the case with designated routes, the BLM has no means to determine accurate use of “open wash zones” in the vicinity of the Project.

Solar Facility

None of the existing solar facility sites is used for recreation as they are all previously farmed parcels or undeveloped desert. However, much of the surrounding area is used for recreation as described above.

OHV routes cannot be officially designated on private land, but some routes cross private land and may be used by recreationists. BLM Route DC 507 crosses Parcel Group E; BLM Route DC 502 crosses Parcel Group G, and BLM Route DC 511 crosses Parcel Groups C and E and is also a utility access road.

220 kV Generation-Tie Line

Most of the gen-tie line is located on private land and BLM land designated as a DFA (meaning not designated for recreation). South of the I-10, approximately 0.15 miles of Gen-tie Segment #4 cross the Chuckwalla ACEC and the Chuckwalla SRMA within an existing utility corridor. Much of the surrounding area is used for recreation as described above, but these activities already coexist with other transmission line facilities.

Gen-tie Segment #2 crosses BLM Routes DC 511, DC 378 and 379 and Gen-tie Segment #3 follows BLM Route DC 379 and crosses Route DC 511.

3.16.2 Regulatory Framework

Federal

Wilderness Act of 1964. The Wilderness Act, signed into law in 1964, created the National Wilderness Preservation System and defined wilderness as “an area of undeveloped Federal land retaining its primeval character and influence without permanent improvements or human habitation, which is protected and managed so as to preserve its natural conditions....”

Designated wilderness is the highest level of conservation protection for federal lands. Only Congress may designate wilderness or change the status of wilderness areas. Wilderness areas are designated within existing federal public land. Congress has directed four federal land management agencies — U.S. Forest Service, Bureau of Land Management, U.S. Fish and Wildlife Service, and National Park Service — to manage wilderness areas to preserve and, where possible, to restore their wilderness character.

The Wilderness Act prohibits permanent roads and commercial enterprises, except commercial services that may provide for recreational or other purposes of the Wilderness Act. Wilderness areas generally do not allow motorized equipment, motor vehicles, mechanical transport, temporary roads, permanent structures or installations (with exceptions in Alaska). Wilderness areas are to be primarily affected by the forces of nature, though the Wilderness Act does acknowledge the need to provide for human health and safety, protect private property, control insect infestations, and fight fires within the area. Wilderness areas are managed under the direction of the Wilderness Act, subsequent legislation (such as the Alaska National Interest Lands Conservation Act), and agency policy.

Federal Land Policy and Management Act (FLPMA). FLPMA recognizes the value of public lands and includes the multiple use/sustained yield framework for management to provide for outdoor recreation for future generations. Title VI of FLPMA, *Designated Management Areas, California Desert Conservation Area*, acknowledges the recreational resources contained within the California desert environment and directs the BLM to develop a multiple use and sustained yield management plan to conserve the desert's resources, particularly recreational use. The solar facility site is governed by these pieces of legislation, and its various alternatives would impact the recreational opportunities available in the vicinity.

CDCA Plan. The CDCA Plan establishes goals for management of recreation in the California Desert (BLM, 1999). As with the FLPMA, recreational opportunities in the study area are framed by the CDCA Plan. The goals are to provide for the use of the public lands and resources of the CDCA, including recreational uses, in a manner that enhances wherever possible — and that does not diminish — the environmental, cultural, and aesthetic values of the desert (BLM, 1999). The goals of the Recreation Element of the plan are to:

- *Provide for a wide range of quality recreation opportunities and experiences emphasizing dispersed undeveloped use;*
- *Provide a minimum of recreation facilities. Those facilities should emphasize resource protection and visitor safety;*
- *Manage recreation use to minimize user conflicts, provide a safe recreation environment, and protect desert resources;*
- *Emphasize the use of public information and education techniques to increase public awareness, enjoyment, and sensitivity to desert resources;*
- *Adjust management approach to accommodate changing visitor use patterns and preferences; and*
- *Encourage the use and enjoyment of desert recreation opportunities by special populations, and provide facilities to meet the needs of those groups.*
- *Provide for off-road vehicle recreation use where appropriate in conformance with FLPMA, Section 601, and Executive Orders 11644 and 11989.*

ACECs are also identified as special management areas in the CDCA Plan. These include areas where special management attention is required to protect important historic, cultural, scenic, biological, or other natural resources.

The CDCA Plan also contains a motorized-vehicle access element, which provides a system and a set of rules that governs access to the CDCA by motor vehicles. The rules include providing for constrained motor-vehicle access, while protecting desert resources (BLM, 1999). When the CDCA Plan was first adopted, the BLM designated a network of motorized vehicle routes on public lands within the northern and eastern Mojave Desert. The BLM designated routes for north-central and southern portions of the CDCA. The BLM manages OHV use, so the conditions of special status species and other natural and cultural resources are maintained.

Northern and Eastern Colorado Desert Coordinated Management Plan. The NECO Plan, an amendment to the CDCA Plan, provides for management of recreation within the California Desert area of El Centro, Blythe, Needles, and cities in the Coachella Valley (BLM, 2002). The NECO Plan specifies the types of recreational activities allowed in Multiple-Use Classes on BLM-administered land. Under this plan, all routes outside closed and OHV open areas are designated as open, closed, or limited. The NECO plan includes an off-highway vehicles (OHV) route inventory and designated routes of travel (approximately 95 percent of existing routes remained available for vehicle access under the plan). Open routes through the solar facility area include DC 948, 949, 950, 952, and CM511. Special Recreation Permits (SRPs) are authorizations that allow for recreation uses of the public lands and related waters. They are issued as a means to control visitor use, protect recreational and natural resources, and provide for the health and safety of visitors.

Desert Renewable Energy Conservation Plan. The BLM published the Land Use Plan Amendment (LUPA) and Final EIS for the DRECP in November 2015. The DRECP amended the CDCA Plan with the signing of the Record of Decision in September of 2016. It designates SRMAs and Extensive Recreation Management Areas within the California Desert, including the study area (BLM, 2015). The DRECP includes additional conservation management actions for recreation that dictate the types of activities allowed near certain recreational features.

Off-Road Vehicles (43 CFR § 8340, et seq.) This regulation establishes criteria for designating public lands as open, limited, or closed to the use of OHVs and for establishing controls governing the use and operation of OHVs in such areas, while protecting resources, promoting safety, and minimizing user conflicts. Recreational use under Title VI “includes the use, where appropriate, of off-road recreational vehicles.”

Riverside County Integrated Plan, General Plan, and Desert Center Area Plan (DCAP). The Riverside County General Plan includes policy area locations, such as for Desert Center, that have a separate Land Use Plan for future development and growth. The Project falls within the DCAP, which is part of the General Plan. Local land use does not apply to the BLM, but FLPMA requires the BLM to coordinate with local governments in land use planning in Title II, Section 202, (b)(9).

3.16.3 Methodology for Analysis

This section analyzes potential effects of the proposed Project related to recreation and assesses the impacts to known recreational uses. The CDCA Plan and NECO Plan Amendment, which includes a detailed inventory and designation of open routes for motorized-vehicle use, were reviewed to determine impacts to open routes.

3.16.4 CEQA Significance Criteria

The criteria used to determine the significance of potential land use impacts are based on Appendix G of the CEQA Guidelines. The Project would result in a significant impact under CEQA related to land use if it would:

- *Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated (see Impact REC-1).*

The following CEQA significance criteria from Appendix G were not included in the analysis:

- *Include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment.*

The proposed Project does not include recreational facilities or require the construction or expansion of recreational facilities.

The following CEQA significance criteria from the County's Environmental Assessment Form were not included in the analysis:

- *Located within a Community Service Area (CSA) or recreation and park district with a Community Parks and Recreation Plan (Quimby fees).*

The proposed Project is located in unincorporated Riverside County and is not within a CSA or recreation and park district.

3.16.5 Proposed Project Impact Analysis

An issue raised during scoping related to recreation includes concerns about access to game bird hunting areas northwest of the proposed Project

Impact REC-1. Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated.

Solar Facility

The solar facility is entirely on private land that was previously used for agriculture or undeveloped desert. As such it would have no direct impact that would result in the loss of recreational space and an increase in the use of other recreational facilities.

BLM Route DC 511 crosses Parcel Groups C and E, but the Project would not interfere with use of this utility access road; Route DC 511 would not be closed. The solar facility could, however, result in the closure of portions of OHV routes on Parcel Group E (Route DC 507) and G (Route DC 502). The portions of these routes located on private land are not designated BLM routes, but closing them would potentially cut off access to the BLM land north of the Project site. In the case of Route DC 507, this route is 1.2 miles long and ends at private land, the Chuckwalla Valley Raceway. While portions of this route may be closed due to the development of the Project, the impact would be less than significant because the route does not lead to any specific recreation area nor does it provide access to the Chuckwalla Valley Raceway. Route DC 502 is an estimated 3.25 miles route much of which crosses private land and is blocked by existing date palm farms. Parcel Group G would block approximately 0.4 miles of the route and isolate 0.75 miles on BLM land north of the site. The route does not lead to any specific destination and ends shortly before reaching the Palen Dunes. Based on aerial imagery, the route does not appear to be used frequently as it is difficult to find on the images. Because the route is already blocked by existing date palm farms, does not lead to a specific recreation destination, and is not heavily used, the loss of less than half a mile and isolation of 0.75 miles of route would not be expected to result in a substantial use of other routes compared with current practice. The impact would be less than significant.

Indirect effects to recreational users of specially designated lands (including the Special Recreation Management Area, wilderness areas and ACECs, the Joshua Tree National Park) could occur due to the distant views of the construction work and dust. The wilderness areas and ACECs do not have maintained trails or trailheads and have a low number of public visitors. While the Joshua Tree National Park receives hundreds of thousands of visitors annually, the location closest to the Project is less heavily visited because of the difficulties in reaching that area. Recreational users could be impacted by construction, operation and decommissioning activities of the Project such as construction noise, fugitive dust, vehicle movement, and other "non-natural" construction activities. During operation, the visual change at the site

could affect visitors seeking experiences in a natural setting. Night lighting for the solar PV project is expected to be minimal, so little detrimental effect to night skies and star gazing would be anticipated. Overall, these impacts could affect users' perception of solitude, naturalness and unconfined recreation. While the Project would result in indirect impacts to recreation, it is not anticipated that the Project would result in a significant change in use of the nearby recreation facilities that would increase the use of other regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated. The impact would be less than significant. The associated indirect impacts are addressed in Sections 3.12 (Noise), 3.4 (Air Quality), 3.17 (Traffic), and 3.2 (Aesthetics).

220 kV Generation-Tie Line

Most the gen-tie line is located on private land and BLM land designated as a Development Focus Area, not designated for recreation. South of the I-10, approximately 0.15 miles of Gen-tie Segment #4 cross the Chuckwalla ACEC and the Chuckwalla SRMA within an existing utility corridor. The gen-tie line would not result in direct loss of recreation nor would it result in impacts to designated OHV routes. While it would introduce a new 220 kV transmission line, the associated construction would be of short duration and the associated visual change would be minimal as it would follow existing transmission lines whenever feasible. Impacts to recreation due to the gen-tie line would be less than significant.

Mitigation Measures for Impact REC-1

No mitigation would be required.

Significance After Mitigation

This impact would be less than significant.

3.16.6 Alternative 1: No Project Alternative

The No Project Alternative would not develop the solar facility and gen-tie line or require new construction and/or operational activities. It would not result in any direct or indirect impacts to recreation and would not result in the closure or isolation of designated OHV routes. Therefore, the No Project Alternative would not have impacts to recreation.

3.16.7 Alternative 2: Reduced Footprint Alternative

The Reduced Footprint Alternative would not develop Parcel Groups D and F, the remaining parcel groups would be developed. While the Reduced Footprint Alternative would develop 387 fewer acres than the proposed Project, the impacts to recreation would remain the same. This is because neither the proposed Project nor the Reduced Footprint Alternative would have direct impact due to loss of recreation and would have the same impacts to designated BLM OHV routes. While the alternative would be smaller than the Project, it would still result in similar indirect impacts to recreation due to noise, dust, traffic, and an altered viewshed and the site closest to the Joshua Tree National Park would not change. Therefore, impacts from the Reduced Footprint Alternative would be similar to those of the proposed Project.

3.16.8 Gen-Tie Segment #1 Alternative Route Option

The Gen-Tie Segment #1 Alternative Route Option would move the gen-tie east to avoid parcel APN 807-191-031. There is little difference between the proposed Gen-tie Segment #1 and the alternative from a recreation perspective because neither route is use as or designated for recreation and the indirect impacts of the alternative are similar to those of the proposed Gen-tie Segment #1.

3.16.9 Cumulative Impacts

Solar Facility

The cumulative geographic scope for recreation is the Desert Center region because the direct and indirect impacts to recreation would be additive within this area in that they could result in direct loss of recreation and indirect impacts to the same resources. Within this area there is one existing utility solar facility (Desert Sunlight) and seven approved or proposed projects (Desert Harvest, DC 50, California Jupiter, LLC, IO Solar Project, SunPower, Victory Pass I, LLC, and Palen), see Tables 3.1-1 and 3.1-2. While other existing or proposed projects would add to the cumulative impacts, the solar facilities would be the largest contributors.

Each of the solar projects would result in similar impacts to recreation as those described for the proposed Project. However, each project is located either on private land previously used for agriculture or on BLM-administered land designated as development focus area under the DRECP LUPA. While some of the BLM land may be used for recreation, the direct loss of recreational lands would be minimal compared with the land available for recreation.

If all the solar projects were developed, loss of the local Desert Center OHV routes would be significant because all routes except Route DC 511 (the utility access road) and Route DC 952 (protected from impact by the Palen Solar Project mitigation) would be closed. The contribution to the cumulative loss of OHV routes by the Project would be less than cumulatively considerable because the routes impacted by the Athos Project do not lead to any specific recreation area and because the Athos Project would only close routes on private land.

If all the solar projects were developed they would result in almost 20,000 acres of solar development in the Desert Center area which would substantially change the region and the vistas from nearby recreational facilities that are prized for their isolation, especially wilderness areas. Recreationists looking for solitary experiences would potentially look for other areas to recreate which would increase the use of these parks or wilderness areas. However, because of the large amount of wilderness and solitary recreational areas in Eastern Riverside County and in the California desert and the limited use of the recreational areas near the Project, it is unlikely that recreationists who leave the Desert Center area for elsewhere in California would increase the use of such areas such that substantial physical deterioration of the region would occur or be accelerated. Therefore, there would not be a significant cumulative impact under CEQA.

220 kV Generation-Tie Line

The cumulative impacts of the gen-tie line would be the same as for the solar facility because the gen-tie line would also result in an additive or cumulative impact with the other renewable energy development in the Desert Center area.

3.16.10 Mitigation Measures

No recreation mitigation would be required.

3.17 Traffic and Transportation

This section describes the environmental setting and regulatory framework with respect to traffic and transportation for the proposed Project, including applicable plans, policies, and regulations. Because the Project site is located in a remote area, all materials would have to be brought to the site from long distances and/or personnel would have to travel from surrounding communities within Riverside County. Consequently, all Project-related traffic would utilize Interstate 10 (I-10) and State Route 177 (SR-177) for regional travel. The “Project area” or “study area” for the traffic and transportation analysis would be the existing roadways and intersections with the potential to experience an increase in traffic volume during Project construction. Therefore, the study area for this analysis of transportation and traffic includes I-10, SR-177, and local roadways in the vicinity of the Project site.

A *Traffic Impact Assessment report for the Athos Renewable Energy Project* (Fehr & Peers, 2017) was prepared by the Applicant’s consultant to evaluate the potential transportation and traffic impacts of the Project and is provided as Appendix I of this Draft EIR.

3.17.1 Environmental Setting

The Project area is in Riverside County, approximately 4 miles east and northeast of the Desert Center Community (refer to Figure 2-1 in Chapter 2). The Project is located north of I-10 and on both sides of SR-177. It is anticipated that most construction workers would be drawn from the Blythe/Palo Verde Valley region and the Desert Center Community, with a smaller portion drawn from the Imperial Valley or the greater Riverside County region. Workers and delivery trucks would access the Project site using locations along SR-177. It is anticipated that the following four intersections (off-ramp locations on I-10 and SR-177) within the traffic study area are likely to experience a substantial increase in traffic volume during construction (see Figure 3.17-1):

- I-10 Eastbound at SR-177
- I-10 Westbound at SR-177
- SR-177 at Proposed South Access Driveway
- SR-177 at Proposed North Access Driveway

Regional and Local Roadway Facilities

Regional roadway facilities in the Project area include the following:

- **Interstate 10:** I-10 is a major east/west interstate freeway connecting Southern California to Phoenix, AZ and destinations further east. I-10 is a four-lane freeway with interchanges near the Project site at SR-177 and Corn Springs Road. The posted speed limit on I-10 is 70 mph. In the study area, I-10 carries roughly 26,000 average daily trips (ADT).
- **State Route 177:** SR-177 (also known as Rice Road) is a north/south highway running between Desert Center/I-10 and State Route 62 (approximately 25 miles northeast of Desert Center). SR-177 is a two-lane road, and the posted speed limit is 65 mph. It carries approximately 2,800 ADT.
- **Corn Springs Road:** Corn Springs Road is a rural road with little connectivity. Its interchange with I-10 is 9 miles east of the I-10/SR-177 interchange. It connects to rural roads which provide access to a nearby substation and is a proposed access site for solar projects in the area, including the Palen Solar Project, which is adjacent to Parcel Group G.

Existing Study Area Intersection Levels of Service

The *Highway Capacity Manual* (HCM) provides methodologies utilized by the Project to assess potential impacts to traffic flow. A Level of Service (LOS) scale is used to indicate the quality of traffic flow on roadway

segments and at intersections. LOS is an indicator of operating conditions on a roadway or at an intersection and is defined in categories ranging from A to F. LOS A represents the best traffic flow conditions with very low delay, and LOS F represents poor conditions. LOS A indicates free-flowing traffic, and LOS F indicates substantial congestion with long delays at intersections.

LOS for signalized intersections is based upon the average time (seconds) that vehicles approaching an intersection are delayed. There is a specific delay and level of service associated with each approach and an overall average delay for all movements. The overall LOS for the intersection is based upon the overall average delay.

Unsignalized intersection LOS is also based upon the control delay, but delay is assessed only for those traffic movements that are stopped or must yield to through traffic. Some movements, including cross traffic on the minor street or left turns onto the major street, can be subject to long delays; however, through traffic and right turns from the major street would not experience any delays at stopped intersections. When delay for cross traffic is severe (LOS F), the intersection should be evaluated further for possible improvement with traffic signals. In some cases, this analysis determines that the delay is being experienced by a very low number of vehicles, and traffic signals are not warranted. In other cases, when the number of stopped vehicles is substantial, and traffic signals may be justified as a mitigation measure, additional analysis is required to determine the need and justification for the installation of a traffic signal.

Table 3.17-1 shows the relationship between LOS and the performance measures for signalized and unsignalized intersections and lists the HCM delay criteria for signalized intersections.

For the proposed Project, field observations of existing intersection turning movements (counts) were completed on March 1, 2018. Intersection classification counts provide vehicle classification (cars, pickups, buses, trucks, etc.) data in addition to the individual vehicle movements. Table 3.17-2 presents existing LOS at the four studied intersections. As illustrated in Table 3.17-2, all intersections within the study area of the proposed Project are operating at an acceptable level of service (LOS A) during both the morning (7:00 a.m. to 9:00 a.m.) and afternoon (4:00 p.m. to 6:00 p.m.) peak hours.

Table 3.17-1. Intersection Level of Service Definitions

Level of Service	Signalized Intersection Control Delay (seconds/vehicle)	Unsignalized Intersection Control Delay (seconds/vehicle)
A	0 – 10	0 – 10
B	10.1 – 20	10.1 – 15
C	20.1 – 35	15.1 – 25
D	35.1 – 55	25.1 – 35
E	55.1 – 80	35.1 – 50
F	80.1 or more	50.1 or more

Source: Appendix I.

Table 3.17-2. Existing (2018) Study Area Intersection Level of Service

Intersection	Peak Period	Delay	LOS
I-10 Eastbound at SR-177	AM	9.2	A
	PM	9.0	A
I-10 Westbound at SR-177	AM	8.8	A
	PM	8.8	A
SR-177 at Proposed South Access Driveway	AM	N/A	N/A
	PM	N/A	N/A
SR-177 at Proposed North Access Driveway	AM	N/A	N/A
	PM	N/A	N/A

Notes: N/A – Not Applicable as driveways only exist with the Project
 Source: Appendix I.

Public Transportation within the Project Vicinity

Pedestrian and Bicycle

Pedestrian facilities include sidewalks, crosswalks, curb ramps, pedestrian signals, and streetscape amenities. Pedestrian facilities currently do not exist in the proposed Project study area. The existing pedestrian network does not currently provide sidewalks connecting adjoining land uses along SR-177 (Rice Road). No bicycle facilities (e.g., bicycle paths, lanes, or routes) currently exist in the proposed Project study area.

Public Transportation Service

The nearest public bus service is offered by the Palo Verde Valley Transit Agency, which serves the Blythe Area. Routes 6 travels along I-10 and serves the Desert Center Post Office once daily westbound and eastbound on Monday, Wednesday and Friday (Palo Verde Valley Transit Agency, 2018).

Rail Service

Blythe is served by the Arizona and California Railroads, but the nearest rail line to the Project site is approximately 7.5 miles north of the site near State Route 62.

Airports

Blythe Airport is the nearest public airport located approximately 20 miles east of the Project, serving Riverside County. The airport has two runways and is mostly used for general aviation. Desert Center Airport is a private airport located between Parcel Group B and E (south of SR-177). Desert Center Airport has one runway and averages less than 150 general aviation operations per year (AirNav, 2018).

The Project site was compared to the military flight paths and airspace designations of the California Military Land Use Compatibility Analysis (CMLUCA) database to determine whether the site is located within 1,000 feet of a military installation, is located within military special-use airspace, or is located beneath a military designated low-level flight path (CMLUCA, 2018). Based on the CMLUCA, the Project site is located within military Visual Route (VR) flight paths (CMLUCA, 2018). However, the Project site is not located within special-use military airspace or an area designated for low-level military flight paths (CMLUCA, 2018).

3.17.2 Regulatory Framework

Federal

CFR, Title 49, Subtitle B

This regulation includes procedures and regulations pertaining to interstate and intrastate transport (including hazardous materials program procedures) and provides safety measures for motor carriers and motor vehicles that operate on public highways.

CFR Part 77 – Safe, Efficient Use, and Preservation of the Navigable Airspace

Construction of a project could potentially impact aviation activities if a structure or equipment were positioned such that it would be a hazard to navigable airspace. The Federal Aviation Administration (FAA) has established reporting requirements for construction or alterations around airport and heliport facilities that meet certain criteria regarding final height above ground level and penetration of an imaginary conical surface extending out from the air facility.

With regard to aviation safety, Subpart B, Section 77.9 of the regulations indicates that for areas around airports having runways longer than 3,200 feet, if any construction that is more than 200 feet above ground level or results in an object penetrating an imaginary surface extending outward and upward at a ratio of 100 to 1 from a public or military airport runway out to a horizontal distance of 20,000 feet (approximately 3.78 miles), then an applicant is required to submit FAA Form 7460-1, Notice of Proposed Construction or Alteration, to the Manager, Air Traffic Division, FAA Regional Office having jurisdiction over the area for review and approval of the Project (FAA, 2018). For areas around heliports, this same requirement applies to any construction that is more than 200 feet above ground level or would penetrate an imaginary surface extending outward and upward at a ratio 25 to 1 from a public or military heliport out to a horizontal distance of 5,000 feet.

FAA – Technical Guidance for Evaluating Selected Solar Technologies on Airports

With respect to solar glare on aviation safety, currently, no defined thresholds for project size, type, or distance from the airport are available that automatically trigger FAA airspace review (FAA, 2010). However, proximity to the airport and solar technology are two indicators of likely FAA interest in a solar project (FAA, 2010). According to this FAA technical guidance document, it is the responsibility of local governments, solar developers, and other stakeholders in the vicinity of an airport to check with the airport sponsor and the FAA to ensure there are no potential safety or navigational problems with a proposed solar facility, especially if it is a large facility (FAA, 2010). Sponsors should notify the FAA when such activities are proposed, and the FAA needs to participate in public meetings or permitting processes (FAA, 2010).

State

California Vehicle Code (CVC)

The CVC includes regulations pertaining to licensing, size, weight, and load of vehicles operated on highways; safe operation of vehicles; and the transportation of hazardous materials.

California Government Code

Sections 65352, 65404, 65940, and 65944, amended by Senate Bill 1462, requires local planning agencies to notify the military whenever a proposed development project or general plan amendment is located within 1,000 feet of a military installation, located within special use airspace, or is located beneath a low-level flight path.

Caltrans

Within the Guide for the Preparation of Traffic Impact Studies (TIS), the following criterion are a starting point in determining when a TIS for a project is needed (Caltrans, 2002):

- 1. Generates over 100 peak hour trips assigned to a State highway facility.*
- 2. Generates 50 to 100 peak hour trips assigned to a State highway facility — and, affected State highway facilities are experiencing noticeable delay; approaching unstable traffic flow conditions (LOS “C” or “D”).*
- 3. Generates 1 to 49 peak hour trips assigned to a State highway facility — and, affected State highway facilities are experiencing significant delay; unstable or forced traffic flow conditions (LOS “E” or “F”).*

As discussed later in Sections 3.17.5 through 3.17.8, during construction, the proposed Project would generate over 100 peak hour trips to I-10 and SR-177. As stated in Caltrans’ *Guide for the Preparation of Traffic*

Impact Studies, a TIS may be as simple as providing a traffic count to as complex as a microscopic simulation (Caltrans, 2002). The appropriate level of study is determined by the particulars of a project, the prevailing highway conditions, and the forecasted traffic. Appendix I provides a TIS prepared for the proposed Project. The analysis provided in Sections 3.17.5 through 3.17.8 compares the worst-case daily construction and operational trips against the existing volumes and capacities of study area roadways. This level of analysis is considered consistent with the *Guide for the Preparation of Traffic Impact Studies*.

Local

County of Riverside Congestion Management Plan

Riverside County's Congestion Management Plan (CMP) specifies that all CMP roadways operate at a Level of Service (LOS) of "E" or better. All state highways and principal arterials are CMP roadways. I-10 and SR-177 are the only CMP roadways in the Project study area. The CMP was first established in 1990 under Proposition 111.

Proposition 111 established a process for each metropolitan county in California to designate a Congestion Management Agency (CMA) that would be responsible for development and implementation of the CMP within county boundaries. The Riverside County Transportation Commission (RCTC) was designated as the CMA in 1990 and, therefore, prepares the CMP updates in consultation with the Technical Advisory Committee (TAC), which consists of local agencies, the County of Riverside, transit agencies, and subregional agencies.

The RCTC's adopted minimum LOS threshold is LOS "E." Therefore, when a CMP street or highway segment falls to "F," a deficiency plan must be required. Preparation of a deficiency plan will be the responsibility of the local agency where the deficiency is located. Other agencies identified as contributors to the deficiency will also be required to coordinate with the development of the plan. The plan must contain mitigation measures, including consideration of Transportation Demand Management (TDM) strategies and transit alternatives, and a schedule for mitigating the deficiency.

Regional Comprehensive Plan and Regional Transportation Plan

Southern California Association of Governments' (SCAG) Intergovernmental Review 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, such as the Regional Comprehensive Plan and the Regional Transportation Plan. The criteria for projects of regional significance are outlined in CEQA Guidelines Sections 15125 and 15206. According to the SCAG Intergovernmental Review Procedures Handbook, "new or expanded electrical generating facilities and transmission lines" qualify as regionally significant projects.

Riverside County General Plan – Circulation Element

The Riverside County General Plan (adopted December 2015) is applicable to all unincorporated lands within Riverside County. Countywide policies that address traffic and transportation within the County boundaries are located in the Circulation Element and Land Use Element of the County General Plan, and include (Riverside County, 2015):

- **Policy C1.8:** Ensure that all development applications comply with the California Complete Streets Act of 2008 as set forth in California Government Code Sections 65040.2 and 65302.

- **Policy C2.1:** The following minimum target levels of service have been designated for the review of development proposals in the unincorporated areas of Riverside County with respect to transportation impacts on roadways designated in the Riverside County Circulation Plan (Figure C-1), which are currently County maintained, or are intended to be accepted into the County maintained roadway system:
 - LOS C shall apply to all development proposals in any area of the Riverside County not located within the boundaries of an Area Plan, as well those areas located within the following Area Plans: REMAP, Eastern Coachella Valley, Desert Center, Palo Verde Valley, and those non-Community Development areas of the Elsinore, Lake Mathews/Woodcrest, Mead Valley and Temescal Canyon Area Plans.
 - LOS D shall apply to all development proposals located within any of the following Area Plans: Eastvale, Jurupa, Highgrove, Reche Canyon/Badlands, Lakeview/Nuevo, Sun City/Menifee Valley, Harvest Valley/Winchester, Southwest Area, The Pass, San Jacinto Valley, Western Coachella Valley and those Community Development Areas of the Elsinore, Lake Mathews/Woodcrest, Mead Valley and Temescal Canyon Area Plans.
 - LOS E may be allowed by the Board of Supervisors within designated areas where transit oriented development and walkable communities are proposed.

Notwithstanding the forgoing minimum LOS targets, the Board of Supervisors may, on occasion by virtue of their discretionary powers, approve a project that fails to meet these LOS targets in order to balance congestion management considerations in relation to benefits, environmental impacts and costs, provided an Environmental Impact Report, or equivalent, has been completed to fully evaluate the impacts of such approval. Any such approval must incorporate all feasible mitigation measures, make specific findings to support the decision, and adopt a statement of overriding considerations.

- **Policy C2.2:** Require that new development prepare a traffic impact analysis as warranted by the Riverside County Traffic Impact Analysis Preparation Guidelines or as approved by the Director of Transportation. Apply level of service targets to new development per the Riverside County Traffic Impact Analysis Preparation Guidelines to evaluate traffic impacts and identify appropriate mitigation measures for new development.
- **Policy C2.3:** Traffic studies prepared for development entitlements (tracts, plot plans, public use permits, conditional use permits, etc.) Shall identify project related traffic impacts and determine the “significance” of such impacts in compliance with CEQA and the Riverside County Congestion Management Program Requirements.
- **Policy C2.4:** The direct project related traffic impacts of new development proposals shall be mitigated via conditions of approval requiring the construction of any improvements identified as necessary to meet level of service targets.
- **Policy C2.8:** Riverside County shall coordinate with Caltrans, RCTC and adjacent local jurisdictions in conformance with the Riverside County Congestion Management Program to determine the appropriate LOS threshold for determining significance when reviewing development proposals that directly impact nearby State Highway facilities or city streets.
- **Policy C3.6:** Require private developers to be primarily responsible for the improvement of streets and highways that serve as access to developing commercial, industrial, and residential areas. These may include road construction or widening, installation of turning lanes and traffic signals, and the improvement of any drainage facility or other auxiliary facility necessary for the safe and efficient movement of traffic or the protection of road facilities.

- **Policy C3.8:** Restrict heavy duty truck through-traffic in residential and community center areas and plan land uses so that trucks do not need to traverse these areas.
- **Policy C3.9:** Design off-street loading facilities for all new commercial and industrial developments so that they do not face surrounding roadways or residential neighborhoods. Truck backing and maneuvering to access loading areas shall not be permitted on the public road system, except when specifically permitted by the Transportation Department.
- **Policy C3.10:** Require private and public land developments to provide all on-site auxiliary facility improvements necessary to mitigate any development-generated circulation impacts. A review of each proposed land development project shall be undertaken to identify project impacts to the circulation system and its auxiliary facilities. The Transportation Department may require developers and/or sub-dividers to provide traffic impact studies prepared by qualified professionals to identify the impacts of a development.
- **Policy C6.1:** Provide dedicated and recorded public access to all parcels of land, except as provided for under the statutes of the State of California.
- **Policy C6.2:** Require all-weather access to all new development.
- **Policy C7.1:** Work with incorporated cities to mitigate the cumulative impacts of incorporated and unincorporated development on the countywide transportation system.
- **Policy C7.9:** Review development applications in cooperation with RCTC and as appropriate, to identify the precise location of CETAP corridors and act to preserve such areas from any permanent encroachments, pending dedication or acquisition. Coordinate with RCTC to evaluate and update the CETAP corridors periodically as conditions warrant.

Riverside County Municipal Code Title 10, Chapter 10.08, Sections 10.08.010 – 10.08.180

These regulations establish requirements and permits for oversize and overweight vehicles.

Riverside County Ordinance No. 460

This ordinance specifies that all new access roads shall conform to the requirements of the Riverside County Transportation Department Subdivision Regulations.

Riverside County Ordinance No. 461

This ordinance specifies that all new access roads shall conform to the requirements of the Riverside County Transportation Department Road Improvement Standards and Specifications.

3.17.3 Methodology for Analysis

This analysis focuses on potential impacts related to the construction, operation, maintenance, and decommissioning of the Project on the surrounding transportation systems and roadways using the *Traffic Impact Assessment report for the Athos Renewable Energy Project* (Fehr & Peers, 2017) found in Appendix I. Impacts to local transportation systems were evaluated based on the LOS determinations.

This assessment of transportation-related impacts is based on evaluations and technical analyses designed to compare the existing conditions (pre-Project), construction of the Project, and cumulative impacts. Operation of the Project would not generate a substantial or significant number of trips above those already generated by existing land uses in the Project area. However, the construction phase of the Project would include trips generated by construction workers and supplies delivered by trucks to the Project

area. Decommissioning activities are anticipated to be similar to construction, but less intense. This analysis considers the effects of transportation and traffic of the Project in the context of Caltrans and Riverside County requirements. Caltrans is the agency responsible for permitting and regulation of the use of state-administered roadways within California, including I-10 and SR-177, and the County is the agency responsible for regulation of the use of roadways within its jurisdictional boundaries.

Trip Generation

Trip generation for the proposed Athos Project was developed for the construction phase of the Project using information provided by the Applicant. Peak hour trips generated for the construction period of the Project are shown in Table 3.17-3. Delivery trucks for the proposed Project represent just over 1 percent of the total trips generated by the Project. The technical assessment has assumed that the heavy vehicle percentage is 2 percent of the total trips through the intersection. As such, the presence of the Project’s heavy vehicles is accounted for in the capacity adjustments at the study intersections through the heavy vehicle percentage. The distribution of these trips is shown in Appendix I.

Table 3.17-3. Construction Trip Generation

Description	Quantity	ADT	AM Peak Hour			PM Peak Hour		
			In	Out	Total	In	Out	Total
Workers	530	1,060	530	0	530	0	530	530
Delivery Trucks	40	80	3	3	6	3	3	6
Total		1,140	533	3	536	3	533	536

Source: Appendix I.

Ambient Growth

The traffic impact analysis presented in Appendix I considered the development of adjacent large-scale solar energy projects, where the construction of those projects is expected to overlap with construction of the proposed Project (refer to Appendix I for a list of these projects). However, two of the ambient projects’ environmental review have not yet begun which would delay the construction timeframe.¹ This is considered both cumulative and ambient growth in the Project area. Future Trip generation and distribution of these adjacent projects was taken from available CEQA documents. When not available, trips generated was estimated per megawatt based on the proposed Project trip generation rate and trip distribution. Table 3.17-4 shows the change to existing Study Area intersection LOS (refer to Table 3.17-2) when the trips from these adjacent projects are added to the Study Area to create “Ambient Volumes” for the study intersections. The addition of proposed Project-related trips is analyzed against the Ambient Volume conditions for determining potential impacts.

¹ The traffic impact analysis included the SunPower projects (SunPower project and CUP3788) due to their status at the time the analysis was drafted. This accounts for over 600 trips in the AM peak hours at the I-10 SR-177 intersection. In May 2018, SunPower exited the utility-scale solar development market and sold its assets to Clearway in September 2018. The status and construction schedule for the SunPower projects is unknown. The analysis therefore provides a worst-case scenario under the conservative assumption that the SunPower projects construction overlaps with the Athos project construction.

Table 3.17-4. Study Area Intersection Ambient Condition Level of Service

Intersection	Peak Period	Existing		Ambient	
		Delay	LOS	Delay	LOS
I-10 Eastbound at SR-177	AM	9.2	A	11.7	B
	PM	9.0	A	12.9	B
I-10 Westbound at SR-177	AM	8.8	A	13.3	B
	PM	8.8	A	8.9	A
SR-177 at Proposed South Access Driveway	AM	N/A	N/A	N/A	N/A
	PM	N/A	N/A	N/A	N/A
SR-177 at Proposed North Access Driveway	AM	N/A	N/A	N/A	N/A
	PM	N/A	N/A	N/A	N/A

Notes: N/A – Not Applicable as driveways only exist with the Project
Source: Appendix I.

Level of Service Standards

In addition to the CEQA thresholds, an intersection LOS analysis was conducted to assess operational performance of the traffic study area during construction. For LOS, the applicable significance thresholds were based on the Riverside County Transportation Commission’s (RCTC) 2011 Congestion Management Program (CMP), County of Riverside requirements, and City of Blythe requirements.

Riverside County’s CMP specifies that all CMP roadways operate at LOS E. Most local agencies in Riverside County and Caltrans have adopted LOS standards of C or D for roadway segments in an effort to maintain a desired LOS for the local circulation system. Within the traffic study area, I-10 and SR-177 have been identified as a key element of the CMP system. Based on the CMP, a significant traffic impact would occur: (1) when existing pre-Project LOS A, B, C, and D become LOS E or F with the Project; or (2) when the existing pre-Project LOS E becomes LOS F with the Project.

The Riverside County Circulation Element Policy C2.1 states that the County must maintain a target LOS C along County-maintained roads and conventional state highways. Therefore, a significant local impact to the County would occur if the pre-Project (base) LOS A, B, or C roadway becomes LOS D, E or F. While the Circulation element states that LOS E may be allowed in a designated community, there are no such designated community centers at the study intersections or in the Project area.

Vehicle Miles Travelled (VMT)

Vehicle miles traveled (VMT) is a measure used in transportation planning for a variety of purposes. It measures the amount of travel for all vehicles in a geographic region over a given period of time. VMT is calculated by adding up all the miles driven by all the cars and trucks on all the roadways in a region. This metric plays an integral role in the transportation planning, policy-making, and revenue estimation processes due to its ability to indicate travel demand and behavior. Per CEQA Guidelines section 15064.3, subdivision (b), a VMT analysis under CEQA may be based on the following:

- **Qualitative Analysis:** If existing models or methods are not available to estimate the vehicle miles traveled for the particular project being considered, a lead agency may analyze the project’s vehicle miles traveled qualitatively. Such a qualitative analysis would evaluate factors such as the availability of transit, proximity to other destinations, etc. For many projects, a qualitative analysis of construction traffic may be appropriate.
- **Methodology:** A lead agency has discretion to choose the most appropriate methodology to evaluate a project’s vehicle miles traveled, including whether to express the chance in absolute terms, per capita,

per household or in any other measure. A lead agency may use models to estimate a project's vehicle miles traveled, and may revise those estimates to reflect professional judgement based on substantial evidence. Any assumptions used to estimate vehicle miles traveled and any revisions to model outputs should be documented and explained in the environmental document prepared for the project.

3.17.4 CEQA Significance Criteria

The criteria used to determine the significance of the Project-related traffic and transportation impacts are based on the criteria identified in the CEQA Guidelines, Appendix G. Project-related impacts would be considered significant if they would:

- *Conflict with a program plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities (see Impact TRA-1).*
- *Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment) (see Impact TRA-4).*
- *Result in inadequate emergency access (see Impact TRA-5).*
- *Conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b) (see Impact TRA-6).*

The following additional significance criteria from the County of Riverside Environmental Assessment Form are used in the analysis. A project could have potentially significant impacts if it would:

- *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 (see Impact TRA-2).*
- *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 (see Impact TRA-3).*
- *Cause an effect, or a need for new or altered maintenance of roads (see Impact TRA-4).*
- *Cause an effect upon circulation during the project's construction (see Impact TRA-1); or*
- *Affect bike trails (see Impact TRA-6).*

The following CEQA significance criteria from the County's Environmental Assessment Form were not included in the analysis:

- *Alter waterborne, rail or air traffic*

There is no waterborne traffic or rail lines in the vicinity of the Project and the Project would not utilize waterborne traffic or affect rail transport. While the project is adjacent to the privately owned Desert Center Airport, the Project would not require use of the airport nor would it impact the alter use of the airport. Air traffic patterns are addressed in Impact TRA-3.

3.17.5 Proposed Project Impact Analysis

Issues raised during scoping related to Traffic and Transportation include the following, which are addressed under Impacts TRA-1, TRA-4, TRA-5 and TRA-6:

- Concerns about the access road not being open during an emergency, and whose responsibility it is to maintain the road.
- Concerns about shared use of residential access roads.
- Concerns about the Project's impacts to road conditions.

- Concerns about roadway safety on SR-177 when adding Project-related trucks on it.
- Concerns about an increase in traffic accidents on I-10 as travelers may take their eyes off the road to view the solar facility.

As presented in Chapter 2 (Description of the Proposed Project and Alternatives), Table 2-3 provides a list of Applicant-proposed measures (APMs) specific for the Project. IP Athos, LLC, commits to complying with the following measures to reduce potential traffic and transportation impacts during construction and operation:

- **APM T-1:** All designated public roadway easements directly impacted by the solar facility will remain open to the public during construction and operation as not to preclude access to nearby properties.
- **APM T-2:** If any designated vehicle routes are temporarily impacted by Project activities, the Applicant will develop alternative routes to allow for continued vehicular access. Traffic Safety Coordinator(s) will oversee the installation of proper signage to ensure safe public use of open routes and other recreation opportunities on public lands in the Project area.

Impact TRA-1. The Project would conflict with an applicable plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities.

Solar Facility

Roadway Network

Table 3.17-5 presents the change in LOS at each study area intersection when the maximum daily construction trips (shown in Table 3.17-3) are added to adjusted existing traffic conditions (shown in Table 3.17-4).

Table 3.17-5. Study Area Intersection Ambient Plus Project Conditions Level of Service

Intersection	Peak Period	Ambient		Ambient + Project	
		Delay	LOS	Delay	LOS
I-10 Eastbound at SR-177	AM	11.7	B	20.3	C
	PM	12.9	B	24.7	C
I-10 Westbound at SR-177	AM	13.3	B	71.3	F
	PM	8.9	A	9.1	A
SR-177 at Proposed South Access Driveway	AM	N/A	N/A	11.4	B
	PM	N/A	N/A	15.3	C
SR-177 at Proposed North Access Driveway	AM	N/A	N/A	8.4	A
	PM	N/A	N/A	9.4	A

Notes: N/A – Not Applicable as driveways only exist with the Project
Source: Appendix I.

As shown in Table 3.27-5, with the adjusted existing traffic conditions, the addition of Project-related construction trips would result in the following intersections to operate at an unacceptable level:

- I-10 westbound ramp at SR-177 – LOS F (AM Peak Hour)

To ensure that impacts from temporary construction-related trips are reduced to the extent feasible, Mitigation Measure TRA-1 (Construction Traffic Control Plan) is proposed and would require the applicant prepare a Construction Traffic Control Plan for review and approval by Caltrans and Riverside County. This plan requires the applicant to reduce construction-related trips during morning (7:00 a.m. to 9:00 a.m.)

and afternoon (4:00 p.m. to 6:00 p.m.) peak hours on I-10 and SR-177. If the traffic conditions at the time of Project construction reflect the ambient conditions due to overlapping construction, the measure requires the applicant to install a temporary signal or use manual intersection control, and geometry changes at the I-10 westbound ramp at SR-177, as modeled in the Traffic Impact Study (see Appendix I). Without the cumulative trips, the Project is not expected to result in an unacceptable LOS as it would result in fewer vehicle trips than the ambient conditions. The measure allows for adaptive management given the uncertain schedule for some projects included in the ambient conditions.

Table 3.17-6 presents the change in LOS when the maximum daily construction trips are added to adjusted ambient conditions of each study area intersection with the controls implemented per Mitigation Measure TRA-1 (Construction Traffic Control Plan). With the implementation of Mitigation Measure TRA-1, impacts from temporary construction-related vehicle trips to the performance of Project area roadways would be less than significant.

Table 3.17-6. Impacted Study Area Intersection Ambient Plus Project Conditions Level of Service, Mitigated (Signalized and Geometry Changes per Recommended Mitigation Measure TRA-1)

Intersection	Peak Period	Ambient + Project (Unmitigated)		Ambient + Project (Mitigated)	
		Delay	LOS	Delay	LOS
I-10 Westbound at SR-177	AM	71.3	F	14.5	B
	PM	9.1	A	6.6	A

Source: Appendix I.

Up to 10 permanent staff could be on the site at any one time for ongoing facility maintenance and repairs. Alternatively, approximately 2 permanent staff and 8 Project operators would be located off-site and would be on call to respond to alerts generated by the monitoring equipment at the Project site. The Project site maintenance program would be largely conducted on-site during daytime hours. Equipment repairs could take place in the early morning or evening when the plant would be producing the least amount of energy. Based on these expected operational and maintenance requirements, it is estimated average daily traffic volumes associated with Project operation would be approximately 15 daily round trips (30 total trips), with the majority being passenger vehicles. The addition of 30 daily trips would have a negligible effect on performance of the study area transportation system and less than significant impacts would occur.

Transit, Bicycle, and Pedestrian Use

The only public transit stop in the region is at Desert Center. There are no designated pedestrian and bicycle paths so the analysis is focused on potential impacts to public transit. Construction of the solar facility is not expected to require any temporary lane closures that could restrict the movements of buses. However, construction of the Project would require large vehicles travel on local roadways to access the site. Mitigation Measure TRA-1 (Construction Traffic Control Plan) requires the Construction Traffic Control Plan be reviewed and approved by Caltrans and Riverside County and would include provisions for ensuring detours or safe movement of buses through all affected areas. With the implementation of this measure, impacts during construction would be less than significant.

Once constructed, maintenance activities would occur as needed at the solar facility but are not expected to require any temporary travel lane closures that could restrict pedestrian or bicycle movements. Impacts would be less than significant.

220 kV Generation-Tie Line

The construction trip generation shown in Table 3.17-3 includes trips associated with both construction of the solar energy facility and the gen-tie line. Therefore, the trip analysis presented above for construction of the solar energy facility also evaluated trips associated with gen-tie construction. As discussed, the implementation of Mitigation Measure TRA-1 (Construction Traffic Control Plan) would eliminate any significant impact at the three affected study area intersections.

As presented in Chapter 2 (Description of the Proposed Project and Alternatives), shown in Figure 2-2, construction of the gen-tie would require overhead conductors be strung across SR-177 (Gen-Tie 1) and I-10 (Gen-Tie 4). The remaining gen-tie line routes may cross over existing rural access roads in the immediate Project area. This activity could require the temporary closure of a road or travel lanes on affected roadway segments. Also, where new poles would be installed adjacent to roads and where conductor would be strung on poles adjacent to roadways, temporary travel lane disruptions may also occur.

While APMs T-1 and T-2 are included as part of the Project (refer to Section 3.17.5), Mitigation Measure TRA-1 (Construction Traffic Control Plan) is proposed to provide specificity regarding the means to reduce potential impacts from any temporary travel lane disruptions and requires the Construction Traffic Control Plan be reviewed and approved by Caltrans and Riverside County. With the incorporation of Mitigation Measure TRA-1 (Construction Traffic Control Plan), impacts to traffic flow resulting from temporary construction-related disruptions to the affected circulation system would be less than significant.

Once constructed, the gen-tie overhead facilities would require routine inspection via ground observation. Maintenance activities would occur as needed. Due to the limited duration and extent of these activities, minimal daily trips are necessary and would have a negligible effect on the LOS or other performance standard of the transportation system under existing conditions. Additionally, routine inspections and maintenance are not expected to require temporary lane closures. Impacts would be less than significant.

Mitigation Measures for Impact TRA-1

Implementation of Mitigation Measure TRA-1 would mitigate Impact TRA-1 (see Section 3.17.10 below) to less than significant levels by ensuring that the impacted intersections would operate at an acceptable level of service during construction of the Project.

Significance After Mitigation

With the implementation of Mitigation Measure TRA-1, potential impacts to traffic flows on the affected circulation system resulting from Project-related construction traffic trips and potential disruptions to travel lanes would be less than significant.

Impact TRA-2. Construction or operational daily vehicle trips would conflict with Congestion Management Program performance standards.

Solar Facility and 220 kV Generation-Tie Line

Within the study area, I-10 and SR-177 are CMP roadways. As discussed earlier in Section 3.17.3 (Level of Service Standards), Riverside County's CMP specifies that all CMP roadways operate at LOS E. As shown in Table 3.17-6, the implementation of Mitigation Measure TRA-1 (Construction Traffic Control Plan) would ensure study area intersections that are part of the CMP network would operate better than LOS E during construction. Therefore, with mitigation, construction of the Project would not conflict with LOS standards established by the Riverside County CMP.

Once constructed, it is estimated average daily traffic volumes associated with Project operation would be approximately 15 daily round trips (30 total trips), with the majority being passenger vehicles. As shown in Table 3.17-4, I-10 eastbound and westbound ramps at Corn Springs Road operate at LOS E or worse under existing conditions during select peak periods. The addition of 30 daily trips would have a negligible effect on baseline LOS, even at these study area intersections operating at LOS E or worse under existing conditions. Therefore, operation of the Project would not conflict with LOS standards established by the Riverside County CMP.

Mitigation Measures for Impact TRA-2

Implementation of Mitigation Measure TRA-1 would mitigate Impact TRA-2 (see Section 3.17.10 below).

Significance After Mitigation

The implementation of Mitigation Measure TRA-1 (Construction Traffic Control Plan) would eliminate any significant impacts during construction at study area intersections that are part of the Riverside County CMP network. Operation of the Project would not conflict with LOS standards established by the Riverside County CMP. This impact would be less than significant with implementation of Mitigation Measure TRA-1.

Impact TRA-3. Project components would affect aviation safety or activities associated with airport facilities.
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Solar Facility 220 kV Generation-Tie Line

Construction of the proposed solar facility and gen-tie lines would not include the use of helicopters, oversized cranes, or other equipment that could temporarily affect airspace safety or conflict with nearby airport facilities. Less than significant impacts to aviation safety would occur during construction.

As discussed in Section 3.17.2, according to the FAA *Technical Guidance for Evaluating Selected Solar Technologies on Airports*, it is the responsibility of local governments, solar developers, and other stakeholders in the vicinity of an airport to check with the airport sponsor and the FAA to ensure there are no potential safety or navigational problems with a proposed solar facility, especially if it is a large facility (FAA, 2010). The public and agency comment period of this Draft EIR will include review of the Project by the FAA and Desert Center Airport sponsor. At this time, potential glare impacts related to air traffic patterns and airspace safety are considered less than significant, but will be updated in the Final EIR (as needed) upon review.

The Desert Center Airport is a private airport located directly adjacent to Parcel Group B and E. At this distance, the gen-tie line (structures and conductor spans) and substation power inverters and transformers would require review by the FAA to determine any potential hazard to air navigation. During their review, the FAA will identify if any features pose aviation hazards and recommend any safety devices that may be required and whether any tower heights would be restricted. Pending FAA determinations, Mitigation Measure TRA-2 (Comply with FAA 7460-1 Determination Recommendations) is proposed to ensure the Project applicant would incorporate all FAA recommendations into the final Project design to ensure safety of navigable airspace. With the incorporation of this mitigation, impacts from Project features to aviation safety would be less than significant.

Mitigation Measures for Impact TRA-3

Implementation of Mitigation Measure TRA-2 would mitigate Impact TRA-3 (see Section 3.17.10 below).

Significance After Mitigation

This impact would be less than significant with implementation of Mitigation Measure TRA-2.

Impact TRA-4. Project activities would increase transportation hazards or damage roads in the Project area.

Solar Facility and 220 kV Generation-Tie Line

Most construction traffic would access the Project area via I-10 and SR-177, accessing private site entrances via local roadways near the Project site. Due to the flat topography, both the freeways and local roadways accessing the site have a relatively straight horizontal alignment with good visibility looking in all directions. All new internal site roads would be private. During construction, all truck drivers would adhere to California Vehicle Code regulations pertaining to licensing, size, weight, and load of vehicles operated on highways and local roads; safe operation of vehicles; and the transport of any hazardous materials. Traffic on public freeways and roads would be of the same vehicle types (passenger vehicles and heavy trucks) that occur and are allowed under existing conditions. Therefore, no additional roadway hazards would occur from Project-related vehicle trips on transportation facilities. Additionally, Mitigation Measure TRA-1 (Construction Traffic Control Plan) requires the preparation of a Construction Traffic Control Plan to be reviewed and approved by Caltrans and Riverside County. This Plan would provide provisions for ensuring detours or safe movement of local resident vehicles, pedestrians, and bicycles through all affected facilities. With the incorporation of this mitigation, hazard impacts from Project-related vehicle use of public roadways would be less than significant.

The movement of heavy trucks and equipment on roadways providing access to Project work areas could potentially result in damage to road surfaces, shoulders, curbs, sidewalks, signs, and light standards. Mitigation Measure TRA-3 (Repair Roadways and Transportation Facilities Damaged by Construction Activities) is proposed to ensure any damage and deterioration attributed to the Project would be repaired. With the incorporation of this mitigation, hazard impacts from transportation facility damage demonstrable to the Project would be less than significant.

It is estimated average daily operational traffic volumes associated with the Project would be approximately 15 round trips (30 total trips), with the majority being passenger vehicles. This amount of operational daily trips would have a negligible effect on public roadway safety. During public scoping, concern was raised about an increase in traffic accidents on I-10 as travelers may take their eyes off the road to view the solar facility. However, solar PV panels are low profile and would likely blend in with the horizon. They are dark in color, absorb light, and designed to minimize glare. Therefore, the solar field is not expected to disrupt normal driving behavior or create a source of distraction or hazard.

Mitigation Measures for Impact TRA-4

Implementation of Mitigation Measures TRA-1 and TRA-3 would mitigate Impact TRA-4 (see Section 3.17.10 below).

Significance After Mitigation

This impact would be less than significant with implementation of Mitigation Measures TRA-1 and TRA-3.

Impact TRA-5. Project activities would cause a temporary disruption to emergency response access or vehicle movement.

Solar Facility

Construction of the solar facility is not expected to require any temporary lane closures that could restrict the movements of emergency vehicles. The Project site would have controlled access points for ingress and egress into the site. These access points would allow for emergency vehicle access into and through the site. Therefore, impacts during construction would be less than significant.

Once constructed, maintenance activities would occur as needed at the solar facility but are not expected to require any temporary travel lane closures that could restrict emergency vehicle movements. As the solar facility would be staffed, entrance into the site through closed gates would be available. Impacts would be less than significant.

220 kV Generation-Tie Line

As discussed under Impact TRA-1, construction of the gen-tie line may require temporary closure or disruption to travel lanes. While APMs T-1 and T-2 are included as part of the Project (refer to Section 3.17.5) and ensure all designated public roadway easements directly impacted by the solar facility will remain open to the public and any detours are provided as needed, Mitigation Measure TRA-1 (Construction Traffic Control Plan) is proposed to provide specificity regarding the means to reduce potential impacts from any temporary travel lane disruptions during construction of the gen-tie line. Additionally, Mitigation Measure TRA-1 (Construction Traffic Control Plan) requires the Construction Traffic Control Plan be reviewed and approved by Caltrans and Riverside County and would include plans to coordinate in advance with emergency service providers to avoid restricting the movements of emergency vehicles. With the incorporation of this mitigation, impacts from temporary construction-related disruptions to the affected circulation system would be less than significant.

Typical inspections and maintenance of the gen-tie line would not require temporary road or lane closures. Therefore, normal maintenance activities are not expected to restrict emergency service access or vehicle movements. Less than significant impacts would occur.

Mitigation Measures for Impact TRA-5

Implementation of Mitigation Measure TRA-1 would mitigate Impact TRA-5 (see Section 3.17.10 below).

Significance After Mitigation

This impact would be less than significant with implementation of Mitigation Measure TRA-1.

Impact TRA-6. The Project would conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b).

Solar Facility and 220 kV Generation-Tie Line

The proposed Project would result in temporary traffic trips during construction. Truck trips associated with materials and equipment deliveries would likely come from within the Palm Springs, Blythe, and/or Riverside–San Bernardino area, with some materials trips likely originating from the Ports of Long Beach and Los Angeles. Many temporary workers needed for construction of the gen-tie would reside within a 60- to 90-minute drive time of the project area. This assumption is based on observations regarding worker commute habits during construction monitoring efforts for recent similar renewable energy and

transmission projects in the California desert. However, it is likely that some construction workers would come from outside a reasonable commute area and seek temporary housing proximate to the work area.

As shown in Table 3.17-3, construction of the Project would include 1,140 daily trips (1,060 daily worker commutes and 80 daily truck trips). Per CEQA Guidelines Section 15064.3(b)(3), a qualitative VMT analysis of construction trips is appropriate. Due to the remote location of the Project site, many construction truck trips may require high VMT to access the site. However, all construction-related truck trips would be temporary and only in volumes necessary to deliver equipment and materials to the site. Upon completion of construction, all truck trips and worker commute trips would cease. At this time, no known applicable VMT thresholds of significance for temporary construction trips that may indicate a significant impact are known. Mitigation Measure TRA-1 (Construction Traffic Control Plan) requires the Project applicant to prepare a Construction Traffic Control Plan to affected jurisdictions, with the Plan providing means to encourage or provide ridesharing opportunities for construction workers. Therefore, while the proposed Project would include temporary construction trips that may include high VMT, they would not affect existing transit uses or corridors and are presumed to cause a less than significant transportation impact.

Once constructed, operation and maintenance of the project would generate very few vehicle trips. It is estimated average daily operational traffic volumes associated with the Project would be approximately 15 round trips (30 total trips), with the majority being passenger vehicles. It is assumed operational workers would either be located in, or seek permanent residence within, a 30-mile commute. Based on U.S. Census data for the Project area (Census Tract 469, City of Blythe, Desert Center area), approximately 28 percent of those residing within these areas have a daily work commute ranging between 20 to 40 minutes in duration (U.S. Census Bureau, 2019). Therefore, the estimated commute time and VMT for operational workers is considered to be within a reasonable range typical of the remote desert communities nearest to the Project. Due to the remote location of the Project site, limited residential and transit opportunities to the site, and low number of daily trips (30 daily trips), Project operation is not considered to result in high VMTs that could adversely affect transit or transportation planning for the area. Mitigation Measure TRA-1 requires the Project applicant to prepare a Construction Traffic Control Plan to affected jurisdictions, with the Plan providing means to encourage or provide ridesharing opportunities for operational workers as well. Therefore, operational-related trips would not affect existing transit uses or corridors and are presumed to cause a less than significant transportation impact.

Mitigation Measures for Impact TRA-6

Implementation of Mitigation Measure TRA-1 would mitigate Impact TRA-6 (see Section 3.17.10 below).

Significance After Mitigation

This impact would be less than significant with implementation of Mitigation Measure TRA-1.

3.17.6 Alternative 1: No Project Alternative

The transportation and traffic impacts associated with the proposed Project, as presented in Section 3.17.5, would not occur under the No Project Alternative. There would be no direct or indirect impacts associated with temporary vehicle trip generation, VMT, or temporary travel lane disruptions. Furthermore, there would be no physical features that could cause impacts to air navigation. Under the No Project Alternative, it is probable that other solar energy-related projects would be implemented within the site in lieu of the proposed Project because the demand for solar energy continues to increase and the site offers excellent solar potential. A different solar energy project would potentially result in similar impacts to transportation and traffic as those identified for the proposed Project.

3.17.7 Alternative 2: Reduced Footprint Alternative

Under this alternative, approximately 387 acres of undisturbed land would be removed from overall Project site boundary. However, per the description of this alternative provided in Section 2.8.3, there would be no change to the size of the solar facility constructed and operated. Furthermore, the overall length of the gen-tie lines under the proposed Project and this alternative would be the same. The total trip generation and VMT during construction and operation of Alternative 2 would be identical to the proposed Project. Also, the potential for temporary lane disruptions during construction and facilities requiring review by the FAA for air navigation hazards would also be identical to those of the proposed Project. Therefore, the impacts for Alternative 2 for both the solar facility and gen-tie lines would be identical to the proposed Project (as presented in Section 3.17.5) and require identical mitigation measures to ensure impacts to transportation and traffic would be reduced to less than significant levels.

3.17.8 Gen-Tie Segment #1 Alternative Route Option

As shown in Figure 2-8, Gen-Tie Segment #1 Alternative would continue to cross SR-177. There would be no change to the remaining segments of the gen-tie lines compared to the proposed Project. Therefore, this gen-tie reroute would result in identical potential for temporary travel lane disruption as the proposed Project. Furthermore, there would be no change to the amount of solar infrastructure constructed and operated compared to the proposed Project. The total trip generation and VMT during construction and operation, the potential for temporary roadway disruptions, and facilities requiring review by the FAA for air navigation hazards would be identical under this alternative as the proposed Project. The impacts for Gen-Tie Segment #1 Alternative for both the solar facility and gen-tie lines would be identical to the proposed Project (as presented in Section 3.17.5) and require identical mitigation measures to ensure impacts to transportation and traffic would be reduced to less than significant levels.

3.17.9 Cumulative Impacts

The geographic scope of the cumulative analysis for the transportation and traffic vehicle trips analysis are the Project study area intersections identified in Table 3.17-2. This geographic area was selected because cumulative projects would increase impacts only if they used the same intersections and roads at the same time as the proposed Project. Therefore, the cumulative projects considered within the traffic and transportation geographic extent include the ambient projects, i.e. SunPower Project, Palen Solar Project, Desert Harvest Solar Project, Victory Pass I, LLC and Desert Southwest 500 kV Transmission Line (see Table 3.1-2).

As stated in Section 3.1.2, the geographic scope for cumulative impacts to aviation safety is 20,000 feet because that is the area where there would be potential impacts to the Desert Center Airport. Cumulative projects include the Desert Harvest Solar Project, Victory Pass I, LLC, California Jupiter, LLC, IO Solar Project, and the SunPower Project (see Table 3.1-2).

Solar Facility and 220 kV Generation-Tie Line

As discussed in Section 3.17.5, Project operations would result in negligible daily trips to study area roadways. Therefore, the cumulative impact analysis focuses on traffic volumes generated during construction of the proposed Project. Impact TRA-1 and Impact TRA-2 consider the cumulative impacts of the Project by analyzing the effects of the Project plus the ambient conditions. Both impacts conclude that the cumulative impacts would be less than significant with implementation of Mitigation Measure TRA-1 (Construction Traffic Control Plan). Furthermore, Project construction and operation would not introduce trip VMT in excess of projects within the rural desert area and with implementation of Mitigation Measure TRA-1 (Construction Traffic Control Plan) would require the applicant to ensure plans for carpooling are incorporated into construction and operation.

Several solar projects and associated gen-tie lines are located within 20,000 feet of the Desert Center Airport. As with the proposed Project, each project would check with the airport sponsor and the FAA to ensure there are no potential safety or navigational problems with a proposed solar facility, especially if it is a large facility (FAA, 2010). Each cumulative development project within 20,000 feet of Desert Center Airport would also have to be evaluated against FAA 7460 regulations pertaining to structures that may affect aviation and airspace safety. Because each project would need to comply with FAA determinations, the FAA will be able to ensure that the cumulative impacts to the Desert Center Airport are not significant.

The number of potential solar projects that could be developed at the same time would result in an increase in trips, VMT, and an increased risk of transportation hazards or damage to the roads. Cumulative impacts due to increased transportation hazards or damaged roads could be significant if simultaneous construction activities resulted in significant volumes of heavy truck trips that affected safe use of a roadway or damaged transportation facility surfaces. The Project's contribution to the potentially significant cumulative impact would be reduced to less than cumulatively considerable because Mitigation Measure TRA-1 (Construction Traffic Control Plan) requires the Project applicant to define the methods to maintaining close coordination with Caltrans and Riverside County, prior to and during construction, to minimize cumulative impacts of multiple simultaneous construction projects affecting shared portions of the circulation system. Mitigation Measure TRA-1 also requires the Project applicant to reduce temporary motorist hazards in a variety of ways, including ensuring the safe movement of pedestrians and bicycles through work areas. Mitigation Measure TRA-3 (Repair Roadways and Transportation Facilities Damaged by Construction Activities) is proposed to ensure any damage and deterioration attributed to the Project would be repaired. With the incorporation of these measures, the Project would have a less than significant contribution to cumulative hazard impacts on transportation facilities.

Construction of the solar facility and gen-tie lines are not expected to result in a cumulative impact to temporary lane closures. This is because construction of the solar facilities is not expected to require temporary land closures as they would occur within the public and private parcels. Construction of the gen-tie lines for each facility would require stringing the lines over local roads and the I-10, but each developer would be required to coordinate that work with Caltrans and the County to avoid any cumulative impacts.

Construction of the solar facility is not expected to require any temporary lane closures that could restrict the movements of buses. Similarly, the construction of the cumulative projects would also be unlikely to require temporary land closures because they would be built on public or private lands off of public roads. Construction of the proposed Project would require large vehicles travel on local roadways to access the site and includes Mitigation Measure TRA-1 (Construction Traffic Control Plan) that would include provisions for ensuring detours or safe movement of buses through all affected areas. The cumulative projects would also be required to abide by regulations regarding lane closures to reduce any potential impacts. Therefore, the Project would not result in a cumulative significant impact to public transportation.

Mitigation Measures for Cumulative Impacts

Implementation of Mitigation Measures TRA-1 through TRA-3 would mitigate potential transportation and traffic impacts for the proposed Project (see Section 3.17.10 below). No additional mitigation is required.

Significance After Mitigation

With implementation of mitigation, the Project's incremental contribution to impacts from an increase in daily trips and transportation hazards would not be cumulatively considerable. There would be no cumulative impact to aviation safety, disruption of emergency response access, or public transportation.

3.17.10 APMs and Mitigation Measures

APM T-1 All designated public roadway easements directly impacted by the solar facility will remain open to the public during construction and operation as not to preclude access to nearby properties.

APM T-2 If any designated vehicle routes are temporarily impacted by Project activities, the Applicant will develop alternative routes to allow for continued vehicular access. Traffic Safety Coordinator(s) will oversee the installation of proper signage to ensure safe public use of open routes and other recreation opportunities on public lands in the Project area.

MM TRA-1 **Construction Traffic Control Plan.** Prior to the start of construction, IP Athos, LLC, shall submit a Construction Traffic Control Plan for review and approval by Caltrans and Riverside County for affected roads and intersections that would be directly affected by the construction activities and/or would require permits and approvals. The Construction Traffic Control Plan shall include, but not be limited to:

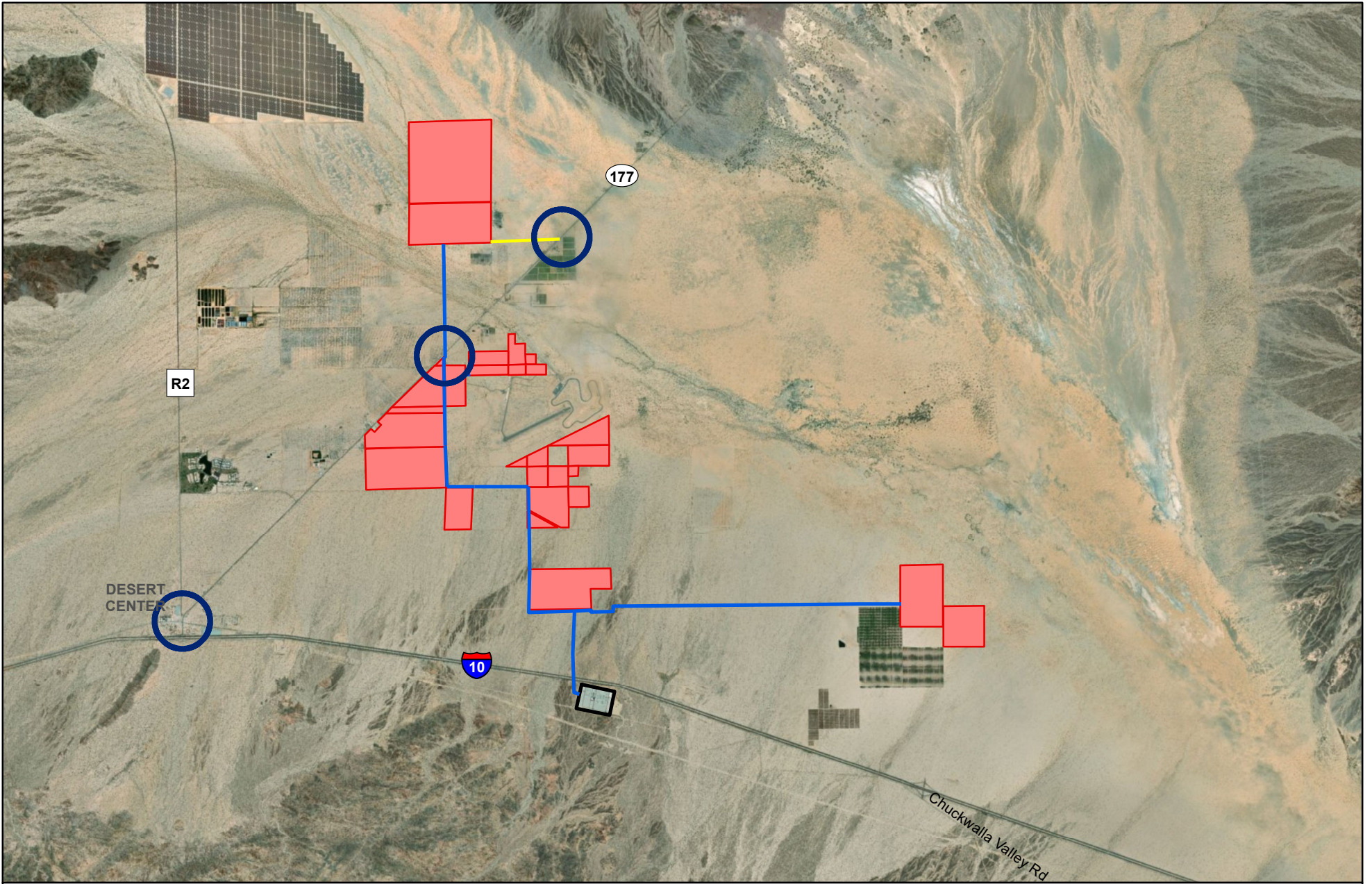
- If multiple construction projects occur at the same time and conditions at the intersection warrant, plans for installation of a temporary signal or use of manual intersection control during the construction period at the I-10 westbound ramp at SR-177. Additionally, if conditions warrant, geometry changes shall be considered in coordination with Caltrans and Riverside County, and implemented, if necessary, in addition to signalization at the I-10 westbound ramp and SR-177. These geometry changes should include a 50-foot westbound right turn pocket, as well as a southbound 50-foot right turn pocket. If manual intersection control is used in the morning peak hour, no manual intersection control is needed in the afternoon peak hour, and the southbound right turn pocket would likely not be needed.
- The locations and use of flaggers, warning signs, barricades, delineators, cones, arrow boards, etc., according to standard guidelines outlined in the Manual on Uniform Traffic Control Devices, the Standard Specifications for Public Works Construction, and/or the California Joint Utility Traffic Control Manual.
- The locations of all road or traffic lane segments that would need to be temporarily closed or disrupted due to construction activities.
- The locations where guard poles, netting, or similar means to protect transportation facilities for any construction or conductor installation work requiring the crossing of a local street, highway, or rail line are proposed.
- The use of continuous traffic breaks operated by the California Highway Patrol on state highways (if necessary).
- Additional methods to reduce temporary traffic delays to the maximum extent feasible during morning (7:00 a.m. to 9:00 a.m.) and afternoon (4:00 p.m. to 6:00 p.m.) peak traffic periods, or as directed in writing by the affected public agency in encroachment or other permits). This should also include feasible ways to avoid construction-related trips on I-10 and SR-177 during peak traffic periods.
- Plans to encourage or provide ridesharing opportunities for construction and operational workers.

- Plans to provide written notification to property owners and tenants at properties affected by access restrictions to inform them about the timing and duration of obstructions and to arrange for alternative access if necessary. The coordination shall occur at least one week prior to any blockages.
- Plans to coordinate in advance with emergency service providers to avoid restricting the movements of emergency vehicles. Police departments and fire departments shall be notified in advance by IP Athos, LLC of the proposed locations, nature, timing, and duration of any roadway disruptions, and shall be advised of any access restrictions that could impact their effectiveness. At locations where roads will be blocked, provisions shall be ready at all times to accommodate emergency vehicles, such as immediately stopping work for emergency vehicle passage, providing short detours, and developing alternate routes in conjunction with the public agencies.
- Provisions for ensuring detours or safe movement of local resident vehicles, pedestrians, and bicycles through all affected facilities.
- Define the method to maintaining close coordination, prior to and during construction, with Caltrans and Riverside County to minimize cumulative impacts of multiple simultaneous construction projects affecting shared portions of the circulation system. Coordination with adjacent development projects to spread work shifts into multiple hours (instead of peak hour) or the installation of additional temporary traffic signals or manual traffic control officers during peak hours to mitigate the temporary impacts.

MM TRA-2 **Comply with FAA 7460-1 Determination Recommendations.** Pursuant to FAA guidelines, IP Athos, LLC, shall submit FAA Form 7460-1, Notice of Proposed Construction or Alteration, to the Manager of the FAA Air Traffic Division for review and comment. These filings shall specify the heights and locations of all applicable gen-tie transmission structures and conductor wire spans, pursuant to final engineering, per the requirements of FAA Form 7460-1. IP Athos, LLC, shall implement all recommended safety features or Project design changes recommended by the FAA through the FAA 7460-1 process.

MM TRA-3 **Repair Roadways and Transportation Facilities Damaged by Construction Activities.** If roadways, sidewalks, medians, curbs, shoulders, or other such transportation features are damaged by Project construction activities, as determined by the affected public agency, such damage shall be repaired and restored to their pre-Project condition by Athos, LLC. Prior to construction, Athos, LLC shall confer with Riverside County regarding the roads within 500 feet in each direction of Project access points (where heavy vehicles will leave public roads to reach Project sites); and Riverside County and Caltrans regarding the roads to be crossed by the proposed gen-tie line. At least 30 days prior to construction, or as requested by Riverside County or Caltrans, Athos, LLC shall photograph or video record all affected roadway segments and shall provide Riverside County and Caltrans with a copy of these images, if requested.

At the end of major construction, Athos, LLC shall coordinate with each affected jurisdiction to confirm what repairs are required. Any damage demonstrable to the Project is to be repaired to the pre-construction condition within 60 days from the end of all construction, or on a schedule mutually agreed to by Athos, LLC and the affected jurisdiction. If multiple projects are using the transportation features, Athos will pay its fair share of the required repairs. Athos, LLC shall provide Riverside County and Caltrans (as applicable) proof when any necessary repairs have been completed.



0 1 2 Miles

-  Proposed Gen-Tie
-  Proposed Access Road
-  Solar Facility
-  Study Area Intersections
-  Red Bluff Substation

Figure 3.17-1

Traffic Study Area

3.18 Energy

This section describes the environmental setting and regulatory framework with respect to energy consumption and generation for the proposed Project, including applicable plans, policies, and regulations. The analysis of energy includes evaluating the Project's use of energy during construction and operation, as well as evaluating the Project's consistency with state or local plan for renewable energy or energy efficiency.

3.18.1 Environmental Setting

The proposed solar facility would generate up to 500 megawatts (MW) of renewable energy. The Project could include, at the Applicant's option, a battery or flywheel storage system capable of storing up to 500 MW of electricity. The power produced by the Project would be conveyed to the statewide power grid via an overhead 220 kilovolt (kV) generation tie (gen-tie) transmission line interconnecting to the Southern California Edison (SCE) Red Bluff Substation, an existing substation located south of Interstate 10 (I-10) and approximately 1.1 miles south of the Project area on BLM-administered land. The southern California bulk electric power transmission system includes the high-voltage transmission facilities of SCE and San Diego Gas & Electric (SDG&E), with major interconnections to systems of Pacific Gas & Electric (PG&E), Los Angeles Department of Water and Power (LADWP) and Arizona Public Service (APS). About 15 million people in central, coastal and southern California, excluding the City of Los Angeles and certain other cities, are served by the SCE transmission system (CAISO, 2018).

3.18.2 Regulatory Framework

Energy Action Plan and Loading Order. California has mandated and implemented aggressive energy-use reduction programs for electricity and other resources. In 2003, California's first Energy Action Plan (EAP) established a high-level, coherent approach to meeting California's electricity and natural gas needs and set forth the "loading order" to address California's future energy needs. The "loading order" established that the state, in meeting its energy needs, would invest first in energy efficiency and demand-side resources, followed by renewable resources, and only then in clean conventional electricity supply (CPUC, 2008). Since that time, the CPUC and California Energy Commission (CEC) have overseen the plans, policies, and programs for prioritizing the preferred resources, including energy efficiency and renewable energy.

Senate Bill 100. On September 10, 2018, Senate Bill (SB) 100 was passed, making California the second state in the nation with a deadline to move to 100% zero-carbon electricity. SB 100 will accelerate California's renewable portfolio standard (RPS) requirements of electricity utility providers to 50% renewable energy sources by 2025, 60% by 2030, and will require that the next 40% comes from zero-carbon sources of electricity by 2045.

State CEQA Guidelines. The California Natural Resources Agency adopted certain amendments to the State CEQA Guidelines effective in 2019, to change how CEQA Lead Agencies consider the environmental impacts of energy use. The State CEQA Guidelines, §15126.2(b) requires analysis of a project's energy use, in order to assure that energy implications are considered in project decisions. CEQA requires a discussion of the potential environmental effects of energy resources used by projects, with particular emphasis on avoiding or reducing the "wasteful, inefficient, and unnecessary consumption of energy" (see Public Resources Code section 21100(b)(3)).

3.18.3 Methodology for Analysis

All construction- and operation-related activities would involve use of energy-consuming equipment and processes. This analysis presents a qualitative discussion of the proposed project's energy use for all phases

and components. As set forth in the State CEQA Guidelines, Appendix F: Energy Conservation, the goal of conserving energy implies the wise and efficient use of energy including:

- Decreasing overall per capita energy consumption;
- Decreasing reliance on fossil fuels such as coal, natural gas and oil; and
- Increasing reliance on renewable energy sources.

Lead agency actions that are consistent with these goals would not be likely to cause an energy-related impact. The energy impact analysis emphasizes avoiding or reducing inefficient, wasteful and unnecessary consumption of energy resources, and whether the project would result in a potentially significant environmental impact due to inefficient, wasteful, and unnecessary consumption of energy.

Examples of energy conservation measures that may be relevant to addressing energy are provided in Appendix F: Energy Conservation, within the State CEQA Guidelines.

3.18.4 CEQA Significance Criteria

The criteria used to determine the significance of the Project-related energy impacts are based on the criteria identified in the CEQA Guidelines, Appendix G. Project-related impacts would be considered significant if they would:

- *Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation (see Impact ENERGY-1).*
- *Conflict with or obstruct a state or local plan for renewable energy or energy efficiency (see Impact ENERGY-2).*

There are no additional significance criteria related to energy use within the County of Riverside Environmental Assessment Form. Therefore, only the CEQA significance criteria identified above are utilized within this analysis.

3.18.5 Proposed Project Impact Analysis

Impact ENERGY-1. The Project would result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation.

Solar Facility and 220 kV Generation-Tie Line

Construction. Construction activity associated with the proposed Project (solar facility and gen-tie line) would require the consumption of fossil fuel resources, for example diesel fuel and gasoline to power construction equipment and vehicles. Additionally, construction would require the manufacture and delivery of new equipment and materials, which would require energy use. Energy use during construction would be reduced by best management practices, applicant proposed measures, and adherence to proposed mitigation requirements that would minimize construction equipment activity, limit the idling of equipment, encourage carpooling, and reducing temporary traffic delays. While construction would require the temporary use of energy resources, the Project would not result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction. Furthermore, implementation of mitigation that would reduce energy consumption by the Project during construction would ensure that impacts would be less than significant.

Operation and Maintenance. The proposed Project would increase the amount of renewable energy electrical power generated and delivered into SCE's load centers. Maintenance and inspection of proposed Project components would require use of fossil fuel resources. Up to 10 permanent staff could be on the site at any one time for ongoing facility maintenance and repairs. Alternatively, approximately 2 permanent staff and 8 Project operators would be located off-site and would be on call to respond to alerts generated by the monitoring equipment at the Project site. However, this limited use of fossil fuel by operational worker commutes and use of vehicles and equipment during maintenance is not considered to wasteful, inefficient, or unnecessary. The proposed Project would increase the use of renewable energy, thus reducing the use of fossil fuel for electrical generation by conventional power plants. The Project would result in less than significant impact with respect to any consumption or use of energy resources.

Mitigation Measures for Impact ENERGY-1

Implementation of the following mitigation measures would reduce energy consumption of the Project: MM AQ-2 (Control On-Site Off-Road Equipment Emissions), MM AQ-3 (Require Newer Vehicles for On-Road Vendor and Hauling Trucks), MM AQ-4 (Construction Activity Management Plan), MM N-1 (Construction Restrictions), and MM TRA-1 (Construction Traffic Control Plan).

Significance After Mitigation

With the implementation of the above mitigation, potential impacts from Project-related construction and operation related to wasteful, inefficient, or unnecessary use of energy resources would be less than significant.

Impact ENERGY-2. The project would conflict with or obstruct a state or local plan for renewable energy or energy efficiency.

Solar Facility and 220 kV Generation-Tie Line

The proposed solar facility would generate up to 500 MW of renewable energy. Critical objectives and purpose and need of the proposed Project are to assist with achieving renewable energy generation goals under Senate Bills 100 and 350, as well as greenhouse gas (GHG) emissions reduction goals of the California Global Warming Solutions Act (AB 32). Additionally, the proposed Project would make the highest and best use of primarily disturbed retired agricultural land in and around a federal "Solar Energy Zone" and "Renewable Energy Development Focus Area" to generate, store, and transmit affordable, wholesale renewable solar electricity. Therefore, the proposed Project would directly support federal, State, and local plans for renewable energy development. Beneficial impacts related to state or local plans for renewable energy or energy efficiency would occur.

Mitigation Measures for Impact ENERGY-2

No mitigation is warranted or proposed.

Significance After Mitigation

No impact would occur.

3.18.6 Alternative 1: No Project Alternative

Any use of energy resources associated with construction of the proposed Project, as presented in Section 3.18.5, would not occur under the No Project Alternative. There would be no direct use of energy resources from vehicles or equipment used during construction. Furthermore, there would be no development of a

renewable energy facility, which would provide the beneficial impact of supporting federal, State, and local plans for renewable energy development (Impact ENERGY-2). Under the No Project Alternative, it is probable that other solar energy-related projects could be implemented within the site in lieu of the proposed Project because the demand for solar energy continues to increase and the site offers excellent solar potential. A different solar energy project would potentially result in similar energy consumption during construction as that identified for the proposed Project.

3.18.7 Alternative 2: Reduced Footprint Alternative

Under this alternative, approximately 387 acres of undisturbed land would be removed from the overall Project site boundary, which would reduce the solar energy production and integrated energy storage to 450 MW each (instead of 500 MW under the proposed Project). The overall impact determination and mitigation requirements would be similar under Impact ENERGY-1, but the total energy consumption during construction of Alternative 2 would be reduced compared to the proposed Project. On the other hand, the Reduced Footprint Alternative would develop only 450 MW of solar energy generation, so would support federal, State, and local plans for renewable energy development (a beneficial impact) to a lesser extent than the proposed Project.

3.18.8 Gen-Tie Segment #1 Alternative Route Option

Gen-Tie Segment #1 Alternative Route Option would not significantly change the amount of construction and energy used compared to the proposed Project. Furthermore, there would be no change to the amount of energy used to construct the solar facility compared to the proposed Project. Gen-Tie Segment #1 Alternative Route Option would develop a 500 MW solar energy generation facility which would directly support federal, State, and local plans for renewable energy development, identical to the proposed Project. The impacts for Gen-Tie Segment #1 Alternative Route Option would be identical to the proposed Project (as presented in Section 3.18.5) and require identical mitigation measures to reduce energy consumption during construction.

3.18.9 Cumulative Impacts

The geographic scope of the cumulative analysis for energy consumption would be all cumulative projects identified in Tables 3.1-1 and 3.1-2. This geographic area was selected because all cumulative projects have the potential to temporarily or permanently utilize energy resources or have the potential to conflict with plans and policies related to increasing renewable energy and energy efficiency.

Solar Facility and 220 kV Generation-Tie Line

As discussed in Section 3.18.5, Project construction would not result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources (Impact ENERGY-1). Energy use during construction would be reduced by best management practices, applicant proposed measures, and adherence to proposed mitigation requirements that would minimize construction equipment activity, limit the idling of equipment, encourage carpooling, and reducing temporary traffic delays. The limited use of fossil fuel by operational worker commutes and use of vehicles and equipment during maintenance is not considered to wasteful, inefficient, or unnecessary. The proposed Project would increase the use of renewable energy, thus reducing the use of fossil fuel for electrical generation by conventional power plants. A number of cumulative projects identified in Tables 3.1-1 and 3.1-2 are also renewable energy facilities. While construction activities associated with cumulative projects identified in Tables 3.1-1 and 3.1-2 would require the use of fossil fuels, it is assumed each project would initiate best

management practices and other methods as part of project approval to reduce wasteful, inefficient, or unnecessary use of energy resources. The Project's contribution to potentially significant cumulative impacts would be less than cumulatively considerable because the Project would not result in wasteful, inefficient, or unnecessary energy use. Additionally, the Project would have a beneficial cumulative contribution related to directly supporting federal, State, and local plans for renewable energy development.

Mitigation Measures for Cumulative Impacts

Implementation of the following mitigation measures would reduce energy consumption of the Project by minimizing extraneous construction activities and equipment use: MM AQ-2 (Control On-Site Off-Road Equipment Emissions), MM AQ-3 (Require Newer Vehicles for On-Road Vendor and Hauling Trucks), MM AQ-4 (Construction Activity Management Plan), MM N-1 (Construction Restrictions), MM TRA-1 (Construction Traffic Control Plan).

Significance After Mitigation

With implementation of mitigation, the Project's incremental contribution to impacts from wasteful, inefficient, or unnecessary energy consumption would not be cumulatively considerable. There would be a beneficial cumulative contribution related to directly supporting federal, State, and local plans for renewable energy development.

3.18.10 Mitigation Measures

- MM AQ-2** **Control On-Site Off-Road Equipment Emissions.** *See full text in Section 3.4, Air Quality.*
- MM AQ 3** **Require Newer Vehicles for On-Road Vendor and Hauling Trucks.** *See full text in Section 3.4, Air Quality.*
- MM AQ-4** **Construction Activity Management Plan.** *See full text in Section 3.4, Air Quality.*
- MM N-1** **Construction Restrictions.** *See full text in Section 3.12, Noise.*
- MM TRA-1** **Construction Traffic Control Plan.** *See full text in Section 3.17, Traffic and Transportation.*

4. Other CEQA Considerations

Section 4 includes discussions of various topics required by CEQA that are not necessarily discussed elsewhere in the EIR. These topics include Section 4.1, significant and unavoidable impacts; Section 4.2, significant irreversible and irretrievable changes, including energy use; Section 4.3, growth-inducing effects; and Section 4.4, energy conservation.

4.1 Significant and Unavoidable Environmental Impacts

4.1.1 Significant Direct Effects of the Solar Facility and Gen-Tie Line

As required by the State CEQA Guidelines Section 15126.2(b), an environmental impact report (EIR) must describe any significant impacts that cannot be avoided, including those impacts that can be mitigated but not reduced to a less than significant level. Where there are impacts that cannot be alleviated without imposing an alternative design, their implications and the reasons the project is being proposed, notwithstanding their effect, should be described. Section 3 of this EIR describes the potential environmental impacts of the proposed Project and recommends mitigation measures to reduce impacts, where feasible. Impacts in the following would be significant and unavoidable with construction and operation of the proposed Project, even with the incorporation of feasible mitigation measures that attempt to reduce impacts to the extent feasible. Note that these conclusions apply to the Project as proposed (and described in Section 2), as well as to Alternative 2 (Reduced Footprint Alternative) and Gen-Tie Segment #1 Route Option Alternative, but not to Alternative 1 (No Project Alternative).

■ **Aesthetics:**

- **Impact AES-2. The Project could substantially degrade the existing visual character or quality of the site and its surroundings.** The resulting visual change would be adverse and unavoidable in the immediate vicinity of the gen-tie span of SR-177 and immediately adjacent to Parcel Group C (approximately 13 percent of the combined northbound and southbound affected travel distance along SR-177).
- **Impact AES-4. The Project could result in the creation of an aesthetically offensive site open to public view.** The visible contrast associated with the change in visual character during operation would result in an impact that would be significant even with implementation of mitigation for the area along SR-177 that is located in the immediate vicinity of the gen-tie span of SR-177 and immediately adjacent to Parcel Group C.
- **Impact AES-7. Project decommissioning activities and associated industrial character could cause short-term and/or long-term aesthetic effects resulting from increased visual contrast.** Revegetation in this desert region is difficult and generally of limited success. Therefore, visual recovery from land disturbance associated with closure and decommissioning activities would likely occur only over a long period of time. While Mitigation Measure BIO-5 (Vegetation Resources Management Plan) requires the implementation of several steps to address temporarily impacted sites, the long term required for any meaningful vegetation recovery and reduction in visual contrast would result in an adverse and significant visual impact that cannot be mitigated to a level that would be less than significant.

While the proposed Project and Reduced Footprint Alternative would both create significant visual impacts from the solar facility and gen-tie line to travelers along SR-177, the proposed Project has been located to minimize environmental impacts and land disturbance associated with solar development by siting the facility on relatively flat, contiguous lands with high solar insolation, in close proximity to established utility corridors, existing transmission lines with available capacity to facilitate interconnection and road

access. The surrounding federal lands are designated as a “Solar Energy Zone” and a “Development Focus Area” in order to allow for development of solar energy generation and appurtenant facilities on public lands in this specific area. Furthermore, construction and operation of the Project would bring jobs to eastern Riverside County and would assist California with achieving its renewable energy generation goals. Given the location of the proposed Project on disturbed land in an area identified for solar generation, the Project’s renewable energy and economic benefits would outweigh the Project’s unavoidable adverse environmental impacts on visual resources.

4.1.2 Significant Cumulative Effects

According to Section 15355 of the State CEQA Guidelines, the term *cumulative impacts* “refers to two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts.” Individual effects that may contribute to a cumulative impact may be from a single project or a number of separate projects. Individually, the impacts of a project may be relatively minor, but when considered along with impacts of other closely related or nearby projects, including newly proposed projects, the effects could be cumulatively considerable.

The cumulative scenario and analysis methodology is included in Section 3.1 of this EIR. This EIR has considered the potential cumulative effects of the Athos Project for each issue area in Section 3. Impacts of these projects are cumulatively considered when they are combined with impacts from past, present, and reasonable future projects. Impacts would be considered cumulatively significant for the following issue areas:

- **Aesthetics:** The cumulative scenario includes many large-scale solar plants and transmission lines whose scale and pervasiveness would have adverse cumulative effects. If all the projects were implemented, they would substantially degrade the visual character and general scenic appeal of the existing landscape, resulting in the conversion of a relatively undeveloped desert landscape into a more industrialized appearance. As a result, the proposed Project in combination with the cumulative projects would result in significant cumulative visual impacts when viewed by sensitive viewing populations along I-10 and SR 177, from nearby residences, and in the surrounding mountains and wilderness. Effective implementation of Mitigation Measures AES-1 (Night Lighting Management Plan), AES-2 (Surface Treatment of Project Structures and Buildings), AES-3 (Project Design), AES-4 (Retention of Roadside Vegetation), and BIO-5 (Revegetation Plan) would reduce the severity of the cumulative visual effects, though not to levels that would be less than significant.
- **Cultural Resources:** Past, present and reasonably foreseeable future actions have already destroyed, and is projected to destroy, approximately 41 percent of the cultural resources that are estimated to have originally existed in the cumulative analysis study area. Three sensitive prehistoric archaeological resources are present in the indirect effects study area and are contributors to the Prehistoric Trails Network Cultural Landscape/Historic District (PTNCL). The addition of more industrial components to the Chuckwalla Valley contributes in a small but measurable way to a visual intrusion upon the setting of the PTNCL, which compromises the integrity of the resource. Implementation of mitigation, namely Mitigation Measure CUL-12 (Prehistoric Trails Summary Report), would reduce the contribution of the Project, but the cumulative impact would remain significant.

4.2 Irreversible and Irretrievable Commitments of Resources

State CEQA Guidelines Section 15126.2 requires a discussion of any irreversible or irretrievable commitments of resources that would be caused by implementation of a proposed project or alternative. According to State CEQA Guidelines Section 15126.2(c), “[u]ses 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.” Both primary and secondary impacts of a project generally commit future generations to similar uses. Also, irreversible damage can result from environmental accidents associated with a project. Irretrievable commitments of resources should be evaluated to assure that such current consumption is justified. Therefore, the purpose of this discussion is to identify any significant irreversible environmental changes brought about by the Project.

Resources irreversibly or irretrievably committed to a proposed project are those used on a long-term or permanent basis. This includes the use of nonrenewable resources such as petroleum fossil fuel resources, petrochemical products, metals as raw material for steel, aggregate minerals including sand and gravel, and other natural resources. These resources are considered irretrievable in that they would be used for a proposed action when they could have been conserved or used for other purposes. Another irreversible or irretrievable commitment of resources is the unavoidable destruction of natural resources that could limit the range of potential uses of that particular environment.

Construction of the proposed Project or alternatives would commit nonrenewable resources during Project construction and ongoing utility services during Project operations. The Applicant anticipates that at least 20 percent of construction waste would be recyclable, and 50 percent of those materials would be recycled. The proposed Project would install solar PV panels manufactured from metals, such as thin-film panels (including cadmium telluride [CdTe or “cad tel”] and copper indium gallium diselenide [CIGS] technologies), crystalline silicon panels, or any other commercially available PV technology. During Project operations, oil, gas, and other nonrenewable resources would be consumed for maintenance purposes, although on a limited basis. See Section 4.4, *Energy Conservation*, for more information.

After the expiration of the CUP at a minimum of 40 years, the Project could be decommissioned and the land will be available for reversion to open space or agricultural use. The Applicant would restore the site to its pre-solar facility conditions, or such condition as appropriate in accordance with County policy at the time of decommissioning. Upon ultimate decommissioning, a majority of Project components would be suitable for recycling or reuse, and Project decommissioning would be designed to optimize such salvage as circumstances allow and in compliance with all local, State, and federal laws and regulations as they exist at the time of decommissioning. In the event that the Project is decommissioned and dismantled, some of the natural resources on site could be retrieved (e.g., agriculture, soil, and natural hydrologic function).

The Project is a renewable energy project intended to generate solar energy to reduce reliance on fossil fuels. Over the minimum 40-year CUP term for the Project, this renewable energy project would contribute incrementally to the reduction in demand for fossil fuel used to generate electricity, thereby resulting in a positive effect counteracting the commitment of nonrenewable resources to the Project.

4.3 Growth Inducing Impacts

State CEQA Guidelines Section 15126.2(d) requires analysis of the growth-inducing impact of the proposed Project. The discussion should identify the ways in which the project could foster economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment. This includes projects that remove obstacles to population growth, such as by extending public services into areas not previously served. Growth inducement can also result from actions that encourage development or encroachment into surrounding areas or encourage adjacent development. According to State CEQA Guidelines Section 15126.2(d), growth should not be assumed to be beneficial, detrimental, or of little significance to the environment.

This growth inducing impact analysis considers the following four criteria, and whether the proposed Project would result in:

- Removal of an obstacle to growth, e.g., establishment of an essential public service or the provisions of new access to an area;
- Economic expansion or growth, e.g., changes in revenue base or employment expansion, that would require construction of new facilities that could cause significant environmental effects;
- Establishment of a precedent-setting action, e.g., a change in zoning, or general plan amendment approval; or
- Encouraging development or encroachment into an isolated area or open space.

Should a project meet any one of the criteria listed above, it can be considered growth-inducing.

Removal of an obstacle to growth. The proposed Project would result in the conversion of substantial land areas to a new type of land use. The proposed Project would be constructed within an area covered by the Riverside County General Plan and Desert Center Area Plan, and the proposed Project would be a conditionally permitted use. The proposed Project would not result in the establishment of an essential public service, and it would not provide new access to a previously inaccessible area. As a result, the proposed Project would not cause significant growth inducement under this criterion.

Economic expansion or growth. Short-term economic growth could occur during the construction and decommissioning periods because the proposed Project and the construction schedules of multiple overlapping projects could create a demand for workers that may not be met by the local labor force, thereby inducing in-migration of non-local labor and their households. Construction of the proposed Project alone would not create long-term jobs, however; therefore, the construction phase of the project is not considered to be growth inducing. Given the number of solar projects proposed in the Desert Center area, workers may stay on and continue to work in the area following construction of the proposed Project if jobs on other solar projects are available. Following construction, up to 10 permanent staff could be on the site at any one time for ongoing solar facility maintenance and repairs, and no new permanent personnel are anticipated to be added to operate and maintain the gen-tie line. The Project workforce could contribute to an increase in tax revenues for the State of California and Riverside County; however, the limited permanent employment expansion would not result in the need for new or physically altered community-serving facilities. As a result, the proposed Project would not be growth-inducing for its effects on economic expansion or growth.

Establishment of a precedent-setting action. The proposed Project would be a conditionally permitted use, resulting in the development of a solar facility and gen-tie line in the vicinity of other existing and approved solar projects. The Project would be similar to other cumulative projects in eastern Riverside County, many of which are identified as past and present projects or probable future projects (EIR Section 3.1.2, Cumulative Impact Scenario). The Project would not establish a precedent-setting action such as a change in zoning or general plan amendment. Therefore, the proposed Project would not be growth inducing under this criterion.

Development or encroachment into an isolated area or open space. The proposed Project would result in development of private and public land across 7 groups of non-contiguous parcels. The proposed Project does not involve the development of a residential component that would result in direct population growth in the area. Additionally, the Project would not involve the development of new roadways, water systems, or sewer systems. Infrastructure improvements to serve the Project would be limited and would not be available to serve surrounding areas. Therefore, the proposed Project would not result

in growth inducement through development or encroachment into an isolated area or open space. In addition, the development of the project will not be in an isolated area, as several neighboring and nearby properties are also developed with, or permitted for development of, solar farms.

4.4 Energy Conservation

In order to assure that energy implications are considered in project decisions, CEQA requires that EIRs include a discussion of the potential energy impacts of proposed projects, with particular emphasis on avoiding or reducing the “wasteful, inefficient, and unnecessary consumption of energy” (see Public Resources Code section 21100(b)(3)). According to Appendix F: Energy Conservation, within the State CEQA Guidelines, the goal of conserving energy implies the wise and efficient use of energy including:

- Decreasing overall per capita energy consumption;
- Decreasing reliance on fossil fuels such as coal, natural gas and oil; and
- Increasing reliance on renewable energy sources.

Lead agency actions that are consistent with these goals would not be likely to cause an energy-related impact. For this analysis, an impact related to energy conservation would be considered potentially significant if the project would cause inefficient, wasteful, and unnecessary consumption of energy.

Energy Implications of the Proposed Project. The proposed Athos Renewable Energy Project itself would develop a renewable source of power, which would help to offset the use of nonrenewable resources and contribute to an overall reduction of nonrenewable resources currently used to generate electricity. The proposed Project would produce over 1.2 million megawatt-hours (MWh) annually based on a typical, lower-bound capacity factor of 28 percent for a PV system without tracking, and with tracking, a higher capacity factor would be achieved, and production would range up to approximately 1.4 million MWh annually. Solar-powered production of electricity would further the energy goal of the State CEQA Guidelines by decreasing reliance on fossil fuel-fired electric generating facilities, primarily by decreasing use of natural gas in California, and by increasing reliance on renewable energy sources.

This EIR in Section 3.8 (Greenhouse Gas Emissions) describes additional effects on climate change/greenhouse gas (GHG) emissions that would be caused by implementation of the Athos Renewable Energy Project, such as the GHG emissions avoided by producing electricity from solar power.

Discussion of Potential Energy Impacts. This analysis addresses the following types of potential energy-related impacts, which are outlined in Appendix F of the State CEQA Guidelines:

- **Would the project result in substantial new energy requirements or significant energy use inefficiencies for any stage of project construction, operation, maintenance, and/or removal?** The proposed Project would produce electricity adding to California’s supply of renewable energy resources. Each stage of proposed Project construction, operation, maintenance, and removal, including decommissioning, would require direct energy use through the consumption of fossil fuels in the form of petroleum products that fuel equipment and vehicles, and the use of electricity for powering onsite equipment and facilities. Indirect energy use would include the energy required to refine raw materials and manufacture the components used in construction of the Project. This would include energy used for extraction of raw materials, manufacturing, and transportation associated with manufacturing. Energy used during construction, operation, maintenance, and removal, including decommissioning would be necessary in the implementation of the proposed Project, which would become an electricity producer upon its operation. Accordingly, the proposed Project would not result in an inefficient, wasteful, or unnecessary consumption of energy, and the proposed Project energy requirements would not be substantial or result in significant energy use inefficiencies during any stage.

- **Would the project cause a significant adverse effect on local and regional energy supplies and on requirements for additional capacity?** The development activities and O&M of the proposed Project would consume fossil fuels and some electricity for powering onsite equipment and facilities. Providing diesel and gasoline for Project-related consumption of transportation fuels would not require any additional capacity in the eastern Riverside County regional supply or distribution network. Upon entering commercial service, the proposed Project would become an electricity producer adding to California's supply of renewable energy resources. Because the proposed gen-tie line would provide the capacity to interconnect and ultimately deliver the electrical output of the solar facility, the proposed Project would not exceed local capacity to meet the demand for electricity.
- **Would the project cause a significant adverse effect on peak and base period demands for electricity and other forms of energy?** Overall per capita energy consumption would not be expected to change as a result of the proposed Project. The proposed Project would involve no change in how retail electric service is provided and no change in energy efficiency or energy conservation programs implemented by the utilities serving the peak and base period demands for electricity. The proposed Project would result in no notable change in demand for peak-period or base period electricity from the grid.
- **Would the project disrupt compliance with existing energy standards?** Development activities and O&M of the proposed Project would consume fossil fuels and some electricity for powering onsite equipment and facilities. Vehicles and equipment, and onsite buildings, would need to conform with fuel efficiency standards and building energy efficiency standards established by California's existing programs promoting energy conservation. Similarly, the end-users of electricity that is produced by the proposed Project would be subject to California's existing energy conservation programs. The proposed Project would not disrupt compliance with existing energy standards or have any adverse effect on potential compliance with energy conservation standards.
- **Would the project cause a significant adverse effect on energy resources?** The proposed Project would add to California's supply of renewable energy resources by increasing the production of renewable energy for end-users of electricity in California. The proposed Project would not cause an adverse effect due to inefficient, wasteful, or unnecessary energy use.
- **Would the project result in significant adverse effects related to transportation energy use?** Development activities and O&M of the proposed Project would use transportation fuels and providing diesel and gasoline for Project-related consumption of transportation fuels would not require any additional capacity in the eastern Riverside County regional supply or distribution network. Due to the small permanent workforce and the limited need for deliveries or waste hauling during O&M of the solar facility, the transportation energy use would be minimal in comparison with the electricity produced. The proposed Project would not cause an adverse effect due to inefficient, wasteful, or unnecessary transportation fuel use.

5. Comparison of Alternatives

This section summarizes and compares the environmental advantages and disadvantages of the proposed Project and the alternatives evaluated in this EIR. This comparison is based on the assessment of environmental impacts of the proposed Project and each alternative, as identified in Section 3 (Environmental Impacts of Proposed Project and Alternatives).

5.1 CEQA Requirements for Alternatives Comparison

CEQA requires the following for alternatives analysis and comparison:

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. Guidelines Section 15126.6(d)

If the environmentally superior alternative is the No Project Alternative, CEQA requires identification of an environmentally superior alternative among the other alternatives [CEQA Guidelines Section 15126.6(e)(2)].

5.2 Comparison Methodology

The following methodology was used to compare alternatives in this EIR:

- **Step 1: Identification of Alternatives.** A screening process (described in Section 2.8, *Alternatives Analyzed in Detail*) was used to identify alternatives to the proposed Project. A No Project Alternative was also identified. This range of alternatives is sufficient to foster informed decision-making and public participation. No other feasible alternatives meeting most of the Project objectives were identified that would lessen or alleviate significant impacts.
- **Step 2: Determination of Environmental Impacts.** The environmental impacts of the proposed Project and alternatives were identified in Section 3, including the potential impacts of solar facility and gen-tie transmission line construction and operation. A summary of the significant impacts that cannot be mitigated (Class I impacts) are described in Section 5.3. Highlighting these areas of significant impacts that the proposed Project cannot avoid identifies the impact of concern when considering whether there is an alternative that would be capable of reducing these effects to a less than significant level compared to the proposed Project, and whether an alternative would create new significant impacts. This simplifies identification of the environmentally superior alternatives while considering all issue areas equally.
- **Step 3: Comparison of Proposed Project and Alternatives.** The environmental impacts of the proposed Project were compared to those of each alternative to determine the environmentally superior alternative. The environmentally superior alternative was then compared to the No Project Alternative.

Determining an environmentally superior alternative requires balancing many environmental factors. In order to identify the environmentally superior alternative, the most important impacts in each issue area were identified and compared in Table 5-1. Although this EIR identifies an environmentally superior alternative, it is possible that the decision-makers could balance the importance of each impact area differently and reach different conclusions. In other words, the lead agency is not required to select the environmentally superior alternative. CEQA's "substantive mandate" only requires the selection of one alternative

over others if that alternative is feasible, based on a list of statutory factors, and if it will avoid one or more significant effects on the environment compared to other alternatives.

5.3 Comparison of the Proposed Project and Alternatives

5.3.1 Ability to Meet Project Objectives

The Applicant's project objectives and purpose and need for the proposed Project are:

1. Assist Californians in meeting their renewable energy generation goals under the Clean Energy and Pollution Reduction Act of 2015 (Senate Bill 350) and greenhouse gas emissions reduction goals of the California Global Warming Solutions Act of 2006 (AB 32), as amended by Senate Bill 32 in 2016;¹
2. Bring living-wage jobs to eastern Riverside County;
3. Minimize environmental impacts and land disturbance associated with solar development by siting the facility on relatively flat, contiguous lands with high solar insolation, in close proximity to established utility corridors, existing transmission lines with available capacity to facilitate interconnection, and road access;
4. Further the purpose of Secretarial Order 3285A1, establishing the development of environmentally responsible renewable energy as a priority for the Department of the Interior; and
5. Make the highest and best use of primarily disturbed, retired agricultural land in and around a federal "Solar Energy Zone" and "Development Focus Area" to generate, store, and transmit affordable, wholesale solar electricity.

Alternative 1: No Project Alternative. The No Project Alternative would fail to meet any of the Project's objectives and would not achieve any of the environmental benefits of increasing renewable energy generation consistent with the State of California's Renewable Portfolio Standard (RPS).

Alternative 2: Reduced Footprint Alternative. The Reduced Footprint Alternative would meet the Project's objectives; however, Alternative 2 would achieve these objectives, which include the provision of environmental benefits, to a lesser extent compared with the proposed Project. Although the Reduced Footprint Alternative would assist Californians in meeting their renewable energy generation goals under Objective #1 and further the purpose of Secretarial Order 3285A1 regarding responsible renewable energy under Objective #4, Alternative 2 would generate and store a smaller amount of renewable energy compared with the proposed Project, and so it would assist Californians to a lesser degree in meeting their renewable energy generation goals. Although the Reduced Footprint Alternative would bring living-wage jobs to eastern Riverside County under Objective #2, it would create fewer jobs compared with the proposed Project. It would meet Objective #3 to minimize environmental impacts and land disturbance because it would be on disturbed agriculture land. Finally, although Alternative 2 would make the highest and best use of primarily disturbed, retired agricultural land in and around priority solar areas under Objective #5, it would not capture the same economies of scale as the proposed project, and it would therefore generate, store, and transmit less wholesale solar electricity, and the electricity would be less affordable.

Gen-Tie Segment #1 Alternative Route Option. The Gen-Tie Segment #1 Alternative Route Option would meet all Project objectives.

¹ Senate Bill 32 California Global Warming Solutions Act of 2006: emissions limit. [online] https://leginfo.ca.gov/faces/billNavClient.xhtml?bill_id=201520160SB32.

5.3.2 Significant and Unavoidable Impacts

Section 3 of this EIR describes the potential environmental impacts of the proposed Project and recommends mitigation measures to reduce impacts, where feasible. Impacts in the following areas would be significant and unavoidable with construction and operation of the proposed Project, even with the incorporation of feasible mitigation measures that attempt to reduce impacts to the extent feasible.

■ **Aesthetics:**

- **Impact AES-2. The Project could substantially degrade the existing visual character or quality of the site and its surroundings.** The resulting visual change would be adverse and unavoidable in the immediate vicinity of the gen-tie span of SR 177 and immediately adjacent to Parcel Group C (approximately 13 percent of the combined northbound and southbound affected travel distance along SR 177).
- **Impact AES-4. The Project could result in the creation of an aesthetically offensive site open to public view.** The visible contrast associated with the change in visual character during operation would result in an impact that would be significant even with implementation of mitigation for the area along SR 177 that is located in the immediate vicinity of the gen-tie span of SR 177 and immediately adjacent to Parcel Group C.
- **Impact AES-7. Project decommissioning activities and associated industrial character could cause short-term and/or long-term aesthetic effects resulting from increased visual contrast.** Revegetation in this desert region is difficult and generally of limited success. Therefore, visual recovery from land disturbance associated with closure and decommissioning activities would likely occur only over a long period of time. While Mitigation Measure BIO-5 (Vegetation Resources Management Plan) requires the implementation of several steps to address temporarily impacted sites, the long term required for any meaningful vegetation recovery and reduction in visual contrast would result in an adverse and significant visual impact that cannot be mitigated to a level that would be less than significant.

The Project would result in a cumulatively considerable contribution to a significant cumulative impact under aesthetics and cultural resources.

5.3.3 Summary of Impacts of Alternatives

Alternative 1: No Project Alternative. No substantially adverse and long-term impacts would occur to the environment as a result of the No Project Alternative. However, site remediation of existing contamination, which would occur as part of the proposed Project, would not occur under the No Project Alternative. Likewise, the No Project Alternative would not achieve any of the environmental benefits of increasing renewable energy generation consistent with the State of California’s Renewable Portfolio Standard (RPS).

Alternative 2: Reduced Footprint Alternative. The Reduced Footprint Alternative would require 2,841 acres of land and would eliminate the development of Parcel Groups D and F, which consist of creosote bush scrub and desert dry wash woodland. Although the renewable energy output would be 450 MW (compared to 500 MW with the proposed Project), the majority of the impacts of the alternative would be substantially similar to those described for the proposed Project. It would result in a reduction of impacts to native trees (primarily palo verde and ironwood trees), which are mainly located within desert dry wash woodland vegetation. These reduced impacts to important habitat areas would lead to reduced direct impacts to birds and mammals using the dry wash woodland habitat. In addition, four CRHR eligible resources in Parcel Groups D and F would not be directly impacted under the Reduced Footprint Alternative. Finally, ground disturbance and the resulting level of construction would be reduced by 347 acres.

Similar to the proposed Project, the Reduced Footprint Alternative would have significant and unmitigable impacts to air quality and aesthetics, and significant cumulative impacts to air quality, aesthetics and cultural resources. Although the overall significance conclusions would be similar to the proposed Project, reduced construction activity and ground disturbance under this alternative would slightly decrease impacts in air quality, noise, transportation and traffic, hazardous materials related to unknown environmental contamination, and geologic resources related to soil erosion. The potential to disturb unknown cultural resources and impact vegetation and wildlife is also decreased with less ground disturbance. Decreased disturbance and removal of vegetation would decrease the chance of noxious weed introduction as well as the removal of more native vegetation.

Gen-Tie Segment #1 Alternative Route Option. The Gen-Tie Segment #1 Alternative Route Option would be approximately 0.65 miles longer than the proposed Gen-Tie Segment #1, but overall impacts from the gen-tie option would be similar to the proposed Project. With its additional length, the Gen-Tie Segment #1 Alternative Route Option would increase the structural complexity and form and line visual contrast visible to both northbound and southbound travelers on SR 177 resulting in a slightly more adverse visual change (see the discussion of KOP 5 [Northbound SR 177-North] in Section 3.2.5).

5.3.4 Alternatives Comparison Summary

Table 5-1 compares the potential impacts of the proposed Project to the solar facility alternatives. The proposed Project and Gen-Tie Segment #1 Alternative Route Option are substantially similar, so the gen-tie options are discussed in a general comparison in Section 5.5 (Environmentally Superior Alternative).

As described above, Alternative 2 (Reduced Footprint Alternative) would not reduce any of the Project’s significant and unmitigable impacts to a less-than-significant level or result in a change to overall impact classifications or significance conclusions. Therefore, Table 5-1 compares the project alternatives based on differences in the level of similar impacts resulting from ground disturbance, as well as the size and duration of construction activities, operations and decommissioning.

Table 5-1. Comparison of Solar Facility Alternatives to the Proposed Project

Environmental Resource	Alternative 1: No Project*	Alternative 2: Reduced Footprint Alternative
Aesthetics	Fewer	Fewer
Agriculture and Forestry Resources	Fewer	Similar
Air Quality	Fewer	Fewer
Biological Resources	Fewer	Fewer
Cultural Resources	Fewer	Fewer
Geology, Soils and Mineral Resources	Fewer	Fewer
Greenhouse Gas Emissions	Fewer	Fewer
Hazards and Hazardous Materials	Fewer	Fewer
Hydrology and Water Quality	Fewer	Fewer
Land Use and Planning	Fewer	Similar
Noise	Fewer	Fewer
Paleontological Resources	Fewer	Fewer
Population and Housing	Fewer	Fewer
Public Services and Utilities	Fewer	Fewer

Table 5-1. Comparison of Solar Facility Alternatives to the Proposed Project

Environmental Resource	Alternative 1: No Project*	Alternative 2: Reduced Footprint Alternative
Recreation	Fewer	Fewer
Traffic and Transportation	Fewer	Fewer
Potential to Meet Project Objectives?	NO	YES

* The No Project Alternative would have no impacts, and the terms “fewer” and “greater” are used for ease of reference only. “Fewer” is used to indicate that the alternative, such as the No Project Alternative, would create reduced or fewer impacts than the Project would create. The term “Greater” indicates that the alternative would result in a greater level of impact than would the Project. Bolded text indicates issue areas where the difference in impacts between the proposed Project and Alternative 2 is substantial, even if the overall significance determinations are similar.

5.4 Comparison of the Proposed Project and No Project Alternative

The No Project Alternative (Alternative 1) would avoid impacts from the construction, operation, maintenance, and decommissioning of the proposed Project. This alternative would result in no impacts to aesthetics, agriculture, biological resources, cultural resources, geology and soils, hazards and hazardous materials, hydrology and water quality, land use and planning, noise, paleontological resources, population and housing, energy usage and under public services and utilities, recreation, and traffic and transportation, but would not realize the beneficial impacts of the Project relating to long-term to air quality and greenhouse gas emissions with the use of renewable energy generation. Additionally, site remediation of existing contamination would not occur under the No Project Alternative. The No Project Alternative does not have the potential to meet any of the Project objectives.

5.5 Environmentally Superior Alternative

Section 15126.6 of the CEQA Guidelines requires an EIR to identify an “environmentally superior” alternative; if the “No Project” alternative is the environmentally superior alternative, then the EIR must identify which of the other alternatives is environmentally superior. Table 5-1 summarizes the comparison of impacts between the Alternatives to the proposed Project to help determine the Environmentally Superior Alternative. As presented in the comparative analysis above, the Environmentally Superior Alternative for the proposed Project would be **Alternative 1, No Project Alternative**. No substantially adverse and long-term impacts would occur to the environment as a result of the No Project Alternative. The No Project Alternative would also avoid the impacts of the Project analyzed in Section 3. While another project may ultimately be developed on the Athos site, it is not now foreseeable, so the analysis assumes that the construction and operational impacts of the proposed Project would not occur under the No Project Alternative.

In accordance with Section 15126.6 of the CEQA Guidelines, **Alternative 2, Reduced Footprint Alternative**, would be the Environmentally Superior Alternative since it would result in fewer impacts than the proposed Project due to the smaller footprint and reduction in direct impacts namely to biological and cultural resources. The Reduced Footprint Alternative would meet most of the project objectives and would be feasible, but it would generate 450 MW of renewable energy (compared to 500 MW under the proposed Project). Therefore, because the Reduced Footprint Alternative would achieve the project objectives, which include the provision of environmental benefits, to a lesser extent compared with the proposed Project (see Section 5.3.1), the proposed Project is considered preferred.

Gen-Tie Segment #1. Although the impacts would be largely similar, the increased route length for the Alternative Route Option compared to the proposed Project, would result in slightly greater ground disturbance,

visual intrusion impacts, level of construction activities and associated environmental impacts. Therefore, the **proposed Project for Gen-Tie Route Segment #1** is the Environmentally Superior Alternative. Should the Applicant be unable to obtain an option agreement with the affected landowner(s), then the proposed Project route would not be legally feasible. In that case, the Gen-Tie Segment #1 Alternative Route Option would be the environmentally superior route for Gen-Tie Segment #1.

6. List of Preparers and Organizations Consulted

Though individuals have primary responsibility for preparing sections of the EIR, the document is an interdisciplinary team effort. In addition, internal review of the document occurs throughout preparation. A consultant team headed by Aspen Environmental Group provided technical assistance in the preparation of this document under the direction of Riverside County. The preparers and technical reviewers of this document are presented below, along with a list of organizations consulted.

Table 6-1. List of Preparers and Reviewers

Name	Position	Primary Responsibility
Riverside County – CEQA Lead Agency		
Tiffany North	County Counsel	Riverside
Aaron Gettis	County Counsel	Riverside
Ken Baez	Planning Department	Riverside
Jason Killebrew	Planning Department	Riverside
Michael Venable	Flood District	Riverside
Heather Thomson	Planning Department	Riverside
Dave Jones	Planning Department	Riverside
Aspen Environmental Group		
Susan Lee	Principal-in-Charge	Quality Assurance/Quality Control
Hedy Koczwar	Project Manager	Quality Assurance/Quality Control
Emily Capello	Senior Associate	Geology, Soils and Mineral Resources; Land Use and Planning; Recreation
Scott White	Senior Associate Biologist	Biological Resources
Elizabeth Bagwell, PhD, RPA	Archaeologist	Cultural Resources and Paleontological Resources
Brewster Birdsall, P.E.	Senior Associate	Air Quality, Greenhouse Gas Emissions, Noise
Scott Debauche	Environmental Planner	Traffic and Transportation
Philip Lowe, P.E.	Senior Associate	Hydrology and Water Quality Resources
Melissa Do	Associate	Agriculture and Forestry; Hazards and Hazardous Materials; Population and Housing; Public Services and Utilities; Policy Consistency
Tracy Popiel	GIS Specialist	Graphics
Kati Simpson	Senior Graphic Designer	Graphics
Mark Tangard	Associate	Document Production
Michael Clayton & Associates		
Michael Clayton	Visual Resources Specialist	Aesthetics

Organizations Consulted

The following is a list of organizations consulted during the preparation of the EIR:

- Bureau of Land Management, California Desert District – Jon Kramer, Kim Marsden and Tiffany Arend
- California Department of Fish and Game – Magdalena Rodriguez
- United States Fish and Wildlife Service – Noelle Ronan and Jenness McBride

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Section 4 Other CEQA Considerations

None.

Section 5 Comparison of Alternatives

None.