ENVIRONMENTAL ASSESSMENT

# CAMPO VERDE GEN-TIE PROJECT

BLM

BLM Case File Number CACA 053151

**Renewable Energy Coordinating Office**
**California Desert District**
**Moreno Valley, California**

***April 2012***

## Environmental Assessment

# CAMPO VERDE GEN-TIE PROJECT

**BUREAU OF LAND MANAGEMENT**

*April 2012*

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# LIST OF ACRONYMS AND ABBREVIATIONS

| | |
|---|---|
| A-2 | General Agriculture |
| A-2-R | General Agriculture Rural Zone |
| A-3 | Heavy Agriculture |
| ABPP | Avian and Bat Protection Plan |
| ACEC | Area of Critical Environmental Concern |
| ACHP | Advisory Council on Historic Preservation |
| ACOE | Army Corps of Engineers |
| Ag | Agriculture |
| AG-A | Active Agriculture |
| AG-F | Fallow Agriculture |
| AHPA | Archeological and Historical Preservation Act of 1974 |
| AIRFA | American Indian Religious Freedom Act of 1978 |
| APE | Area of Potential Effect |
| APLIC | Avian Power Line Interaction Committee |
| AQAP | Ambient Air Quality Strategy |
| AQMP | Air Quality Management Plan |
| ARB/EPA | Air Resource Board/Environmental Protection Agency |
| ARPA | Archeological Resources Protection Act of 1979 |
| AS | Arrow Weed Thicket |
| AS-D | Arrow Weed Thicket Disturbed |
| AW | Athel Tamarisk Type Woodland |
| BBCS | Bird and Bat Conservation Strategy |
| BLM | US Department of the Interior, Bureau of Land Management |
| BMP | Best Management Practices |
| C | Celsius |
| CAA | Clean Air Act |
| CAISO | California Independent System Operator |
| Cal-IPC | California Invasive Plant Council |
| CARB | California Air Resources Board |
| CBS | Creosote Bush-White Bursage Scrub |
| CBS-D | Creosote Bush-White Bursage Scrub Disturbed |
| CDCA | California Desert Conservation Area |
| CDFG | California Department of Fish and Game |
| CEQ | Council on Environmental Quality |
| CEQA | California Environmental Quality Act |
| CERCLA | Comprehensive Environmental Response, Compensation, and Liability Act |
| CFGC | California Fish and Game Commission |
| CFR | Code of Federal Regulations |
| CNDDB | California Natural Diversity Database |
| CNPS | California Native Plant Society |
| $CO_{2e}$ | Carbon Dioxide Equivalents |
| Corridor N | Utility Corridor |
| CRHR | California Register of Historical Resources |

| | |
|---|---|
| CRM-D | Common Reed Marsh-Disturbed |
| CSE | Centinela Solar Energy |
| dB | Decibels |
| dBA | “A-weighted" Decibel Scale |
| DEIR/EA | Draft Environmental Impact Report/Environmental Assessment |
| DEV | Developed |
| DEV/DH | Developed/Disturbed Habitat |
| DW | Disturbed Wetland |
| EA | Environmental Assessment |
| EDR | Environmental Data Resources Inc. |
| EHS | Extra High Strength |
| EIR | Environmental Impact Report |
| EMF | Electromagnetic Field |
| EO | Executive Orders |
| EPA | U.S. Environmental Protection Agency |
| ESA | Endangered Species Act |
| F | Fahrenheit |
| FEIR | Final Environmental Impact Report |
| FEMA | Federal Emergency Management Agency |
| FLPMA | Federal Land Management and Policy Act |
| FMMD | Farmland Mapping and Monitoring Program |
| FPRP | Fire Prevention and Response Plan |
| FTHL | Flat-Tail Horned Lizard |
| GHG | Greenhouse Gas |
| I-8 | Interstate 8 |
| ICAPCD | Imperial County Air Pollution Control District |
| IID | Imperial Irrigation District |
| kV | Kilovolt |
| Leq | Equivalent Average Sound Pressure Level |
| LIM | Land Inventory Monitoring |
| LOS | Level of Service |
| MA | Management Area |
| MBTA | Migratory Bird Treaty Act |
| MPH | Miles Per Hour |
| MSDS | Material Safety Data Sheets |
| MSL | Mean Sea Level |
| MW | Mega Watts |
| NAAQS | National Ambient Air Quality Standards |
| NAF/EC | U.S. Naval Air Facility El Centro |
| NAGPRA | Native American Graves Protection and Repatriation Act of 1990 |
| NEPA | National Environmental Policy Act |
| NHPA | National Historic Preservation Act |
| NPDES | National Pollutant Discharge Elimination System |
| NRHP | National Register of Historic Places |
| O&M | Operation and Maintenance |
| $O_3$ | Ozone |

| | |
|---|---|
| OHV | Off-Highway Vehicle |
| OPGW | Optical Ground Wire |
| OW | Opens Water with Arrow Weed Thicket |
| PFYC | Potential Fossil Yield Classification |
| PM | Particulate Matter |
| $PM_{10}$ | Inhalable Particulate Matter |
| POD | Plan of Development |
| ppm | Parts Per Million |
| PUP | Pesticides Use Proposal |
| PV | Photovoltaic |
| Qa | Quaternary Alluvium |
| Qc | Lake Cahuilla sediments |
| RECs | Recognizable Environmental Conditions |
| ROW | Right-Of-Way |
| RPS | Renewable Portfolio Standards (for power source mixes of electrical power retailers and generators) |
| RWQCB | Regional Water Quality Control Board |
| SDD-D | Stabilized Desert Dunes-Disturbed |
| SDG&E | San Diego Gas and Electric |
| SIP | State Implementation Plan |
| SRRP | Site Reclamation and Revegetation Plan |
| SSAB | Salton Sea Air Basin |
| SWFL | Southwestern Willow Flycatcher |
| SWPPP | Storm Water Pollution Prevention Plan |
| SWRCB | State Water Resources Control Board |
| TCP | Traditional Cultural Property |
| TDS | Total Dissolved Solids |
| TGA | Taylor Grazing Act |
| TS | Tamarisk Thicket |
| USC | United States Code |
| USDA | United States Department of Agriculture |
| USFWS | United States Fish and Wildlife Service |
| VRM | Visual Resource Management |
| WEAP | Workers Environmental Awareness Program |
| YCR | Yuma Clapper Rail |

# 1.0 INTRODUCTION, PURPOSE AND NEED

## 1.1 Project Overview

On September 12, 2011, Campo Verde Solar, LLC ("Campo Verde Solar" or "Applicant") submitted a SF-299 application to the Bureau of Land Management (BLM) for a right-of-way (ROW) under the Federal Land Policy and Management Act (FLPMA) for a generation interconnection (gen-tie) transmission line across federal lands administered by BLM ("Proposed Action" or "Project"). The approximate 1.0 mile gen-tie line would transport renewable electrical energy from the proposed Campo Verde Solar generation facility to San Diego Gas and Electric's (SDG&E's) Imperial Valley Substation (Imperial Valley Substation) located on BLM land in Imperial County, California about 8 miles southwest of the city of El Centro. The Campo Verde Solar generation facility is a proposed photovoltaic (PV) solar project that would generate nominally 140-plus megawatts of alternating current ($MW_{AC}$) renewable energy. The Campo Verde Solar generation facility is located on approximately 1,990 acres of disturbed private land that are currently used for agriculture.

There are multiple solar projects proposed in the area around the Imperial Valley Substation. In order to reduce the number of required gen-tie lines crossing federal lands administered by the BLM to access this substation and to minimize the impacts associated with the development of multiple lines across these federal lands, the Applicant proposes to construct the gen-tie as a double-circuit 230 kilovolt (kV) line, with two 230-kV transmission circuits built on single steel-pole structures. This would provide transmission capacity for future projects in the area without the need for additional lines and the associated disturbance on federal lands.

This Environmental Assessment (EA) describes and evaluates the environmental impacts that are expected to result from construction, operation, maintenance, and decommissioning of the Project and presents recommended mitigation measures that, if adopted, would avoid, minimize, or mitigate the environmental impacts identified. In accordance with National Environmental Policy Act (NEPA) requirements, this EA also analyzes reasonable alternatives that respond to the purpose and need for the proposed action and evaluates the environmental impacts associated with these alternatives. Additionally, this EA analyzes a No Action Alternative, which serves as a useful baseline for the comparison of environmental effects. The information contained in this EA will be considered by the BLM in its deliberations regarding approval of the right-of-way grant and may also be considered by other agencies, including those discussed in the paragraph below, with regard to their respective permits.

The BLM is the lead federal agency for this EA. There are no formal cooperating agencies but the Applicant is coordinating with other federal agencies, including the US Fish and Wildlife Service (USFWS) and the US Army Corps of Engineers (ACOE), regarding potential Project approvals and any associated compliance requirements. The Applicant is also coordinating with California state and local agencies including Imperial County, the California Department of Fish and Game (CDFG), Regional Water Quality

Control Board (RWQCB), Imperial County Air Pollution Control District (ICAPCD), Imperial Irrigation District and others regarding potential Project approvals and any associated compliance requirements.

## 1.2 BLM Purpose and Need

In accordance with FLPMA (Section 103(c)), public lands are to be managed for multiple use that takes into account the long-term needs of future generations for renewable and non-renewable resources. The Secretary of the Interior is authorized to grant rights-of-way on public lands for systems of generation, transmission, and distribution of electric energy (Section 501(a)(4)). Taking into account the BLM's multiple use mandate, the purpose of and need for action is to respond to a FLPMA right-of-way application submitted by Campo Verde Solar, LLC to construct, operate, maintain, and decommission a gen-tie transmission line from the Applicant's solar generation facility located on private property over public lands administered by the BLM in compliance with FLPMA, BLM right-of-way regulations, and other applicable Federal laws and policies.

In conjunction with FLPMA, the BLM's applicable authorities include the following:

- Executive Order 13212, dated May 18, 2001, which mandates that agencies act expediently and in a manner consistent with applicable laws to increase the production and transmission of energy in a safe and environmentally sound manner.
- Secretarial Order 3285A1, dated February 22, 2010, which establishes the development of renewable energy as a priority for the Department of the Interior.

### *1.2.1 Decision to be Made*

The BLM will decide whether to deny the proposed right-of-way, grant the right-of way, or grant the right-of-way with modifications. The BLM may include terms, conditions, and stipulations it determines to be in the public interest, which may include modifying the proposed use or changing the route or location of the proposed facilities (43 CFR 2805.10(a)(1)).

The application is for a right-of-way entirely within a designated utility corridor (Corridor N) and the proposed project is consistent with the California Desert Conservation Area (CDCA) land use plan. See CDCA discussion in Section 1.4. An amendment to the CDCA Plan is not required.

## 1.3 General Location and Map

The Campo Verde Solar generation facility is located in Imperial County, California approximately 8 miles southwest of the community of El Centro, California. **Figure 1-1** shows the general location of the solar generation facility. The site for the solar

generation facility is south of Interstate-8 (I-8), west of Drew Road, and northeast of the Westside Main Canal. **Figure 1-2** shows the boundary of the solar generation facility.

The Applicant submitted a FLPMA SF-299 right-of-way application for a proposed and alternative route for a double-circuit 230-kV gen-tie line across public lands administered by the BLM. The proposed gen-tie route would be approximately 1.0 mile long. It would proceed south from the solar generation facility site, cross the Westside Main Canal, and follow existing roads south across BLM-managed land to a point where it would turn southeast to SDG&E's Imperial Valley Substation. An alternative route for the gen-tie across BLM-managed land would be approximately 0.8 miles long, with approximately 0.4 miles on BLM-managed land and the remainder on private land. It would generally parallel the existing Imperial Irrigation District's (IID's) 230-kV S-Line south from the project sites (note: the BLM approved the S-Line to be upgraded to a double-circuit 230-kV line in Grant CACA-13206 Amended March 26, 2010). **Figure 1-3** shows the locations of each of the proposed and alternative gen-tie routes.

## 1.4 Policy Consistency and Land Plan Conformance

### Federal Land Policy and Management Act of 1976

In accordance with Section 103(c) of the Federal Land Policy and Management Act of 1976 (FLPMA), public lands are to be managed for multiple use that takes into account the long-term needs of future generations for renewable and non-renewable resources. The Secretary of the Interior is authorized to grant rights-of-way on public lands for systems of generation, transmission, and distribution of electric energy (Section 501(a)(4)).

### California Desert Conservation Area Plan

The CDCA Plan, which was developed as mandated by FLPMA, is the Resource Management Plan for the project location and the surrounding area. The CDCA Plan is a comprehensive, long- range plan that was adopted in 1980; it since has been amended many times. The CDCA is a 25 million-acre planning area that contains over 12 million acres of BLM-administered public lands in the California Desert, which includes the Mojave Desert, the Sonoran Desert, and a small part of the Great Basin Desert. Those 12 million acres of BLM-administered lands are approximately half of the total land area in the CDCA.

The CDCA Plan provides guidance addressing the management, use, development, and protection of the public lands and associated resources within the CDCA. It is based on the concepts of multiple use, sustained yield, and maintenance of environmental quality. The CDCA Plan's goals and actions for each resource are established in its 12 elements, each of which provides both a desert-wide perspective of the planning decisions for one major resource or issue of public concern and a more specific interpretation of multiple-use class guidelines for a given resource and its associated activities.

The BLM-managed lands crossed by portions of the proposed and alternative gen-tie lines are within the CDCA. These lands are located entirely within a utility corridor (Corridor N) designated in the CDCA Plan. Designation as a utility corridor indicates that these lands are suitable for the location of transmission infrastructure and linear facilities to facilitate energy transmission. The proposed rights-of-way for gen-tie facilities would therefore be consistent with the CDCA Plan.

The portions of the proposed and alternative gen-tie lines on BLM-managed land are also located entirely within the Yuha Basin Area of Critical Environmental Concern (ACEC) which was designated by the BLM and managed as a limited use area for biological and archaeological resource conservation. Because this portion of the ACEC is also located within the designated utility corridor as described above, the ACEC Management Plan allows for the "traversing of the ACEC by proposed transmission lines and associated facilities if environmental analysis demonstrates that it is environmentally sound to do so". The designation of this portion of the ACEC as a utility corridor indicates that the gen-tie lines would also be consistent with the Yuha Basin ACEC Management Plan.

An amendment to the CDCA Plan is therefore not required. Also, development of the gen-tie line would not preclude other existing or future uses on this federal land.

## 1.5 Other Applicable Plans and Programs

### State of California Renewables Portfolio Standard Program

Established in 2002 under Senate Bill 1078, accelerated in 2006 under Senate Bill 107 and expanded in 2011 under Senate Bill 2, California's Renewables Portfolio Standard (RPS) is one of the most ambitious renewable energy standards in the country. The RPS program requires investor-owned utilities, electric service providers, and community choice aggregators to increase procurement from eligible renewable energy resources to 33% of total procurement by 2020. The proposed Campo Verde Solar generation facility and its gen-tie interconnection to the California electrical grid at the Imperial Valley Substation would help meet California's RPS goals.

### State Implementation Plan for $PM_{10}$

The Imperial Valley, like many arid areas, has had persistent air quality issues associated with airborne particulate Matter (PM). On August 11, 2009, the ICAPCD Board held a public hearing and unanimously adopted the Imperial County 2009 $PM_{10}$ State Implementation Plan (SIP). The Board's action included:

- Approval and adoption of the Draft Final Imperial County 2009 $PM_{10}$ SIP (dated July 10, 2009), with changes as specified in the July 31, 2009 Errata Sheet;
- Adoption of the findings in the associated Staff Report;
- Certification of the Negative Declaration for the 2009 $PM_{10}$ SIP;
- Adoption of the transportation conformity budgets in the Imperial County 2009 $PM_{10}$ SIP, and

- Direction to staff to submit the Imperial County $PM_{10}$ SIP and related documents to the California Air Resources Board for their review and action.

As part of the strategy to control PM, the ICAPCD developed Rule 801 of Imperial County's Rules and Regulations that deals with control of fugitive dust from construction and earthmoving activities. To comply with this rule, the project must develop and implement a Dust Control Plan in accordance with ICAPCD requirements.

**Imperial County General Plan (2003)**

The private lands crossed by the gen-tie options and proposed to be developed for the solar generation facility are located in unincorporated Imperial County ("the County"). Land use planning in the County is outlined in the County's General Plan that provides guidance on future growth and development. Any development in the County of Imperial must be consistent with the General Plan and the Land Use Ordinance (Title 9, Division 10).

All of the private lands associated with the project are designated by the General Plan as "Agriculture" and are zoned General Agriculture (A2), Heavy Agriculture (A-3) and General Agricultural Rural Zone (A-2-R). The solar generation facility on private land would require approval of a Conditional Use Permit from the County of Imperial to authorize construction and operation as well as related grading and building permits. Transmission lines and substations are permitted uses within the A-3 Zone and facilities relating to the transmission of electrical energy are permitted uses in the A-2 and A-2-R zone subject to the approval of a Conditional Use Permit. A variance from the County has been applied for to allow the proposed transmission towers to exceed the 120-foot height limit. No land use changes are anticipated in order to implement the Proposed Action.

**Flat-tailed Horned Lizard (FTHL) Rangewide Management Strategy (2003)**

The Flat-tailed Horned Lizard Rangewide Management Strategy ("Management Strategy") was created by numerous federal and state cooperating agencies to provide guidance for the conservation and management of sufficient habitat to maintain extant populations of flat-tailed horned lizards ("FTHLs") in each of the five Management Areas (MAs). The proposed and alternative gen-tie line routes on BLM land are located within the Yuha Desert Management Area. The Management Strategy limits new authorized disturbance within a designated MA to one percent of the total land area in the MA, but does not otherwise preclude land disturbance within the MA. If a project is located within a MA, land disturbing activities should be minimized through project design features, implementation of appropriate conservation measures, efforts to locate the project in a previously disturbed area or poor quality habitat, and timing construction to minimize mortality. Pursuant to the Mitigation Strategy, mitigation compensation will be provided for the acreage of permanent and temporary impacts.

## Issues

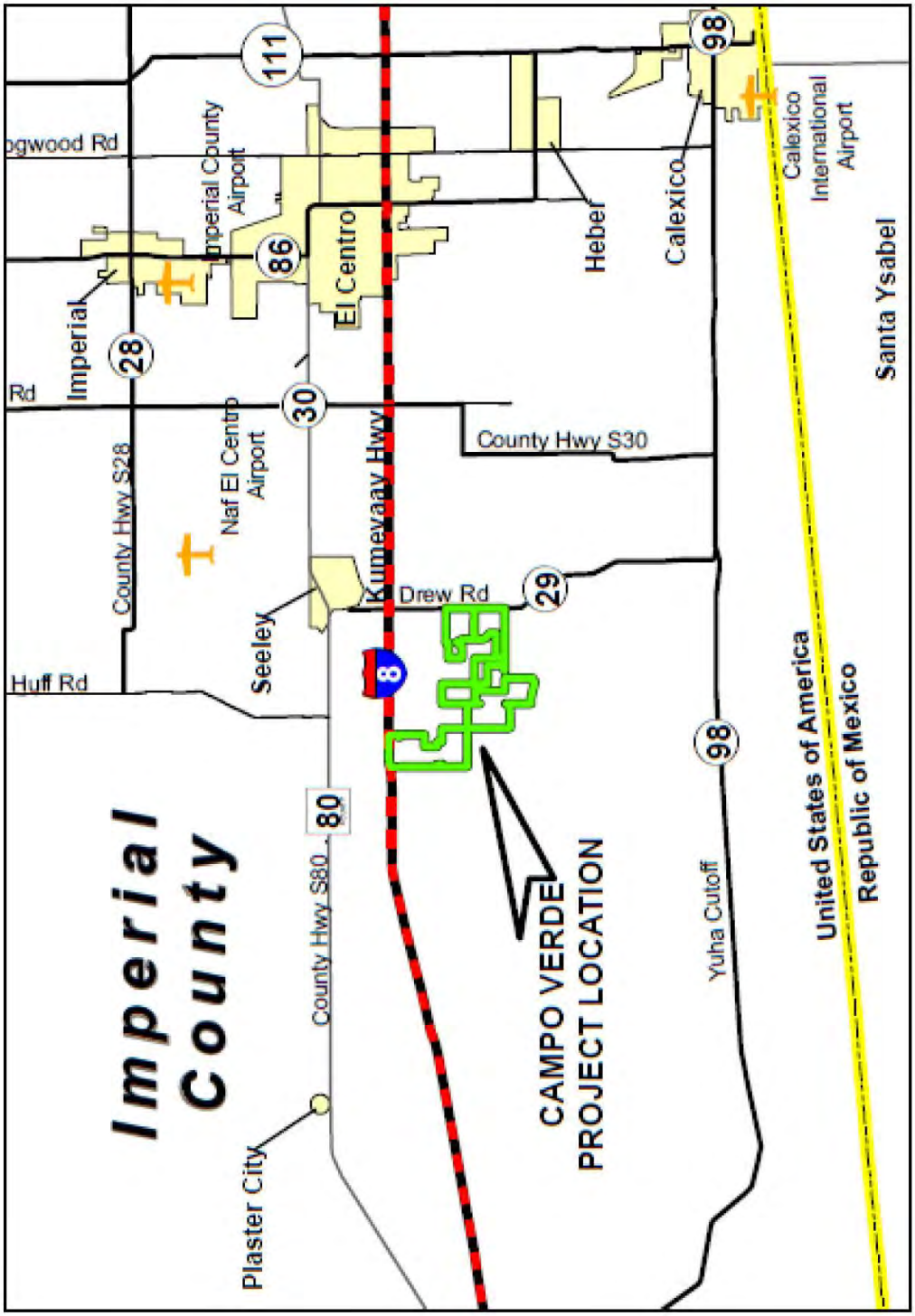
External scoping is optional for EA-level analysis. (40 CFR 1501.7). BLM policy allows a decision-maker to determine the need for and level of scoping to be conducted for an EA. (BLM H-1790-1 National Environmental Policy Act Handbook, Section 8.3.3). Iin order to identify any project-specific issues associated with the relevant plans and programs discussed above, the BLM held an interagency meeting in El Centro for the federal, state, and local agencies with potential interest in the Project. This meeting was held on October 12, 2011 in the BLM El Centro Office and was attended by representatives of the following agencies:

- BLM
- US Fish and Wildlife Service
- US Border Patrol
- NAF El Centro
- California Department of Fish and Game
- Imperial County Planning and Development Services

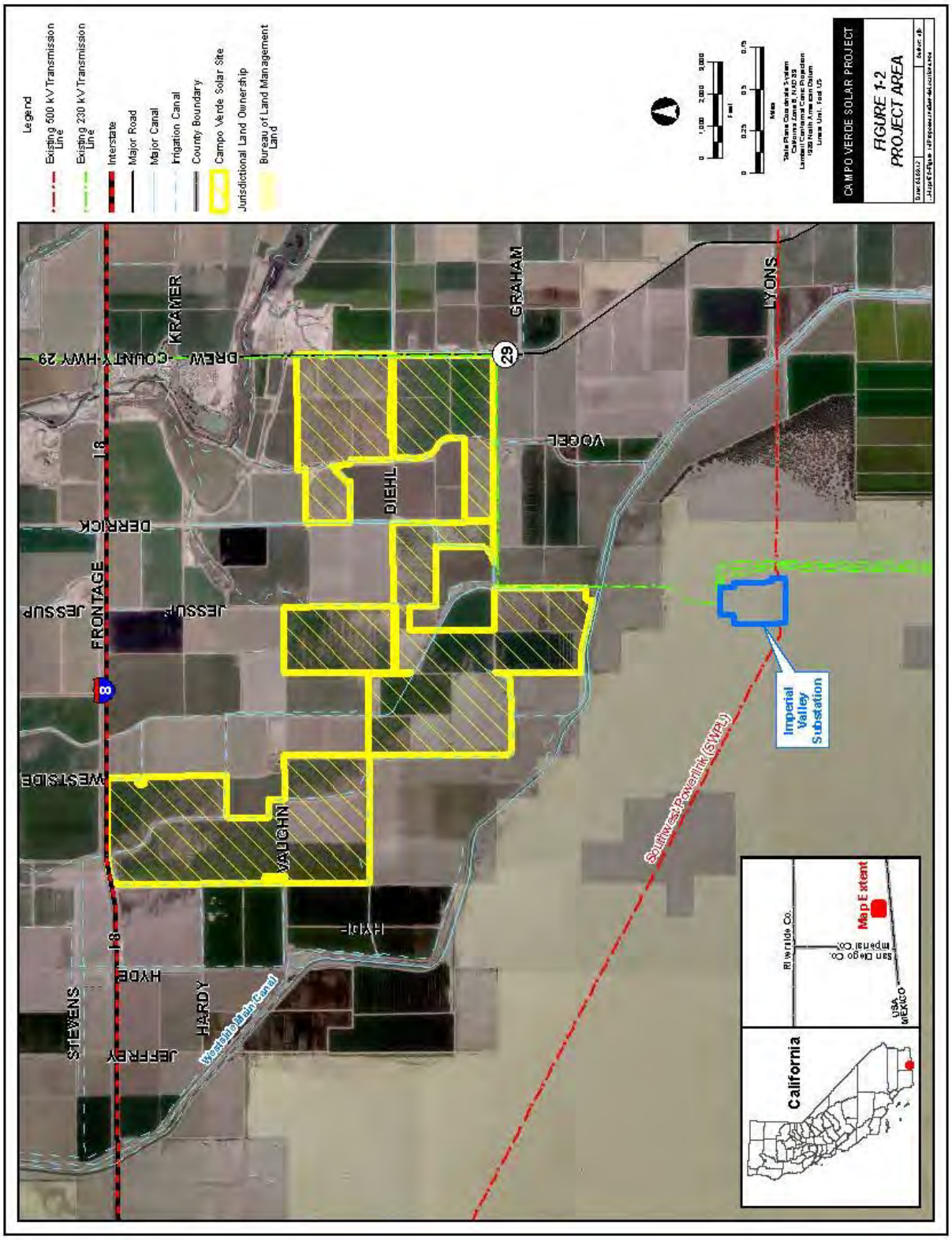
The issues identified by each agency were consistent with the issues discussed above in the relevant plans and programs. Below is a list of the issues identified:

- Consistency with the CDCA Plan and the direction of the Yuha Desert ACEC
- Potential impacts to the FTHL and other sensitive biological resources
- Potential impacts to historical and cultural resources
- Potential visual impacts.

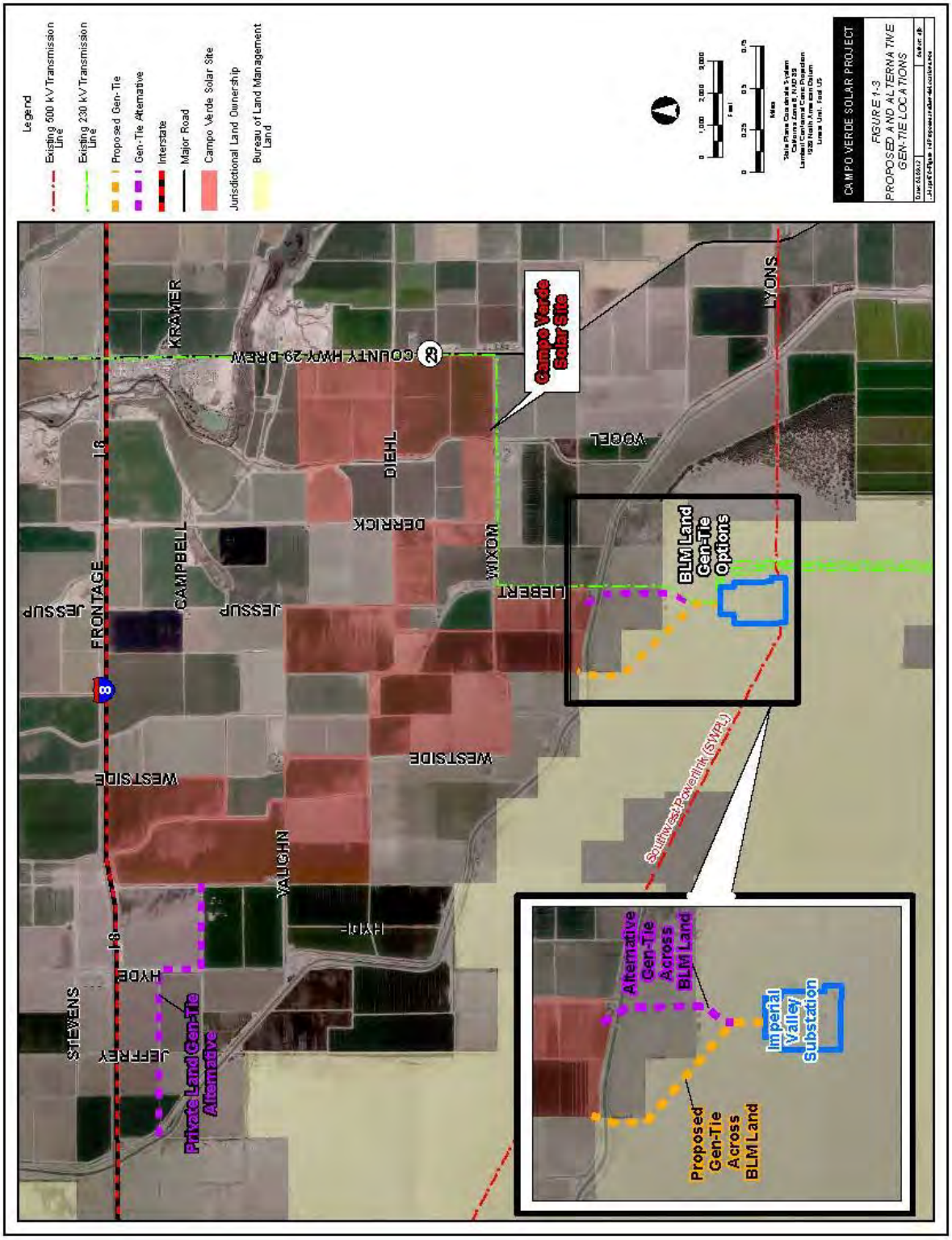
**FIGURE 1-1 PROJECT LOCATION**



## FIGURE 1-2 PROJECT AREA



## FIGURE 1-3 PROPOSED AND ALTERNATIVE GEN-TIE LOCATIONS



# 2.0 ALTERNATIVES

Campo Verde Solar proposes to construct an approximately 1.0-mile gen-tie line to connect the Campo Verde solar generation facility to the existing SDG&E Imperial Valley Substation in Imperial County, California. The solar generation facility would be located entirely on private lands while a portion of the gen-tie line would be located on federal lands managed by the BLM which will interconnect to the Imperial Valley Substation, also located on BLM land. This EA analyses the proposed gen-tie across federal lands managed by the BLM ("Proposed Action" or "Project"). This EA also analyzes an alternative gen-tie that would be built entirely on private land and not require BLM approval, an additional alignment of the gen-tie on federal lands managed by the BLM and a no action alternative.

The No Action Alternative, the Proposed Action, and two action alternatives are evaluated in this EA:

- Alternative 1 – The No Action Alternative is defined as the BLM denying the right-of-way grant for either of the gen-tie alternatives on BLM-managed land. Under this alternative, Campo Verde Solar generation facility would either not be built or would obtain transmission access via an alternative means that does not involve BLM-managed land or an action by the BLM.
- Alternative 2 - The Proposed Action would be a double-circuit 230-kV line built on BLM-managed land that would provide the interconnection for the Campo Verde Solargeneration facility. This double-circuit line would be about 1.0 mile long with a ROW approximately 0.9 mile long and 160 feet wide on BLM-managed land where it would follow existing roads and disturbance to the extent possible.
- Alternative 3 –Alternative 3 would be a double-circuit 230kV line built using an alternative alignment on BLM land that would provide the interconnection for the Campo Verde Solar generation facility. It would parallel the existing IID S-line and would be approximately 0.8 miles long with a ROW about 0.4 miles long and 160 feet wide located on BLM land.
- Alternative 4 – The Private Land (non-BLM ROW) Alternative would involve developing a single or double-circuit 230-kV line that would provide the interconnection for the Campo Verde Solar generation facility via the approved gen-tie route and line associated with the Imperial Solar Energy Center West Project. This line from the Campo Verde site to the Imperial Energy Center West site would be approximately 1.75 miles long and located entirely on private lands.

These alternatives are described in detail in subsections 2.1 through 2.4 below. In addition to the proposed gen-tie alternatives, an interim electrical interconnection may be implemented that would involve connecting to IID's S Line that crosses the solar generation facility site. This would only require an aerial connection looping one of the upgraded S Line circuits into the proposed on-site substation/substation. If the S Line is used, it would provide temporary interconnection to the electrical grid and would be

replaced by a permanent interconnection into the Imperial Valley Substation when completed.

## 2.1 Alternative 1: No Action

Under the No Action Alternative, the BLM would deny the ROW application submitted by the Applicant. Because there would be no gen-tie ROW across BLM-managed land, it is expected that the area associated with the proposed gen-tie routes on BLM-managed land would continue to remain in its existing condition, with no new structures or facilities constructed or operated within it. However, these BLM-managed lands would remain available for other uses that are consistent with the CDCA Plan. In the absence of the proposed gen-tie lines across public lands for this project, other gen-tie lines could be constructed in other locations to facilitate the interconnection needed for the solar generation facility.

If BLM were to deny the ROW application, the solar generation facility would still move forward if the proponent of that project is able to utilize a gen-tie line that does not require BLM approval. Alternative 4 is one such private land alternative. Additionally, a gen-tie line could be constructed on private land to the proposed Liebert Substation which could also potentially be located on private land immediately to the south of the proposed solar generation facility. From the Liebert Substation, the existing IID S-line could be utilized to access the Imperial Valley Substation. BLM has already authorized for upgrades to the IID S-line. To develop this potential interconnection option, agreements would need to be negotiated between the private parties involved and IID would need to obtain approval to construct the Liebert Substation on private land, but no new authorizations would be required from the BLM. Therefore, this option could be pursued under the no action alternative.

## 2.2 Alternative 2: Proposed Gen-Tie Line Across BLM Land

### *2.2.1 Overview*

The Proposed Action (or proposed "Project") would be a double-circuit 230-kV gen-tie line that would provide the interconnection for the Campo Verde Solargeneration facility. This gen-tie line would be approximately 1.0 miles long with about 0.9 miles located on BLM-managed land where it would follow existing roads and previously disturbed land to the extent possible.

This alternative gen-tie route would exit the southern portions of the solar generation facility (near 32°43'58" N, 115°43' 22" W) where it would cross IID's Westside Main Canal southwest onto BLM-managed land. On BLM-managed land it would proceed south approximately 0.2 miles, southeast for approximately 0.6 miles and south for approximately 0.1 miles to the Imperial Valley Substation.

**Figure 2-1** shows the proposed location of this gen-tie route. The description of the lands involved in the portion of this route on BLM land is shown in **Table 2-1** below.

| Table 2-1 Description of BLM Lands Alternative 2 – Proposed Gen-Tie | |
|---|---|
| **Township / Range** | **Sections** |
| 16S 12E | NW ¼ SW ¼ of Section 34<br>SW ¼ SW ¼ of Section 34<br>SE ¼ SW ¼ of Section 34 |
| 16 ½S 12E | NE ¼ NW ¼ of Section 3<br>SW ¼ NE ¼ of Section 3 |

### *2.2.2 Structures and Facilities*

The proposed gen-tie line would be designed for two 230kV circuits with three conductors per circuit. The gen-tie line would have two shield wires with either one composed of extra high strength (EHS) steel wire and one or both being an Optical Ground Wire (OPGW) constructed of aluminum and steel core which may carry glass fibers within its core for communications. The OPGW would be installed underground from the southern structure into Imperial Valley Substation per SDG&E requirement. Single steel pole structures will be used with the span length between structures ranging from 400 to 800 feet. Assemblies of insulators would be used to position and support each of the conductor bundles while maintaining electrical design clearances between the conductors and the towers.

The Project would use self-supporting single steel poles made with self-weathering or galvanized steel to better blend into the surrounding environment. An illustration of the double-circuit 230-kV steel pole structures that will be used for this Project is provided in **Figure 2-2**. Structure heights would be up to 145 feet varying with terrain and span lengths ranging from approximately 400 to 800 feet. Each pole would be installed on a drilled pier with anchor bolts or direct embedded foundations, which would be typically 15 to 45 feet deep and 6 to 15 feet in diameter. Final foundation design will be based on a site-specific geotechnical study.

Structure Sites

Approximately ten structures are proposed to be located on BLM land. Additional structures may be needed to accommodate crossing other planned transmission lines. A 100-foot by 150-foot (15,000 square foot) area around each structure site would be cleared as required for safe and efficient construction. These areas will be temporarily disturbed during construction. The permanent disturbance area associated with each structure is estimated to be approximately a 20-foot diameter (approximately 300 square foot) area. The tentative locations of structure sites are shown on **Figure 2-2**. Topography, environmental and cultural constraints, and best engineering practice will determine final structure locations.

Wire Pull Sites

Pull sites are the locations where equipment would pull the conductors and static wires into place during the final stages of construction. Conductor stringing equipment would be set up at both ends of each straight section of line. This equipment must be located a distance away from the deadend structure to minimize the vertical construction loads imposed upon the deadend structure during the wire stringing. The distance between the deadend structure and the conductor stringing equipment is generally described by a 3:1 slope from the top of the structure.

Pull sites would be temporarily disturbed during this activity. Each would be 100-foot by 400-foot and one pull site would be required at each turning point along the line. Five pull sites on BLM-managed land are anticipated for this alternative.

Staging Areas/Equipment Storage Areas

Staging and storage areas would be needed for storing materials, construction equipment, and vehicles during construction of the line. Any needed staging areas/construction material storage areas needed for this short line will be located on the solar generation facility site or on other private land.

Access (Permanent and Temporary)

Access to the portions of this gen-tie line on BLM land will be by existing roads during both construction and operation. To access each structure location, no new roads are expected to be constructed. Instead, a designated access spur will be flagged and rubber-tired equipment will be driven overland from the nearest existing road both during construction and operation. These overland routes are expected to be approximately 20 feet wide and their proposed locations are shown on **Figure 2-1**.

Substation Facilities

This gen-tie line would originate at a new switchyard / substation located at the Campo Verde Solar generation facility site on private land. The two 230-kV circuits would terminate at the existing Imperial Valley Substation on BLM land. The connection into the Imperial Valley Substation is proposed to be within this substation's existing footprint. The project interconnection may also require upgrades to electrical equipment within Imperial Valley Substation and potentially to equipment within other existing offsite facilities as identified by SDG&E through the interconnection study process.

### *2.2.3 Construction Activities*

Installation of the gen-tie line will generally use the proposed construction techniques covered in the following subsections. Construction of the gen-tie is expected to take 2 to 6 months. Written approval by the BLM Authorized Officer or his delegate is required for any modification to construction plans or other actions involving additional surface-

disturbing activities. Modifications may be incorporated as a minor change to the right-of-way or Plan of Development.

The construction activities and areas of impact will be confined to structure locations, tower access spurs, and pull sites.

Pre-Construction Environmental Resource Surveys

Biological Resource Surveys: Pre-construction surveys for biological resources in accordance with accepted protocols would be conducted before construction starts to confirm the results of recently conducted protocol-level surveys; otherwise, the presence of federally listed or special status species would be assumed where biologists and agencies have determined habitat is present.

Pre-construction surveys for environmental clearance by qualified biologists are standard BLM requirements for projects that may impact sensitive species habitat.

Construction Crew Training

All sensitive resources that are identified will be flagged or otherwise identified in the field to ensure awareness and appropriate avoidance during construction.

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 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.

Transmission Line Surveying and Geotechnical Investigation

Prior to construction, preconstruction field survey work would include geotechnical testing and locating the centerline, structure center hubs, right-of-way boundaries, and sensitive environmental resources. All of these features will be subsequently staked in the field.

No paint or permanent discoloring agents will be applied to rocks or vegetation to indicate survey or construction limits. In addition, sensitive areas will be flagged so they can be avoided or appropriately managed during construction. Flag colors will denote the type and restriction in an area.

A geotechnical investigation will be required to determine the nature of the subsurface soil conditions. This investigation will require access to several of the proposed transmission line tower sites by a small drill rig. The drill rig will sample the existing soils to a depth of approximately 50 feet.

Staging Area Construction

Construction of the transmission lines would first establish a staging area, which would be required for storing materials, construction equipment, and vehicles and as a show up yard for the construction crews. The staging area would be located on the solar generation facility site on private land.

Access for Construction

Access to the structure sites for both construction and long term maintenance of the transmission line will proceed from the closest existing road to each location. No new permanent access roads or access spur roads are planned to be constructed.

The construction contractor selected to build this Project will be required to submit a specific Access Plan. The plan would address use of the existing road network to transport workers, materials, and heavy equipment to the staging areas and then to each structure locations.

Structure Sites

The 230-kV structure sites on BLM-managed lands will have a temporary workspace approximately 100 feet by 150 feet cleared of obstructions that could create safety risks for construction. Vegetation in this temporary work area will be disturbed, but not cleared. Because the area has flat topography, grading for the construction pads at structure locations will not be needed at most structure locations.

Foundation Excavation and Foundation Installation

Foundation excavations will be made using mechanized equipment, with poles requiring one 6- to 15-foot diameter hole drilled and excavated from 15 to 45 feet deep depending on the results of the geotechnical investigation and final design. This excavation at each structure location would generate between 424 and 7948 cubic feet of material that would be distributed on site or hauled offsite, at the direction of BLM. Excavations will be made with power drilling equipment using a vehicle-mounted power auger. Foundation holes left open or unguarded temporarily would be covered with a material suitable to BLM to protect public and wildlife.

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

Though not expected, if hard rock is encountered within the planned drilling depth, equipment will be mobilized that is capable of boring into the rock layers without using explosives.

Structure Assembly and Erection

Structural steel components and associated hardware would be delivered to each structure site where they would be fastened together to form a complete structure and hoisted into place by a crane. Concrete for use in constructing foundations would be dispensed from concrete mixer trucks.

Conductor Installation

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

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

The shield wire (and/or OPGW) and conductors would be strung using powered pulling equipment at one end and powered braking or equipment tensioning at the other end of each conductor stringing segment. Sites for tensioning equipment and pulling equipment would be planned for each turning structure. For this alternative, five pull sites are expected to be needed.

Each tensioning site would be approximately 100 by 400 feet. Tensioners, line trucks, wire trailers, and tractors needed for stringing and anchoring the ground wire or conductor would be necessary at each tensioning site. A puller, line trucks, and tractors needed for pulling and temporarily anchoring the shield wires, OPGW, and conductor would be necessary at each pulling site. There will be no blading at pull sites because the terrain is sufficiently level. Final pull site locations will be determined during final design.

Cleanup

Construction sites will be kept in an orderly condition throughout the construction period by using approved enclosed refuse containers. Refuse and trash will be removed from the sites and disposed of in accordance with BLM and all applicable regulations. No open burning of construction trash will occur.

Reclamation / Restoration

Reclamation activities will be conducted on temporarily disturbed construction areas including structure locations and stringing/tensioning sites. The following prescriptions would be implemented after construction activities have been completed.

- To the maximum extent possible, all trees, shrubs and cacti within work areas would be identified and flagged prior to initiation of construction for protection against trampling or removal. In all other areas, larger vegetation would be avoided by the overland travel routes designated for construction equipment.
- No mulch or fertilizers would be applied in order to eliminate any barriers to seed deposition from wind dispersal and avoid introduction of alien and invasive plant species.
- Suitable cacti and shrubs in work areas or overland travel routes would be salvaged and replanted at a site as approved by BLM.
- Following construction, disturbed areas would be restored to the original pre-construction topographic contours. Replacement of gravel, rocks and vegetative material will make the site less visible to discourage creation of off-road trails.
- Hydrologic features including wash banks will not be disturbed.
- New seed from local provenances would be broadcast or planted in the manner prescribed by the BLM.
- If vegetation has been cleared from a construction area, it would be re-spread within the reclaimed area to increase soil moisture and provide micro-catchments for wind-dispersed seeds.
- If vegetation is unsalvageable, it will be removed in the manner prescribed by the BLM and revegetation will follow the prescription directed by BLM.

The prevention of weeds and exotic species invasion will be addressed throughout the construction process. All heavy equipment utilized during construction will be washed prior to entering BLM land. This practice will ensure that weed seed from a different region is not transported into the ROW area. Monitoring will be conducted post-construction and appropriate contingency responses will be implemented to control weeds and ensure the re-establishment of native species.

### *2.2.4 Operations and Maintenance Activities*

Following project construction, operation and maintenance of the new line would commence and is anticipated to continue through the anticipated term of the ROW grant of 50 years. Operation and maintenance activities would include all operation and maintenance requirements set forth by California Independent System Operator (CAISO) including patrol of the lines, climbing inspections, and transmission structure (tower or pole) and wire maintenance and repair. The following section provides details on the anticipated operation and maintenance requirements for the proposed gen-tie line.

Safety

The gen-tie line will be protected with power circuit breakers and related line relay protection equipment. Lightning protection will be provided by overhead ground wires

(shield wires or OPGW) along the line. Electrical equipment and fencing at the substation will be grounded. Existing fences, metal gates, pipelines, etc. that cross or are within the line right-of-way will be grounded as required by local, state, and national code requirements.

Emergency Response

Emergencies are any event requiring immediate response to a condition by Applicant personnel. These may include, but are not limited to, downed structures, fires, and/or outages due to down wire as a result of extreme weather. Responding crews would follow the protocols outlined in the project safety and emergency response plan, spill prevention and containment plan, fire prevention and response plan, and other applicable procedures. Each of these plans will be approved by the BLM as part of the construction plan for the selected alternative.

Inspection and Maintenance Schedule and Level of Use

The Project ROW will have scheduled patrols to inspect its condition and identify problem areas so that maintenance crews can correct any problems. Ground and aerial inspections will be performed on average once per year, or as needed to detect facilities needing repair or replacement.

Normal maintenance or repairs to conductor or insulator components will not require notification of the BLM unless ground disturbance is required.

In emergencies arising from fire, flood, storms, vandalism or other factors causing or requiring an outage, repair work will be conducted as soon as the damage is detected. Crews will be instructed, in accordance with specific maintenance plans and procedures, to protect crops, vegetation, wildlife, and other resources. The project owner will provide specific training to all maintenance crews. Training will instruct them on policy and requirements for procedures and responses to avoid and minimize damage to natural resources in and near the ROW. Restoration procedures following completion of repair work will be similar to those prescribed for original construction unless the BLM finds that new knowledge requires adjusting the original restoration prescription.

Vegetation Management and Invasive Weed Control

Vegetation management for woody species to maintain adequate line and work clearances during operation is expected to be limited. Work areas will be maintained adjacent to transmission structures for vehicle and equipment access necessary for operations, maintenance and repair.

The Project will implement a comprehensive, adaptive Weed Management Plan for pre-construction and long-term invasive weed abatement. The Weed Management Plan includes specific weed abatement methods, practices and treatment timing developed in consultation with the Imperial County Agriculture Offices and the California Invasive

Plant Council (Cal-IPC). On the ROW lands administered by the BLM, the Weed Control Plan will incorporate all BLM national requirements for vegetation management. The Weed Control Plan is included in **Appendix A** of this EA. Weed control will also be implemented on ROW easements located on private lands will include adaptive provisions for the implementation of the Weed Management Plan. Prior to implementation, the Project will work with the BLM and any other landowners to obtain authorization for the weed control treatment required on developed land.

Weed control treatments will include all legally permitted chemical, manual and mechanical methods applied with the authorization of the Imperial County Agriculture Commissioner and the BLM (for BLM lands). The application of herbicides will be in compliance with all state and federal laws and regulations under the prescription of a Pest Control Advisor (PCA) and implemented by a Licensed Qualified Applicator. For the lifespan of the Project (i.e., as long as the Project is physically present), long-term measures to control the introduction and spread of invasive weeds in the Project area will include annual surveying for new and spreading invasive weed populations and monitoring identified and treated populations in the project areas to ascertain the effectiveness of weed control measures.

Fire Control

All applicable fire laws and regulations (BLM and Imperial County) will be observed during the operation and maintenance period. All personnel would be advised of their responsibilities under the applicable fire laws and regulations, including taking practical measures to report and suppress fires.

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

### *2.2.5 Decommissioning Activities*

This section outlines the measures that will be taken at such time in the future when the ROW has expired and the Project is terminated. At this time, these actions are anticipated to include:

- Removal of structures
- Recontouring, if needed
- Stabilization and re-vegetation of disturbed areas

Structures will be removed and structure sites will be cleared and graded as required by the BLM. Clearing activities to reestablish or improve access will be performed in a manner agreed to by the BLM. Restoration activities will likely be similar to those described for post-construction but will follow the current techniques required by BLM at the time.

In construction areas (e.g., structure sites, pull sites, access roads) where ground disturbance has occurred or where recontouring is required, surface restoration will occur according to BLM stipulations and standards. The method of restoration will typically consist of returning disturbed areas to their natural contour and revegetating with native species providing habitat for the native species.

In general, all construction and subsequent maintenance activities will be conducted in a manner that will minimize disturbance to soil and vegetation. In addition, all previously existing roads will be left in a condition equal to or better than their condition prior to construction of the transmission lines.

The methods of restoration applied to the ROW at the expiration of the Project may differ considerably from those in practice today. The Project proponent will underwrite site restoration stipulated by the BLM in line with the best restoration technology and standards of achievement available for desert ecosystems when the Project concludes.

Prior to restoration, all necessary biological surveys will be conducted in accordance with accepted standards and procedures. During the course of any necessary restoration activities, a Worker Environmental Awareness Program training will be given to construction crews will be given to restoration teams regarding ecologically sensitive areas; protection and avoidance of Native American, paleontological, and historical resources; minimizing impact on special status species; and containment and disposal of any hazardous materials collected or discovered during the restoration. In addition, natural resource advisors will be on site to safeguard national resources.

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

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

### *2.2.6 Design Features, BMPs, and Other Conditions Included in the Proposed Action*

The Applicant has incorporated several design features and measures into the Project for mitigation to offset impacts. The following table identifies those mitigation features and measures proposed by the Applicant for the proposed gen-tie project to avoid or reduce resource impacts.

Some of these mitigation measures would be applied to specific areas (where a need for safeguarding a specific type of resource exists). In these cases, the locations for these geographically-specific measures will be shown on the detailed drawings prepared prior to construction.

Chapter 4 of this EA will identify any additional mitigation measures that would be needed to lessen potential environmental impacts of the Project.

**Table 2-2 Applicant Proposed Measures**
**Included as part of Proposed Project on BLM-Managed Land**

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| ***BIOLOGICAL RESOURCES*** |
| ***Vegetation*** |
| *Adverse effects on vegetation disturbance during construction would be minimized as follows:* |
| 1) Prohibit vehicle operation off BLM designated routes by construction workers, including construction work and employee access, except where access is authorized by the BLM in the ROW grant.<br>2) Existing access roads would be used to the maximum extent allowable and development of overland travel routes would be minimized.<br>3) Vegetation disturbance including its removal would be minimized wherever possible. Access road construction activities shall implement drive and crush to minimize impacts to the roots of desert shrubs rather than grading, where possible. To the extent possible, grading and grubbing of vegetative cover will be avoided on all tower pad locations and all vehicular traffic will travel only on access routes authorized in the ROW grant. |
| *The following prescriptions would prevent the spread of invasive weeds into previously uninfested areas in the designated construction right-of-way.* |
| 1) In advance of construction activities, all construction equipment arriving on site would have the tires, axles, frame, running boards, under-carriages, and any equipment parts designed to hold soil or rock shall be washed and cleaned at a documented location to prevent transport of invasive weed species transport into project areas.<br>2) A qualified weed specialist, vegetation ecologist, or desert botanist would survey the tower pad locations, stringing and tensioning sites, existing access roads that require improvements, and construction material staging areas prior to construction to identify any infestations of invasive plant.<br>3) Before beginning construction activities, these infestations would be controlled through acceptable mechanical (e.g., topsoil excavation and removal/disposal), hand pulling, or herbicide applications.<br>4) If direct control methods or removal of invasive weed infestations in construction disturbance areas is not feasible, the invasive plants may be cut and disposed of or otherwise destroyed in a manner that the BLM specifies.<br>5) The lead environmental construction monitor would instruct construction personnel about invasive weed identification and the legal requirement for controlling and preventing the spread of invasive weed infestations. |
| ***Wildlife*** |
| *Compensation for habitat modifications per coordination with responsible resource agencies.* |
| 1) Project habitat compensation for both streambed alteration agreements and special-status species may be satisfied by the Applicant independently, or by depositing compensation funds into the Renewable Energy Action Team (REAT) Account established with the National Fish and Wildlife Foundation (NFWF). |
| *Construction activities and vehicle operation would be conducted to minimize potential impacts or disturbance of wildlife.* |
| 1) Speed limits along the right-of-way and access roads will be limited to 15 mph. In addition, construction and maintenance employees would exercise caution when traveling to and from the project site on designated routes on BLM lands to reduce the potential for wildlife mortality.<br>2) Prohibit vehicle operation off BLM designated routes by all project personnel except where authorized by the BLM.<br>3) Equipment stockpiles and vehicle parking will occur only on designated wire tensioning (pull) sites or on private lands. |

4) On BLM lands, the minimum number and types of vehicles and equipment would be limited to those necessary for project construction.
5) *Implement the "List of Standard Mitigation Meausres for Flat-tailed Horned Lizard", as outlined in the Flat-tailed horned lizard Rangewide Management Strategy* (2003)
6) Develop and implement a Bird and Bat Conservation Strategy (BBCS) - formerly known as an Avian and Bat Protection Plan (ABPP).

*Design would minimize electrocution and collision potential for raptors.*

1) Design would space conductors and ground wires sufficiently apart so that raptors cannot contact two conductors or one conductor and a ground wire to cause electrocution as outlined in Suggested Practices for Raptor Protection on Power Lines: The State of the Art in 2006 (APLIC 2006)..

*Conduct pre-construction surveys prior to project initiation*

1) Preconstruction clearance surveys will be conducted by qualified biologists for sensitive wildlife including, but not limited to, burrowing owl, kit fox, and American badger. FTHL surveys will be conducted pursuant to the methods outlined in the FTHL Rangewide Management Strategy, 2003.
2) For the protection of migratory birds during the breeding season (January 15 through August 15), prior to any project related activities, an approved biologist with a minimum of three years of experience conducting migratory bird surveys and implementing the requirements of the Migratory Bird Treaty Act (MBTA) shall conduct a preconstruction migratory bird nesting survey in the project area. If any active nest is located, the nest area shall be flagged or otherwise marked for avoidance, and a 200-foot buffer zone shall be flagged, a 300-foot buffer shall be established for nests of federally listed birds and a 500-foot buffer will be established for all nesting raptor species. No work activity shall occur within these avoidance buffer areas until an approved biologist determines that the fledglings are independent of the nest or has verified nest failure. If is the biologist or a construction worker discovers an occupied burrowing owl burrow, the construction contractor will halt construction activities and notify the California Department of Fish and Game, in Ontario at (909) 484-0167, MCRodriguez@dfg.ca.gov and the BLM, El Centro, Resources Section, (760) 337-4400 immediately. Construction would be avoided during the passerine and raptor nesting season (e.g., April 1 to August 31), if possible.

***Special Status Species***

*Survey and avoid and/or salvage special-status plant species n areas to be disturbed by project activities.*

1) Comprehensive focused surveys conducted during the appropriate season and designed with appropriate agency consultation would be conducted prior to any project-related ground disturbing activities to identify any special-status plant populations on proposed tower pads, pulling and splicing sites, staging areas, or any other construction sites that would be temporarily or permanently disturbed.
2) If special-status plant(s) are identified during the pre-construction surveys, plant locations would be delineated on aerial photography and incorporated into the construction plan as areas to be avoided. In addition, identified populations would be marked in the field with stakes and flagging. Realignments would be implemented to avoid those populations within the designated tower pad and access routes, unless the BLM approves making no realignment.
3) Where avoidance is infeasible, a Plant Salvage Plan would be developed by the Applicant and submitted for approval from the appropriate responsible agencies.

*Implement conservation measures to decrease the likelihood of take of special status wildlife species and impacts to critical habitat.*

1) Flag or otherwise mark the outer boundaries of the project construction areas where necessary to define the limit of work activities.
2) Minimize habitat degradation by limiting travel to existing roads and surface disturbance to previously disturbed areas.
3) Implement WEAP training for all project personnel.

4) Employ BLM-approved biologists to monitor construction activities within the righ-of-way. These monitors will have the authority to halt construction acitivities when wildlife would be adversely affected. The biological monitors will alert take appropriate actions to ensure impacts to wildlife are avoided.within the right-of-way. Pulling, staging, and equipment storage sites where construction activities would be intense and extended overtime, may be temporarily fenced to keep wildlife from entering these zones.
5) Conduct passive exclusion according to CDFG guidelines if kit fox and/or American badger burrows are located where ground disturbing activities are authorized.

***Waters of the U.S.***

*The following actions would be implemented to minimize impacts to waters of the US.*

1) A survey of "waters of the U.S." was completed and submitted to the ACOE. In addition, a delineation and drainage report was submitted to the CDFG and an investigation of the project site by the CDFG was conducted to determine if the project may impact fish or wildlife resources. On BLM lands, an overhead crossing of the Westside Main Canal by the Gen-Tie is expected, although no construction activities are expected to result in the placement of fill material or divert, obstruct, or change the natural flow of the bed or channel.
2) The Project would have a design consistent with ACOE and CDFG guidance to minimize impacts to floodplains and jurisdictional waters of the U.S., and construction of the transmission line would incorporate best management practices (BMPs), include erosion control measures, and comply with all ACOE, CDFG, and State water quality permit terms and conditions to protect water quality in the Project area.
3) Placement of towers in washes will be avoided to the extent possible through project engineering design. Washes will be flagged prior to ground-disturbing activities by a qualified resource specialist. All construction activities would take place outside the flagged areas to ensure minimum habitat disturbance.
4) Any direct or indirect impacts to Waters of the U.S. and streambeds would be mitigated by restoring the impact area to a state that encourages native vegetation to reestablish to its pre-construction condition and reduces the effects of erosion on the drainage system.
5) Additional compensatory, restoration, or avoidance mitigation measures identified by regulatory agencies (e.g., ACOE, CDFG) as part of the permitting process would be implemented

***CULTURAL RESOURCES***

*Preparation of a Treatment Plan for avoiding and mitigating unavoidable direct adverse effects on resources eligible for listing in the National Register of Historic Places would be prepared and implemented.*

1) Treatment of cultural resources will follow the procedures established by the ACHP for compliance with Section 106 of the National Historic Preservation Act (NHPA) and also for compliance with CEQA.
2) A Class III intensive pedestrian inventory will be undertaken for all portions of the Project that have not been previously surveyed or have been identified by the BLM as requiring an inventory to identify properties that are eligible for listing in the National Register of Historic Places (NRHP).
3) A Treatment Plan will be prepared to identify methods of avoiding or mitigating effects. A cultural resources evaluation report will be submitted to the BLM for review, and for consultation purposes, as part of the development of the Treatment Plan.
4) Adverse effects to cultural resources will be avoided to the extent possible. Final design of the Project (e.g., tower placement and work areas) will include measures to avoid NRHP eligible sites. The final list of sites to be avoided during construction will be specified in the Treatment Plan. The Treatment Plan will also include detailed measures to ensure this avoidance is implemented during construction.
5) An Unanticipated Discovery Plan would be developed to outline procedures to be undertaken if unexpected resources are encountered during the course of construction.

6) A cultural resources monitor will be available to respond to the BLM within 48 hours to cultural resource issues that arise during construction.
7) Consultation will be conducted at the direction of BLM with concerned Native American groups to determine if the archaeological sites have additional sensitivities (i.e., Taditional Cultural Properties [TCPs]).

***AIR QUALITY***

*The following mitigation measures would be implemented during the construction of the Proposed Project to reduce the exhaust emissions of CO, $NO_X$, VOC, $SO_X$, and $PM_{10}$.*

1) Heavy duty off road diesel engines over 50 horsepower will meet Tier I ARB/EPA standards for off-road equipment and will be properly tuned and maintained to manufacturers' specifications to ensure minimum emissions under normal operations;
2) Construction vehicles will have 1996 and newer model engines;
3) Visible emissions from all heavy duty off road diesel equipment will not exceed 20 percent opacity for more than three minutes in any hour of operation;
4) A comprehensive inventory (i.e., make, model, year, emission rating) of all heavy-duty off-road equipment (50 horsepower or greater) that will be used an aggregate of 40 hours per week or more during the duration of the construction project will be submitted to the Imperial County Air Pollution Control District, if needed.

*The following mitigation measures would be implemented for the Proposed Project to reduce fugitive dust emissions (including $PM_{10}$):*

1) Water or chemical dust suppressants approved by the BLM will be applied to unstabilized surfaces of disturbed areas and/or unpaved roadways in sufficient quantity and frequency to maintain a stabilized surface.
2) Water or water-based chemical additives will be used in such quantities to control dust on areas with extensive traffic including unpaved access roads. Water, organic polymers, lignin compounds, or conifer resin compounds will be used depending on availability, cost, and soil type.
3) Vehicle speeds on unpaved roadways will be restricted to 15 mph.
4) Vehicles hauling dirt will be covered with securely-fastened tarp or other means approved by the BLM.

***WATER RESOURCES***

*A stormwater pollution prevention plan (SWPPP) would be prepared as required by the State General Construction Activity Storm Water Permit. The SWPPP will include:*

1) An outline of the areas of vegetative soil cover or native vegetation onsite that will remain undisturbed during the construction project.
2) An outline of all areas of soil disturbance including cut or fill areas which will be stabilized during the rainy season by temporary or permanent erosion control measures, such as seeding, mulch, or blankets, etc.
3) An outline of the areas of soil disturbance, cut, or fill which will be left exposed during any part of the rainy season, representing areas of potential soil erosion where sediment control BMPs are required to be used during construction.
4) A proposed schedule for the implementation of erosion control measures.
5) The SWPPP will include a description of the BMPs and control practices to be used for both temporary and permanent erosion control measures.

*Surface waters, wells and springs adjacent to construction areas would be protected.*

1) Surface waters (canals), springs, and wells within 1,000 feet of construction activities will be identified. Construction activities will be limited in the following manner: (1) construction activities will not be carried out within 100 feet of these resources without using BMPs; (2) blasting will be prohibited within 500 feet of a well; and (3) only size limited blasting will be authorized within 1,000 feet of a well. If damage occurs to a well or spring, the affected area will be repaired by the contractor.
2) The use or storage of hazardous material near a canal, well, or spring will be prohibited. Additionally, special precautions will be implemented to prevent spills of hazardous materials, discharges of foreign materials, and sedimentation discharges near a canal, well or spring.

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| 3) Dewatering activities for tower footings or other deep excavations will be planned to minimize the effect on wells and springs. |
| ***GEOLOGY AND SOILS*** |
| *The Project would be designed to prevent damage resulting from seismic activity in the Project area.* |
| 1) Measures will be taken to the extent possible to avoid sites for transmission towers that are located within known fault zones.<br>2) A geotechnical engineering investigation consistent with California geologic and engineering standards will be conducted for the Proposed Project by a licensed geotechnical engineer.<br>3) All practicable precautions will be taken to design and construction of transmission towers and new substations, substation facility improvements, and equipment to withstand the projected ground shaking in the area. |
| *Construction, operation, and maintenance activities will be restricted when the soil is too wet to adequately support construction or maintenance equipment (i.e., when heavy equipment creates ruts in excess of 4 inches deep over a distance of 100 feet or more in wet or saturated soils). Where the soil is deemed too wet, one or more of the following measures will apply:* |
| 1) Construction and maintenance vehicles will be rerouted around wet areas onto existing roads that do not cross sensitive resource areas.<br>2) If wet areas cannot be avoided, implement BMPs for use in these areas during construction and access road improvement, and during subsequent reclamation of these areas. BMPs may include use of wide-track or balloon-tire vehicles and equipmentuse of geotextile cushions, pre-fabricated equipment pads, and other materials to minimize damage to the substrate where determined necessary by resource specialists and in consultation with appropriate resource agencies. If BMPs cannot be successfully applied to wet or saturated soil areas, construction or routine maintenance activities would not be allowed in these areas until the Project environmental monitor(s) determine it is acceptable to proceed. |
| *Areas of expansive soils would be mitigated to minimize damage from shrink / swell actions on equipment foundations.* |
| 1) Prior to construction, soils will be evaluated by a geotechnical engineer to determine if they are expansive and if they may have potential effects on the proposed facilities. Where they represent a potential hazard, solutions recommended by the Proposed Project's geotechnical engineer, such as excavation and replacement of the expansive soils with compacted backfill, will require BLM approval. If imported backfill material is used, it will be certified to be from a non-agricultural area and to be free of invasive weeds and propagules (i.e., seeds and root/stem/rhizome fragments), and the soil material will be a match with the native soil in the project area. |
| *Monitoring of the erosion control measures will continue until reclamation efforts are considered complete and successful. Measures to be implemented during the Proposed Project construction and reclamation are listed below.*<br><br>*These measures will minimize the effects of grading, excavation, soil compaction, and other surface disturbances in all Project areas. Schedules and specifications for these features would be part of the final construction plan.* |
| 1) Confine all vehicular traffic associated with construction to areas designated in the construction, operation, and maintenance (COM) Plan.<br>2) Limit disturbance and removal of soils and vegetation to the minimum area necessary for access and construction.<br>3) Where vegetation removal is necessary, use cutting/mowing methods instead of blading, wherever possible. Fire will not be used to remove vegetation.<br>4) Adhere to a construction methodology that mitigates impacts in sensitive areas during severe weather events.<br>5) Inform all construction personnel before they are allowed to work on the Proposed Project of the environmental concerns, pertinent laws and regulations, and elements of |

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| the erosion control plan. A multi-hour environmental training would be provided for project management, foremen, and construction personnel.<br>6) Minimize grading to the extent possible. When required, grading will be conducted away from washes and artificial waterways to reduce the potential of material entering watercourses.<br>7) Slope and berm graded material, where possible, to reduce surface water flows over unit area across the graded area.<br>8) Replace excavated materials in disturbed areas and minimize the time between excavation and backfilling.<br>9) Direct the dewatering of excavations onto stable surfaces to avoid soil erosion.<br>10) Use detention basins, certified weed-free straw bales/rolls, or silt fences, where appropriate.<br>11) Use drainage control structures, where necessary, to direct surface drainage away from disturbance areas and to minimize runoff and sediment deposition downslope from all disturbed areas. Control structures include culverts, ditches, water bars (berms and cross ditches), and sediment traps.<br>12) Implement other applicable BMPs to minimize erosion-related impacts during construction, to improve access roads, and to facilitate their subsequent reclamation. |
| ***VISUAL RESOURCES*** |
| *The following mitigation measures will be implemented to minimize visual impacts:* |
| 1) Non-specular materials will be used for conductor and structure materials to minimize reflections and glare.<br>2) After Project construction is complete, ground surfaces within the transmission line right-of-way and areas outside the right-of-way that are disturbed during project construction would be restored to their original condition and grade, as outlined in the Reclamation Plan.<br>3) Staging areas would be revegetated as necessary, according to the Vegetation Restoration Plan.<br>4) Existing rock formations and vegetation would be retained whenever possible. |
| ***TRAFFIC AND TRANSPORTATION*** |
| *The following measures would be implemented to minimize impacts to traffic and roads:*<br>Traffic controls shall include ensuring that: |
| 1) The locations of intersections of existing access roads are highly visible by placing signage and traffic control crews to ensure that people are aware of the presence of crossing or slow-moving construction vehicles.<br>2) Following construction, or during construction as necessary to maintain safe driving conditions, any damage to existing roadways caused by construction vehicles would be repaired. |
| ***PUBLIC HEALTH AND SAFETY*** |
| *Detailed information about the use, storage and disposal of hazardous materials would be provided in the Health and Safety Plan that would be developed by the construction contractor and with the approval of the BLM.* |
| *A Fire Prevention and Response Plan (FPRP) will be developed and implemented after approval by the BLM during construction, operation, and maintenance of the proposed transmission line.* |

*During Project construction, on-going training would be provided by the Applicant to the US Border Patrol agents who work in the area for the duration of the Project about any safety issues related to BP access to the gen-tie ROWs or the solar energy generation facilities. At least two training sessions for the Border Patrol will be conducted at their convenience at the beginning of construction and at the beginning of operations (generally one for a day shift and one for a night shift) to explain the development process, hazards to the agents and their vehicles during construction and operations, depth of holes (as potential hiding places for undocumented persons), dangers of collapse of earthen excavations, any risks from electrical/shock, and staffing during the construction phase. The Project Applicant will provide access for Border Patrol agents to no-electrified secured areas if they need to pursue individuals.*

## 2.3 Alternative 3: Alternative Gen-Tie Across BLM Land

### *2.3.1 Overview*

The Alternative 3 Gen-Tie across BLM land would also involve developing a double-circuit 230-kV line that would provide the interconnection for the Campo Verde Solar generation facility. It would parallel the existing IID S-line and would be approximately 0.8 miles long with about 0.4 miles located on BLM land.

This alternative would begin on the southern portion of the solar site (near 32°43'54" N, 115°42' 52" W) where it would cross IID's Westside Main Canal and proceed south approximately 0.4 miles on private land where it would enter BLM land and continue south for approximately 0.4 more miles to the Imperial Valley Substation.

**Figure 2-3** shows the proposed location of this gen-tie route. The location of the route for the portion of this route on BLM land is shown in **Table 2-3** below.

**Table 2-3 Description of BLM Lands Alternative 3 – Alternative Gen-Tie on BLM Lands**

| Township / Range | Sections |
|---|---|
| 16 ½S 12E | NW ¼ NE ¼ of Section 3<br>SW ¼ NE ¼ of Section 3 |

The existing IID S-line that this Alternative would parallel has been approved by BLM for upgrade. Additionally, IID's proposed Liebert Substation would potentially be located on private land immediately to the south of the solar generation facility and could use the upgraded IID S-line to access the Imperial Valley Substation. Development of the Liebert Substation would encourage the co-location of gen-tie lines on private lands for renewable projects located in this general area. If the Applicant could connect to the Imperial Valley Substation via the Liebert Substation, then the gen-tie line for this solar generation facility would be constructed on private lands.

Because the Liebert Substation has not yet been approved and construction of the upgraded IID S-line has not yet begun, the precise schedule for this connection option is uncertain. For that reason, though this option is currently feasible, it is possible that the

schedule required to meet the Applicant's obligations under its Power Purchase Agreement may in the future make this option impractical. Therefore, under this Alternative, the BLM would grant a ROW for the Applicant's gen-tie on public lands, as described above. However, before the BLM would issue a Notice to Proceed to begin construction of this Alternative, the Applicant will be required to show that utilization of the proposed Liebert Substation would be infeasible from a timing perspective or other reason.

If the Applicant is able to connect to the Liebert Substation within the required timeframe, then the BLM would not issue a Notice to Proceed for the construction of the Applicant's gen-tie on BLM-managed land.

Because the upgrade of the IID S-line on public land has already been authorized, the impacts associated with the connection to the Liebert Substation will be as analyzed in the No Action Alternative. Therefore, the analyses in Chapter 4 for this Alternative will address the Applicant's alternative gen-tie across BLM-managed land described above and further outlined below.

### *2.3.2 Structures and Facilities*

The structures and facilities for this alternative would be the same as that described for the proposed action alternative in Section 2.2.2. Four or more structures are proposed to be located on BLM land for this alternative and three would be located on private lands off the solar sites. Like the proposed alternative, a small 100-foot by 150-foot area around each structure site would be cleared of obstructions and temporarily used for construction on the BLM lands. Five pulling / tensioning sites are expected to be needed on BLM land for this alternative. The tentative locations of structure sites and associated overland access routes are shown on **Figure 2-3**.

### *2.3.3 Construction Activities*

The construction activities for this alternative would be the same as those described for the proposed action alternative in Section 2.2.3.

### *2.3.4 Operations and Maintenance Activities*

The operations and maintenance activities for this alternative would be the same as those described for the proposed action alternative in Section 2.2.4.

### *2.3.5 Decommissioning Activities*

The decommissioning activities for this alternative would be the same as those described for the proposed action alternative in Section 2.2.5.

### *2.3.6 Design Features, BMPs, and Other Conditions*

The design features and BMPs for this alternative would be the same as that described for the proposed action alternative in Section 2.2.6.

## 2.4 Alternative 4: Private Land Gen-Tie Alternative

### *2.4.1 Overview*

The Private Land (non-BLM ROW) Alternative would be a single or double-circuit 230-kV that would provide the interconnection for the Campo Verde Solar generation facility. It would be approximately 1.75 miles long and located completely on private lands. This gen-tie line would enter the site of the Imperial Solar Energy Center West where it would utilize available capacity on one of the circuits on the Imperial Solar Energy Center's double-circuit gen-tie line that has an approved right-of-way to the Imperial Valley Substation. As conditioned in the ROW grant for this approved line, the grant holder shall construct and utilize this line for common use ancillary facilities (i.e. other Generation Tie-in line) where the authorized officer deems it necessary. **Figure 2-4** shows the location of the Imperial Solar Energy Center West site and its proposed gen-tie line to the Imperial Valley Substation.

This alternative would commence at the western portion of the Campo Verde Solar generation facility site where it would cross approximately 1.75 miles of privately-owned agricultural lands, cross IID's Westside Main Canal, and enter the Imperial Solar Energy Center West site.

**Figure 2-5** shows the proposed location of this gen-tie route. The description of the lands for this route is shown in **Table 2-4** below.

**Table 2-4 Description of Lands Alternative 4 – Alternative Gen-Tie on Private Lands**

| Township / Range | Sections |
|---|---|
| 16S 12E | NE ¼ SE ¼ of Section 20<br>NW ¼ SE ¼ of Section 20<br>SW ¼ NE ¼ of Section 20<br>NW ¼ NE ¼ of Section 20<br>SE ¼ SW ¼ of Section 17<br>SW ¼ SW ¼ of Section 17<br>SE ¼ SE ¼ of Section 18<br>SW ¼ SE ¼ of Section 18<br>SE ¼ SW ¼ of Section 18 |

### *2.4.2 Structures and Facilities*

The structures and facilities for this alternative would be similar to those described for the proposed action alternative in Section 2.2.2. Approximately 18 structures would be needed for this alternative on the private lands between the two sites. Some structure locations for this alternative would need to be cleared of agricultural crops for construction. Three pulling / tensioning sites are expected to be needed for this alternative. The tentative locations of structure sites are shown on **Figure 2-5**.

### *2.4.3 Construction Activities*

The construction activities for this alternative would be the same as those described for the proposed action alternative in Section 2.2.3.

### *2.4.4 Operations and Maintenance Activities*

The operations and maintenance activities for this alternative would be the same as those described for the proposed action alternative in Section 2.2.4.

### *2.4.5 Decommissioning Activities*

The decommissioning activities for this alternative would be the same as those described for the proposed action alternative in Section 2.2.5.

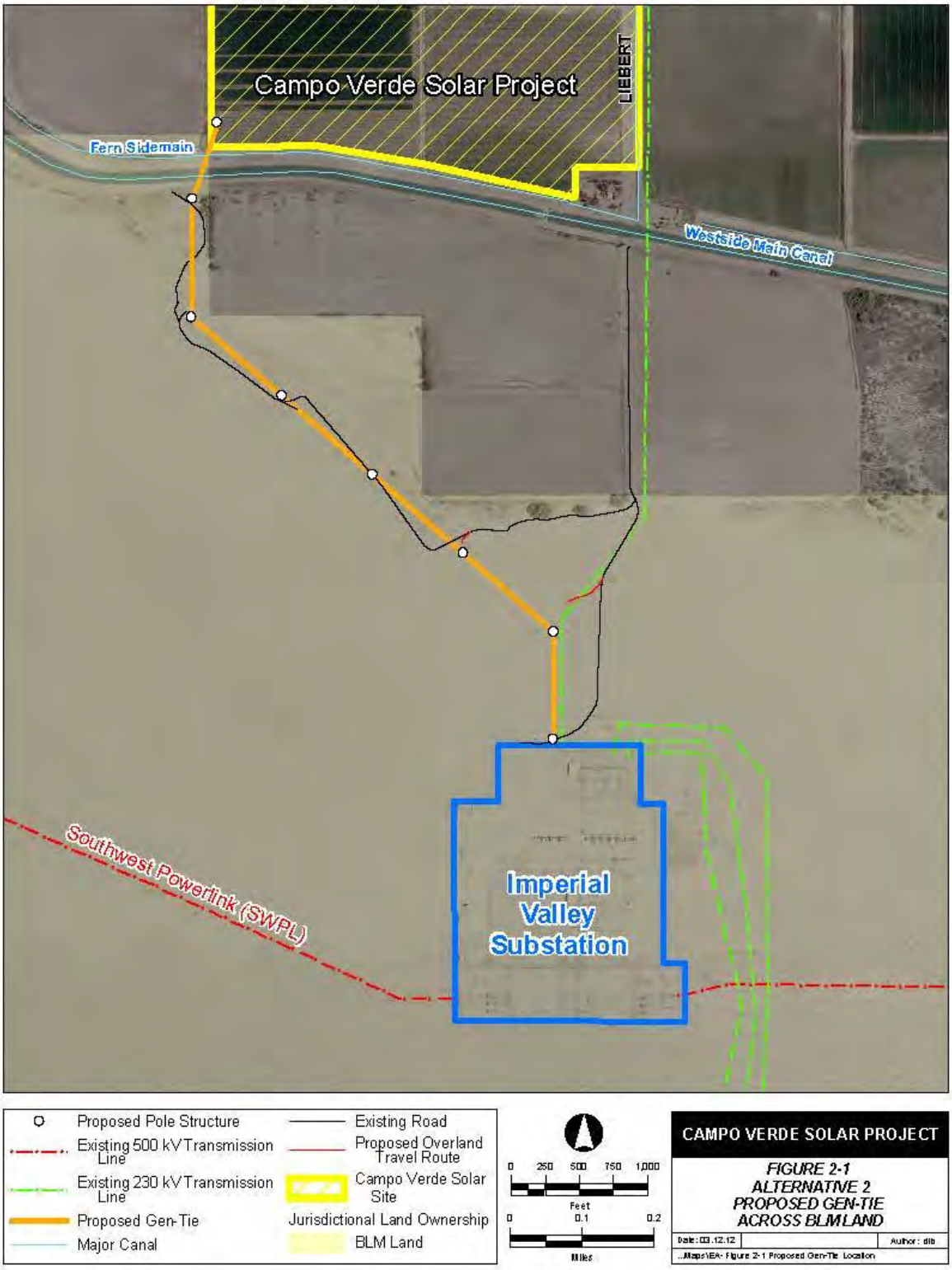
### *2.4.6 Design Features, BMPs, and Other Conditions*

The design features for this alternative would be the same as those described for the proposed action alternative in Section 2.2.6. However, many of the BMPs designed to minimize impacts on desert lands would not be needed here because all lands crossed by this alternative are currently disturbed by agriculture.

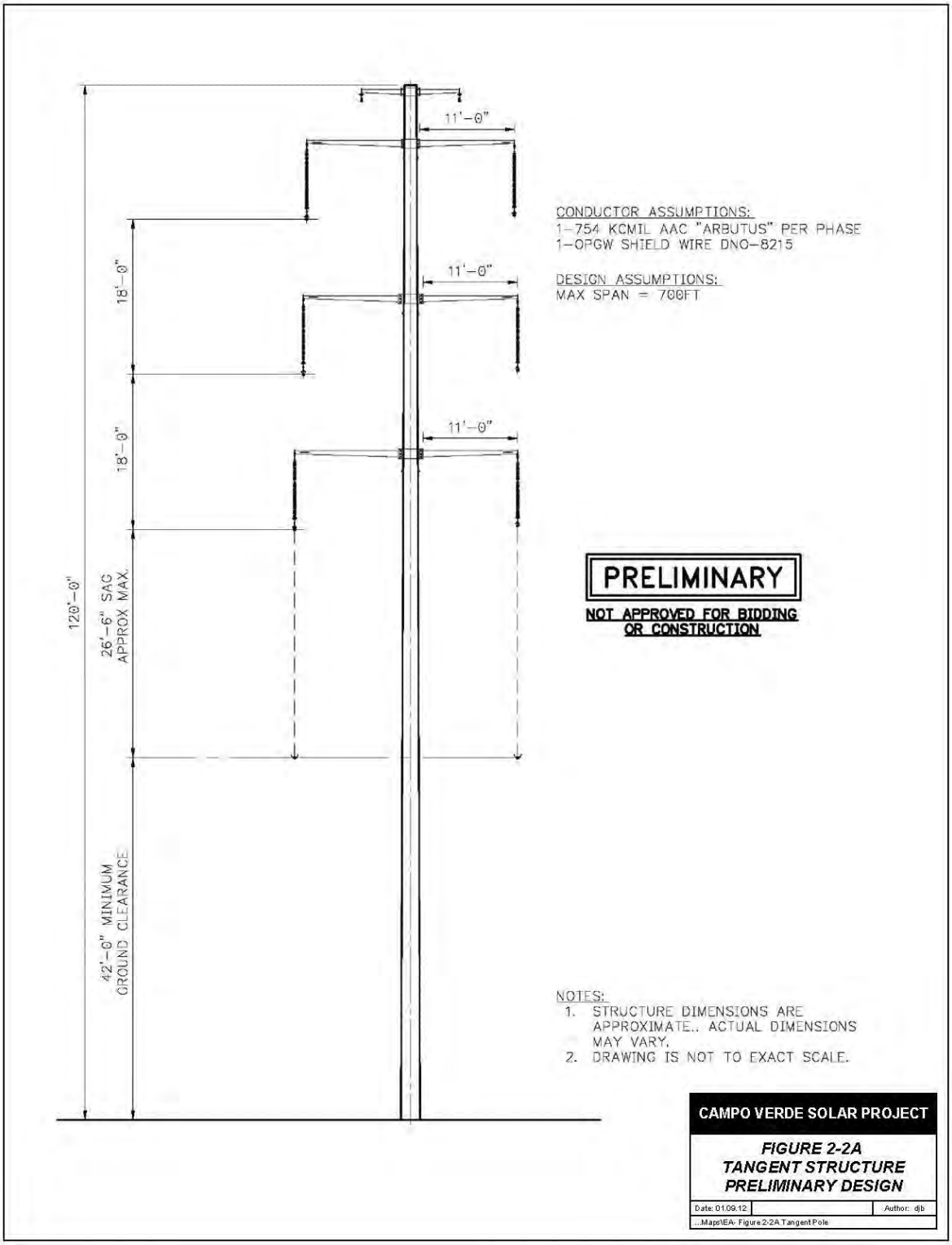
## 2.5 Alternatives Considered but Eliminated from Detailed Analysis

Because the options for interconnecting with the Imperial Valley Substation are limited, no additional gen-tie alternatives for connecting the Campo Verde Solar generation facility were considered beyond those described above.

## FIGURE 2-1 PROPOSED GEN-TIE LOCATION



## FIGURE 2-2A TANGENT STRUCTURE PRELIMINARY DESIGN



## FIGURE 2-2B DEAD-END STRUCTURE PRELIMINARY DESIGN

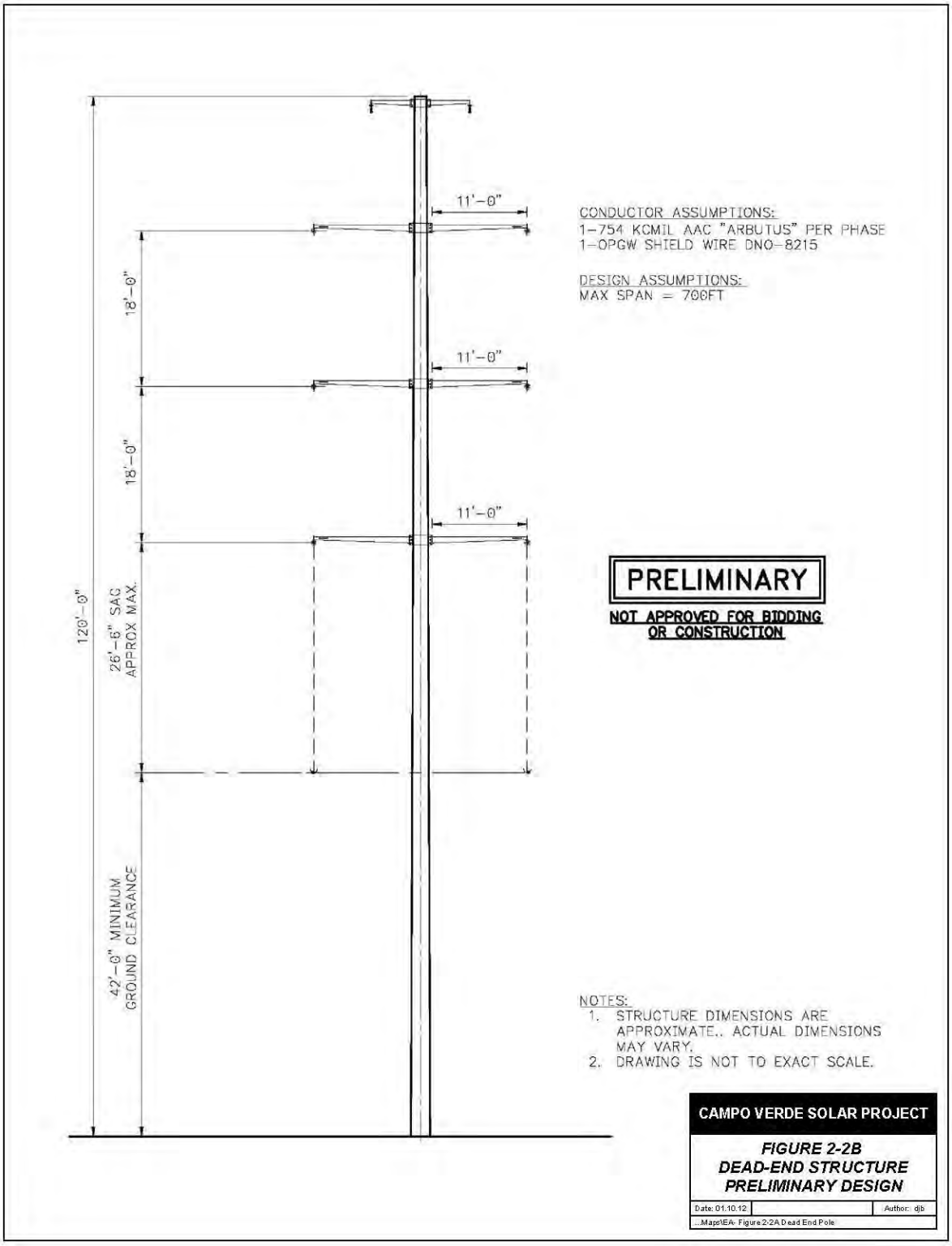


**FIGURE 2-3 ALTERNATIVE 3 GEN-TIE LOCATION**

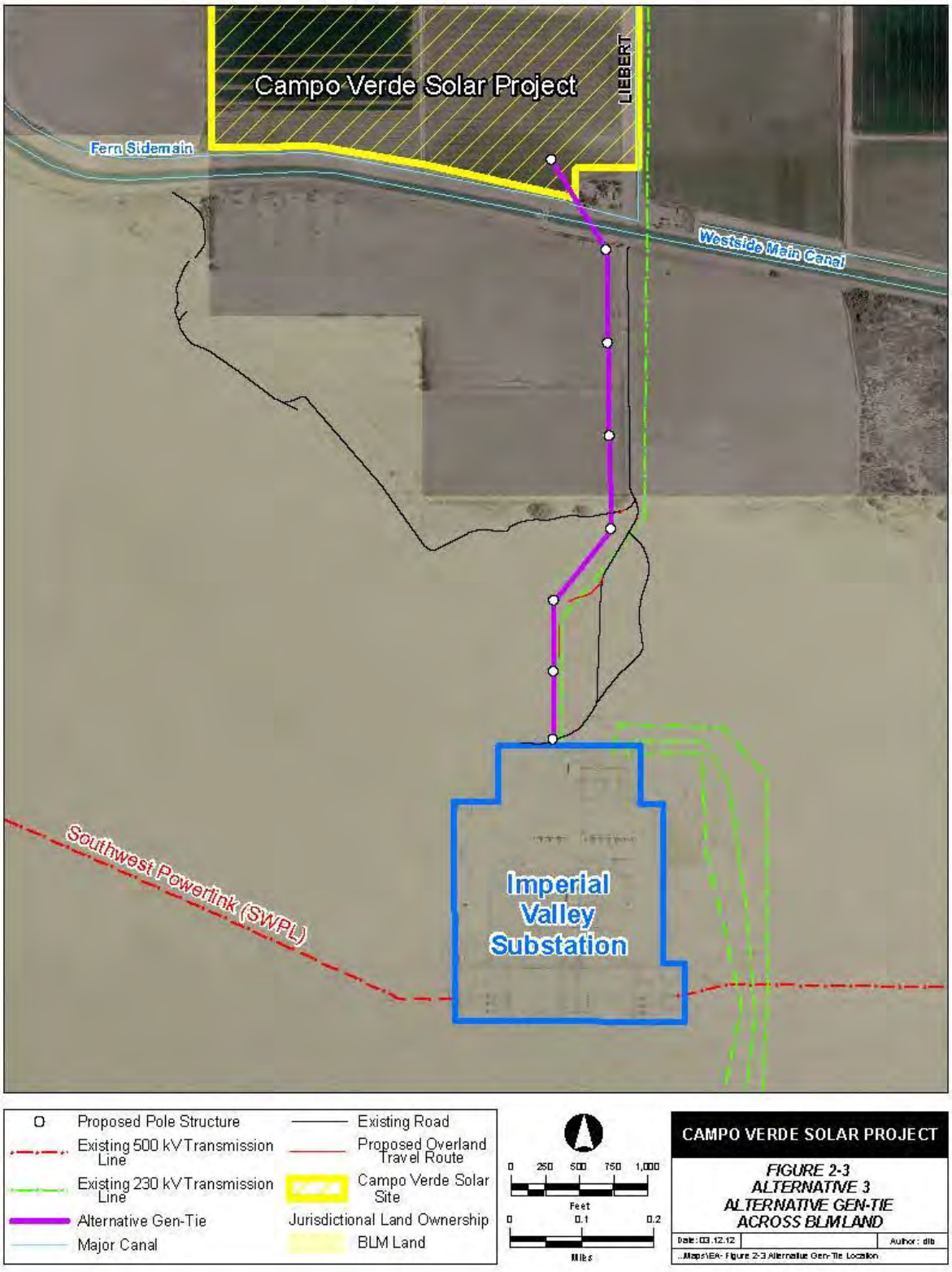
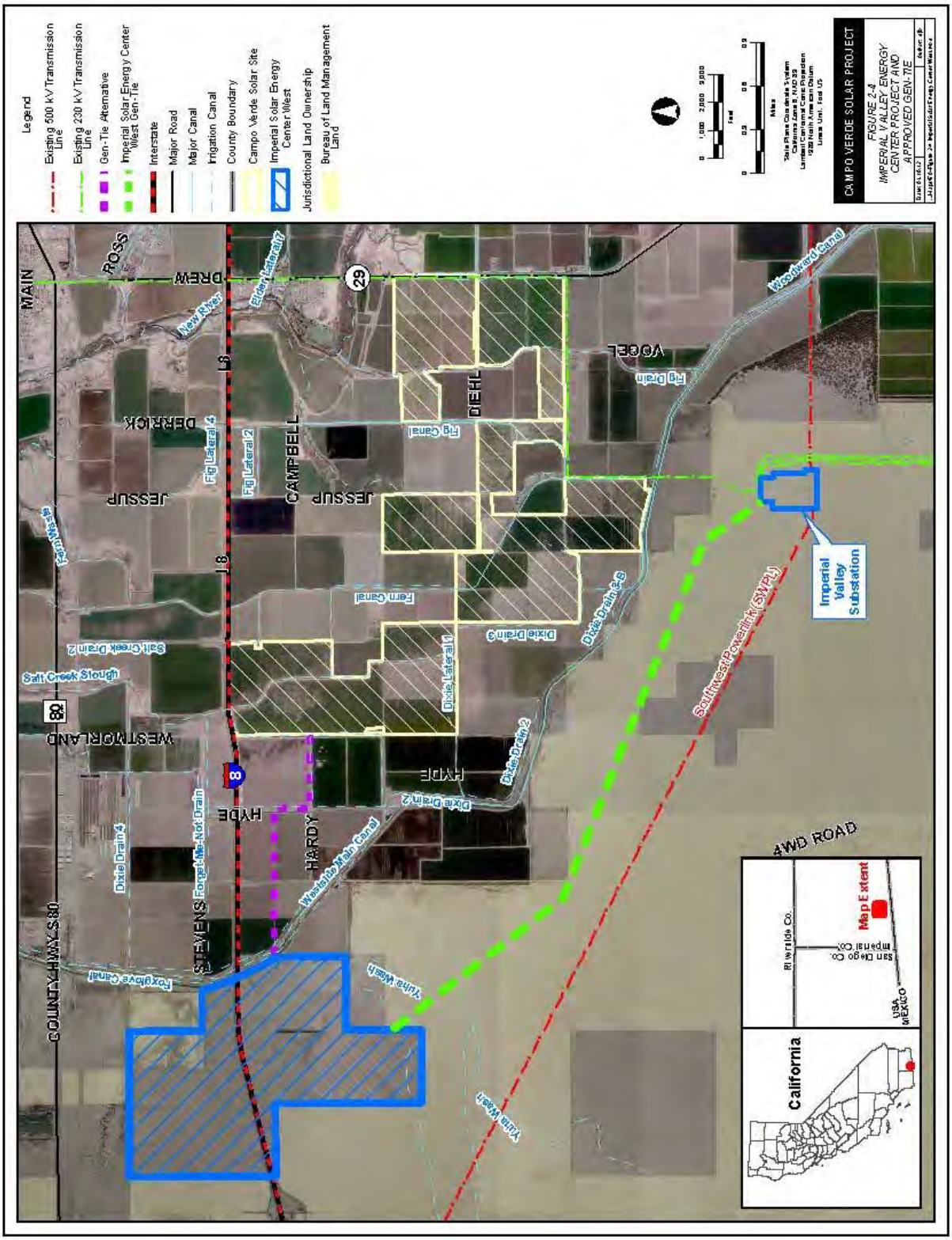
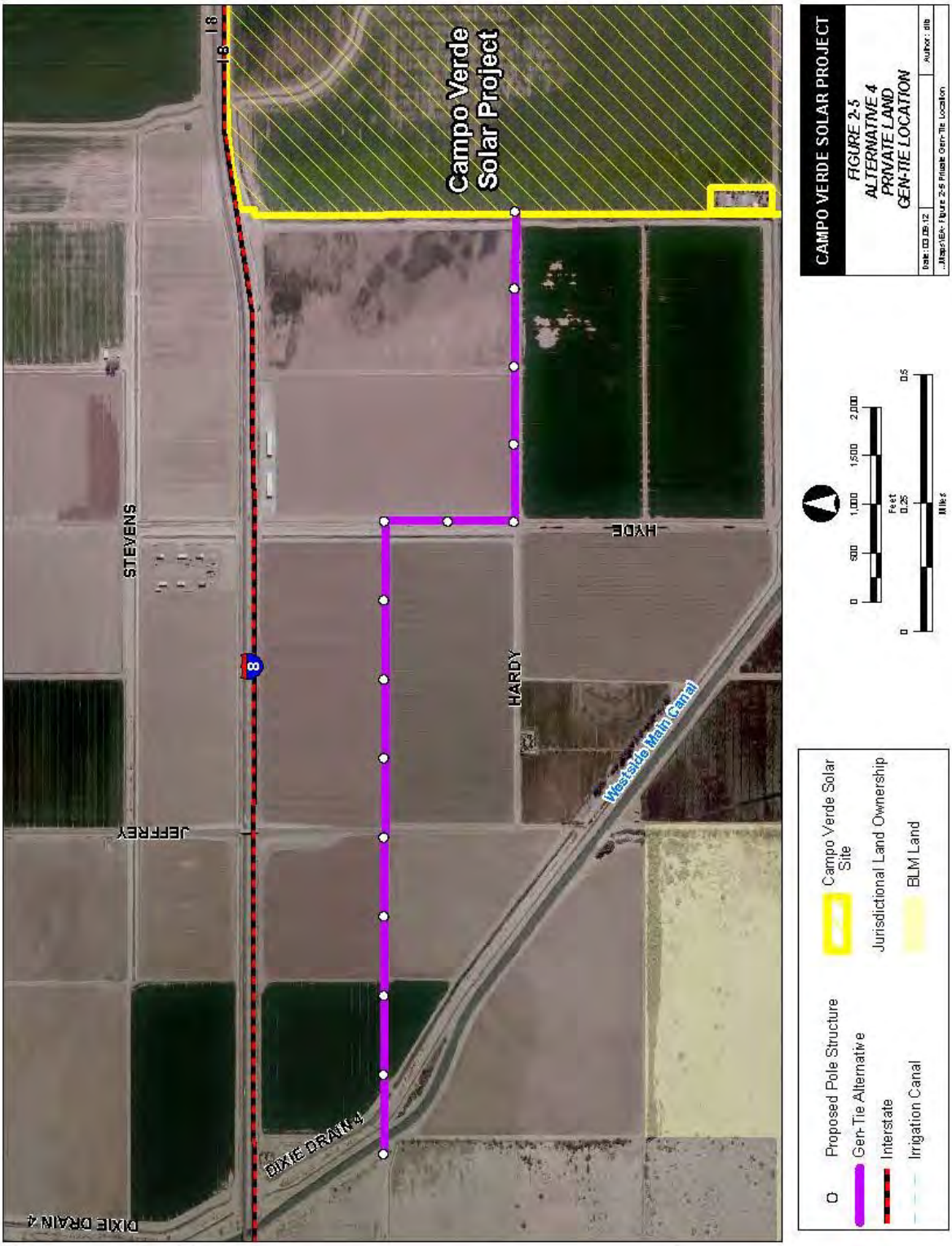


**FIGURE 2-4 IMPERIAL VALLEY ENERGY CENTER PROJECT AND APPROVED GEN-TIE**



## FIGURE 2-5 ALTERNATIVE 4 GEN-TIE LOCATION



# 3.0 AFFECTED ENVIRONMENT

This chapter describes the affected environment (environmental setting) of the Project Study Area. It provides information on the physical, biological, cultural, socioeconomic, and other resources that have the potential to affect or be affected by activities related to implementing the Proposed Action or alternatives that are discussed in detail in Chapter 2. These resources include those that occur within the proposed Project area, or adjacent to or otherwise associated with the area. For the purpose of this document, the environmental setting, or "baseline," used for the impact analysis reflects conditions at the time of issuance of this EA. The environmental setting (existing conditions) of the Project area is described using information from literature reviews, fieldwork, and input from appropriate federal, state, and local agencies.

## 3.1 Air Resources

The proposed project is located within the Salton Sea Air Basin (SSAB). The Imperial County Air Pollution Control District (ICAPCD) is the government agency which regulates sources of air pollution within Imperial County.

The Sunrise Powerlink Project FEIR, Section D.11 provides a detailed discussion of the current air quality in the basin and the relevant regulatory standards. Updates to this information are included in Section 3.4 of the Centinela Draft Environmental Impact Report / Environmental Assessment (DEIR/EA).

Currently, like most rural areas, the SSAB is in "non-attainment" status for ozone ($O_3$) and particulate matter greater than 10 microns ($PM_{10}$). Therefore, the County of Imperial developed an Ambient Air Quality Strategy (AQAP) to provide control measures to try to achieve attainment status. The AQAP was adopted in 1991. New standard for ozone was adopted by EPA in 1997 and required modified strategies to decrease higher ozone concentrations. In 2008, the 8-hr Ozone Air Quality Management Plan (AQMP) was adopted to guide nonattainment areas closer to National Ambient Air Quality Standards (NAAQS) requirements.

In 2009, Imperial County completed the 2009 Particulate Matter Less Than 10 Microns State Implementation Plan (2009 $PM_{10}$ SIP). The 2009 $PM_{10}$ SIP applies to $PM_{10}$ emission sources located within Imperial County. It was developed to meet the requirements of the federal Clean Air Act (CAA) for areas classified as "serious" non-attainment of the National Ambient Air Quality Standards (NAAQS) for $PM_{10}$. The 2009 $PM_{10}$ SIP demonstrates that Imperial County would have attained the NAAQS "but for" emissions resulting from international transport, Elements of the plan include the implementation of best management control technologies to reduce emissions of fugitive dust.

## 3.2 Biological – Vegetation

The Yuha Desert encompasses approximately 52,666 acres (including all BLM and non-BLM administered lands) and contains many visually important features including Crucifixion Thorn Natural Area, The immediate area surrounding the proposed Gen-tie Line is characterized by vacant lands with gradual elevation change and mud hill formations.

Sseveral state and federal environmental regulations apply to the management of biological resources – both vegetation and wildlife. The Sunrise Powerlink Project FEIR (Aspen 2008), Section D.2.3 provides a detailed discussion of the relevant regulatory standards and this information can also be found in Section 3.12.1 of the Centinela DEIR/EA (EGI 2011).

Vegetation in the project area includes active and fallow agricultural lands, wetland vegetation associated with the canals and drains in the area, a variety of native and disturbed desert vegetation, and some developed lands. The survey area for the gen-tie alternatives included a 160-foot corridor with a 200-foot buffer. Eleven vegetation communities were mapped within the survey areas for the project. The sections below describe the vegetation communities and species that are associated with each. Communities that are similar in composition were lumped together as appropriate.

*Creosote Bush-White Bursage Scrub (CBS and CBS-D)*

Creosote bush–white bursage scrub (including the disturbed component) is the major plant alliance (sensu Sawyer et al. 2009) of the survey area and accounts for 48.73 acres (69 percent of the gen-tie survey area). This community is dominated by creosote bush (*Larrea tridentata*) and white bursage (*Ambrosia dumosa*) with relatively sparse vegetation cover and flat topography. Four-wing saltbush (*Atriplex canescens*) and plicate tiquilia (*Tiquilia palmeri*) are present as sporadic minor associates. This community occurs in minor washes and rills, alluvial fans, bajadas, upland slopes, usually on well-drained alluvial, colluvial and sandy soils (Sawyer, et al. 2009). It covers approximately 67% of the central Mojave Desert and 70% of the Colorado and Sonoran deserts in California (Sawyer et al. 2009). Plantain (*Plantago* sp.), narrow-leaf cryptantha (*Cryptantha angustifolia*), basket evening-primrose (*Oenothera deltoides*) and narrow-leaf oligomeris (*Oligomeris linifolia*) are very common in the herbaceous layer. Other ephemeral species expected to occur within this community include: short-ray desert marigold (*Baileya pauciradiata*), desert dandelion (*Malacothrix glabrata*), spectacle-pod (*Dithyrea californica*), onyx flower (*Achyronychia cooperi*) and bajada lupine (*Lupinus cocinnus*). Areas impacted by visible human disturbance are classified as disturbed creosote bush-white bursage scrub.

*Agriculture (Ag)/Fallow Agriculture (AG-F)*

Active agricultural fields encompass 4.66 acres within the buffer zone of the survey area (approximately 7 percent of the gen-tie survey area). Alfalfa is currently the primary

crop within the field. Fallow agricultural fields are being invaded by non-native weeds such as five-hook bassia, tamarisk, Saharan mustard (*Brassica tournefortii*), and the native shrub quailbush (*Atriplex lentiformis)*.

*Arrow Weed Thicket (AS and AS-D)*

Arrow weed thicket is a shrub community dominated or co-dominated by arrow weed (*Pluchea serricea*). The canopy is intermittent to continuous with the shrub canopy usually less than 5 meters in height. The herbaceous layer in these communities is generally sparse. This community occurs around springs, seeps, irrigation ditches, canals, canyon bottoms, stream borders, and seasonally flooded washes in desert. The USFWS Wetland Inventory recognizes this as a facultative wetland species. The community occurs throughout the Mojave, Colorado and Sonoran deserts of California (Sawyer et al. 2009). Areas where the vegetation has not fully recovered from the previous clearing are classified as disturbed arrow weed thicket. Most of these areas are regularly cleared and the thickets are constantly changing.

*Stabilized Desert Dunes – Disturbed (SDD-D)*

Stabilized desert dunes occur in the project area as a result of several types of windbreaks that have been created to prevent sand from blowing into the agricultural fields. These windbreaks include plantings of athel (*Tamarix aphylla*), soil berms and hay bale/soil berms. These berms have created stabilized sand dunes primarily on the windward sides of these features. The vegetation in these areas is dominated by creosote bush, four-wing saltbush and three-fork ephedra (*Ephedra trifurca*). Ephemeral species expected to occur here are the same as those described previously for the creosote bush scrub, especially basket evening-primrose (*Oenothera deltoides*), dicoria (*Dicoria canescens*) and parch locoweed (*Astragalus aridus*) and desert locoweed (*Astragalus didymocarpus*). Because these dunes are an artifact of human creation and the foreign materials that are a part of this dune system, these have been classified as disturbed dunes.

*Athel Tamarisk Type Woodland (AW)*

Athel (*Tamarix aphylla*) trees have been planted as a windscreen along the edges of agricultural fields. This semi-evergreen or evergreen tree reaches a height of 12 meters. The herbaceous layer in these woodlands is generally sparse (Sawyer et al. 2009).

*Developed/Disturbed Habitat (DEV/DH)*

These areas contain little to no vegetation. Disturbed areas include areas adjacent to the Imperial Valley Substation. These areas are usually kept bare of vegetation by constant vehicle traffic but may support non-native weed species.

*Open Water with Arrow Weed Thicket (OW)*

This habitat is restricted to the Westside Main Canal. Arrow weed thicket is restricted to a narrow band along the banks of this canal. Arrow weed is the dominant species and in many areas the only species along the banks of this canal.

*Tamarisk Thicket (TS)*

Tamarisk thicket is a shrub community dominated or co-dominated by tamarisk (*Tamarix ramosissima*). This non-native species has invaded many areas of native riparian vegetation where they develop dense, monospecific stands across floodplains, wetlands, and lake margins. The USFWS Wetland Inventory recognizes this as a facultative species. The canopy is continuous to open with the shrub canopy usually less than 8 meters in height. The herbaceous layer in these communities is generally sparse. This community occurs throughout watercourses in the Mojave and Sonoran deserts (Sawyer et al. 2009). Within the survey area, this community occurs within irrigation drains and canals, generally along the channel bottoms and lower slopes or within fallow fields with a high water table. Arrow weed, cattails (*Typha* sp.), and common reed (*Phragmites australis*) are major associates to co-dominants in some areas.

*Common Reed Marsh – Disturbed (CRM-D)*

Common reed marshes are semi-permanently flooded and slightly brackish marshes, ditches and impoundments that are dominated or co-dominated by common reed (*Phragmites australis*). Native stands occur in wetlands throughout the Mojave and Sonoran deserts. The USFWS Wetland Inventory recognizes common reed as a facultative wetland species (Sawyer et al. 2009). Within the survey area, these marshes occur along the channel bottoms of the canals and drains with a more permanent water source. Cattails (*Typha latifolia*), tamarisk (*Tamarix ramosissima*), and arrow weed are co-dominants or major associates. In many instances these earthen irrigation canals and drains are routinely cleared of vegetation to facilitate hydrologic flow. Areas where the vegetation has not fully recovered from the previous clearing are classified as disturbed common reed marsh.

*Disturbed Wetland (DW)*

Disturbed wetlands include earthen canals and drains that have been recently cleared and usually support herbaceous non-native species. Most of the species in the disturbed wetlands are non-native grasses and forbs; with the exception of salt grass, they were not identifiable at the time of the fall survey. Other species expected to occur in these drainages include sprangletop (*Leptochloa* spp.), umbrella sedge (*Cyperus* spp.) and dock (*Rumex* spp.).

Special Status Plant Species

*Fall Blooming and/or Woody Perennial Special Status Plants*

Most of the Special Status Species that are known from the vicinity of the project area are either not expected to occur or would have a low potential to occur within the BLM-managed lands. The majority of the species are not expected to occur because of lack of appropriate habitat or lack of known or historical populations from the vicinity. Species with a low potential for occurrence have suitable habitat present within the survey areas on BLM lands, but due to the relatively small amount of habitat, the proximity to agricultural fields, the Imperial Valley substation, and several existing transmission lines, their potential for occurrence is much less likely.

**Table 3-1** lists all the fall blooming Special Status Plants that are known from the vicinity of the project area. Plant surveys were conducted of the gen-tie routes plus a buffer of 500 feet on both sides of the proposed ROW. No Special Status Plants were observed during the survey of the project area. This area of Imperial County experienced very little summer/fall rainfall and there was no evidence that any fall blooming, ephemeral species germinated during the fall 2011. Because of the low amount of rainfall, fall blooming Special Status Plants that could be present onsite may not have been observable.

Approximately one-half of the gen-tie survey area on BLM lands was also surveyed in November 2010 for the Centinela Solar Energy Project (Heritage 2011c). No Special Status Species were observed in this portion of the study area at that time either even though fall blooming species were observed in the general area at that time.

A total of 8 fall-blooming Special Status Species were assessed for their potential for occurrence in the gen-tie survey area **(Table 3-1)** including: Abram's spurge (*Chamaesyce abramsiana*) (Priority Plant Species), California ditaxis (*Ditaxis serrata* var. *californica*) (Priority Plant Species), glandular ditaxis (*Ditaxis claryana*) (Priority Plant Species), Algodones Dunes sunflower (*Helianthus niveus* ss. *tephrodes*) (State Endangered), pink velvet mallow (*Horsfordia alata*) (Priority Plant Species), Newberry's velvet mallow (*Horsfordia newberryi*) (Priority Plant Species) and California satintail (*Imperata brevifolia*) (Priority Plant Species) and dwarf germander (*Teucrium cubense* ssp. *depressum*) (Priority Plant Species).

In addition to the 8 fall blooming species, six other perennial species would have been observable (or their host would have been observable in the case of the parasitic plants) if present, because of their life-forms, (e.g., shrubs, stem succulents or parasitic plants) even though they would not have been blooming at the time of the survey. These species include: Wolf's cholla (*Cylindropuntia wolfii*), little-leaf elephant tree (*Bursera microphylla*) (Priority Plant Species), fairy duster (*Calliandra eriophylla*) (Priority Plant Species), crucifixion thorn tree (*Castela emoryi*) (Priority Plant Species), Wiggins croton (*Croton wigginsii*) (BLM Sensitive), and Thurber's pilostyles (*Pilostyles thurberi*) (Priority Plant Species).

*Spring-blooming Special Status Plants*

Some species with the potential to occur in the project area are spring ephemerals. Many of these species have a low potential for occurrence because they occur in specialized habitats (e.g., rocky desert scrub) that are absent from this portion of the Yuha Basin, or they are species that do not have reported populations near the project site.

Based on literature review of biological technical reports and observations by the field biologists, populations of brown turbans (*Malperia tenuis*) (Priority Plant Species), Parish's desert-thorn (*Lycium parishii*) (Priority Plant Species), Utah vine milkweed (*Funastrum utahense*) (Priority Plant Species), hairy stickleaf (*Mentzelia hirsutissima*) (Priority Plant Species) and rock nettle (*Eucnide rupestris*) (Priority Plant Species) are known to occur the vicinity of the gen-tie lines on BLM land. Habitats for these species are present within the survey area.

**Table 3-1** also provides a detailed analysis of these special status plant species.

*Federally-listed Species*

Based on the literature review, no federally listed threatened or endangered plant species were identified as having the potential to occur within the Gen-tie survey areas. No federally listed threatened or endangered species were observed during focused rare plant surveys.

*State-listed Species*

Algodones Dunes sunflower (*Helianthus niveus* ssp. *tephrodes*) is a California state listed endangered species and a California Native Plant Society's (CNPS) Rare Plant Rank 1.2 (Rare, Threatened or Endangered in California, and elsewhere/fairly endangered in California) species. This species was not observed during the survey which coincided with its blooming period (September – May). There is very marginal suitable habitat (desert dunes) within the project area on BLM lands. As mentioned previously, these dunes are the result of human created windbreaks. This species is also only known from the Algodones Dunes; the site is well outside of the known range of this species. Despite the lack of sufficient rainfall that might have made detection of this species inconclusive, this is not expected to occur within the project area on the BLM or private lands.

No state-listed species were observed within the survey areas for the gen-tie routes during focused rare plant surveys.

*BLM Sensitive Species*

BLM sensitive species include all species currently on CNPS List 1B, as well as others that are designated by the California BLM State Director. Based on the literature review, three BLM sensitive plant species have the potential to occur within the Gen-tie survey

area (Algodones Dunes sunflower and Wiggins' croton). Algodones Dunes sunflower is discussed above under state-listed species.

Wiggins' croton is a California state listed rare species and a BLM sensitive species that was historically considered restricted to the Algodones Dunes on East Mesa, though this species has recently been reported near Plaster City. Individuals of croton previously observed around the IV Substation adjacent to the gen-tie survey area are California croton (*Croton californicus*) (John Messina pers obs). No individuals in the genus *Croton* were observed within the gen-tie survey area during the survey. Wiggins' croton is not expected to occur within the BLM-managed lands associated with the gen-tie.

No other BLM Sensitive Species are expected to occur within the Gen-tie survey area.

*Priority Plant Species*

Priority plant species are rare, unusual, or key species that are not sensitive by BLM or listed as threatened and endangered. Priority plant species are specifically plants that are included on the CNPS Lists 2–4. Several priority plant species were identified as having the potential to occur within the survey area. **Table 3-1** provides additional detail about the potential for priority plant species to occur within the survey area.

California satintail is a CNPS Rare Plant Rank 2.1 species (Rare, Threatened or Endangered in California, more common elsewhere/seriously endangered in California) and a CNDDB special plant. This tall perennial grass occurs in riparian scrub and mesic habitats which are not present along the gen-tie corridors on the BLM lands. This species was not observed during the fall survey which coincided with this species blooming period (September-May) and is not expected to occur on BLM lands.

Abram's spurge is known from several historical locations from the vicinity of the Campo Verde Project area. Abram's spurge is a CNPS 2.2 species (Rare, Threatened or Endangered in California, more common elsewhere/fairly endangered in California) and a CNDDB special plant that is a fall/winter blooming species (September – November). Abram's spurge would have a low potential for occurrence within the BLM lands because much of the suitable habitat is adjacent to agricultural activities, a substation and transmission line corridors. This species was not observed during the fall survey which may be inconclusive due to the lack of summer/fall precipitation.

Glandular ditaxis (*Ditaxis claryana*) is a CNPS Rare Plant Rank 2.2 species (Rare, Threatened or Endangered in California, more common elsewhere/fairly endangered in California) and a CNDDB special plant. The fall survey coincided with this herbaceous perennial blooming period which is October through March. Glandular ditaxis would have a low potential for occurrence within the BLM lands because much of the suitable habitat is adjacent to agricultural activities, a substation and transmission line corridors. This species was not observed during the fall survey which may be inconclusive due to the lack of summer/fall precipitation. There are also no known reported populations within the vicinity of the project area.

Dwarf germander (*Teucrium cubense* ssp. *depressum*) is a CNPS Rare Plant Rank 2.2 species (Rare, Threatened or Endangered in California, more common elsewhere/fairly endangered in California) and a CNDDB special plant that blooms March – May and September- November (if fall rains occur). Suitable habitat for this species (sandy washes and wet soils) is absent from the BLM lands within the Project area. Though summer and fall rains may not have been sufficient for seed germination, this species is not expected to occur within the BLM lands associated with the gen-tie due to the lack of suitable habitat.

California ditaxis (*Ditaxis serrata* var. *californica*) is a CNPS Rare Plant Rank 3.2 species (Plants for which more information is needed/fairly endangered in California) and a CNDDB special plant. The fall survey coincided with this herbaceous perennial blooming period from March through December. This species was not observed during the fall survey which may be inconclusive due to the lack of summer/fall precipitation in the Campo Verde Project area. Despite this, California ditaxis would have a low potential for occurrence within the BLM lands because much of the suitable habitat is adjacent to agricultural activities, a substation and transmission line corridors. There are also no known reported populations within the vicinity of the Project area.

Pink velvet mallow and Newberry's velvet mallow are both CNPS Rare Plant Rank 4.3 species (Plants of limited distribution/not very endangered in California) and CNDDB special plants. These species are both sub-shrubs that bloom throughout the year (February – December), including the time of the survey. These species are members of the Malvaceae (mallow family), which have distinctive leaf features that also aid with their identification. No members of this family were observed during the time of the survey. In addition, rocky desert scrub is absent from the BLM lands associated with the gen-tie so these species are not expected to occur.

Thurber's pilostyles is a CNPS Rare Plant Rank 4.3 species (Plants of limited distribution/not very endangered in California) and a CNDDB special plant. Thurber's pilostyles is a parasitic plant of the genus *Psorothamnus*. This species is known from Pinto Wash south of the Project area. Though this species would not have been observable at the time of the survey, its host plant would have been observable if present. No individuals of the genus *Psorothamnus* were observed during the survey. As such Thurber's pilostyles is not expected to occur within the BLM lands associated with the gen-tie. Thurber's pilostyles, a parasitic species, would not have been observable at the time of the survey, as it blooms in January but its host plant, woody shrubs or trees in the genus *Psorothamnus*, would have been observable. Therefore, this species may occur within the project area.

Little-leaf elephant tree, fairy duster, and crucifixion thorn tree are all CNPS Rare Plant Rank 2.3 species (Rare, Threatened or Endangered in California, more common elsewhere/not very endangered in California) and CNDDB special plants. All are perennial trees or shrubs and would have been observable during the time of the survey. In addition, preferred habitats for these species are typically more rocky or gravelly

bajadas or playas that are not present within the Project area. As such these species are not expected to occur within the BLM lands associated with the gen-tie.

Rock nettle is a CNPS Rare Plant Rank 2.2 species (Rare, Threatened or Endangered in California, more common elsewhere/fairly endangered in California) and a CNDDB special plant. Brown turbans, Parish's desert-thorn and hairy stickleaf are all CNPS Rare Plant Rank 2.3 species (Rare, Threatened or Endangered in California, more common elsewhere/not very endangered in California) and CNDDB special plants. Utah vine milkweed is a CNPS Rare Plant Rank 4.2 species (Plants of limited distribution/fairly endangered in California). These species have a low to moderate potential for occurrence within the BLM lands associated with the gen-tie. Though suitable habitat is present, it is adjacent to agricultural activities, a substation and transmission line corridors.

Wolf's cholla is a CNPS Rare Plant Rank 4.3 species (Plants of limited distribution/ not endangered in California), and a California Natural Diversity Database (CNDDB) special plant. Wolf's cholla is a small, multi-branched cactus with cylindrical stem segments. This species is known from Pinto Wash south of the Project area. Though the survey did not coincide with its flowering period, no cactus species were observed within the gen-tie survey area. As such this species is not expected to occur within the BLM-managed associated with the gen-tie.

The remainder of the plants on List 2 either have a very low potential for occurrence or are not expected to occur within the BLM-managed lands associated with the gen-tie because of the absence of suitable habitat of the site is outside of the known range of these species. Additional spring rare plant surveys will be conducted in the spring of 2012.

**Table 3-1**
**Special Status Plant Species**

| Species Name | Sensitivity Status | Potential for Occurrence |
|---|---|---|
| Little-leaf elephant (*Bursera microphylla*) | CDFG: Special Plant<br>CNPS Rare Plant Rank: 2.3 | Occurs in alluvial fan scrub (Reiser 2001) and rocky areas in Sonoran Desert scrub. Deciduous tree; blooms June-July (CNPS 2011). Not observed within project area during survey. Distinctive tree species would have been observed during surveys if present. Nearest location in In-Ko-Pah Gorge, Sweeney Pass and Arroyo Tapiado quads (CNPS, 2011). Alluvial fan scrub habitat and rocky scrub absent in the project area. Closest sites are in rocky desert foothills to west of site. Species is not expected to occur within project area. |
| Fairy duster (*Calliandra eriophylla*) | CDFG: Special Plant<br>CNPS Rare Plant Rank 2.3 | Occurs in Sonoran Desert scrub primarily on rocky hillsides and bajadas (Reiser, 2001; CNPS 2011). Deciduous shrub; blooms January – March (CNPS 2011). Not observed during survey but would have been observable if present. Not expected to occur due to absence of suitable habitat in project area. One CNDDB occurrence south of the project area which is also likely the Yuha Basin Quad location reported by CNPS (2011). Most occurrences of this species in East Mesa of Imperial County (CNPS 2011). |

**Table 3-1**
**Special Status Plant Species**

| Species Name | Sensitivity Status | Potential for Occurrence |
|---|---|---|
| Crucifixion thorn (*Castela emoryi*) | CDFG: Special Plant<br>CNPS Rare Plant Rank 2.3 | Occurs in playas and gravelly areas in Sonoran Desert scrub. Deciduous shrub; blooms April – July (CNPS 2011). Not observed during survey. Distinctive shrub species would have been observed if present. Not expected to occur. Suitable habitat (i.e., playas and gravelly areas) absent in project area. Known from Yuha Basin and Coyote Wells quads (CNPS 2011). |
| Abram's spurge (*Chamaesyce abramsiana*) | CDFG: Special Plant<br>CNPS Rare Plant Rank 2.2 | Occurs in sandy Sonoran Desert scrub. Annual; blooms September – November (CNPS 2011). Suitable habitat present in project area. Historical collections known from Calexico, Heber and Brawley quads (CNPS, 2011). Not observed during focused survey for this species in October 2011which was conducted during this species' traditional flowering period. However, late summer and fall rains may have been insufficient for seeds to germinate this year. Low potential to occur in native desert scrub habitats in project area. |
| Wiggins croton (*Croton wigginsii*) | BLM: Sensitive<br>CDFG Rare<br>CNPS Rare Plant Rank 2.2 | Occurs in desert dunes and Sonoran Desert scrub. Shrub; blooms March – May. CNPS reports species restricted to Algodones Dunes and all CNPS locations are on the East Mesa (CNPS 2011). Known from near Plaster City between S-80 and I-80 (URS, 2010). Not observed and not expected to occur in the project area. Marginal suitable habitat present (i.e. desert dunes), but dunes are result of human creation and site and is outside of species range. |
| Wolf's cholla (*Cylindropuntia wolfii*) | CDFG: Special Plant<br>CNPS Rare Plant Rank 4.3 | Occurs in Sonoran Desert scrub, usually on alluvial fans or rocky slopes (Reiser 2001). Stem succulent that blooms from March-May. Known from San Diego and Imperial counties and Baja, California (CNPS 2011). Known from Pinto Wash south of the IV substation. No individuals of this genus observed within project area. Species not expected to occur within project area. |
| Glandular ditaxis (*Ditaxis claryana*) | CDFG: Special Plant<br>CNPS Rare Plant Rank 2.2 | Occurs in sandy Sonoran Desert scrub. Herbaceous perennial; blooms October – March. Known from Algodones Dunes. Ogliby and Iris quads are closest reported populations (CNPS 2011). Not observed during survey. October 2011 survey conducted during this species traditional blooming period. However, late summer and fall rains may have been insufficient for this year. Despite this, the species is not expected to occur, as project area is outside of known range. |
| California ditaxis (*Ditaxis serrata* var. *californica*) | CDFG: Special Plant<br>CNPS Rare Plant Rank 3.2 | Sonoran Desert scrub. Herbaceous perennial, blooms March-December. Nearest known occurrence Clark Lake Quad in northern Anza Borrego State Park. Most other reported locations along the I-10 corridor between Indio and Blythe (CNPS 2011). Not observed during survey. October 2001 survey conducted during this species traditional blooming period. However, late summer and fall rains may have been insufficient this year. Despite this, the species is not expected to occur, as Campo Verde project area is well south of reported range of this species in California. |

**Table 3-1**
**Special Status Plant Species**

| Species Name | Sensitivity Status | Potential for Occurrence |
|---|---|---|
| Algodones Dunes sunflower (*Helianthus niveus* ssp. *tephrodes*) | CDFG: Endangered<br>CNPS Rare Plant Rank 1B.2 | Occurs in desert dunes and is restricted to the Algodones Dunes of East Mesa. This herbaceous perennial blooms from September-May. Not observed during October 2011 survey nor expected to occur in project area. However, late summer and fall rains may have been insufficient for species to grow this year. Marginal suitable habitat present (i.e. desert dunes), but dunes are result of human creation and site and is outside of species range. |
| Pink velvet mallow (*Horsfordia alata*) | CDFG: Special Plant<br>CNPS Rare Plant Rank 4.3 | Occurs in rocky Sonoran Desert scrub. This perennial shrub blooms almost year round from February-December. This species is reported from Imperial County but no quad data is available (CNPS 2011). Suitable habitat (rocky desert scrub) is absent from project area. As a shrub, this species is not expected to occur in the project area because it would have been observable during October 2011 survey if present. |
| Newberry's velvet mallow (*Horsfordia newberryi*) | CDFG: Special Plant<br>CNPS Rare Plant Rank 4.3 | Occurs in rocky Sonoran Desert scrub. This perennial shrub blooms almost year round from February-December. This species is reported from the Carrizo Mountain Quad (CNPS 2011). Suitable habitat i.e. rocky areas, is absent in the project area. As a shrub, this species is not expected to occur in the project area because it would have been observable during October 2011 survey if present. |
| California satintail (*Imperata brevifolia*) | CDFG: Special Plant<br>CNPS Rare Plant Rank 2.1 | Riparian scrub; desert scrub. Herbaceous perennial; blooms September – May (CNPS 2011). CNDDB occurrence immediately east of Campo Verde project area between Greeson Wash and New River. Not observed during October 2011survey. Not expected to occur in the BLM lands due to the lack of suitable habitat. This species is not expected to occur in the project area but has a low to moderate potential for occurrence in a side tributary of the New River on the private lands immediately along the northeastern boundary of the solar site within the project's buffer area. This species was not observed along that tributary though a focused survey was not conducted due to health hazards posed by pollutants in the New River. |
| Thurber's pilostyles (*Pilostyles thurberi*) | CDFG: Special Plant<br>CNPS Rare Plant Rank: 4.3 | Herbaceous perennial parasitic on *Psorothamnus* spp.; blooms January. Known from Plaster City and Mount Signal (Reiser 2001). Known from southwest of Plaster City between S-80 and I-80 (URS 2010). Known from Pinto Wash south of the IV Substation. Not expected to occur in project area due to the absence of this species host plants in the project area. |
| Dwarf germander (*Teucrium cubense* ssp. *depressum*) | CDFG: Special Plant<br>CNPS Rare Plant Rank: 2.2 | Occurs in sandy washes, streams and wet soils, Sonoran Desert scrub. Annual; blooms March – May (September- November if fall rains occur). Known from Coyote Wells quad (CNPS 2011). Not observed or expected in project area. Suitable habitat (i.e., sandy washes) absent. Not observed during survey. October 2001 survey conducted during this species traditional blooming period. However, late summer and fall rains may have been insufficient for seeds to germinate this year. |

**Table 3-1**
**Special Status Plant Species**

| Species Name | Sensitivity Status | Potential for Occurrence |
|---|---|---|
| **Spring Blooming Special Status Plant Species** | | |
| Chaparral sand verbena (*Abronia villosa* var. *aurita*) | BLM: Sensitive<br>CDFG: Special Plant<br>CNPS Rare Plant Rank 1B.1 | Occurs in sandy floodplains or flats in generally, inland arid areas of sage scrub and open chaparral and desert dunes (Reiser 2001; CNPS 2011). Annual; blooms January – September (CNPS 2011). Known from Calexico, Seeley, and Superstition Mountains quads (CNPS, 2010). Marginal dune habitat present within native habitats in project area. Low to moderate potential for occurrence. Surveys for this species will be conducted in appropriate habitat within its blooming season in 2012. |
| Watson's amaranth (*Amaranthus watsonii)* | CDFG: Special Plant<br>CNPS Rare Plant Rank 4.3 | Occurs in Sonoran Desert Scrub. Annual; blooms August – September. Not observed but survey occurred outside of traditional blooming period. Suitable habitat present within native desert scrub in project area. Known from Calexico and Heber quads (CNPS 2011). Low to moderate potential for occurrence within desert scrub habitats. Surveys for this species will be conducted in appropriate habitat within its blooming season in 2012. |
| Salton milk vetch (*Astragalus crotalariae*) | CDFG: Special Plant<br>CNPS Rare Plant Rank 4.3 | Occurs in sandy or gravelly Sonoran Desert scrub habitat and is known from the Superstition Mountains quad. This herbaceous perennial blooms from January to April (CNPS 2011). Potential habitat present within project area. Low to moderate potential for occurrence within desert scrub habitats. Surveys for this species will be conducted in appropriate habitat within its blooming season in 2012. |
| Harwood's milk vetch (*Astragalus insularis* var. *harwoodii*) | CDFG: Special Plant<br>CNPS Rare Plant Rank: 2.2 | Occurs in Sonoran Desert scrub with gravelly, sandy washes or dunes (Reiser, 2001). Annual; blooms January-May (CNPS 2011). Known from southwest of Plaster City between S-80 and I-80 (URS 2010). Also known from In-Ko-Pah Gorge and Coyote Wells quads (CNPS 2011). Habitat (sandy dunes) present within native desert scrub in survey. Known from Coyote Wells quad (CNPS 2011). Low to moderate potential for occurrence within desert scrub habitats. Surveys for this species will be conducted in appropriate habitat within its blooming season in 2012. |
| Borrego milk vetch (*Astragalus lentiginosus* var. *borreganus*) | CDFG: Special Plant<br>CNPS Rare Plant Rank 4.3 | Occurs in sandy Sonoran Desert scrub habitat and is known from the Shell Reef quad in upper Borrego Valley and from the Algodones Dunes on East Mesa. This herbaceous perennial blooms from February to May (CNPS 2011). Potential habitat present. Low potential for occurrence within project area. Surveys for this species will be conducted in appropriate habitat within its blooming season in 2012. |
| Peirson's milk vetch (*Astragalus magdalenae* var. *peirsonii*) | USFWS: Threatened<br>CDFG: Endangered<br>BLM: Sensitive<br>CNPS Rare Plant Rank 1B.2 | Occurs in desert dunes habitat, this species is known from fewer than 10 occurrences. Known from Algodones Dunes on East Mesa and upper Borrego Valley. A herbaceous perennial that blooms from December to April (CNPS 2011). Marginal dune habitat present. Low potential for occurrence within project. Surveys for this species will be conducted in appropriate habitat within its blooming season in 2012. |

**Table 3-1**
**Special Status Plant Species**

| Species Name | Sensitivity Status | Potential for Occurrence |
|---|---|---|
| Desert ayenia (*Ayenia compacta*) | CDFG: Special Plant<br>CNPS Rare Plant Rank: 2.3 | Occurs in rocky Sonoran Desert scrub. A herbaceous perennial that blooms from March to April (CNPS 2011). Closest reported populations include Jacumba and Sweeney Pass. This species not expected to occur in the project area due to the lack of suitable habitat, i.e., rocky areas. Known populations are well west of the corridor in the rocky mountains above the Yuha Basin. Surveys for this species will be conducted in appropriate habitat within its blooming season in 2012. |
| Sand evening primrose (*Camissonia arenaria*) | CDFG: Special Plant<br>CNPS Rare Plant Rank 2.2 | Occurs in sandy or rocky Sonoran Desert scrub. This annual/herbaceous perennial blooms from November–May and is reported from the Quartz Peak quad in the Chocolate Mountains (CNPS 2011). Though suitable habitat is present the reported occurrences of this species are distant from the project area. Low potential for occurrence. Surveys for this species will be conducted in appropriate habitat within its blooming season in 2012. |
| Peirson's pincushion (*Chaenactis carphoclinia* var. *peirsonii*) | BLM: Sensitive<br>CDFG: Special Plant<br>CNPS Rare Plant Rank 1B.3 | Occurs in sandy Sonoran Desert scrub. Annual; blooms March-April. Known only from the eastern Santa Rosa Mountains with closest reported location from the Borrego Mountain SE quad (CNPS 2011). Suitable habitat present in Campo Verde project area. However, species not expected to occur within project area due to its present known range. Surveys for this species will be conducted in appropriate habitat within its blooming season in 2012. |
| Arizona spurge (*Chamaesyce arizonica*) | CDFG: Special Plant<br>CNPS Rare Plant Rank 2.3 | Occurs in sandy Sonoran Desert scrub. Known from the In-Ko-Pah Gorge Quad, this species is undocumented in Imperial County. This herbaceous perennial blooms from March to April (CNPS 2011). Not expected to occur within project area. Though suitable habitat is present, project area is outside of this species current known range. Surveys for this species will be conducted in appropriate habitat within its blooming season in 2012. |
| Flat-seeded spurge (*Chamaesyce platysperma*) | BLM: Sensitive<br>CDFG: Special Plant<br>CNPS Rare Plant Rank 1B.2 | Occurs in desert dunes and sandy Sonoran Desert scrub. Known in California from only four herbarium collections and one collection from Imperial County in 1987 (CNPS 2011). Annual; blooms February – September. Known from Superstition Mountain and Kane Springs quads in Imperial County (CNPS 2011). Not expected to occur within project area. Though marginal suitable habitat for this species exists, species is very rare in Imperial County. Surveys for this species will be conducted in appropriate habitat within its blooming season in 2012. |
| Las Animas colubrinia (*Colubrinia californica*) | CNPS Rare Plant Rank 2.3 | Occurs in Sonoran Desert scrub (CNPS 2001) often localized around springs and mesic rocky canyon bottoms (Reiser 2001). This deciduous shrub blooms from April-June and is reported from Picacho Peak and Quartz Peak in the Chocolate Mountains (CNPS, 2001). Suitable habitat lacking and site is outside known current distribution. Not expected to occur within project area. Surveys for this species will be conducted in appropriate habitat within its blooming season in 2012. |

**Table 3-1**
**Special Status Plant Species**

| Species Name | Sensitivity Status | Potential for Occurrence |
|---|---|---|
| Spiny abrojo (*Condalia globosa* var. *pubescens*) | CDFG: Special Plant<br>CNPS Rare Plant Rank 4.2 | Occurs in Sonoran Desert scrub. This deciduous shrub blooms from March-May. This species is reported from Imperial County but no quad data is available (CNPS 2011). Suitable habitat is present in the project area. Low potential for occurrence. Surveys for this species will be conducted in appropriate habitat within its blooming season in 2012. |
| Ribbed cryptantha (*Cryptantha costata*) | CDFG: Special Plant<br>CNPS Rare Plant Rank: 4.3 | Occurs in desert sand dunes and sandy desert scrub. Annual; blooms February – May (CNPS 2011). Reiser (2001) reports an old historical collection from Pinto Wash. Marginal suitable habitat within project area. Low potential for occurrence. Surveys for this species will be conducted in appropriate habitat within its blooming season in 2012. |
| Rock nettle (*Eucnide rupestris*) | CDFG: Special Plant<br>CNPS Rare Plant Rank 2.2 | Sonoran Desert scrub. Annual; blooms December – April. Known from Mount Signal and Coyote Wells quads (CNPS 2011). CNDDB occurrence in Yuha Basin (likely CNPS Coyote Wells quad location). Suitable habitat present in project area. Low to moderate potential for occurrence. Surveys for this species will be conducted in appropriate habitat within its blooming season in 2012. |
| Utah vine milkweed (*Funastrum (=Cynachum) utahense*) | CDFG: Special Plant<br>CNPS Rare Plant Rank: 4.2 | Occurs in sandy or gravelly Sonoran Desert Scrub. Herbaceous, perennial growing on desert shrubs; blooms April – June (CNPS 2011). Known from southwest of Plaster City between S-80 and I-80 (URS 2010). Suitable habitat present in project area. Known from Yuha Basin south of S80. Low to moderate potential for occurrence. Surveys for this species will be conducted in appropriate habitat within its blooming season in 2012. |
| Curly herissantia (*Herissantia crispa*) | CDFG: Special Plant<br>CNPS Rare Plant Rank 2.3 | Occurs in Sonoran Desert scrub. Annual- herbaceous perennial; Blooms August – September. Only known from two locations in California, both in San Diego County (Pinto Wash and Mountain Springs Grade) (CNPS 2011). Not known from Imperial County. Suitable habitat present in project area. However, site is well below reported lower elevational range (700m) (CNPS 2011). Not expected to occur due to species known range. Surveys for this species will be conducted in appropriate habitat within its blooming season in 2012. |
| Baja California ipomopsis (*Ipomopsis effusa*) | CDFG: Special Plant<br>CNPS Rare Plant Rank 2.1 | Occurs in washes in Sonoran desert scrub. Annual; blooms April – June. Only known location in California from Pinto Wash west of the site. Considered a waif in California, more common in Baja, California (CNPS 2011). Suitable habitat present in project area. Not expected in the project area due to known range and rarity in California. Surveys for this species will be conducted in appropriate habitat within its blooming season in 2012. |
| Slender-leaved ipomopsis (*Ipomopsis tenuifolia*) | CDFG: Special Plant<br>CNPS Rare Plant Rank 2.3 | Occurs in rocky/gravelly Sonoran Desert scrub. Herbaceous perennial; blooms March – May. Known from In-Ko-Pah Gorge and Jacumba quads (CNPS 2011). Suitable habitat, (i.e., rocky/gravelly desert scrub) absent. Site outside of known current range of species. Not expected to occur within project area. |

**Table 3-1**
**Special Status Plant Species**

| Species Name | Sensitivity Status | Potential for Occurrence |
|---|---|---|
| Pygmy lotus (*Lotus haydonii*) | CNPS Rare Plant Rank 1B.3 | Occurs in rocky Sonoran Desert scrub. Herbaceous perennial; blooms January – June. Known from In-Ko-Pah Gorge quad (CNPS 2011). Suitable habitat (i.e., rocky/gravelly desert scrub) absent. Site outside of current known range of species and well below reported lower elevational range (520m) (CNPS 2011). Not expected to occur within project area. Surveys for this species will be conducted in appropriate habitat within its blooming season in 2012. |
| Mountain Springs bush lupine (*Lupinus excubitus* var. *medius*) | BLM: Sensitive<br>CDFG: Special Plant<br>CNPS Rare Plant Rank 1B.3 | Occurs in Sonoran Desert scrub. Perennial shrub; blooms March – May. Known from In-Ko-Pah Gorge and surrounding quads of desert transition areas (CNPS 2011). Marginal habitat (species range is more in desert transition habitats). Site outside of current species known range and well below reported lower elevational range (425m) (CNPS 2011). Not expected to occur within project area. Surveys for this species will be conducted in appropriate habitat within its blooming season in 2012. |
| Parish's desert-thorn (*Lycium parishii*) | CDFG: Special Plant<br>CNPS Rare Plant Rank: 2.3 | Occurs in Sonoran Desert scrub with sandy plains and washes. Shrub; blooms March – April. Known from In-Ko-Pah Gorge and Carrizo Mountain quads (CNPS 2011). Reported south of Hwy 98. Suitable habitat present. Low to moderate potential for occurrence within project area. Surveys for this species will be conducted in appropriate habitat within its blooming season in 2012. |
| Coulter's lyrepod (*Lyrocarpa coulteri* var. *palmeri*) | CDFG: Special Plant<br>CNPS Rare Plant Rank 4.3 | Occurs in rocky or gravelly Sonoran Desert scrub. This herbaceous perennial; blooms January – June (Reiser 2001; CNPS 2001). Reiser (2001) reports this species from a number of rocky desert canyons in eastern San Diego County. Suitable habitat (i.e., rocky/boulders) absent. Not expected to occur within project area. Surveys for this species will be conducted in appropriate habitat within its blooming season in 2012. |
| Brown turbans (*Malperia tenuis*) | CDFG: Special Plant<br>CNPS Rare Plant Rank: 2.3 | Occurs in sandy, Sonoran Desert scrub. Annual, blooms March – April (CNPS 2011). Several CNDDB locations in Yuha Basin which correspond to CNPS locations for the Mount Signal, Painted Gorge and Yuha Basin quads (CNPS 2011). Suitable habitat present. Low to moderate potential for occurrence within project area. Surveys for this species will be conducted in appropriate habitat within its blooming season in 2012. |
| Hairy stickleaf (*Mentzelia hirsutissima*) | CDFG: Special Plant<br>CNPS Rare Plant Rank: 2.3 | Occurs in Sonoran Desert Scrub on rocky hillsides and desert mesas (Reiser 2001; CNPS 2011). Annual; blooms March – May. Known from Mount Signal quad (CNPS 2011). Rocky hillsides absent but desert mesas present. Most of this species' localities in the desert transition areas to the east of the site including localities from In-Ko-Pah Gorge and Sweeny Pass quads (CNPS 2011). Low to moderate potential for occurrence within project area. Surveys for this species will be conducted in appropriate habitat within its blooming season in 2012. |

**Table 3-1**
**Special Status Plant Species**

| Species Name | Sensitivity Status | Potential for Occurrence |
|---|---|---|
| Creamy blazing star (*Mentzelia tridentata*) | CDFG: Special Plant<br>CNPS Rare Plant Rank 1B.3 | Occurs in rocky, gravelly and sandy desert scrub. Annual; blooms March – May. Known from In-Ko-Pah Gorge quad (CNPS 2011). Suitable sandy scrub habitat present in project area. However, site outside of known range in California and well below lower elevational limit (700 meters) reported for this species (CNPS 2011). Not expected to occur within project area. Surveys for this species will be conducted in appropriate habitat within its blooming season in 2012. |
| Slender-lobed four o'clock (*Mirabilis tenuiloba*) | CDFG: Special Plant<br>CNPS Rare Plant Rank: 4.3 | Occurs in Sonoran Desert Scrub. A herbaceous perennial that blooms March – May. This species is reported from the 17 Palms Quad (CNPS 2011). Suitable desert scrub habitat present in project area. Low to moderate potential for occurrence. Surveys for this species will be conducted in appropriate habitat within its blooming season in 2012. |
| Slender wooly-heads (*Nemacaulis denudata* var. *gracilis*) | CDFG: Special Plant<br>CNPS Rare Plant Rank: 2.2 | Occurs in desert dunes and Sonoran Desert scrub. Annual; blooms March – May. Known from Coyote Wells quad. Most of locations for this species are in Algodones Dunes of East Mesa (CNPS 2011). Marginal dune habitat present. Low to moderate potential for occurrence within project area. Surveys for this species will be conducted in appropriate habitat within its blooming season in 2012. |
| Giant Spanish-needle (*Palafoxia arida* var. *gigantea*) | BLM: Sensitive<br>CDFG: Special Plant<br>CNPS Rare Plant Rank 1B.3 | Occurs in desert dunes. Annual- herbaceous perennial; blooms March – May. Known from Algodones Dunes on the East Mesa (CNPS 2011). Marginal desert dune habitat present. Site is well west of reported range of species. Not expected to occur within project area. Surveys for this species will be conducted in appropriate habitat within its blooming season in 2012. |
| Sand food (*Pholisma sonorae*) | BLM: Sensitive<br>CDFG: Special Plant<br>CNPS Rare Plant Rank 1B.2 | Occurs in desert dunes and sandy Sonoran Desert scrub. This herbaceous perennial is parasitic on native desert shrubs and blooms from March – May. This species is known from the Holtville West Quad just east of the corridors and most of the locations are in the Algodones Dunes of the East Mesa (CNPS 2011). This species would have a low to moderate potential for occurrence in the project area. Suitable habitat (sandy areas and dunes) is marginal. Surveys for this species will be conducted in appropriate habitat within its blooming season in 2012. |
| Desert unicorn-plant (*Proboscidea althaeifolia*) | CDFG: Special Plant<br>CNPS Rare Plant Rank 4.3 | Occurs in sandy, Sonoran Desert scrub. Herbaceous perennial; blooms May – August (CNPS 2011). There are no CNPS or CNDDB locations for this species in the vicinity of the project. Suitable habitat present, low to moderate potential for occurrence within project area. Surveys for this species will be conducted in appropriate habitat within its blooming season in 2012. |
| Desert spike-moss (*Selaginella eremophila*) | CDFG: Special Plant<br>CNPS Rare Plant Rank: 2.2 | Occurs in rocky or gravelly terrain in Sonoran Desert scrub (Reiser 2001; CNPS 2011). Herbaceous perennial is most conspicuous in May-July (CNPS 2011). Closest reported populations in rocky desert scrub of In-Ko-Pah and Sweeney Pass quads (CNPS 2011). Not expected to occur within project area due to the lack of suitable habitat. Surveys for this species will be conducted in appropriate habitat within its blooming season in 2012. |

**Table 3-1**
**Special Status Plant Species**

| Species Name | Sensitivity Status | Potential for Occurrence |
|---|---|---|
| Mecca aster (*Xylorhiza cognata*) | CDFG: Special Plant<br>CNPS Rare Plant Rank 1B.2 | Occurs in Sonoran Desert scrub. This species is known from 17 Palms Quad. This herbaceous perennial blooms from January-June. Most of the reported occurrences are in the Indio and Mecca Hills surrounding Palm Springs and Indio (CNPS 2011). Suitable habitat present, but site may also be at limits of known species range. Not expected to occur within project area. Surveys for this species will be conducted in appropriate habitat within its blooming season in 2012. |
| Orcutt's woody-aster (*Xylorhiza orcuttii*) | BLM: Sensitive<br>CDFG: Special Plant<br>CNPS Rare Plant Rank: 1B.2 | Occurs in Sonoran Desert scrub in rocky canyons and sandy washes (Reiser 2001). Herbaceous perennial; blooms March – April (CNPS 2011). Closest reported localities are Carrizo and Borrego Mountain quads, areas of rocky terrain. Suitable habitat absent. Not expected to occur within project area. Surveys for this species will be conducted in appropriate habitat within its blooming season in 2012. |

Sensitivity Status Codes used in this table:
USFWS: Endangered- Plant taxa that are listed as threatened under the Federal Endangered Species Act (ESA)
CDFG: Endangered- Plant taxa that are listed as endangered with extinction under the California Endangered Species Act (CESA)
Special Plant: Plant taxa that are inventoried by the CNDDB
BLM: Sensitive- Plants that are designated by the State Director for special management consideration.
CNPS: Rare Plant Rank 1: Rare, Threatened or Endangered in California and elsewhere
Rare Plant Rank 2: Rare, Threatened or Endangered in California, more common elsewhere
Rare Plant Rank 3: Plants for which more information is needed
Rare Plant Rank 4: Plants of Limited Distribution
Threat extension: 1- Seriously endangered in California
2- Fairly endangered in California
3- Not very endangered in California

*Invasive Plant Species*

Descriptions of the more common or potentially harmful noxious weeds occurring or potentially occurring in the Campo Verde survey area are provided in this section, along with the basic weed management strategy applicable to each. The following list provides brief descriptions of the weed species of particular concern within the Campo Verde project area.

- **Sahara mustard** or **African mustard** (*Brassica tournefortii*) was observed in the survey area. Cal-IPC has declared this plant highly invasive (Cal-IPC 2006). BLM and other agencies recognize that, because of the widespread distribution of Sahara mustard, this species is not considered feasible to control, especially is small areas such as the Campo Verde ROW; therefore, weed abatement efforts for Sahara mustard will not be required.
- **Arabian grass** (*Schismus arabicus*) occurs throughout the proposed Gen-tie route. Cal-IPC has determined that this plant has a limited invasiveness rating in California (Cal-IPC 2006). BLM and other agencies recognize that, because of the widespread distribution of Arabian grass, this species is not considered feasible to control, especially is small areas such as the Campo Verde ROW; therefore, weed abatement efforts for Arabian grass will not be required.

- **Athel (***Tamarix aphylla)* was observed in the survey area. This species has been planted as a windscreen along the edges of fallow agricultural fields along the boundary of the BLM-managed lands. This species is invading the BLM-managed lands in this area, often at very high densities. Over time it is anticipated that more individuals will invade the survey area. Though Cal-IPC has rated this species as Limited, it is obvious that this species could have a large impact on the native desert scrub ecosystem by eliminating desert vegetation communities. Known individuals of this species will be mechanically removed as necessary, and occurrences of this species should be mechanically treated where observed within the WMA.

More detailed information on the invasive species in the project area is contained in the Weed Management Plan included as **Appendix A**.

### *3.2.1 Alternative 2 - Proposed Action*

General Vegetation

**Table 3-2** below shows the ten vegetation communities that occur within the survey area for the proposed gen-tie (Alternative 2). These are shown on **Figure 3-1a**.

**Table 3-2**
**Vegetation Communities/Land Cover Types**
**Alternative 2 – Proposed Action Gen-tie**

| Vegetation Community | BLM Land (Acres) | Private Land (Acres) |
|---|---|---|
| Active Agriculture (AG-A) | 1.49 | 2.22 |
| Fallow Agriculture (AG-F) | 0.79 | 0.96 |
| Arrow Weed Thicket (AS) | 0.41 | 0.44 |
| Arrow Weed Thicket - Disturbed (AS-D) | 0.21 | 0.50 |
| Athel Tamarisk Type Woodland (AW) | 0.42 | 0.52 |
| Creosote Bush - White Bursage Scrub (CBS) | 35.14 | 0.00 |
| Creosote Bush - White Bursage Scrub - Disturbed (CBS-D) | 1.82 | 2.30 |
| Developed (DEV) | 2.19 | 0.00 |
| Open Water with Arrow Weed Thicket (OW) | 0.71 | 0.44 |
| Stabilized Desert Dunes - Disturbed (SDD-D) | 22.28 | 0.00 |
| **Total** | **65.46** | **7.41** |

Special Status Plant Species

The potential for the occurrence of special status species for this gen-tie-alternative is described above and summarized in **Table 3-1**.

### *3.2.2 Alternative 3 - Gen-Tie on BLM*

Ten vegetation communities were mapped within the survey area for the Alternative BLM Gen-tie as shown in **Table 3-3**. These are shown on **Figure 3-1a**.

**Table 3-3**
**Vegetation Communities/Land Cover Types**
**Alternative 3 – Alternative Gen-tie on BLM Lands**

| Vegetation Community | BLM Land (Acres) | Private Land (Acres) |
|---|---|---|
| Active Agriculture (AG-A) | 0.00 | 1.40 |
| Fallow Agriculture (AG-F) | 0.00 | 21.50 |
| Arrow Weed Thicket – Disturbed (AS-D) | 0.00 | 0.32 |
| Athel Tamarisk Type Woodland (AW) | 0.43 | 0.04 |
| Tamarisk Thicket (TS) | 0.00 | 0.17 |
| Creosote Bush - White Bursage Scrub (CBS) | 22.36 | 2.03 |
| Creosote Bush - White Bursage Scrub - Disturbed (CBS-D) | 0.60 | 1.37 |
| Developed (DEV) | 2.19 | 2.13 |
| Open Water with Arrow Weed Thicket (OW) | 0.00 | 1.34 |
| Stabilized Desert Dunes - Disturbed (SDD-D) | 1.22 | 0.09 |
| **Total** | **26.92** | **30.39** |

Special Status Plant Species

The potential for the occurrence of special status species for this gen-tie-alternative is described above and summarized in **Table 3-1**.

### *3.2.3 Private Land (non-BLM ROW) Alternative*

Eight vegetation communities were mapped within the survey area for the Private Land (non- BLM) - Alternative 4 gen-tie as shown in **Table 3-4**. These are shown on **Figure 3-1b**.

| Table 3-4<br>Vegetation Communities/Land Cover Types<br>Alternative 4 – Private Land (non-BLM ROW) Alternative | |
|---|---|
| **Vegetation Community** | **Private Land (Acres)** |
| Active Agriculture (AG-A) | 112.26 |
| Fallow Agriculture (AG-F) | 4.04 |
| Arrow Weed Thicket (AS) | 0.83 |
| Athel Tamarisk Type Woodland (AW) | 0.27 |
| Common Reed Marsh - Disturbed (CRM-D) | 0.50 |
| Developed (DEV) | 3.35 |
| Disturbed Wetland (DW) | 1.11 |
| Open Water with Arrow Weed Thicket (OW) | 1.25 |
| **Total** | **123.61** |

Special Status Plant Species

There are no suitable habitats for special status species along this gen-tie-alternative.

## 3.3 Biological – Wildlife

General Wildlife

The wildlife species observed in the project area were typical of the common Colorado Desert habitats described in Vegetation that provide cover, foraging, and breeding habitat for a variety of wildlife species. **Appendix A** provides a list of all wildlife species observed and some of the primary species are described below.

*Invertebrates*

The project area contains suitable habitat for a wide variety of invertebrates (UC Davis, Insect Inventory of the Imperial Sand Dunes Rec Area, 2008). Harvester ants (*Pogonomyrmex* spp.), and flies (*Diptera* spp.) were observed regularly along with cabbage white (*Pieris rapae*) and other butterflies and moths (*Lepidoptera* spp.).

*Amphibians*

Most amphibians require moisture for at least a portion of their life cycle, with many requiring a permanent water source for habitat and reproduction. Terrestrial amphibians have adapted to more arid conditions and are not completely dependent on a perennial or standing source of water. These species avoid desiccation by burrowing beneath the soil or leaf litter during the day and during the dry season. No amphibians were observed within the project area.

*Reptiles*

The diversity and abundance of reptile species varies with habitat type. Many reptiles are restricted to certain plant communities and soil types, although some of these species would also forage in adjacent communities. Other species use a variety of vegetation types for foraging and shelter.

Four reptile species were commonly observed throughout the project area or are known to occur in the immediate vicinity of the area. These include the desert iguana (*Dipsosaurus dorsalis*), common zebra-tailed lizard (*Callisaurus draconoides*), Great Basin tiger whiptail (*Aspidoscelis tigris tigris*), sidewinder rattlesnake (*Crotalus cerastes*), and Flat-tailed horned lizard (FTHL; *Phrynosoma mcallii*). FTHL individuals and sign have been observed in the immediate vicinity of the Imperial Valley Substation and the project area occurs within the Yuha Desert Management Area.

*Birds*

The diversity of bird species varies with the character, quality, and diversity of vegetation communities. Common species are expected to include Horned Lark (*Eremophilia alpestris*), Mourning Dove (*Zenaida macroura*) Yellow-rumped Warbler (*Dendroica coronate*), Blue-gray Gnatcatcher (*Polioptila caerulea*), Black-tailed Gnatcatcher (*Polioptila melanura*), White-crowned Sparrow (*Zonotrichia leucophrys*), Rufous-crowned Sparrow (*Aimophila ruficeps*), Black Phoebe *Sayornis nigricans*), Turkey Vulture (*Cathartes aura*), Greater Roadrunner (*Geococcyx californianus*), and American Kestrel (*Falco sparverius*).

Turkey Vultures are known to roost on transmission line structures associated with existing transmission lines running south out of the Imperial Valley Substation. A pair of Red-tailed Hawks (*Buteo jamaicensis*) has been observed tending a stick nest approximately 0.3-miles southeast of the project area on a Southwest Powerlink transmission line structure (Heritage 2011).

*Mammals*

Suitable mammal habitat is present within the project area. Desert black-tailed jackrabbit (*Lepus californicus deserticola*), desert cottontail (*Sylvilagus audubonii*), round-tailed ground squirrel (*Spermophilus tereticaudus*), desert kangaroo rat (*Dipodomys deserti deserti*), and coyote (*Canis latrans*) were detected often within or immediately adjacent to the project area through direct observation as well as burrows, tracks, and scat. Kit fox (*Vulpes macrotis*) and American badgers (*Taxidea taxus*) are also common in the area.

American badgers were once fairly widespread throughout open grassland habitats of California. Badgers are an uncommon permanent resident with a wide distribution across California, except from the North Coast area. American badger is a resident species and is most abundant in the drier open stages of most shrub, forest, and herbaceous habitats

with friable soils. Badgers are generally associated with treeless regions, prairies, parklands, and cold desert areas (Zeiner *et al* 1990). Badgers inhabit burrows and often predate and forage on other small mammal burrows as evidenced by claw marks along the edges of existing burrows.

Neither American badgers nor sign was found during field surveys. However, the desert habitats and agricultural habitats (especially drains) within the project area are considered suitable habitat for badgers.

Desert kit fox is an uncommon to rare permanent resident of arid regions of the southern portion of California. Kit fox occur in annual grasslands, or grassy open, arid stages of vegetation dominated by scattered herbaceous species. Kit fox occur in association with their prey base, which is primarily cottontail rabbits, ground squirrels, kangaroo rats and various species of insects, lizards, or birds (Zeiner *et al* 1990).

California Code of Regulations 14 CCR § 460 stipulates that desert kit fox may not be taken at any time. Protection provided by kit fox dens for use as shelter, escape, cover, and reproduction is vital to the survival of the species. Potential desert kit fox burrows were observed throughout the project area within agricultural drain and desert scrub habitats during field surveys but no kit foxes or sign were observed. The agricultural drains and desert scrub habitats are suitable habitat for desert kit fox.

Special Status Wildlife Species

Thirteen special status wildlife species have the potential to occur within the survey area and those whose potential occurrence is most pertinent to the gen-tie survey area are discussed in detail below. These species include federally listed species, state listed species, and BLM sensitive species that are known to occur in the Imperial Valley, as well as CDFG species of special concern that were observed during surveys. Detailed species profiles and information for each of these species can be found in Section 3.12.2.4, Item B of the Centinela DEIR/EA

*Federally-listed Species*

Southwestern Willow Flycatcher (*Empidonax traillii extimus:* SWFL) is federally listed as endangered, and all willow flycatchers in California, including the southwestern and two other subspecies (*E. t. brewsteri* and *E. t. adastus*) are state-listed as endangered. Critical habitat was designated for the SWFL on October 19, 2005 in San Diego County, California and in Arizona (USFWS 2005). No critical habitat was designated within Imperial County, California.

SWFLs are not likely to nest within the project area, but may migrate through the action area and possibly forage during migration within the arrow weed scrub, phragmites, and tamarisk scrub habitats in the area (as discussed further in Chapter 4).

Peninsular bighorn sheep, formerly known as *O. c. nelsoni*, was federally listed endangered on March 18, 1998, and state-listed threatened on June 27, 1971 (USFWS 2001). Critical habitat for Peninsular bighorn sheep was designated in 2009 and includes portions of western Imperial County. The nearest recorded location for this species is approximately 16 miles west of the survey area, in the rocky hills southwest of Ocotillo, California (USFWS 2010b). The project area is not in close proximity to the steep, rocky terrain or desert wash habitat preferred by this species. Peninsular bighorn sheep are not expected to occur within the survey area or the vicinity.

Yuma Clapper Rail habitat is present only in the Private Land (Non-BLM ROW) Alternative and is discussed in Section 3.3.3.

*State-listed Species*

State listed species with the potential to occur within the Gen-tie survey area include: greater Sandhill Crane (*Grus canadensis tabida*), and Peninsular bighorn sheep (discussed above).

Greater Sandhill Crane is state-listed as threatened and is protected under the federal Migratory Bird Treaty Act (MBTA) and similar State legal protections. This species is known to winter in Imperial County California (Zeiner et al. 1989). In winter, it feeds in annual and perennial grasslands, moist croplands, and open emergent wetlands. The greater sandhill crane is likely to forage within the active agricultural fields in the area at times during winter, but this species is not expected to breed in the survey area. It is also unlikely that cranes will use habitats within the Alternative 2 or 3 corridors. These corridors do not occur within suitable crane foraging habitat (agricultural lands so it is unlikely that cranes would fly in close proximity to either corridor. The Alternative 4 corridor occurs within suitable foraging habitat for this species.

*BLM Sensitive Species*

Five BLM sensitive wildlife species were evaluated based on their presence on the BLM sensitive list within the El Centro Field Office's jurisdiction. These include the Colorado Desert fringe-toed lizard (*Uma notata notata*), flat-tailed horned lizard, Western Burrowing Owl, California leaf-nosed bat (*Macrotus californicus*), and pallid bat (*Antrozous pallidus*).

Colorado Desert fringe-toed lizard is a CDFG Species of Special Concern and a BLM sensitive species. This species has a moderate potential to occur within Creosote Bush – White Bursage Scrub and Stabilized Sand Dune habitats present in the project area, but none were observed during surveys. This species is known to occur approximately three miles south of the project area (State of California 2010). Some of the area within the Creosote Bush – White Bursage Scrub habitat represents potentially suitable habitat although loose sandy areas are limited in depth and extent and are not highly suitable. The Stabilized Sand Dune habitat represents higher quality habitat for this species due the greater depth and extend of loose sandy areas.

Flat-tailed Horned Lizard (Phrynosoma mcallii) (FTHL) was designated a sensitive species in California by the BLM in 1980. In 1988, a petition was submitted to the California Fish and Game Commission (CFGC) to list the species as endangered. In 1989, the commission voted against the proposed listing. In 1993, the USFWS published a proposed rule to list the FTHL as a threatened species (USFWS 2010a). In 2006, the USFWS withdrew its proposal (USFWS 2006). On March 2, 2010, USFWS re-instated the 1993 proposed listing of the FTHL as federally threatened (USFWS 2010e). The Ninth Circuit Court of Appeals ordered the USFWS to make a final listing determination by November 3, 2010. On March 15, 2011, the USFWS again withdrew its proposal to list the FTHL under the Endangered Species Act (USFWS 2011).

The BLM lands in the project area are located with the Yuha Desert Management Area. The Creosote Bush – White Bursage Scrub and, especially, Stabilized Sand Dune habitats have the potential to support FTHL and FTHL are known to occur in this area.

FTHL are apparently not limited to the less-disturbed suitable habitats within the MA near the gen-tie survey area, and they have been observed in disturbed habitats in the survey area. Thus, the Creosote Bush – White Bursage Scrub and Stabilized Sand Dune habitat areas are considered to be occupied.

Burrowing Owl (*Athene cunicularia*) is a California Species of Special Concern and a BLM sensitive species. It is protected by the MBTA and California Fish & Game Code §§ 3503, 3503.5, 3513. Suitable habitat for the Burrowing Owl within the survey area includes Fallow Agriculture and Creosote Bush – White Bursage Scrub.

California Leaf-nosed Bat (*Macrotus californicus*) is a Species of Special Concern and a BLM sensitive species. This bat is found primarily in desert areas of the southwestern United States, and ranges through Imperial County and the eastern parts of Riverside and San Diego Counties in California.

The California leaf-nosed bat is commonly found in desert habitats that include riparian, wash, scrub, succulent scrub, alkali scrub, and palm oasis. The thickets and irrigation channels in the northern portion of the project area offer foraging opportunities for this species. The nearest reported location for the California leaf-nosed bat is approximately 22 miles northwest of the proposed project (State of California 2010b). No known roosts occur in the survey area, and there is no suitable roosting habitat within or near the survey area.

Pallid Bat (Antrozous pallidus) is a Species of Special Concern and a BLM sensitive species. It is a locally common yearlong resident of low elevations throughout most of California. This bat occupies a variety of habitats including grasslands, shrublands, woodlands, and forests at elevations ranging from sea level up through mixed conifer forests. The entire project area offers foraging opportunities for this species. The nearest reported location for the pallid bat is approximately 22 miles west of the

proposed project (State of California 2010b). Roosts are not known to occur in the survey area, and there is no suitable roosting habitat within or near the survey area.

Mountain Plover (*Charadrius montanus*) on June 29, 2010, USFWS announced the proposed listing of this species as threatened under the ESA of 1973, as amended (USFWS 2010a), and then withdrew the proposed listing on May 12, 2011 (76 Fed. Reg. 27756). Mountain Plovers are known to over-winter in the Imperial Valley, foraging within the large agricultural complex that surrounds El Centro and spans from Mexico to the Salton Sea. Active and Fallow Agriculture in the project area represents suitable foraging habitat for the species. This species was documented within the agricultural private lands portion of the solar generation facility in January and February 2012.

*California Species of Special Concern and Fully Protected Species*

Three species that are classified as CDFG Species of Special Concern were observed within the project area or were observed during surveys for nearby projects (RECON 2010a, 2010b; Heritage 2011c; Heritage unpub data). These include Loggerhead Shrike, Crissal Thrasher (*Toxostoma crissale*), and LeConte's thrasher (*T. lecontei lecontei*). Golden eagle (*Aquila chrysaetos*), a CDFG Fully Protected Species, and protected under the Bald and Golden Eagle Protection Action, MBTA, and Fish & Game Code sections 3503, 3503.5, and 3513, has also been observed near the survey area (Heritage 2011a).

Loggerhead Shrike (*Lanius ludovicianus*) is a CDFG Species of Special Concern and is a year-round resident in Imperial County. The Loggerhead Shrike prefers open habitat with perches for hunting and fairly dense shrubs for nesting. Loggerhead Shrikes were observed regularly within the project area. The Fallow Agriculture and native desert habitats provide suitable foraging habitat for this species. No Loggerhead Shrike nests were identified, though the species may nest in tamarisk habitats in the vicinity.

Crissal Thrasher (*Toxostoma crissale*) is a CDFG Species of Special Concern and is a year-round resident in Imperial County. This species occupies dense thickets of shrubs or low trees in desert riparian and desert wash habitats. This species has been observed within mesquite thickets associated with nearby projects (RECON 2010). The habitats within the project area do not support suitable nesting or foraging habitat for this species. Crissal Thrashers were not observed within the survey area.

Le Conte's Thrasher (*Toxostoma lecontei lecontei*) is a CDFG Species of Special Concern and a year-round resident in Imperial County. It occurs primarily in open desert wash, desert scrub, alkali desert scrub, and desert succulent shrub habitats. This species was observed within desert wash vegetation associated with a nearby project (RECON 2010). The habitats within the survey area do not support suitable nesting or foraging habitat for this species. LeConte's Thrashers were not observed within the project area.

Golden Eagle (*Aquila chrysaetos*) occurs throughout the United States and is a rare resident in San Diego County and Imperial Counties. Golden eagles nest on cliffs of all heights and in large trees in open areas, and use rugged, open habitats with canyons and escarpments used most frequently for nesting. A golden eagle was observed foraging over the Mount Signal Drain and adjacent agricultural fields during surveys associated with a nearby project, approximately 4.5 miles southeast of the Imperial Valley Substation. No previous records of this species were identified within the project vicinity (State of California 2011). No suitable nesting habitat is present within the survey area or immediate vicinity. Therefore, golden eagles are not expected to nest within the project area.

### *3.3.1 Alternative 2 - Proposed Action*

General Wildlife

The invertebrates, amphibians, reptiles, birds, and mammals that occur along this gen-tie alternative are the same as those described above.

Special Status Wildlife Species

The potential for occurrence of the twelve special status wildlife species for the proposed gen-tie are the same as discussed previously.

Specific to burrowing owls, twenty-four suitable burrows were initially recorded in 2011 in the survey area for this gen-tie route. However, these burrows occur within dunes and regularly get filled in or collapsed. During these surveys, Burrowing Owls were not observed. Preconstruction surveys will be performed to determine presence of occupied burrows.

### *3.3.2 Alternative 3 - Gen-Tie on BLM*

General Wildlife

The invertebrates, amphibians, reptiles, birds, and mammals that occur along this gen-tie alternative are the same as those described previously.

Special Status Wildlife Species

The same fourteen special status wildlife species described in Section 3.3.1.2 were determined to have the potential to occur within the survey area. These species include federally listed species, state listed species, and BLM sensitive species that are known to occur in the Imperial Valley, as well as CDFG species of special concern that were observed during surveys.

Specific to burrowing owls, two suitable burrows (abandoned irrigation pipe) were recorded in the survey area in the Fallow Agriculture habitat within the Alternative 3

survey area. No Burrowing Owls were observed during the surveys. Preconstruction surveys will be performed for BUOW in accordance with CDFG guidelines 2012.

### *3.3.3 Private Land (non-BLM ROW) Alternative*

General Wildlife

The invertebrates, amphibians, birds, and mammals that occur along this gen-tie alternative are the same as those described previously. No reptile species were observed in the survey area for this alternative.

Special Status Wildlife Species

All thirteen special status wildlife species described in Section 3.3 were determined to have the potential to occur within the survey area. These species include federally listed species, state listed species, and BLM sensitive species that are known to occur in the Imperial Valley, as well as CDFG species of special concern that were observed during surveys.

SWFLs are not likely to nest within the project area, but may migrate through the action area and possibly forage during migration within the arrow weed scrub, phragmites, and tamarisk scrub habitats in the area (as discussed further in Chapter 4).

Yuma Clapper Rail (YCR) has the potential to occur along the Private Land Alternative. The YCR was federally listed as endangered March 11, 1967, under the Endangered Species Preservation Act of October 15, 1966, and state-listed as threatened February 22, 1978 (USFWS 2006). Critical habitat has not been established for this species.

This bird breeds in freshwater marshes along the Colorado River from Needles, California, to the Colorado River delta and at the Salton Sea. The YCR breeds in freshwater marshes and brackish waters and nests on firm, elevated ground, often under small bushes. This species is not likely to nest within the survey area because the only potentially suitable patches of typha and typha/phragmites habitat in the area (associated with Forget-Me-Not Drain 1, Westside Drain and Dixie 4 Drain) are narrow, have steep sides and water depths deeper than those preferred by YCR. There is also a low potential for YCR to forage in the cattail marsh vegetation or winter in the arrow weed thickets associated with the drains. The active agricultural fields immediately adjacent to the cattail marshes provide a constant source of human disturbance in the area.

Specific to burrowing owls, four suitable burrows were recorded in 2011 in the survey area in the Active Agriculture habitat within the Private Land Alternative survey area. No Burrowing Owls were observed during the surveys in 2011. Preconstruction surveys will be performed for BUOW in accordance with CDFG guidelines 2012.

## 3.4 Climate Change

Gases that absorb and re-emit infrared radiation in the atmosphere are called greenhouse gases (GHG), in reference to the fact that greenhouses retain heat. It is believed that emissions from human activities, particularly the consumption of fossil fuels for electricity production and transportation, have elevated the concentration of these gases in the atmosphere beyond the level of naturally occurring concentrations. This phenomenon is commonly referred to as climate change.

GHG have recently been the subject of rules requiring their analyses. The Sunrise Powerlink Project Final Environmental Impact Report (FEIR) (Aspen 2008), Section D.11 provides a detailed discussion of the relevant climate change regulatory standards. Updates to this information are included in Section 3.5 of the Centinela DEIR/EA (EGI 2011).

There are no existing GHG sources on the BLM lands that would be crossed by the project. There are limited quantities of GHGs currently being produced in the project area. On the private lands in agriculture, emissions associated with agricultural equipment use (trucks, tractors, etc) occur. These are not considered major GHG sources, and as such, the existing use of the land is not a major generator of GHGs. The existing agricultural crops produced on the site (primarily alfalfa and bermuda grass) have little to no value for biomass carbon sequestration.

## 3.5 Cultural Resources

Listed below are the most relevant Federal, State, and County laws, ordinances and regulations for the protection of cultural resources and for which this study provides data for agency assessments of impacts to cultural resources:

- National Historic Preservation Act (NHPA)
- National Environmental Policy Act of 1969 (NEPA)
- Archeological and Historic Preservation Act of 1974 (AHPA)
- Archeological Resources Protection Act of 1979 (ARPA)
- American Indian Religious Freedom Act of 1978 (AIRFA)
- Native American Graves Protection and Repatriation Act of 1990 (NAGPRA)
- Executive Order 11593 (1971), Protection and Enhancement of the Cultural Environment
- Executive Order 13007 (1996), Protection and Preservation of Native American Sacred Sites
- California Desert Conservation Area (CDCA) Plan, 1980, as Amended
- Yuha Basin Area of Critical Environmental Concern (ACEC) Management Plan, June 1981
- Comprehensive Management and Use Plan and Final Environmental Impact Statement, Juan Bautista de Anza National Historic Trail, April 1996
- Federal Land Management Policy Act (FLMPA) of 1976

- California Environmental Quality Act (CEQA)
- Public Resources Code Section 5024.1 and Title 14 C.C.R., Section 4852
- California Health and Safety Code Section 7050.5
- California Public Resources Code Section 5097.98
- Imperial County General Plan

More detail on the requirements associated with each of these regulations is provided in section 3.7.1 of the Centinela DEIR/EA (EGI 2011).

The prehistoric and historic period habitation of Imperial Valley has largely been tied to the availability of water. On numerous occasions during prehistory, and at least once during historic times, the Colorado River has shifted its course to inundate the western Colorado Desert. In recent times, this flooding created the Salton Sea and in the past, much larger inundations occurred that resulted in the creation and refilling of the much larger Lake Cahuilla.

The predominant evidence of human occupation in Imperial County during the Late Prehistoric Period (1,500-100 years B.P.) (Mitchell 2011b) is located along the ancient shoreline at approximately 40 feet above mean sea level (Noah and Gallegos 2008; Moratto 1984) and is exemplified by ceramic and lithic artifact scatters associated with rock rings and fish traps and temporary camp sites. Trails used by Native Americans as well as Spanish, Mexican, and American Period (450-150 B.P.) explorers are still evident in portions of Imperial Valley and are typically associated with known water sources (Mitchell 2011b).

During the historic farming period (1890 – 1950s), agriculture was made possible through the development of a system of canals that directed water from the Colorado River to farmlands (Mitchell 2011b). The Proposed Project area had many private land patents that were acquired early in the first quarter of the 20th century beginning in 1911 and tapered off toward the middle of the 20th century (1950s). The cultural resources identified during the study reflect a range of activities that occurred within Imperial Valley in the past.

More detail on the prehistoric and historic context of this part of Imperial County can be found in Section 3.7.2.2 of the Centinela DEIR/EIS (EGI 2011).

A background literature review and a Class I records search was conducted for an area within one-mile of the area of potential effect (APE). For cultural resources, the APE included the proposed right-of-way for the gen-tie routes and a 500-foot buffer on either side. The majority of the known and recorded resources in the proposed project area are historic irrigation-related sites such as canals, laterals, and drains. There are also prehistoric lithic artifact scatters that indicate such activities as tool making and sharpening took place in these areas. In addition, the presence of pottery suggests that food was prepared, stored and perhaps transported in ceramic vessels.

Class III intensive pedestrian surveys were conducted of the APE in January 2012 (Mitchell 2012).

### *3.5.1 Alternative 2 - Proposed Action*

Based on the inventory results, two sites and nine isolated archaeological occurrences were recorded within the survey area for the proposed action. One site is the historic-period Westside Main Canal and its associated Pump 6 canal. The other site is a ceramic scatter with a mano. The nine isolated archaeological occurrences are seven prehistoric artifacts, and two historic period artifacts.

### *3.5.2 Alternative 3 - Gen-Tie on BLM*

Based on the inventory results, seven sites and nine isolated archaeological occurrences were recorded within the survey area for Alternative 3. Two historic-period sites, the Westside Main Canal and its associated Pump 6 canal and the Fern Check of the Westside Main Canal, are historic irrigation-related sites. The other five sites include a temporary camp site, three lithic scatters, and a ceramic scatter. The nine isolated archaeological occurrences are eight prehistoric artifacts, and one historic period artifact.

### *3.5.3 Private Land (non-BLM ROW) Alternative*

Five historic period sites and one isolated archaeological occurrence were recorded along the Private Land (non-BLM ROW) Alternative. All five sites are sites are historic irrigation-related sites, and the isolated archaeological occurrence is a historic artifact found on the wall of one of the canal features.

## 3.6 Paleontology

Paleontological resources (i.e., fossils) are the remains and/or traces of prehistoric plant and animal life. Although it is typically assumed that fossils must be older than about 10,000 years, organic remains of early Holocene age (i.e., younger than about 10,000 years) can also be considered to represent fossils because they are part of the record of past life.

The geologic deposits that underlie the project area (all gen-tie options and solar site) are mapped as a complex containing Quaternary Alluvium (Qa) and Lake Cahuilla sediments (Qc). The Qa deposits are covered by a thin veneer of recent sediments. In general, these surficial deposits are probably entirely Holocene in age. Younger Quaternary alluvium typically is not considered to yield important fossils given the young age of the sediments.

Qc are sedimentary rocks mapped as Lake Cahuilla sediments underlie a large part of the area and include interbedded lake and river sediments to depths of at least 20 feet below the ground surface (Waters, 1983; Whistler et al., 1995). These deposits include the

occurrence of shells of various kinds of freshwater mollusks (clams and snails) also of a young age and high fossil potential but with varying occurrence and predictability.

The Sunrise Powerlink Project FEIR (Aspen 2008), Section D.7.25.1 provides a more detailed discussion of the paleontological resource potential in this area.

## 3.7 Fire/Fuels

This section summarizes federal, State and local regulations, plans and standards relevant to fire suppression and fire prevention. Fire prevention around transmission lines is focused on vegetation management and clearance of nearby trees and branches. Relevant federal, state, and local fire requirements that could be relevant are presented in the Sunrise Powerlink Project FEIR (Aspen 2008), Section D.15.3.1 pages D.15-47-54.

Imperial County fire and fuels data is presented in the Sunrise Powerlink Project FEIR, Section D.15.2.3 pages D15-19-20. The proposed Gen-tie and alternatives are located on BLM lands in an area where there would be no trees or tall shrubs in the rights-of-way that would cause vegetation clearance or fire risk issues. During construction, vehicles and equipment would use existing roads or overland routes without substantial vegetation/fuel present. Also, the portions of the projects on private lands would be cleared of all vegetation and also would not contain any appreciable amounts of flammable materials or fuels.

In addition to there being a low fuel load in the area, there is a minimal historic fire occurrence and a low population density in the area.

## 3.8 Soils and Geologic Resources

The proposed action and alternatives are approximately 0-35 feet below Mean Sea Level (MSL) and located within the Salton Trough, an area that is underlain by lacustrine (lake) deposits. This is a seismically active region and the Uniform Building Code classifies Imperial County as Seismic Zone 4 and the county contains a number of active faults but none are in the immediate project area (see **Figure 3-2**).

A variety of soil types of the soils occur in the area and would be crossed by the gen-tie routes. The soils consist predominantly of silty clays, silty clay loams, and very fine sands of the Imperial, Glenbar, Meloland, Holtville and Rositas soils groups. These are shown on **Figure 3-3**. The BLM lands are fairly flat and most soils here are generally sandy and well drained. Nearly all the private lands in the area have been leveled for irrigation and the soils range from sandy and well drained to those that contain silts and clays and are moderately to poorly drained. Because of the flatness of the slopes, susceptibility to water erosion is generally low but there is a moderate potential for soil blowing.

The Sunrise Powerlink Project FEIR Aspen 2008), Section D.13 provides a more detailed discussion of the existing geologic and soils conditions in the area and the relevant regulatory standards that apply to geology and soils.

## 3.9 Mineral Resources

Imperial County contains diverse mineral resources. Those with the highest economic value include gold, gypsum, sand, gravel, lime, clay, and stone. Geologic factors restrict mining operations to the relatively few locations where mineral deposits are feasible for extraction. The majority of the mining areas are in the eastern portion of Imperial County as depicted on Figure 5, Mining Resources, of the Imperial County General Plan Conservation and Open Space Element (Imperial County, 1993). The proposed and one alternative Gen-tie line would be located on BLM desert lands with native vegetation cover. One Gen-tie alternative and the nearby solar generation facility occur on lands currently used for agricultural. The Gen-tie routes and agricultural lands contain no mineral resources that have been identified and no mining activities occur in the vicinity of the project. Therefore, this resource will not be analyzed in Chapter 4.

## 3.10 Grazing

The Taylor Grazing Act (TGA) authorizes the United States Secretary of the Interior to allow grazing on public lands and other lands administered by the BLM through issuing grazing permits or leases to qualified applicants (43 United States Code [USC] Sections 315 and 315a). BLM regulations implementing the TGA are codified at 43 Code of Federal Regulations (CFR) Part 4100. Grazing range allotments are designated BLM allotments or pastures for wildlife and livestock. There are currently no BLM rangeland allotments in Imperial County and, therefore, none associated with the project area. This resource will not be analyzed in Chapter 4.

## 3.11 Wild Horses and Burros

There are no known populations of wild horses or burros in the vicinity of the Project and there are no herd management areas in the area. This resource will not be analyzed in Chapter 4.

## 3.12 Lands and Realty

The Project area is in a rural portion of Imperial County. Land use is defined by current land activities, land ownership, zoning (where applicable), and land use designations in adopted land use plans and policies. Land use is also affected by legal guarantees or limitations on land use, such as those provided by easements, deeds, ROW, claims, leases, licenses, and permits. BLM-administered lands are not zoned, but they may be encumbered by easements, ROWs, mining claims, and permits.

Use of BLM lands included in the project area is directed by a number of applicable plans and regulations. These include the:

- Federal Land Policy and Management Act
- California Desert Conservation Area (CDCA) Plan
- Yuha Desert Area Plan (Yuha ACEC)
- Flat-tailed Horned Lizard Rangewide Management Strategy

These are described in more detail in Chapter 1.

There are a number of existing and proposed rights-of-way on the BLM lands in the vicinity of the proposed gen-tie routes – all associated with lines interconnecting with Imperial Valley Substation within BLM designated Utility Corridor N. These include the existing SDG&E Imperial Valley Substation, the existing IID S-Line, the existing Sempra transmission lines from Mexico that enter the Imperial Valley Substation on the north side, the approved upgrade to the S-Line (CACA-13206), the approved gen-tie for the Imperial Solar Energy Center West (CACA-051644), the approved gen-tie for the Imperial Valley Solar Project (CACA-047740), and the proposed IID Dixieland to Imperial Valley line and associated Liebert Substation. The location of the proposed gen-ties would have to be coordinated with some of these projects to minimize impacts on one another to enter the Imperial Valley Substation.

Use of private lands in unincorporated Imperial County is outlined in the County's General Plan. Development in the County must be consistent with the General Plan and the Land Use Ordinance. All of the private lands associated with the project are designated by the General Plan as "Agriculture" and this designation would not have to be amended to allow transmission or solar projects. A variance from the County has been applied for to allow the proposed transmission towers to exceed the 120-foot height limit. This is also described in more detail in Chapter 1.

### *3.12.1 Alternative 2 - Proposed Action*

The private lands associated with the proposed gen-tie are zoned Heavy Agriculture (A-3). Transmission lines and substations are permitted uses within the A-3 Zone. This route is located within Utility Corridor N on BLM lands and would be located near the gen-ties for Imperial Solar Energy Center West and Imperial Valley Energy Projects and the IID Dixieland to Imperial Valley Line.

### *3.12.2 Alternative 3 - Gen-Tie on BLM*

The private lands associated with this gen-tie alternative are zoned Heavy Agriculture (A-3). Transmission lines and substations are permitted uses within the A-3 Zone. This route is also located within Utility Corridor N on BLM lands and would be located near the existing and approved upgrade for IID's S-Line. The potential entry of this line into the Imperial Valley Substation would also need to be coordinated with gen-ties for

Imperial Solar Energy Center West and Imperial Valley Energy Projects and the IID Dixieland to Imperial Valley Line.

### *3.12.3 Private Land (non-BLM ROW) Alternative*

The private lands associated with this gen-tie alternative are zoned General Agricultural Rural Zone (A-2-R) where facilities relating to the transmission of electrical energy are permitted uses subject to the approval of a Conditional Use Permit.

## 3.13 Noise and Vibration

Sound is measured on a logarithmic scale consisting of sound pressure levels known as a decibel (dB). The method for evaluating all the frequencies of the sound is to apply an A-weighting to reflect how the human ear responds to the different sound levels at different frequencies. Community noise levels are usually closely related to the intensity of nearby human activity. Noise levels are generally considered low when ambient levels are below 45 dBA (A-weighted decibel scale), moderate in the 45 to 60 dBA range, and high above 60 dBA. In small towns or wooded and lightly used residential areas, background noise 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.

The project site is located in a rural, undeveloped portion of Imperial County characterized by agricultural uses. To determine the existing noise environment, measurements were taken at two locations in the project area. The ambient noise levels measured in the area of the project during the late morning and mid-day were found to be between 50 to55 dBA in the western portion of the area and 90 percent the noise levels were between 36 to 38 dBA. The existing noise levels in the project area consisted primarily of low traffic volumes along local roads and background noise from existing agricultural operations in the area.

## 3.14 Public Health and Safety

This section describes the existing environmental setting with respect to public health and safety that may be present in the project area. The rules and regulations applicable to public health and safety are outlined in detail in the Sunrise Powerlink Project FEIR (Aspen 2008), Section D.10.3.

The presence of hazardous materials in the project area is discussed in Section 3.22 below. There are no hazardous materials or recognized environmental conditions (RECs) identified on the private lands or BLM lands associated with the project.

Aboveground transmission lines can pose a threat to aviation safety if they are located within an airport land use plan or flight zone. The proposed gen-tie line and alternatives

are not located within the airport compatibility zones associated with any of the public airports in Imperial County. The closest public airport is the U.S. Naval Air Facility at El Centro (NAF/EC) military airport located approximately 5.5 to 6.5 miles north of any of the gen-tie alternatives. The project is over 10.5 miles west of the Calexico International Airport.

## 3.15 Recreation

The California Desert Conservation (CDCA Plan) (BLM, 1980) includes a Recreation Element to address use of, and access to, recreational destinations within the California Desert including the project area. A primary consideration of the recreation program is to ensure that access routes necessary for recreation enjoyment are provided (BLM, 1980, p. 84).

While no designated BLM recreation areas are located within 10 miles of the Project site, roads which provide access to recreational areas are located near the Gen-tie Line segments on BLM lands and these roads would be crossed at two locations by the proposed and alternative Gen-tie line. However, the project would be located within BLM-designated Utility Corridor N which is devoted to infrastructure and designated area for new electrical transmission towers and cables of 161-kV or above (BLM, 1980, p. 115). Currently there are multiple sets of existing transmission towers in this area of the corridor terminating at the Imperial Valley Substation.

The portions of the gen-ties on private lands and the lands on which the solar generation facility will be located are all in agricultural production. Agricultural areas may be used for recreational activities such as hunting or walking but these activities do not occur with high frequency.

## 3.16 Social and Economic Setting

The proposed project is located in unincorporated western Imperial County. The County is in Southern California, bordering Mexico, west of Arizona, and east of San Diego County. The Gen-Tie is located in a rural portion of Imperial County, and the private lands in the area are in Census Tract 111 and the BLM lands are in Census Tract 123. There is very little population in either census tract and very few people in the immediate vicinity. The closest populated areas are more than four miles from the project site: the City of El Centro, eight miles northeast; the City of Calexico, twelve miles to the southeast; the community of Seeley, four miles north; and the community of Heber, eleven miles to the east.

Detailed information on Imperial County demographics and housing data is presented in the Sunrise Powerlink Project FEIR (Aspen 2008), Section D.14.2.1 page D.14.2 and information on County public services and utilities data is presented in Section D.14.2.1 page D.14.3.

## 3.17 Environmental Justice

Executive Order (EO) 12898 was issued on February 11, 1994 by President Clinton. EO 12898 requires the all federal agencies, as well as state agencies receiving federal funds, to analyze the effects of their decisions on human health and environmental conditions in minority and low-income communities and to develop strategies to address environmental justice. The agencies are required to identify and address any disproportionately high and adverse human health or environmental effects of their programs, policies, and activities on minority and/or low-income populations. In 1997, the Council on Environmental Quality (CEQ) published *Environmental Guidance Under the National Environmental Policy Act* (CEQ, 1997) to assist Federal agencies with developing NEPA procedures so that environmental justice concerns are effectively identified and addressed. This guidance defines low-income population, minority, minority populations and disproportionate effects.

Imperial County is an area with a high percentage of minorities and low- income persons. The private lands in the area are in Census Tract 111 and the BLM lands are in Tract 123. The socioeconomic characteristics defined from the most recent census data in Imperial County are described in detail in the Centinela EIR/EA, Section 3.14, pages 3.14-3 through 3.14-9. The current information indicates that the County and Census Tracts 111 and 123 each have a minority population that is predominantly Hispanic, typical of areas near the border. In the 2010 census, the Imperial County population was 80 percent Hispanic while Census Tract 111 was 60 percent Hispanic and Census Tract 123 was 45 percent Hispanic.

The percent of families living in poverty is over 20 percent in Imperial County.

## 3.18 Special Designations

### *3.18.1 Wilderness / Wilderness Characteristics*

There are no wilderness areas and no lands with wilderness characteristics in the vicinity of the project that would be affected by it. This resource will not be analyzed in Chapter 4.

### *3.18.2 ACECs*

The CDCA Plan-designated Yuha Basin Area of Critical Environmental Concern (ACEC) Management Plan was prepared to give additional protection to unique cultural resources and wildlife values found in the region while also providing for multiple use management. The portions of the proposed and alternative gen-tie lines on BLM land are located entirely within Yuha Basin ACEC.

The ACEC Management Plan allows for the “traversing of the ACEC by proposed transmission lines and associated facilities if environmental analysis demonstrates that it is environmentally sound to do so”.

### *3.18.3 National Scenic and Historic Trails*

There are no national scenic or historic trails in the vicinity of the project that would be affected by it. This resource will not be analyzed in Chapter 4.

### *3.18.4 Wild and Scenic Rivers*

There are no wild and scenic rivers located in the vicinity of the project. This resource will not be analyzed in Chapter 4.

### *3.18.5 Donated Lands*

There are no lands that have been donated to the BLM in the project area. Also, there are no lands proposed to be donated to BLM as part of this project. Therefore, this will not be analyzed in Chapter 4.

### *3.18.6 Prime and Unique Farmland*

The Farmland Mapping and Monitoring Program (FMMP) managed by the California Department of Conservation produces maps and statistical data used for analyzing impacts on California's agricultural resources. Agricultural land is rated according to soil quality and irrigation status with the best quality land classified as Prime Farmland.

The definitions for Prime Farmland, Farmland of Statewide Importance, Unique Farmland, Farmland of Local Importance, and Urban Built-up Land were developed by the US Department of Ariculture (USDA-SCS) as part of their nationwide Land Inventory and Monitoring (LIM) system. These LIM definitions have been modified for use in California and can be found in the Sunrise Powerlink Project FEIR, Section D.6.1: pages D.6-1 - 2.

The portions of the proposed gen-tie and alternative gen-tie on BLM land are undeveloped desert and do not contain prime farmlands or farmlands of importance. The short portion of these gen-tie lines on private land cross Prime Farmland, Farmland of Statewide Importance, and fallow land.

The Non-BLM ROW Gen-tie Alternative crosses Prime Farmland, Farmland of Statewide Importance, and Farmland of Local Importance.

## 3.19 Transportation and Public Access

The project area is accessed by a number of existing roads. The primary roads that provide access to the private lands and BLM lands involved in this project are described below.

The public road system and classifications described here are based on the Imperial County Planning & Development Services Department *Circulation and Scenic Highways Element,* January 29, 2008. Interstate 8 (I-8) is constructed as a 4 lane divided freeway with 2 lanes in each direction and provides primary access to the general area. Drew Road (S29) is a prime arterial road and can be taken south from the exit on I-8 to Wixom and Drew Roads to provide access to the private lands in the area. From Drew Road, Liebert Road south provides access to the BLM lands involved in this project.

There are existing roads on the BLM lands providing public access to the area. There is a road adjacent to the existing S-Line (where Alternative 3 is located) that provides access to the existing line and the Imperial Valley Substation. There also is a road along the proposed gen-tie route (Alternative 2)

## 3.20 Visual Resources

The general vicinity of the proposed project is predominantly flat. Portions of the proposed Gen-tie line and one of the alternatives would cross BLM lands and the BLM land in the general area is mostly managed as limited use where vehicular travel is only allowed on designated routes. Views of desert and distant mountains can be seen in the background of most views in the area. This BLM land has been designated as a utility corridor where utility uses are encouraged to be consolidated. In the immediate vicinity of the proposed project, the existing Imperial Valley Substation and the numerous existing transmission lines emanating from it are readily visible.

Visual management of BLM lands is directed by the BLM's Visual Resource Management (VRM) System which is discussed in detail in the Sunrise Powerlink Project FEIR (Aspen 2008), Section D.3.1.2: pages D.3-3 - 6. The BLM lands crossed by the gen-ties have been tentatively designated VRM Class III.

Nearly all of the private lands in the area are in agriculture and have been leveled to facilitate irrigation. Earthen berms, overhead power and telephone lines, and agricultural fields dominate the scenery on these lands. Numerous canals, ditches and drains are located throughout the Project site and surrounding area providing irrigation water and drainage to the individual fields. Two-lane paved roads and dirt roads are located throughout the area and provide access to and through the existing agricultural fields. Residential development in the area is limited.

### *3.20.1 Alternative 2 - Proposed Action*

This proposed gen-tie line would parallel existing roads and berms. As mentioned above, this BLM land is part of a designated utility corridor where utility uses are encouraged. The existing Imperial Valley Substation and the transmission lines emanating from it are readily visible in this area. **Figure 3-4** contains a photograph showing the existing visual condition of this area.

### *3.20.2 Alternative 3 - Gen-Tie on BLM*

This proposed line would parallel the existing IID S-Line and associated access road which has been approved to be upgraded to a 230kV double-circuit line. Like the proposed gen-tie route, the BLM land crossed by this route is part of a designated utility corridor where the existing S-Line, Imperial Valley Substation, and other transmission lines are readily visible in this area. **Figure 3-5** is a photo showing the existing visual condition along this route.

### *3.20.3 Private Land (non-BLM ROW) Alternative*

The Non-BLM ROW Gen-Tie Alternative would exit the Campo Verde Project site on the west side and would cross approximately 1.75 miles of private lands to the west where it would cross the Westside Main Canal to the C-Solar West Project site. Like the Project site and surrounding area, the land crossed by this line made up of agricultural fields that contain earthen berms associated with the field irrigation and drainage systems, local roads, and local electrical distribution lines. **Figure 3-6** is a photo showing the existing visual condition along this route.

## 3.21 Water Resources

### *3.21.1 Surface Water Resources*

The project is located within the Imperial Hydrologic Unit of the Salton Sea watershed in the Colorado River region. The Salton Sea Watershed encompasses an area of approximately 8,000 square miles that extend from San Bernardino County in the north to the Valley of Mexicali (Mexico) in the south (refer to Salton Sea Watershed Map). The Salton Sea lies at the lowest point in the watershed (approximately 270 feet below mean sea level) and collects runoff and agricultural drainage from most of Imperial County and portions of Riverside, San Diego, and San Bernardino Counties. Major hydrologic features in the area include the Alamo and New Rivers, which flow north towards the Salton Sea.

Imperial County regional data regarding surface water resources is presented in the Sunrise Powerlink FEIR (Aspen 2008), Section D12.1, pages D12-1 through D12-6.

The private lands included in the project are currently in agriculture. Surface water in the project area is conveyed in a series of Imperial Irrigation District (IID) canals and ditches that deliver irrigation water to the fields. The Westside Main Canal is the primary supply of surface water to the area. Other primary canals in the area include the Fig Canal, Fern Canal, Wormwood Lateral #7, and Dixie Lateral #1.

Current drainage patterns on the private lands generally direct storm water runoff and irrigation drainage through the agricultural fields and convey all runoff via existing outlet structures to the IID drains located throughout the area. IID facilities that accept flow

from the project area include the Dixie Drain #3, Dixie Drain #3A, Wixom Drain, Diehl Drain, and Fig Drain.

There are no defined surface water features on the BLM lands in the project area.

### *3.21.2 Groundwater Resources*

Geographically, the project area is located within the Imperial Groundwater Basin which is bounded on the east by the Sand Hills, on the west by the impermeable rocks of the Fish Creek and Coyote Mountains, and on the north by the Salton Sea, which is the discharge point for groundwater in the basin.

On the private lands, groundwater was encountered at depths ranging from 10 feet to 15 feet below ground surface based on 25 soil borings conducted as part of the geotechnical investigation conducted for the solar generation facility (EGA, 2011). Depth to groundwater on the BLM lands is expected to be deeper because irrigation water is not being constantly applied as it is on the private agricultural lands.

### *3.21.3 Wetlands and Riparian Zones*

There are several riparian habitats within the survey area associated with the large irrigation drains present throughout the survey area. These communities include common reed marsh, cattail marsh, tamarisk thicket, and disturbed wetland. None of these communities are considered to be special status communities.

No wetlands or riparian zones were identified along the proposed gen-tie (Alternative 2) or Alternative 3. The non-BLM gen-tie alternative would cross one disturbed common reed marsh, one disturbed wetland, and two arrow weed thickets, all associated with drains and canals.

### *3.21.4 Jurisdictional Waters, Floodplains*

A jurisdictional delineation was conducted to determine the extent of ACOE, CDFG, and the Regional Water Quality Control Board (RWQCB) resources within the survey area. The survey area for potentially jurisdictional waters for the gen-tie lines included a 160-foot ROW and a 200-foot buffer area. Consultation with these agencies has been conducted and the Drainage Report has been submitted to the ACOE and CDFG for their review and concurrence.

Section D.2.3 of the Sunrise Powerlink FEIR (Aspen 2008) provides detailed descriptions of the applicable regulations, plans, and standards associated with these resources and definitions of jurisdictional waters are included in Section 3.12.2.4, Item D, Pages 3.12-37 and 3.12-38 of the CSE DEIR/EA (EGI 2011).

One ACOE non-wetland Water of the U.S. and CDFG jurisdictional water of the state (Westside Main Canal) was identified along the proposed gen-tie (Alternative 2) and

Alternative 3. The non-BLM gen-tie (Alternative 4) would span six jurisdictional features (both ACOE and CDGF jurisdictional). These features include the Westside Main Canal, Westside Drain, Fox Glove Canal, Forget-me-not Drain, Forget-me-not Canal, and the Dixie 4 drain.

Floodplains in the area have been mapped by the Federal Emergency Management Agency (FEMA). The entire project area is located in Flood Zone X, defined by FEMA as areas determined to be outside of the 0.2 percent chance for an annual flood or outside the 100-year and 500-year floodplains. (FEMA, 2008)

### *3.21.5 Water Quality and Quantity*

According to the Imperial County General Plan, there are three general categories of surface water in Imperial County: freshwater, brackish water, and saline water. Freshwater in the area include the All-American Canal and other canals (such as the Westside Main Canal) and laterals which deliver irrigation water to the agricultural fields within the County. The freshwater contains total dissolved solids (TDS) generally less than 1,000 parts per million (ppm). The brackish waters include the Alamo River, New River and the agricultural drains that flow into these rivers or directly into the Salton Sea. This water generally has TDS in the range of 2,000 to 4,000 ppm. The Salton Sea represents the saline water category and has salinity concentrations that are slightly higher than those of ocean water (TDS of approximately 44,000 ppm).

Groundwater in the area of the Project is brackish (having high salt content). Agricultural practices in the Imperial Valley, including the project area, include aerial and ground application of pesticides and application of chemical fertilizers to both ground and irrigation water. Most of the agricultural fields in the valley are underlain by tile drainage systems (perforated pipelines encapsulated by sand/gravel) installed at a depth of approximately 5- to 7-feet below the ground surface. These tile drains remove excess water to maintain groundwater below the root system of crops and remove soluble salts and compounds leached from the soil during irrigation.

## 3.22 Wastes, Solid and Hazardous

Phase I Environmental Site Assessments were prepared for the portion of the project located on private lands. In addition to a site inspection, this work included environmental database searches conducted by Environmental Data Resources, Inc. (EDR) to determine whether any environmental releases or violations had occurred in the vicinity. The Phase 1 results showed that there were no recognized environmental conditions (RECs) identified on any of the private lands associated with the project.

There have been no hazards or hazardous wastes or materials identified on the BLM lands crossed by the gen-tie line alignments. An EDR data search was conducted for the Sunrise Powerlink Project that included the portion of the project on BLM lands in the vicinity of the Imperial Valley Substation. This search did not indicate ant sites or RECs in the vicinity (see Sunrise Powerlink Project FEIR (Aspen 2008), Section D.10.2.1).

## 3.23 CDCA Plan Conformance

Portions of the proposed Gen-tie Line and one of the alternatives would cross BLM-managed lands that are part of the CDCA. These lands are also part of the Yuha Basin Area of Critical Environmental Concern (ACEC) identified in the CDCA Plan and discussed in Section 3.18.2. More specifically, they are located within a Multiple-Use Class L (Limited Use) designated area within the CDCA. The Multiple-Use Class L (Limited Use) designation protects sensitive, natural, scenic, ecological, and cultural resource values. Lands classified as Multiple-Use Class L are managed to provide for generally lower-intensity, controlled multiple use of resources to protect sensitive values (BLM, 1980).

These BLM lands are located entirely within a utility corridor (Corridor N) that is designated in the Plan. Designated utility corridors indicate that these lands are suitable for the location of utilities. This utility corridor (N) is designated for new electrical transmission towers and cables of 161-kV or above (BLM, 1980, p. 115).

## 3.24 Cumulative Effects Projects

The projects identified on the **Tables 3-5** and **3-6** are located in Imperial County and are under the jurisdiction of the County or the BLM. These projects, if implemented, could result in impacts that could contribute cumulatively to impacts in the area. These lists were generated through consultation with Imperial County and the BLM and represent those projects that have occurred or have the potential to occur in the area.

Two of the cumulative projects, the Campo Verde Solar generation facility and the Silverleaf Solar generation facility, are located on nearby private lands and would potentially use the proposed gen-tie alternatives across BLM lands to interconnect into the regional electrical grid at the Imperial Valley Substation. The Campo Verde Solar generation facility is a proposed PV solar project located on approximately 1,990 acres of disturbed private lands that are currently used for agriculture. In addition to the two gen-tie options on BLM land, the Campo Verde Solar generation facility also has an option to provide its needed electrical interconnection via the gen-tie option on private lands (Alternative 4). This ability to interconnect via a non-BLM alternative makes the Campo Verde Solar generation facility not dependent of BLM's approval of the gen-tie options on BLM-managed land. Therefore, this project is evaluated as a cumulative project in this EA.

The Silverleaf Solar generation facility is a proposed PV solar project located near the Campo Verde Solar generation facility site on approximately 1,096 acres of previously disturbed private land that is currently used for agriculture. This project has proposed gen-tie routes across BLM lands that generally parallel Alternatives 2 and 3 proposed by Campo Verde Solar, but could potentially use the second circuit position on any of the gen-tie lines proposed by Campo Verde Solar for its electrical connection to Imperial Valley Substation. This project is expected to occur on a later schedule because it has

outstanding data needs and the SF-299 application for the relevant BLM lands is not ready to be processed. If this project moves forward, this project is expected to analyze the use of gen-tie lines paralleling Campo Verde Solar Alternatives 2 and 3 and, alternatively, to use any gen-tie line that is approved in connection with the Campo Verde Solar generation facility. For these reasons, the Silverleaf Solar project is addressed as a cumulative project.

| Table 3-5 Approved and/or Proposed Projects In Imperial Valley Under BLM Jurisdiction | | | | | |
|---|---|---|---|---|---|
| **Project Name** | **Description of Project** | **Impacts** | **Size/Location** | **Assumptions** | **Status** |
| Silverleaf Solar Energy<br><br>(Agile Energy) | Project is 160 MW PV solar project with 230- kV transmission gen-tie crossing same BLM land as Campo Verde Project. Solar site is on approximately 1,096 acres of private land currently in active agricultural production. | Impacts on BLM land all would be within Utility Corridor N, 0.4 to 0.9 miles on BLM | Approximately 7 Miles southwest of El Centro | Development would occur after construction of Campo Verde is complete. | Applications pending to County and BLM |
| Centinela Solar Energy<br><br>(LS Power) | Project is 175 MW PV solar project with seven-mile, 230- kV transmission gen-tie crossing BLM land. Solar site is on approximately 2,067 acres of private land, of which approximately 1,861 acres are currently in active agricultural production. | Impacts on BLM land all would be within Utility Corridor N | Approximately 8 Miles southwest of El Centro | | Approved by County and BLM – 12/11 |
| "S" Line Upgrade 230-kV Transmission Line Project (Imperial Irrigation District) | The "S" Line route runs the IID/San Diego Gas & Electric Imperial Valley Substation located on BLM lands. The project is located in Imperial County. IID proposes to upgrade about 18 miles of the 230-kV overhead electrical transmission line to replace the existing wood poles supporting a single 230-kV circuit. | Impacts on BLM land all would be within Utility Corridor, 0.4 miles on BLM N | 18 miles various segments. I-8, Hwy 86, 10 miles southwest of the City of El Centro, near Liebert and Wixom Roads, to the north and terminating at the El Centro Switching Station on Dogwood Road new Villa Road. | For 18 miles of transmission line there are 2.151 acres is on BLM land and the rest is on private land. | End review 12/17/2009; MND filed with mitigation measures. ROW amended/ Renewed 03/2010. |
| Imperial Valley Solar (AES) | 230-kV line -CACA-047740. Develop electric-generating facility with normal capacity of 709 megawatts using concentrated solar power. Constructed on approximately 6,500 acres (10 square miles) of BLM land. | Visual impacts are very noticable and unavoidable. All others less than significance after mitigation. | Imperial Valley, 14 miles west of El Centro, and 4 miles east of Ocotillo Wells. | Impacts of 6,571 acres of BLM lands and 93 acres of Yuha FTHL MA. Impacts to 840 acres of CDFG jurisdictional streambeds. Impacts to 328 known prehistoric and historical surface archaeological resources. | Initiatlly approved by BLM on 9/28/10 and CEC on 9/29/10. The CEC terminated its license for the project on 6/30/11, and BLM has indicated that the project will require further NEPA review should the owner decide to proceed with a new technology. |

| Table 3-5 Approved and/or Proposed Projects In Imperial Valley Under BLM Jurisdiction | | | | | |
|---|---|---|---|---|---|
| **Project Name** | **Description of Project** | **Impacts** | **Size/Location** | **Assumptions** | **Status** |
| Sunrise 500-kV Line CACA-047658 | The project also includes new 230-kV and 138-kV transmission lines and a 230-kV substation and rebuilt 138-kV substation. Project will be 120 feet wide. | Primary issues included cultural (historic properties, Native American lands, and archeological resources), biological (Flat-tailed horned lizard and Western Burrowing Owl), and paleontological (fossils). | Imperial Valley to Penasquitos. Located in the Yuha Basin Area of Critical Habitat in the southwestern portion of Imperial County. 8/9 miles southwest of the town of El Centro. | Impact to 180.1 acres of Yuha FTHL MA. | Final Environmental Impact Statement (EIS) complete. ROW authorized 02/2009 |
| C Solar West Development LLC | CSOLAR Development, LLC West proposed 230-kV line (follows the Dixieland Line alignment) CACA-051644. 250 megawatts of electricity on 1,100 acres of previously disturbed private farmland. Will cross 0.5 mile of public land and then aligns to the existing Southwest Powerlink. | Proposed ROW lies within the Yuha Basin ACEC and in the Yuha Desert Management Area for the flat-tailed horned lizard. Will fully mitigate impacts. Permanently impact 9 acres of public lands (will use existing access to minimize impact). 69.9 acres of BLM land | The proposed access road traverses both BLM lands and private land, and is located on the west side of the Westside Main Canal. Located within the Yuha Desert, and within BLM's Utility Corridor "N" of the CDCA Desert Plan. | Impacts to 13.7 acres of BLM Land and 3 acres of Yuha FTHL MA. | Approved by County and BLM |
| Ocotillo Photovoltaic Solar Field (SDG&E) | SDG&E proposed photovoltaic solar field. CACA-051625. Producing 12 to 14 megawatts of renewable energy. | To be determined in the plan of development (POD). 351.250 (this number will be reduced per their new POD) acres of impact to BLM land. | Located on approximately 100 acres of federal land directly adjacent to SDG&E's Imperial Valley substation. | Impacts to biological resources have yet to be assessed fully. Impacts to 100 acres of BLM Lands. | Application submitted to BLM |

| Table 3-5 Approved and/or Proposed Projects In Imperial Valley Under BLM Jurisdiction | | | | | |
|---|---|---|---|---|---|
| **Project Name** | **Description of Project** | **Impacts** | **Size/Location** | **Assumptions** | **Status** |
| North Gila to Imperial Valley #2 (Southwest Transmission Partners) | Southwest Transmission Partners double-circuit 500-kV line coming in from the east. Project would provide high-voltage transmission capacity in the southeastern U.S> to facilitate the development and interconnection of renewable energy. The total ROW will be approximately 1,903 acres of BLM Land. Project will be approximately 75 miles long. CACA51575. | Visual impacts would be minimized to the extent possible by locating the structures of the new line adjacent to and with the same spacing as existing SWPL structures. Impacts to biological resources will result. | Between North Gila Substation in Yuma County, Arizona and the Imperial Valley Substation in Imperial County. Project will follow the same route as existing Southwest Powerlink 500-kV line. | Impacts to 450 acres of BLM Lands and approximately 3 acres of Yuha FTHL MA disturbed. | Submitted Plan of Development. Have not started on the NEPA analysis. |
| Dixieland Connection to IV Transmission System | Interconnection from the IID Dixieland Substation to the Imperial Valley Substation. | Lies in the Yuha Basin ACEC in the Yuha Desert Management Area for flat-tailed horned lizards and Western burrowing owl (impacts will be mitigated). Potential impacts to cultural and paleontological resources. | Approximately 10 to 12 miles southwest of El Centro, Imperial County. | 20 acres of impacts to FTHL and Western burrowing owl. 34.2 acres of land disturbed. | Application filed and currently still in planning phases. |

| Table 3-5 Approved and/or Proposed Projects In Imperial Valley Under BLM Jurisdiction | | | | | |
|---|---|---|---|---|---|
| **Project Name** | **Description of Project** | **Impacts** | **Size/Location** | **Assumptions** | **Status** |
| C Solar South | Proposed solar energy facility consisting of 200 MW Imperial Solar Energy Center South solar energy facility, electrical transmission lines that would connect the solar power facility to the existing Imperial Valley Substation, and improvement and use of an existing dirt access road, a portion of which traverses BLM lands. | The proposed 120-foot ROW for the electrical transmission line corridor and an existing dirt access road that would be widened by five feet to provide secondary access are both located in the Yuha Basin ACEC in the Yuha Desert Management Area for flat-tailed horned lizards. Potential impacts to cultural and paleontological resources. | Follows the 230-kv lines from the international border going north alignment. | Impacts to 10.1 acres of disturbed lands under the jurisdiction of BLM. | Approved by BLM and County |
| Mount Signal Solar Farm | Proposed 82-LV line (follows the C Solar Imperial Solar Energy Center South alignment). Project would create 200 megawatts of electricity on 1,375 acres of private farmland in the Imperial Valley. Proposed transmission line route would parallel existing 230-kV lines and share transmission line with C Solar Imperial Valley Energy South project. | Lies in the Yuha Basin ACEC in the Yuha Desert Management Area for flat-tailed horned lizards and Western burrowing owl (impacts will be mitigated). Potential impacts to cultural and paleontological resources. | Located on 1,375 acres of privately owned land located 2.5 to 7.5 miles west of Calexico in southern Imperial County. Right-of-Way is located within BLM lands. | | Application filed and currently working on NEPA Analysis. |

| Table 3-6 Approved and/or Proposed Projects In Imperial Valley Under Imperial County Jurisdiction | | | | | |
|---|---|---|---|---|---|
| **ID** | **Project Name/Agency ID** | **Location** | **Ownership** | **Status** | **Project Description** |
| 1 | Las Aldeas Specific Plan | North of Adams Avenue, east of Austin Road and west of La Brucheri Road | Las Aldeas Specific Plan Westshore (Lerno) Development | City of El Centro working on staff report and condition of approval. | The Las Aldeas Specific Plan project is a mixed-use project of 2,156 single-family residential units, 84 multifamily residential units, 467 4-plex residential units, 27.95 acres of commercial zoning, 10.79 acres of light manufacturing zoning, 21.78 acres of park, 48.18 acres of retention basin, and 23.09 acres for two school sites. |
| 2 | Linda Vista | West side of Clark Road and I-8 and McCabe Road | City of El Centro Brent Grizzle | | The Linda Vista project is a mixed-use project consisting of 182 single-family homes and a 6-acre commercial lot. |
| 3 | Desert Village #6 | West of Clark Road between I-8 and Home Road | City of El Centro | Approved granted extension of 2 years for filing final map of subdivision (Aug. 2008) | The Desert Village Project #6 consists of 95 single-family homes, 260 apartments, and 7.3 acres of commercial. |
| 4 | Commons | East side of Dogwood Avenue between I-8 and Danenberg Drive | City of El Centro | | The Commons is a regional shopping center of 780,000 square feet. |
| 5 | Imperial Valley Mall | Southeast corner of Dogwood Road and Danenberg Road | City of El Centro | | The Imperial Valley Mall consists of a regional shopping center of 1,460,000 square feet and 306 single-family houses |
| 6 | Miller Burson | South of Ross Road and east of Austin Road | Miller Burson Development Design and Engineering | Responses to Draft EIR under preparation. | The Miller Burson project consists of a 570 single-family residential project. |
| 7 | Courtyard Villas | Northwest of I-8 and Austin Road | City of El Centro | EIR in Process | The Courtyard Villas is a project consisting of 54 single-family homes. |
| 8 | Willow Bend (East) & Willow Bend (West) | Northeast corner of Clark Road and McCabe Road | City of El Centro | | The Willow Bend (East) and Willow Bend (West) is a combined project of 216 single-family homes. |
| 9 | Lotus Ranch | Southwest corner of I-8 and La Brucheri Road. | Gary McPhetrige | On hold per applicant request (June 2008) | The Lotus Ranch project is a residential project of 616 single-family homes and a 600-student elementary school. |

| Table 3-6 Approved and/or Proposed Projects In Imperial Valley Under Imperial County Jurisdiction | | | | | |
|---|---|---|---|---|---|
| **ID** | **Project Name/Agency ID** | **Location** | **Ownership** | **Status** | **Project Description** |
| 10 | Mosaic | South of SR-86 and bisected by Dogwood Ranch | | EIR in Process | The Mosaic project is a residential project of 1,156 single-family units and 2.7 acres of commercial. |
| 11 | Hallwood/Calexico Place 111 & Casino | Southwest corner of SR-111 and Jasper Road | City of Calexico | Approved | The Calexico Place 111 and Casino project is a mixed-use project of residential, commercial, and casino. |
| 12 | Calexico Mega Park | Southeast corner of SR-111 and Jasper Road | | | The Calexico Mega Park project is a mixed-use project of a commercial and regional shopping center. |
| 13 | County Center II Expansion | Southwest corner of McCabe Road and Clark Road (8th Street in the City of El Centro) | County and ICOE | EIR in Process | mixed-use project of a commercial center, expansion of the Imperial County Office of Education, a Joint-use Teacher Training and Conference Center, Judicial Center, County Park, Jail Expansion, County Administrative Complex, Public Works Administration, and a County Administration Complex. |
| 14 | Desert Springs Oasis | Northwest of the Boley Road and Westmoreland Road | Rob and Don Preston of the Barone Group | EIR in Process | The project components include the construction of a geothermal brine processing facility, a 49.9-MW (net) turbine-generator facility, 230-kV switchyard, power distribution centers, and a short interconnection transmission line to the IID electrical transmission grid exporting generated power. |
| 15 | Mt. Signal | Eight miles southwest of the City of El Centro | MMR Power Solutions, LLC | | The Mt. Signal project is a proposed 49.4 megawatt solar hybrid power station on roughly 974 acres. |
| 16 | Coyote Wells (Wind Zero) | Ocotillo/Nomirage Area | Wind Zero Group, Inc. | Approved | The project is a 944+/- acre privately owned law enforcement training facility to meet the needs of local and regional law enforcement and public safety agencies. This project includes several closed circuit road tracts, shooting ranges, tactical training buildings, classrooms, temporary housing, RV park, 2 heliports, airstrip, along with a number of support facilities |
| 17 | Granite Carroll Sand and Gravel Mine | 4 miles northwest of Ocotillo | Granite | Approved | The Granite Carroll Sand and Gravel Mine is a mining operation project. |
| 18 | Imperial Valley Solar Project (Formerly SES Solar Two) | 4 miles east of Ocotillo | BLM | BLM's Record of Decision Signed | The Imperial Valley Solar Project is an electric generating facility capable of producing approximately 750 megawatts of electricity on approximately 6,500 acres. |

| Table 3-6 Approved and/or Proposed Projects In Imperial Valley Under Imperial County Jurisdiction | | | | | |
|---|---|---|---|---|---|
| **ID** | **Project Name/Agency ID** | **Location** | **Ownership** | **Status** | **Project Description** |
| 19 | Imperial Solar Energy Center West | 8 miles west of the City of El Centro | | Approved by County and BLM | The Imperial Solar Energy Center West project is a photovoltaic solar facility capable of producing approximately 250 megawatts of electricity on approximately 1,130 acres. |
| 20 | Imperial Solar Energy Center South | Mt. Signal area of unincorporated Imperial County, approximately eight miles west of the City of Calexico. | CSOLAR Development, LLC | Approved by County and BLM | The proposed solar energy facility consists of three primary components: 1) the construction and operation of a 200 Megawatt Imperial Solar Energy Center South solar energy facility; 2) the construction and operation of electrical transmission lines that would connect the solar power facility to the existing Imperial Valley Substation; and, 3) the improvement and use of an existing dirt access road, a portion of which traverses BLM lands. As part of the project, the facility would interconnect to the utility grid at the 230-kV side of the Imperial Valley Substation via a 230-kV electrical transmission line and associated access. |
| 21 | Superstition Solar 1 | Westmorland | Superstition Sunpeak | EIR in Process | The Superstition Solar 1 project is a photovoltaic solar energy facility capable of producing 500 megawatts of electricity on approximately 5,516 acres. |
| 22 | Mount Signal Solar | Mt. Signal | 8 Minute | In Process | The Mount Signal Solar project is a solar energy project located on approximately 1,375 acres of agriculture land and will produce approximately 200 megawatts of electricity. |
| 23 | Bethel Solar X, Inc | Calexico | Jim Doyle | In Process | The Bethel Solar X, Inc project is a solar hybrid energy project that will produce approximately 49.40 megawatts of electricity on approximately 571 acres of land. |
| 24 | Energy Solar Source I, LLC | Niland | Energy Source | In process | The Energy Solar Source I project is a solar energy project that will produce 80 megawatts of electricity on approximately 480 acres of land. |
| 25 | Energy Solar Source II, LLC | Niland | Energy Source | In process | The Energy Solar Source II project is a solar energy project that will produce 80 megawatts of electricity on 480 acres of land. |
| 26 | Salton Sea Solar Farm I | Calipatria | 8 minute/81BM | County of Imperial just received | The Salton Sea Solar Farm I project is a solar energy project that will produce approximately 49.9 megawatts of electricity on approximately 320 acres of land. |

| Table 3-6 Approved and/or Proposed Projects In Imperial Valley Under Imperial County Jurisdiction | | | | | |
|---|---|---|---|---|---|
| **ID** | **Project Name/Agency ID** | **Location** | **Ownership** | **Status** | **Project Description** |
| 27 | Salton Sea Solar Farm Ii | Calipatria | 8 minute/81BM | County of Imperial just received | The Salton Sea Solar Farm II project is a solar energy project that will produce approximately 100 megawatts of electricity on approximately 623 acres of land. |
| 28 | Calipat Solar Farm I | Calipatria | 8 minute energy | In process | The Calipat Solar Farm I project is a solar energy project that will produce approximately 50 megawatts of electricity on approximately 280 acres of land. |
| 29 | Calipat Solar Farm II | Calipatria | 8 minute energy | In Process | The Calipat Solar Farm II project is a solar energy project that will produce approximately 50 megawatts of electricity on approximately 280 acres of land. |
| 30 | Frink Road Solar Power | Niland | Granite Construction | In process | The applicant Granite Construction Company proposes to construct a Solar Power Generator Farm. It will be comprised of 436 Integrated High Concentration Photovoltaic Solar Power Generators, 200 Square foot single story equipment building, twenty three (23) concrete transformer pads, onsite water storage tank, and an all weather fire access road. Additionally, a 10-acre substation is proposed to be constructed in the northern portion of the project site. |
| 31 | Keystone Solar Power | Mesquite SPA | Granite Construction | In process | The Applicant, Granite Construction Company, is proposing to operate a 6.06 megawatt photovoltaic solar plant. The project would include a 200-square foot single story equipment building five (5) concrete transformer pads, an all-weather fire access road, a water storage tank and 88 high-concentration photovoltaic (HCPV) Solar Power Generators (Machines). |
| 32 | Midway Solar Farm I | Calipatria | 8 minute | County of Imperial just received | The Midway Solar Farm I project is a solar photovoltaic project that will produce approximately 50 megawatts of electricity on approximately 326 acres of land. |
| 33 | Midway Solar Farm II | Calipatria | 8 minute | County of Imperial just received | The Midway Solar Farm II project is a solar photovoltaic energy project that will produce approximately 155 megawatts of electricity on approximately 803 acres of land. |

| Table 3-6 Approved and/or Proposed Projects In Imperial Valley Under Imperial County Jurisdiction | | | | | |
|---|---|---|---|---|---|
| **ID** | **Project Name/Agency ID** | **Location** | **Ownership** | **Status** | **Project Description** |
| 34 | IV Solar Company | Niland | Sun Peak Solar | Approved | The IV Solar Company project is a solar photovoltaic energy project that will produce approximately 23 megawatts of electricity on approximately 123 acres of land. |
| 35 | Chocolate Mountain | Niland | 8minute Energy | Approved | The Chocolate Mountain is a solar photovoltaic energy project that will produce approximately 49.9 megawatts of electricity on approximately 320 acres of land. |
| 36 | Ocotillo Express | Ocotillo | Pattern Energy | EIR/EIS in progress | The Ocotillo Express Wind Project consists of the construction and operation of wind turbine generators and associated facilities necessary to successfully generate up to 550 megawatts of electrical energy. |
| 37 | Hudson Ranch II | Niland | HR Power II | EIR to be prepared | The Hudson Ranch II project is a geothermal energy project that will produce approximately 49.9 megawatts of electricity on approximately 326.26 acres of land. |
| 38 | Black Rock Unit # 1 2 3 Geothermal Project | Niland | Calenergy | Approved by Imperial County Planning Department and California Energy Commission | Black Rock Unit # 1 2 3 project is a geothermal energy project that will produce approximately 159 megawatts of electricity on approximately 160 acres of land. |
| 39 | Wister Project | Niland | Ormat | EIR in process | The Wister Project is a 49.9 net MW geothermal power plant that will includes up to 50 geothermal water wells. This project is located in within the Salton Sea Known Geothermal Resource Area (KGRA). The project site is currently agricultural. |
| 40 | Ram Power/Overlay | Brawley | Ram Power | EIR in process | Ram Power Overlay is a geothermal energy project that will produce approximately 50 megawatts of electricity on approximately 27,875 acres of land. |

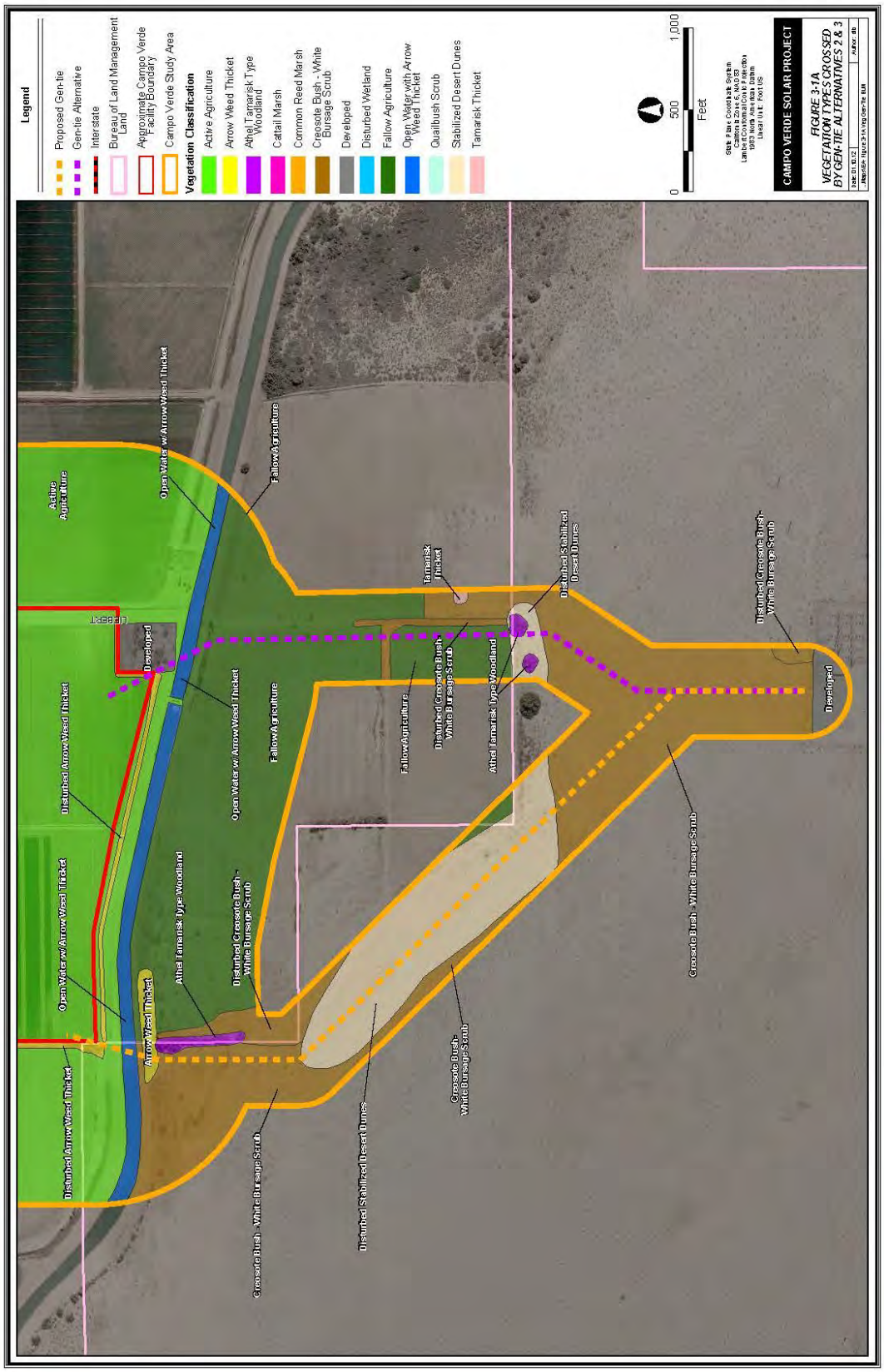
**Table 3-6 Approved and/or Proposed Projects In Imperial Valley Under Imperial County Jurisdiction**

| ID | Project Name/Agency ID | Location | Ownership | Status | Project Description |
|---|---|---|---|---|---|
| 41 | Orni 19 | Brawley | Ormat | EIR in Process | ORNI 19, LLC/Ormat Nevada Inc. proposes to permit, construct, operate and maintain the East Brawley Geothermal Development Project that would consist of the following facilities. A 49.9 net MW geothermal power plant consisting of up to six (6) OEC binary generation units (12.5 MW gross each) with vaporizers, turbines, generators, condensers, pre-heaters, pumps and piping, motive fluid (isopentene) storage, a motive fluid vapor recovery system, a gas scrubber and a regenerative thermal oxidizer (RTO) and related equipment. |
| 42 | Campo Verde Solar Generation Facility | 7 miles southwest of the community of El Centro, California | Campo Verde Solar, LLC | CUP Application Received/EIR in process | The proposed project is a photovoltaic (PV) solar generating facility located approximately 7 miles southwest of the community of El Centro, California. The approximately 1,990 acre project site is located south of Interstate 8 and west of Drew Road and is currently private land used for agriculture. |
| 43 | Mayflower Solar Farm Project | 5.5 mile south southeast of the town of Calipatria | Solar Gen 2,LLC | CUP Application Received 6/24/11 | The project is a nominal 50 megawatt alternating current (MWAC) solar photovoltaic (PV) energy generation project on approximately 482 acres. |
| 44 | Arkansas | 2.5 miles east of the town of Calipatria | Solar Gen 2, LLC | CUP Application Received 6/24/11 | The project is a nominal 50 megawatt alternating current (MWAC) solar photovoltaic (PV) energy generation project on approximately 481 acres. |
| 45 | Sonora | 4.5 miles north northeast of the town of Calipatria | Solar Gen 2, LLC | CUP Application Received 6/27/11 | The project is a nominal 50 megawatt alternating current (MWAC) solar photovoltaic (PV) energy generation project on approximately 488 acres. |
| 46 | Alhambra | 3.5 miles south southeast of the town of Calipatria | Solar Gen 2, LLC | CUP Application Received 6/24/11 | The project is a nominal 50 megawatt alternating current (MWAC) solar photovoltaic (PV) energy generation project on approximately 482 acres. |
| 47 | Acorn Greenworks | 9.7 miles southwest of El Centro just west of the Westside Main Canal. | Silverado Power, LLC dba Acorn Greenworks, LLC | CUP Application Received 6/30/11. | The project is a 150 megawatt alternating current solar photovoltaic (PV) project with 5,280 feet of transmission line. The project site is comprised of seven parcels (APN 051-380-032, 033, 052-170-027, 072, 073, 01 & 051-390-023) on 693 acres. |

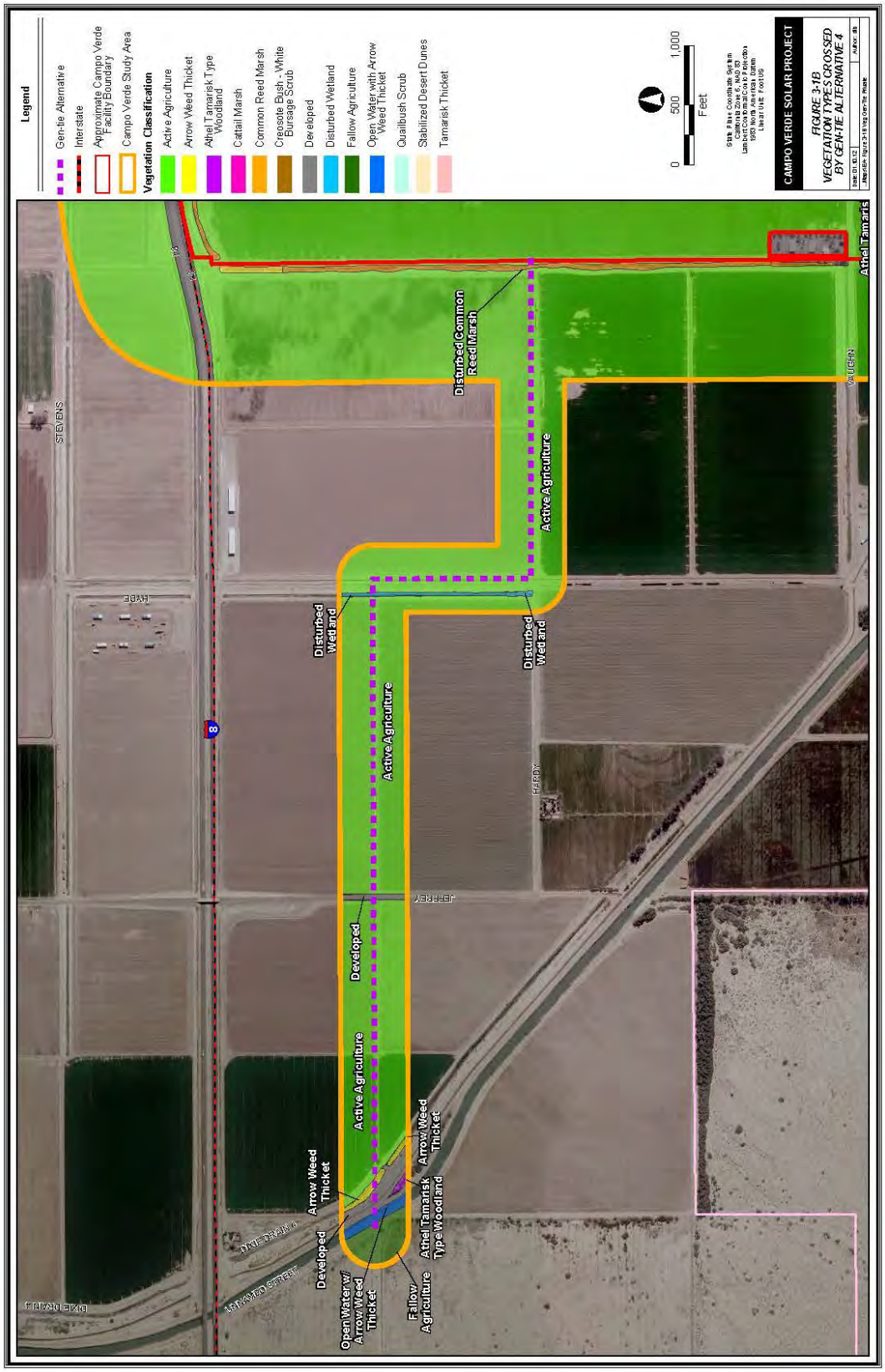
**Table 3-6 Approved and/or Proposed Projects In Imperial Valley Under Imperial County Jurisdiction**

| ID | Project Name/Agency ID | Location | Ownership | Status | Project Description |
|---|---|---|---|---|---|
| 48 | Centinela Solar Energy | 8 miles southwest of El Centro | LS Power | Approved | Project is 175 MW PV solar project with transmission gen-tie crossing BLM land. |
| 49 | Silverleaf Solar Project | 7 miles southwest of El Centro | Agile Energy | CUP application pending | Project is 160 MW PV solar project with transmission gen-tie crossing BLM land. |

## FIGURE 3-1A VEGETATION TYPES CROSSED BY GEN-TIE ALTERNATIVES 2 AND 3



## FIGURE 3-1B VEGETATION TYPES CROSSED BY GEN-TIE ALTERNATIVE 4



## FIGURE 3-2 REGIONAL FAULTS AND SEISMICITY

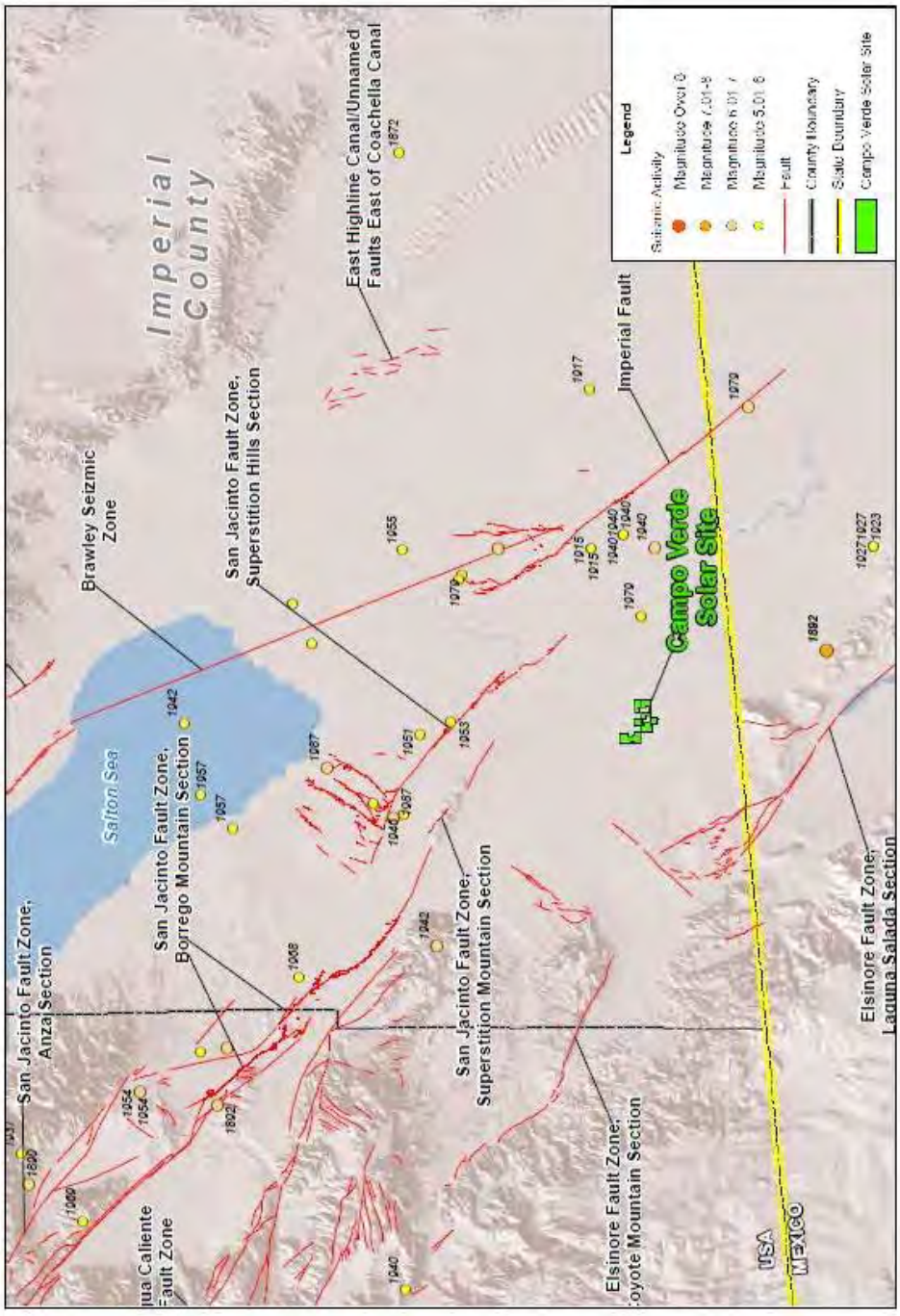



**Figure 3-2**
Regional Faults and Seismicity

## FIGURE 3-3 SOIL TYPES GROSSED BY THE GEN-TIE ALTERNATIVES

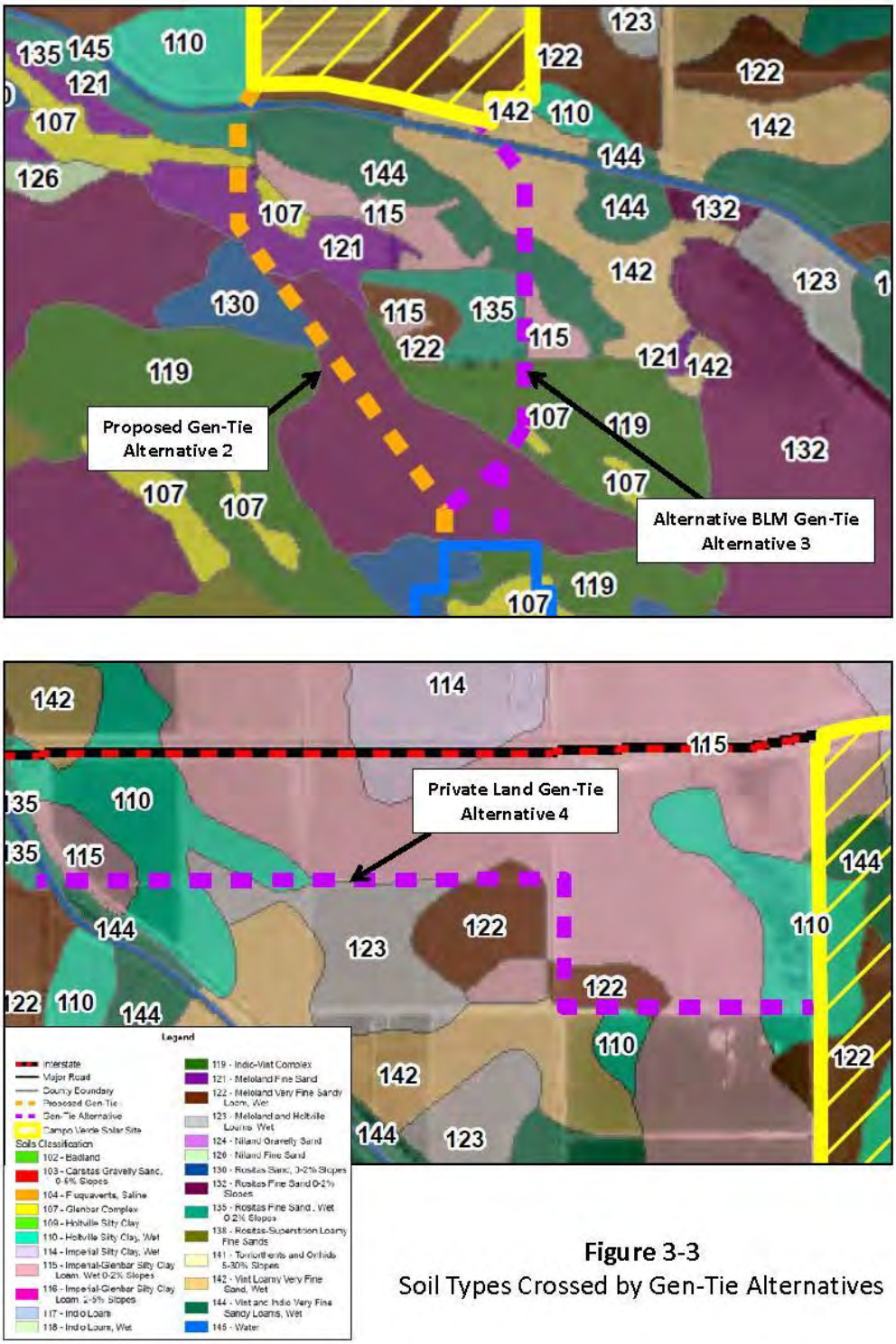



**Figure 3-3**
Soil Types Crossed by Gen-Tie Alternatives

**FIGURE 3-4 EXISTING VIEW OF PROPOSED ALTERNATIVE 2 GEN-TIE ROUTE**

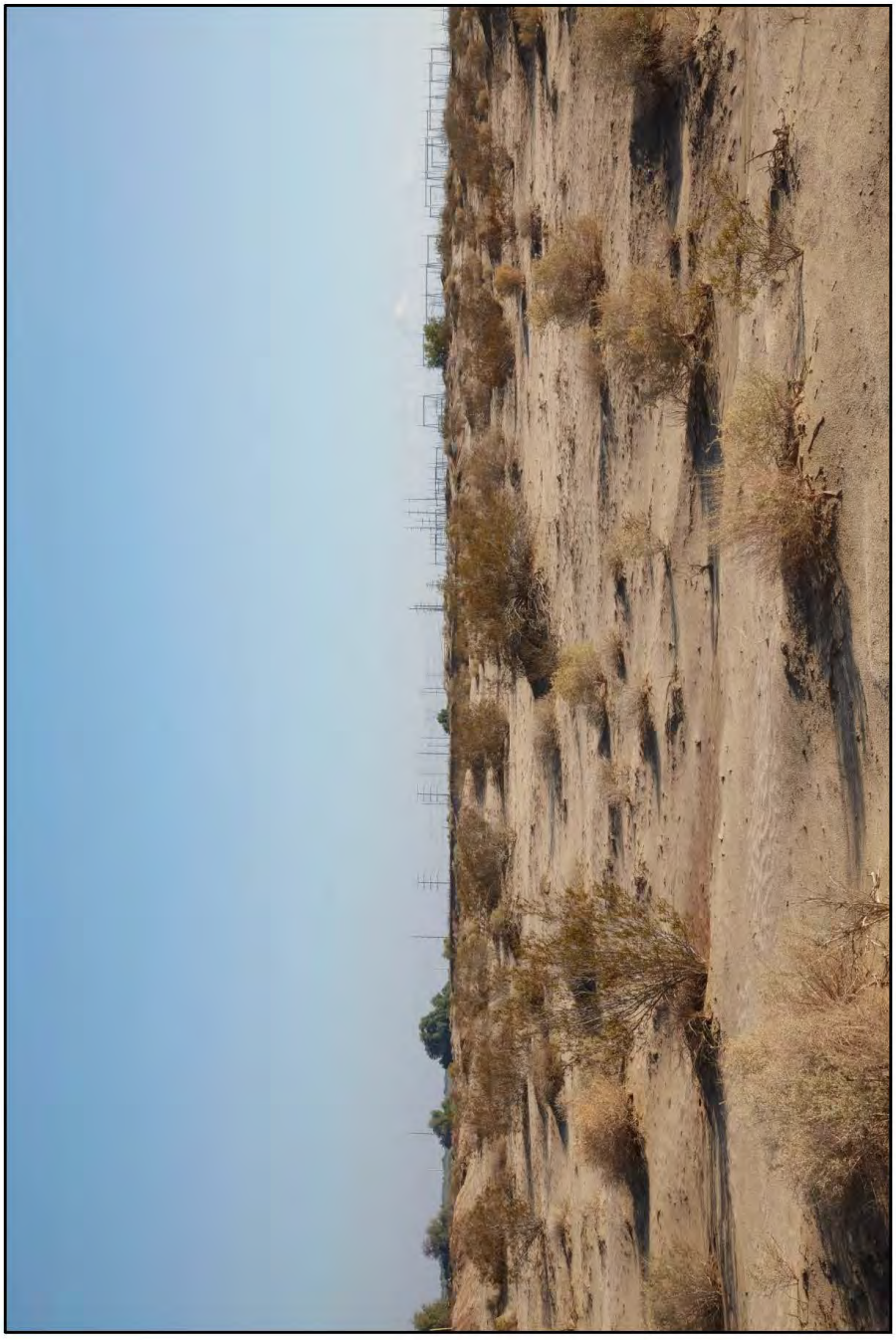


**Figure 3-4**
Existing View of Proposed Alternative 2 Gen-Tie Route
On BLM Land Looking Southeast Towards Imperial Valley Substation

## FIGURE 3-5 EXISTING VIEW OF ALTERNATIVE 3 GEN-TIE ROUTE

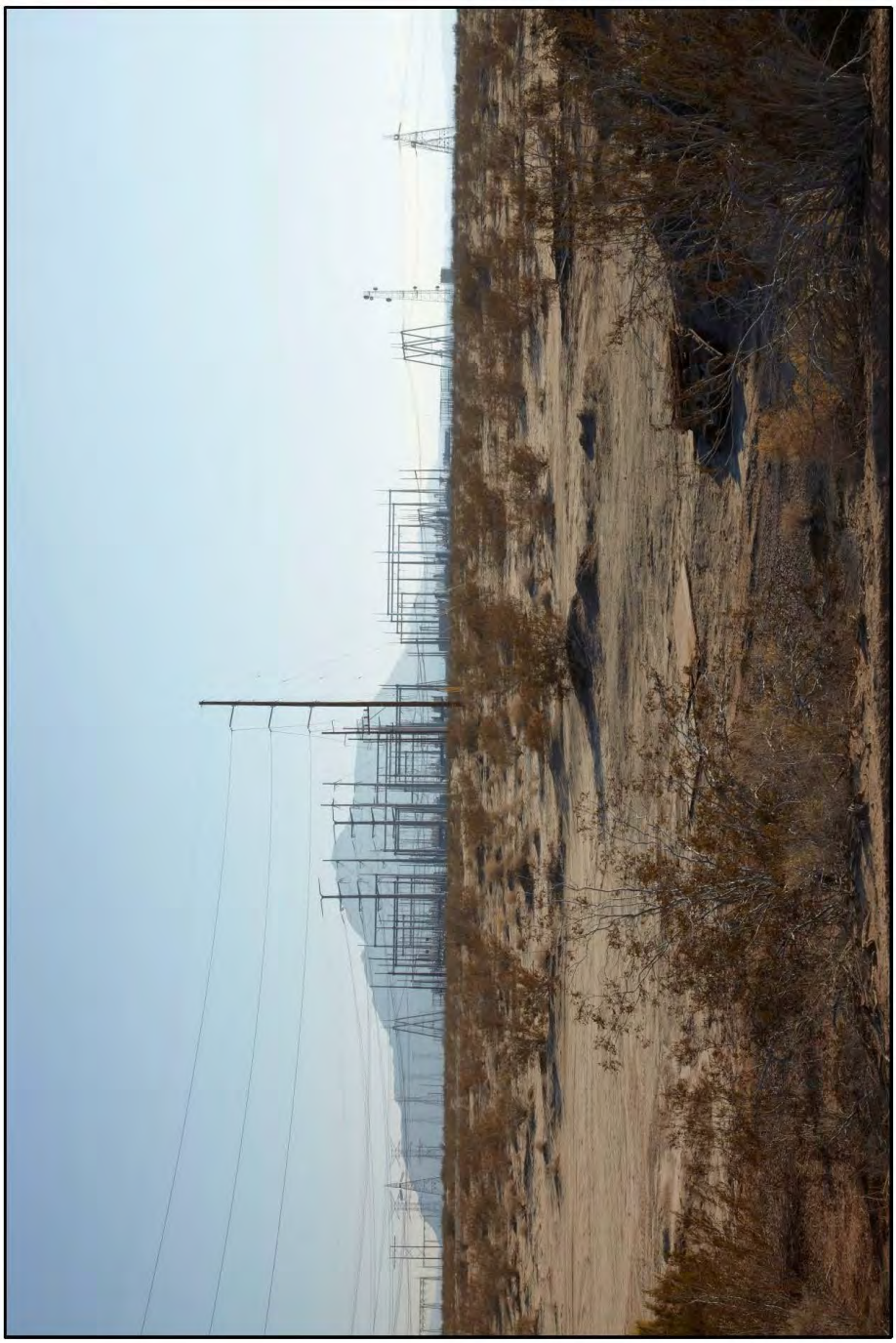


**Figure 3-5**
Existing View of Alternative 3 Gen-Tie Route
On BLM Land Looking South Towards Imperial Valley Substation

## FIGURE 3-6 EXISTING VIEW OF ALTERNATIVE 4 GEN-TIE ROUTE

**Figure 3-6**
Existing View of Alternative 4 Gen-Tie Route Area
Looking SE from Interstate 8

# 4.0 ENVIRONMENTAL CONSEQUENCES

Implementation of the Proposed Action and alternatives described in Chapter 2 may result in direct, indirect, or cumulative effects on the physical, biological, and social components of the human environment. This chapter analyzes the anticipated environmental consequences (impacts) that may occur as a result of implementing the Proposed Action or one of the alternatives. Implementation includes construction, operation and decommissioning of the Proposed Action or an alternative. Plans for decommissioning will be prepared and submitted for approval to BLM at the end of the project's operation life, which is anticipated to be 50 years.

Impacts may be direct, indirect, or cumulative. Direct impacts are those effects that are caused by the action and occur at the same time and place as the action. Indirect impacts are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable (40 CFR §1508.8). Direct and indirect impacts are weighted the same, and need not be distinguished where it is difficult to do so (BLM National Environmental Policy Act Handbook, H-1790-1, page 56). Cumulative impacts are those that result from the impact of the action when added to other past, present, and reasonably foreseeable future actions (40 CFR §1508.7).

## 4.1 Air Resources

Air quality impacts related to construction were calculated using the latest URBEMIS2007 air quality model developed by the California Air Resources Board (CARB). URBEMIS2007 has been approved by Imperial County Air Pollution Control District (ICAPCD) and Imperial County for construction emission calculations. URBEMIS2007 incorporates emission factors from the EMFAC2007 model for on-road vehicle emissions and the OFFROAD2007 model for off-road vehicle emissions. Default settings were used within the model to perform calculations for the proposed gen-tie project. Furthermore, to ensure that projected impacts are conservative, the gen-tie project's schedule assumes that construction activities could occur on the gen-tie line and the Campo Verde Solar generation facility simultaneously.

Under CAA regulations in Title 40 of the Code of Federal Regulations (CFR) Part 93 and the provisions of Part 51, Subchapter C, Chapter I, Title 40, Appendix W of the CFR, of the CAA as amended, federal agencies are required to demonstrate that federal actions conform with the applicable SIP. The provisions of Part 51, Subchapter C, Chapter I, Title 40, of the CFR, in effect December 27, 1993, applicable to the subparts listed in this regulation were adopted by the ICAPCD.

The United States Environmental Protection Agency (EPA) general conformity rule applies to federal actions occurring in nonattainment or maintenance areas when the total direct and indirect emissions of nonattainment pollutants (or their precursors) exceed specified thresholds. The emission thresholds that trigger requirements of the conformity rule are called *de minimis* levels. **Table 4-1** below identifies the federal nonattainment pollutants and the relevant *de minimis* emission thresholds for nonattainment areas.

| Table 4-1 De Minimus Emission Thresholds | | | | | | | |
|---|---|---|---|---|---|---|---|
| De Minimus Levels (tons/year) | | | | | | | |
| **Air Basin** | **Carbon Monoxide (CO)** | **Nitrous Oxides ($NO_x$)** | **Volatile Organic Compounds (VOC)** | **Nitrous Dioxide ($NO_2$)** | **Particulate Matter less than 10 microns ($PM_{10}$)** | **Particulate Matter less than 2.5 microns ($PM_{2.5}$)** | **Sulfur Dioxide ($SO_2$)** |
| Salton Sea Air Basin | 100 | 100 | 100 | 100 | 70 | 100 | 100 |

*Source: 40 C.F.R. § 93.153(b)(1)*

### *4.1.1 Alternative 1 – No Action*

Under Alternative 1, the proposed and alternative gen-tie line on federal land managed by BLM would not be approved by the BLM. As a result, a gen-tie on federal land managed by BLM would not be constructed to interconnect the Campo Verde Solar generation facility to the regional transmission grid. The Campo Verde Solar generation facility would obtain gen-tie access via an alternative means that does not involve BLM-managed land or issuance of a separate ROW authorization.

It is expected that the federal lands managed by the BLM would continue to remain in their existing condition, with no new structures or facilities constructed or operated in the locations of the proposed gen-tie lines. As a result, none of the air emissions from the proposed gen-ties on federal lands managed by BLM would occur. However, the gen-tie for the Campo Verde Solar generation facility could possibly be built on private land so similar air impacts would occur and in the same air basin.

However, because of their location within a designated utility corridor, the federal lands managed by BLM on which the gen-tie lines are proposed would become available to other uses that are consistent with BLM's land use plan, including gen-tie lines for other solar projects. In addition, without this gen-tie line on federal lands managed by BLM, other renewable energy projects may be constructed with gen-ties in other locations to meet state and federal mandates, and those projects would have similar impacts in other locations.

### *4.1.2 Alternative 2*

*Direct and Indirect Impacts*

Construction of the proposed gen-tie line would occur over a 2 to 6 month period. The construction activities would include site preparation at each structure location, foundation construction at each location, structure assembly and erection, conductor stringing and tensioning, and cleanup / restoration.

This gen-tie alternative would be 1.0 miles long and would have approximately 10 structures that would be located off the solar generation facility site on BLM-managed land. Construction activity would generally occur over a standard five-day workweek with activity limited to daytime hours. Construction would progress in a linear fashion along the transmission corridor so only a few acres would be actively disturbed at any one time during construction. As a result, few pieces of construction equipment would be operating at the same time and in the same location.

The gen-tie would be built at the same time as the Campo Verde Solar generation facility to facilitate transmission interconnection. To calculate conservative emission estimates, the emissions from construction of the gen-tie were assumed to coincide with construction of the solar generation facility. Construction equipment would be operating at the solar generation facility site and along the proposed gen-tie route. In addition, the collective construction activities would be expected to generate traffic from construction workers, deliveries and vendors that were also factored in to the conservative emission evaluation.

**Table 4-2** identifies expected emissions generated by construction of the gen-tie and solar generation facility on an annual basis. These annual construction emissions were calculated to compare the yearly conservative emission quantity with the *de minimis* emissions thresholds.

**Table 4-2 Expected Emissions Summary Emission Thresholds**

tons/year

| Emissions | Carbon Monoxide (CO) | Nitrous Oxides ($NO_x$) | Volatile Organic Compounds (VOC) | Nitrous Dioxide ($NO_2$) | Particulate Matter less than 10 microns ($PM_{10}$) | Particulate Matter less than 2.5 microns ($PM_{2.5}$) | Sulfur Dioxide ($SO_2$) |
|---|---|---|---|---|---|---|---|
| **2013 emissions (unmitigated)** | 16.2 | 21.12 | 2.88 | Included in $NO_x$ numbers | 33.36 | 7.8 | 0 |
| **De minimus level** | 100 | 100 | 100 | 100 | 70 | 100 | 100 |
| **Exceeds threshold?** | no | no | no | no | no | no | no |
| **2013 emissions (mitigated)** | 16.2 | 14.04 | 2.88 | Included in $NO_x$ numbers | 3.12 | 1.2 | 0 |
| **Exceeds threshold?** | no | no | no | no | no | no | no |

*Source: Ldn, 2011*

Based on the emissions shown in **Table 4-2**, construction emissions are expected to be far below established *de minimis* levels. Both unmitigated emissions and emissions after the required mitigation measures (outlined below) are included. As shown, both unmitigated and mitigated emissions are well below the *de minimus* thresholds. The emissions estimated in Table 4-2 are the cumulative emissions from constructing the gen-

tie and the Campo Verde Solar generation facility. Given that the gen-tie is much smaller in scale than the solar generation facility and has a shorter construction period, the emissions generated from constructing the gen-tie will be only a small percentage of the totals listed in Table 4-2.

Operation and maintenance of the proposed gen-tie would result in lower emissions than project construction. There would be no stationary emission sources and operations and maintenance of the project will involve primarily periodic maintenance and worker trips only. Although emissions are expected, they would be well below the *de minimis* levels in Table 4.1 given that the gen-tie would only require annual inspection and maintenance only when needed.

*Mitigation*

Even though air emissions associated with construction and operation of the gen-tie line would be less than de minimis, the following mitigation measures would be employed to further reduce emissions.

To reduce $PM_{10}$ emissions:

- Apply water during grubbing activities to all active disturbed areas.
- Apply water to all onsite roadways or other County approved dust suppression additives.
- Reduce all construction related traffic speeds onsite to below 15 miles per hour (MPH).

Additionally, under Rule 801 of Imperial County's Rules and Regulations for Construction and Earthmoving Activities, a dust control plan would be developed and implemented. The plan will include specific treatments and control measures and the schedule for implementation, per ICAPCD requirements.

*Residual Impacts*

After the application of the identified mitigation measures, impacts to air quality resulting from construction and operation of the gen-tie line would be low.

### *4.1.3 Alternative 3*

Air emissions from the construction, operation, and decommissioning of this gen-tie line alternative would be essentially the same as, if not less than, that described for Alternative 2. This gen-tie alternative would be about 0.8 miles long and would have approximately 7 structures that would be located off the solar generation facility site. Because this gen-tie alternative is shorter than Alternative 2, the construction duration and the associated construction emissions would be less than for Alternative 2. Accordingly, like Alternative 2, conservative emissions for this alternative would be well under the *de minimus* thresholds.

The mitigation that would be applied and the residual air impacts would also be the same as Alternative 2.

### *4.1.4 Alternative 4*

Air emissions from the construction, operation, and decommissioning of this gen-tie line alternative would be similar to that described for Alternative 2. While longer and having more structures (this gen-tie alternative would be about 1.75 miles long and would have approximately 16 structures that would be located off the solar generation facility site), this route has completely flat terrain and no need for any clearing. Therefore, the additional emissions generated due to constructing a longer gen-tie line relative to Alternative 2 would be offset to some extent by the fact that fewer emissions would be generated to prepare the Alternative 4 site for construction. While emissions for this alternative could be slightly higher, like Alternative 2, conservative emissions for this alternative would be well under the *de minimus* thresholds.

The mitigation that would be applied and the residual air impacts would also be the same as Alternative 2.

## 4.2 Biological – Vegetation

Direct impacts on vegetation are considered to include disruption, trampling, or removal of rooted vegetation resulting in a reduction in the total acres of native vegetation and actions that unequivocally cause a reduction of total numbers of plant*s* and/or reduction or loss of total area, diversity, vigor, structure, or function of vegetative habitat. This includes loss of suitable habitat due to surface disturbance. Direct impacts can also include decreased plant vigor or health from reduced air or water quality.

Indirect impacts can occur later in time or are farther removed in distance while still being reasonably foreseeable and related to the project. Potential indirect impacts include introduction of invasive species by various vectors or conditions that compete with native species and can result in habitat degradation.

Section 3.2 describes the vegetation communities and sensitive species that occur in the area that could be impacted by the project alternatives. It also describes the vegetation surveys that have been conducted for the project and their results.

The three gen-tie line alternatives would result in temporary impacts and permanent impacts to vegetation communities. Temporary impacts are those that would occur during construction while permanent impacts are those that would result from the location of the permanent structures associated with the project. **Table 4-3** summarizes the expected impacts to vegetation communities from each of the project alternatives. The more detailed discussion of impacts resulting from each alternative are described below.

### *4.2.1 Alternative 1 – No Action*

Under Alternative 1, the proposed and alternative gen-tie line on federal land managed by BLM would not be approved by the BLM. As a result, a gen-tie on federal land managed by BLM would not be constructed to interconnect the Campo Verde Solar generation facility to the regional transmission grid. The Campo Verde Solar generation facility would obtain gen-tie access via an alternative means that does not involve BLM-managed land or issuance of a separate ROW authorization.

It is expected that the federal lands managed by the BLM would continue to remain in their existing condition, with no new structures or facilities constructed or operated in the locations of the proposed gen-tie lines. As a result, none of the vegetation emissions from the proposed gen-ties on federal lands managed by BLM would occur. However, the gen-tie for the Campo Verde Solar generation facility could possibly be built on private land so vegetation impacts would occur but on disturbed lands in a nearby location.

However, because of their location within a designated utility corridor, the federal lands managed by BLM on which the gen-tie lines are proposed would become available to other uses that are consistent with BLM's land use plan, including gen-tie lines for other solar projects. In addition, without this gen-tie line on federal lands managed by BLM, other renewable energy projects may be constructed with gen-ties in other locations to meet state and federal mandates, and those projects would have similar impacts in other locations.

### *4.2.2 Alternative 2 – Proposed Action*

*Direct and Indirect Impacts*

#### 4.2.2.1 GENERAL VEGETATION

Impacts to vegetation communities are shown in **Table 4-3**. Temporary impacts during construction would be about 7.40 acres and permanent impacts following construction would be 0.05 acres.

| Table 4-3 Proposed Impacts to Vegetation Communities by Alternative | | | |
|---|---|---|---|
| **Vegetation Community** | **Alternative 2 Proposed Gen-Tie** | **Alternative 3 BLM Gen-Tie** | **Alternative 4 Private Land Gen-Tie** |
| **Permanent Impacts** | | | |
| **Active Agriculture (AG-A)** | -- | -- | 0.09 |
| **Arrow Weed Thicket (AS)** | -- | -- | -- |
| **Arrow Weed Thicket Disturbed (AS-D)** | -- | -- | -- |
| **Athel Tamarisk Type Woodland (AW)** | -- | -- | -- |
| **Common Reed Marsh- Disturbed (CRM-D)** | -- | -- | -- |
| **Creosote Bush - White Bursage Scrub (CBS)** | 0.03 | 0.03 | -- |
| **Creosote Bush - White Bursage Scrub - Disturbed (CBS-D)** | -- | -- | -- |
| **Developed (DEV)** | -- | -- | -- |
| **Fallow Agriculture (AG-F)** | -- | 0.02 | 0.01 |
| **Quailbush Scrub (BSS)** | -- | -- | -- |
| **Quailbush Scrub- Disturbed (BSS-D)** | -- | -- | -- |
| **Tamarisk Thicket (TS)** | -- | -- | -- |
| **Stabilized Desert Dunes- Disturbed (SDD-D)** | 0.02 | -- | -- |
| **Total** | **0.05** | **0.05** | **0.10** |
| **Temporary Impacts** | | | |
| **Active Agriculture (AG-A)** | -- | -- | 9.08 |
| **Arrow Weed Thicket (AS)** | 0.21 | -- | -- |
| **Arrow Weed Thicket Disturbed (AS-D)** | -- | -- | -- |
| **Athel Tamarisk Type Woodland (AW)** | 0.03 | 0.01 | -- |
| **Common Reed Marsh- Disturbed (CRM-D)** | -- | -- | -- |
| **Creosote Bush - White Bursage Scrub (CBS)** | 5.54 | 5.27 | -- |
| **Creosote Bush - White Bursage Scrub - Disturbed (CBS-D)** | -- | 0.20 | -- |
| **Developed (DEV)** | -- | -- | 0.34 |
| **Fallow Agriculture (AG-F)** | -- | 2.10 | 0.50 |
| **Disturbed Wetland** | -- | -- | 0.05 |
| **Quailbush Scrub (BSS)** | -- | -- | -- |
| **Quailbush Scrub- Disturbed (BSS-D)** | -- | -- | -- |
| **Tamarisk Thicket (TS)** | -- | -- | -- |
| **Stabilized Desert Dunes- Disturbed (SDD-D)** | 1.91 | 0.43 | -- |
| **Total** | **7.69** | **8.01** | **10.19** |

#### 4.2.2.2 SPECIAL STATUS AND PRIORITY PLANT SPECIES

No federally listed, state-listed or BLM sensitive plant species are known or expected to occur within the Alternative 2 gen-tie corridor. Therefore, there are no anticipated impacts to federally listed, state-listed or BLM sensitive plant species as the result of implementation of this alternative.

##### *4.2.2.2.1 Priority Plant Species*

Abram's spurge (CNPS 2.2), glandular ditaxis (CNPS 2.2), and California ditaxis (CNPS 3.2) have a low potential for occurrence within the Alternative 2 gen-tie survey area. Rock nettle (CNPS 2.2 and CNDDB special plant), Brown turbans, Parish's desert-thorn and hairy stickleaf (CNPS 2.3 and CNDDB special plants), and Utah vine milkweed (CNPS 4.2) have a low to moderate potential for occurrence within the corridor.

Impacts to these species are not anticipated because they were not observed during surveys and habitat is of low quality. However, if impacts occur, they will be relatively minor based on the small geographic impact areas (7.40 acres of temporary impacts and 0.05 acres of permanent impacts).

Though considered sensitive species, the relatively low ranking status of these species (as indicated by the rankings indicated above [CNPS 2.2, etc.] and defined in Section 3.2) means that mitigation would be satisfied through the mitigation that will be conducted for these species' habitats (e.g., mitigation for the creosote bush – white bursage scrub habitat would mitigate for impacts to the preferred habitats for these species). Therefore, species-specific mitigation would not be necessary.

#### 4.2.2.3 RIPARIAN HABITAT OR SPECIAL STATUS NATURAL COMMUNITIES

For purposes of this report, sensitive vegetation communities (i.e., natural communities) are those identified by the CDFG (State of California 2010b). Reasons for the designation as "sensitive" include restricted range, cumulative losses throughout the region, and a high number of endemic sensitive plant and wildlife species that occur in the vegetation communities. Riparian habitats occur on the perimeters of surface or near-surface waters and provide a transition zone between aquatic and terrestrial zones. In this project area, three communities would be characterized as riparian – arrow weed thicket, common reed marsh, and disturbed wetland. None would be disturbed permanently and only one, arrow weed thicket, would be temporarily impacted by this alternative and it is discussed below.

As shown in **Table 4-3**, arrow weed thicket is the only special status natural community potentially affected by the proposed project. Alternative 2 would impact 0.21 acres temporarily and none permanently. Though very limited in extent (0.21 acres of temporary and 0 acres of permanent impact), these impacts would be mitigated through reclamation.

Soil disturbed during construction and continued use of the access roads along the gen-tie line may result in the introduction or increased density of non-native invasive plant species. The risk of non-native invasive species establishment in sensitive natural communities will be assessed as part of the Weed Management Plan that will be prepared for the project.

#### 4.2.2.4 JURISDICTIONAL WATERS

Based on the preliminary jurisdictional delineation report and coordination with the ACOE and CDFG, there would be no impacts to jurisdictional waters from implementation of this gen-tie alternative. The one potential ACOE non-wetland "Water of the U.S." and CDFG jurisdictional water of the State (Westside Main Canal) identified along this alternative would be spanned and not affected. The Applicant is continuing consultation with the agencies to finalize the federal and state jurisdictional waters report.

#### 4.2.2.5 CALIFORNIA DESERT CONSERVATION AREA

The Alternative 2 gen-tie line is an allowable use under the CDCA, as the proposed ROW area is located within the CDCA designated "Utility Corridor N." This area is also designated as an ACEC and the BLM manages all land uses within the ACEC in order to minimize impact to this sensitive area. All proposed impacts to resources discussed in Section 4 are in conformance with the CDCA and maintain the integrity and intent of the CDCA Plan.

*Mitigation*

A number of general measures, designed to reduce potential indirect impact to resources in the project area as well as restore and/or improve the quality of habitat in the project area will be implemented as part of the Project design. These are outlined in **Table 2-2**. In addition, mitigation measures for specific sensitive biological resources would be implemented in order to further reduce the potential direct and indirect impacts of implementation of Alternative 2 and are identified below.

B1 VEGETATION COMMUNITIES

Mitigation for permanent and temporary impacts to arrow weed scrub shall be accomplished through mitigation for the flat-tailed horned lizard (FTHL). **Table 4-3** describes the proposed impacts to each vegetation community. All native habitats in the project area are considered potentially suitable FTHL habitat and are within a designated FTHL management area. As such, disturbance to these habitats will be mitigated according to the formulas as outlined in the *Flat-tailed Horned Lizard Rangewide Management Strategy* (see **B5**). Thus, disturbance to native vegetation communities will not require unique mitigation but will rely on the requirements of mitigation measure B5.

### B2 Invasive and Non-Native Weeds

To minimize the introduction and spread of weed species, a Weed Management Plan has been developed and would be implemented. The weed management plan includes a discussion of specific weeds identified on site that will be targeted for eradication or control as well as a variety of measures that will be undertaken during construction and O&M activities to prevent the introduction and spread of new weed species as a result of Alternative 2.

General measures to prevent the spread of weeds include:

- Limiting disturbance areas during construction to the minimal area required to perform work and limiting ingress and egress to defined routes
- Washing equipment during construction and closely monitoring the types of materials brought onto BLM land to minimize the potential for weed introduction
- Use of certified weed free mulch, straw wattles, hay bales and seed mixes
- Reestablishing native vegetation along the Gen-tie line as quickly as practicable on disturbed sites is the most effective long-term strategy to avoid weed invasions
- Monitoring and rapid implementation of control measures to ensure early detection and eradication for need weed invasions

Weed control methods that may be used include both physical and chemical control. Physical control methods include manual hand pulling of weeds, or the use of hand and power tools to uproot, girdle, or cut plants. Herbicide applications are a widely used, effective control method for removing infestations of invasive weed species. However, inadvertent application of herbicide to adjacent native plants must be avoided, which can often be challenging when weeds are interspersed with native cover. Before applying herbicide, contractors will be required to obtain any required permits from state and local authorities. Only a State of California and federally certified contractor will be permitted to perform herbicide applications. All herbicides will be applied in accordance with applicable laws, regulations, and permit stipulations. Only herbicides and adjuvants approved by the State of California and federal agencies for use on public lands will be used within or adjacent to the project area. Invasive plants species on BLM lands would be prevented, controlled, and treated through an Integrated Pest Management approach per the *Vegetation Treatments on Bureau of Land Management Lands in 17 Western States Programmatic Environmental Report (PER 2007)*. Only herbicides approved by BLM in California will be used on BLM lands. Herbicide application can only occur on BLM lands with an approved Pesticide Use Proposal (PUP).

### B4 General O&M Mitigation Measures

A number of general mitigation measures will be implemented after construction to reduce the potential impact to vegetation resources during operations and maintenance. These include the following:

- A brief report will be submitted to the BLM documenting the implementation of the general measures below as well as any resource-specific measures such as habitat restoration and/or compensation.
- A *Site Reclamation and Revegetation Plan (SRRP)* will be prepared and approved by BLM that will define the post-construction native seed and planting guidelines.
- A *Weed Management Plan* will be prepared and implemented that describes specific on-going measures to remove weedy plant species from the gen-tie ROW and encourages native plant growth. This plan should be prepared in conformance with herbicide protocols and, and will be approved by the BLM.

*Residual Impacts*

There would be no residual impacts for this gen-tie alternative after mitigation is applied.

### *4.2.3 Alternative 3 – Alternative Gen-Tie on BLM Land*

*Direct and Indirect Impacts*

#### 4.2.3.1 GENERAL VEGETATION

Impacts to vegetation communities are shown in **Table 4-3**. Temporary impacts during construction would be 7.84 acres and permanent impacts after construction would be 0.05 acres for this gen-tie alternative.

#### 4.2.3.2 SPECIAL STATUS AND PRIORITY PLANT SPECIES

No federally listed, state-listed or BLM sensitive plant species are known or expected to occur within the Alternative 3 gen-tie corridor. Thus, there are no anticipated impacts to federally listed, state-listed or BLM sensitive plant species as the result of implementation of Alternative 3.

##### *4.2.3.2.1 Priority Plant Species*

Abram's spurge (CNPS 2.2), glandular ditaxis (CNPS 2.2), and California ditaxis (CNPS 3.2) have a low potential for occurrence within the Alternative 3 gen-tie survey area. Rock nettle (CNPS 2.2 and CNDDB special plant), Brown turbans, Parish's desert-thorn and hairy stickleaf (CNPS 2.3 and CNDDB special plants), and Utah vine milkweed (CNPS 4.2) have a low to moderate potential for occurrence within the corridor.

Impacts to these species are not anticipated because they were not observed during surveys and habitat is of low quality. However, if impacts occur, they will be relatively minor based on the small impact areas (7.84 acres of temporary impacts and 0.05 acres of permanent impacts).

Though considered sensitive species, the relatively low ranking status of these species (as indicated by the rankings indicated above [CNPS 2.2, etc.] and defined in Section 3.2) means that mitigation would be satisfied through the mitigation that will be conducted for these species' habitats (e.g., mitigation for the creosote bush – white bursage scrub habitat would mitigate for impacts to the preferred habitats for these species). Therefore, species-specific mitigation would not be necessary.

4.2.3.3 Riparian Habitat or Special Status Natural Communities

Arrow weed thicket is the only special status natural community identified within the project area and Alternative 3 would not impact this community. No riparian habitats would be impacted by this alternative.

#### 4.2.3.4 JURISDICTIONAL WATERS

Based on the preliminary jurisdictional delineation report and coordination with the ACOE and CDFG, there would be no impacts to jurisdictional waters from implementation of this gen-tie alternative. The one potential ACOE non-wetland "Water of the U.S." and CDFG jurisdictional water of the State (Westside Main Canal) identified along this alternative would be spanned and not affected.

#### 4.2.3.5 CALIFORNIA DESERT CONSERVATION AREA

The Alternative 3 gen-tie line is an allowable use under the CDCA, as the proposed ROW area falls within the CDCA designated "Utility Corridor N." This area is also designated as an ACEC and the BLM manages all land uses within the ACEC in order to minimize impact to this sensitive area. All proposed impacts to resources discussed in Section 4 are in conformance with the CDCA and maintain the integrity and intent of the CDCA Plan.

*Mitigation*

The vegetation mitigation measures applied to this alternative would be the same as those described for Alternative 2 in **Section 4.3.2.6**.

*Residual Impacts*

There would be no residual impacts for this alternative after mitigation is applied.

### *4.2.4 Alternative 4 – Private Land Gen-Tie Alternative*

*Direct and Indirect Impacts*

#### 4.2.4.1 GENERAL VEGETATION

Impacts to vegetation communities are shown in **Table 4-3**. Temporary impacts during construction would be 10.19 acres and permanent impacts after construction would be 0.10 acres for this gen-tie alternative.

#### 4.2.4.2SPECIAL STATUS AND PRIORITY PLANT SPECIES

No special status or priority plant species are expected to occur within the Alternative 4 survey area. Therefore, no impacts to special status or priority plant species are expected to occur as a result of project implementation.

#### 4.2.4.3 RIPARIAN HABITAT OR SPECIAL STATUS NATURAL COMMUNITIES

There are no riparian habitats or special status natural communities affected by Alternative 4.

#### 4.2.4.4JURISDICTIONAL WATERS

Based on the preliminary jurisdictional delineation report and coordination with the ACOE and CDFG, there would be no impacts to jurisdictional waters from implementation of this gen-tie alternative. The one ACOE non-wetland "Water of the U.S." and CDFG jurisdictional water of the State (Westside Main Canal) and the six additional jurisdictional features (both ACOE and CDGF jurisdictional) associated with Alternative 4 would be spanned and not affected.

*Mitigation*

The mitigation measures applied to this alternative would be the same as those described for Alternative 2 in **Section 4.3.2.6**.

*Residual Impacts*

There would be no residual impacts for this alternative after mitigation is applied.

## 4.3 Biological - Wildlife

Section 3.3 describes the wildlife habitats and sensitive species that occur in the area that could be impacted by the project alternatives. It also describes the status of each species as well as the wildlife surveys that have been conducted for the project and their results.

The three gen-tie line alternatives would result in temporary impacts (areas affected during construction) and permanent impacts areas impacted during operations) to wildlife species and habitats. **Table 4-3** summarizes the expected impacts to habitats (vegetation communities) from each of the project alternatives. The more detailed discussion of impacts resulting from each alternative are described below.

### *4.3.1 Alternative 1 – No Action*

Under Alternative 1, the proposed and alternative gen-tie line on federal land managed by BLM would not be approved by the BLM. As a result, a gen-tie on federal land managed by BLM would not be constructed to interconnect the Campo Verde Solar generation facility to the regional transmission grid. The Campo Verde Solar generation facility would obtain gen-tie access via an alternative means that does not involve BLM-managed land or issuance of a separate ROW authorization.

It is expected that the federal lands managed by the BLM would continue to remain in their existing condition, with no new structures or facilities constructed or operated in the locations of the proposed gen-tie lines. As a result, none of the wildlife impacts from the proposed gen-ties on federal lands managed by BLM would occur. However, the gen-tie for the Campo Verde Solar generation facility could possibly be built on private land so similar wildlife impacts would occur but on disturbed lands in a nearby location.

However, because of their location within a designated utility corridor, the federal lands managed by BLM on which the gen-tie lines are proposed would become available to other uses that are consistent with BLM's land use plan, including gen-tie lines for other solar projects. In addition, without this gen-tie line on federal lands managed by BLM, other renewable energy projects may be constructed with gen-ties in other locations to meet state and federal mandates, and those projects would have similar impacts in other locations.

### *4.3.2 Alternative 2 – Proposed Action*

*Direct and Indirect Impacts*

Construction of the Project could impact American badgers if they were present within the construction area. The Applicant's proposed measures require that a qualified biologist perform a preconstruction survey for badger dens in the Project area, including access roads, structure locations, and pulling/tensioning sites. If badgers are located, a qualified biologist would passively evict the animals to ensure no direct impacts.

The desert kit fox is not a special-status species, but it is protected under Title 14, California Code of Regulations (section 460), and potential impacts to individuals of this species must be avoided. Desert kit foxes and sign were not detected in the project area but the project area includes marginally suitable foraging and denning habitat for this species. Construction of the Project could impact desert kit fox if present in the construction area if avoidance measures are not implemented. The Applicant's proposed

measure requires that a qualified biologist perform a preconstruction survey for kit fox dens in the Project area, including access roads, structure locations, and pulling/tensioning sites. If kit fox are located, a qualified biologist would passively evict the animals to ensure no direct impacts.

The Campo Verde project would permanently remove less than 0.05 acres of potential foraging and denning habitat for American badgers and kit fox. This potential habitat loss and degradation is so small that no adverse effects are anticipated. Direct take is not anticipated because of implementation of pre-construction surveys and passive eviction, if needed.

#### 4.3.2.1 SPECIAL STATUS WILDLIFE SPECIES

##### *4.3.2.1.1 Federally Listed Species*

###### 4.3.2.1.1.1 SOUTHWESTERN WILLOW FLYCATCHER

Construction of the proposed gen-tie is not likely to directly affect Southwestern Willow Flycatcher (SWFL) individuals, because there is no nesting habitat in the survey area and no habitat used during migration will be impacted. A Bird and Bat Conservation Strategy (BBCS) (formerly known as an Avian and Bat Protection Plan) will provide guidance designed to minimize disturbance and avoid project related impacts to migration and other important avian habitats.

Suitable SWFL migration habitat in the Alternative 2 survey area occurs only in the vicinity of Dixie 3B Drain, just west of the Westside Main crossing (**Figure 4-1**). The proposed gen-tie line (Alternative 2) will not disturb acreage inside these habitats, nor would the gen-tie line be built across this habitat. No project features will be built within, over or under any of the drains or wetlands containing potentially suitable migratory habitat for the SWFL.

Potential direct impacts to the SWFL would be limited to the risk that night-migrating SWFL individuals could collide with the gen-tie line and temporal displacement of migrant willow flycatchers if nearby construction activities temporarily deter foraging. Bird flight diverters will be installed on the gen-tie line along the segments that cross the Westside Main Canal to minimize the risk of such impacts.indirect impacts include those from disturbance from construction when foraging and would be temporary in nature.

###### 4.3.2.1.1.2 PENINSULAR BIGHORN SHEEP

No effects to Peninsular bighorn sheep are anticipated because there is no suitable habitat for the species in the project area, the closest known habitat is approximately 11 miles away, and the nearest known occurrence is 16 miles west of the project area.

#### *4.3.2.1.2 State Listed Species*

As discussed in **Section 3.3.1.2.2**, the barefoot-banded gecko and greater sandhill crane are not expected to occur in the survey area and will not be impacted by Alternative 2. Peninsular bighorn sheep is discussed in **Section 4.3.2.1.1.2**.

#### *4.3.2.1.3 BLM Sensitive Species*

##### 4.3.2.1.3.1 COLORADO DESERT FRINGE-TOED LIZARD

Direct impacts to Colorado Desert fringe-toed lizard may occur during construction of the gen-tie line. Construction activities such as the movement of construction vehicles or heavy equipment and the installation of electric line towers may result in the direct mortality, injury, or harassment of this species. The mitigation that will be implemented for FTHL would also act as mitigation for this species because they use the same habitats, so no additional mitigation is anticipated.

##### 4.3.2.1.3.2 FLAT-TAILED HORNED LIZARD

Direct impacts to FTHL may occur during construction of the gen-tie line. Construction activities such as the movement of construction vehicles or heavy equipment and the installation of electric line towers may result in the direct mortality, injury, or harassment of FTHLs.

The proposed corridor is within the Yuha Desert Flat-tailed Horned Lizard Management Area (MA), as designated in the 2003 *Flat-tailed Horned Lizard Rangewide Management Strategy (RMS)* (ICC 2003). The creosote bush–white bursage scrub vegetation and stabilized desert dune habitat within the Management Area provides habitat for this species. As required by the RMS, compensation would be necessary for impacts to FTHL habitat and the proposed impacts to the MA from the project must be the minimum necessary to construct the project. Therefore:

- No new access roads will be constructed and access disturbance would be limited to short overland travel extending from existing access roads.
- Extensive resource surveys have been conducted to facilitate the siting of the electric line components to insure they are located in a manner that creates the least amount of disturbance to resources.
- Whenever possible, any removal of vegetation will be in the form of trimming instead of root grubbing, to allow shrubs to readily re-sprout. The only soil removal necessary during gen-tie line construction will be during excavation of tower footings and if required for safe crane operations.

Impacts to FTHL habitat within the MA by implementation of Alternative 2 would be 7.69 acres temporary impacts during construction and 0.05 acres permanent impacts after construction. Habitat compensation mitigation for impacts will be provided based upon

the compensation formula provided in the *Flat-Tailed Horned Lizard Rangewide Management Strategy*.

Disturbance of soil and vegetation will take place during construction, which can encourage invasive, exotic plant species to encroach into FTHL habitat. This impact would be mitigated by the weed management measures described as vegetation measure B2 above.

General O&M activities that may be conducted along the gen-tie line include equipment inspection and/or repairs, tower washing, and weed abatement activities. These O&M activities will require vehicles to occasionally drive the existing access roads in the area and travel overland to structure sites if needed.

FTHL injury or mortality could potentially occur due to occasional travel to the structure sites, weed abatement, or any other activities that may result in ground disturbance outside of the designated access roads. The anticipated frequency of travel to gen-tie structure sites is expected to represent a negligible increase in traffic compared to the ongoing traffic associated with maintenance of the IV Substation, Border Patrol activity, and OHV use of the area.

The implementation of Mitigation Measure B5 would reduce impacts to FTHL.

#### 4.3.2.1.3.3 BURROWING OWL

The burrowing owl is both a California Species of Special Concern and a BLM sensitive species. BLM generally uses CDFG guidance for impact assessment and mitigation for this species. The 1995 California Department of Fish and Game's Staff Report on Burrowing Owl Mitigation (CDFG 1995) defines impact to Burrowing Owl as:

- Disturbance within 50 meters (approx. 160 feet) which may result in harassment of owls at occupied burrows;
- Destruction of natural and artificial burrows (culverts, concrete slabs, and debris piles that provide shelter to Burrowing Owls); and
- Destruction and/or degradation of foraging habitat adjacent (within 100 meters) of an occupied burrow(s).

As discussed in Section 3.3.1.2.3.3, twenty-four suitable but unoccupied Burrowing Owl burrows were observed within the survey area, though they are located within the unstable desert dune habitat and are regularly filled in because of the structural instability of the sand. Direct removal of these burrows is not anticipated to occur as the result of implementation of Alternative 2 because the burrows would be spanned and adjacent suitable foraging habitat for these burrows would not be removed during construction activities.

As discussed in Section 4.9 below, no equipment or components of the gen-tie line are expected to produce noise either during construction or operation that would exceed ambient noise in the vicinity. So no noise mitigation is required.

Mitigation Measure B3 would be implemented in order to minimize impacts to Burrowing Owls. These mitigation measures would include pre-construction clearance surveys, relocation of owls whose burrows would be directly removed by construction activities, and possibly the acquisition of compensatory mitigation acreage if required. Consultation with CDFG regarding on-site mitigation is ongoing and agency approval of a Burrowing Owl Mitigation Plan for the gen-tie would be obtained before the start of construction. The specific mitigation measures for Burrowing Owl will be determined in consultation with CDFG.

#### 4.3.2.1.3.4 PALLID BAT AND CALIFORNIA LEAF-NOSED BAT

These species may use the northern portion of the project area for foraging (along the Westside Main Canal), though neither is expected to roost within the vicinity of the proposed gen-tie. Construction of the Alternative 2 gen-tie would not result in the temporary or permanent direct removal of potentially suitable foraging habitat because the canal would be spanned. Following construction, the span of the canal by the gen-tie line could pose a minor collision risk to foraging bats but this would be mitigated by the distance to known populations of these species and the species' inherent ability to avoid obstructions through the use of echolocation. The potential for continued foraging following project implementation would continue to be supported by the larger drains and canals that support prey populations for both species. Given that the project will not remove any suitable habitat for either species, the large amount of suitable foraging habitat available throughout Imperial County, and the continued foraging opportunities following project implementation, the proposed project is not expected to impact either the pallid bat or the California leaf-nosed bat.

#### 4.3.2.1.3.5 MOUNTAIN PLOVER

Suitable foraging habitat for the Mountain Plover does not occur within the area that would be disturbed by implementation of this alternative. Therefore, no impacts to Mountain Plover are expected from Alternative 2.

### 4.3.2.1.4 California Species of Special Concern and Fully Protected Species

#### 4.3.2.1.4.1 LOGGERHEAD SHRIKE

Loggerhead Shrikes are known to forage in the Alternative 2 survey area. Construction activities would be completed within 2 to 6 months but could result in temporary avoidance of the area by this species for that period. There is a large amount of suitable foraging habitat in the area surrounding Alternative 2 that could be utilized by the species during and after construction so there would be no permanent impacts. Also, Mitigation B7 would be implemented to ensure there would be no impacts to nesting Loggerhead Shrikes.

#### 4.3.2.1.4.2 CRISSAL THRASHER AND LECONTE'S THRASHER

The area crossed by the Alternative 2 gen-tie line does not support suitable nesting or foraging habitat for these species. Therefore, there would be no impacts from construction or operation of Alternative 2.

#### 4.3.2.1.4.3 GOLDEN EAGLE

Suitable nesting habitat for the golden eagle is not present within the Alternative 2 area and this species is not expected to nest within the immediate vicinity because of the lack of suitable nesting habitat. Therefore, impacts to nesting golden eagles are not expected.

All of Imperial County is suitable foraging habitat that could be utilized by the species during construction so there would be no temporary impacts to the golden eagle. The Alternative 2 gen-tie would result in the permanent disturbance of approximately 0.05 acres of potentially suitable but low quality foraging habitat for golden eagles. This would not represent an impact to this species given the vast amounts of suitable foraging habitat in the surrounding vicinity and the relative infrequence that this species has been observed in the area (only one recorded siting in the general area).

The gen-tie line could represent a potential risk of collisions for this species. Bird flight diverters will be installed on the gen-tie line along the segment that crosses the Westside Main Canal, which would alleviate some of the risk. Because of the relative infrequency that golden eagles use the Project Area, the use of bird flight diverters, and the implementation of a BBCS, the impact to golden eagles from the construction or operation of the gen-tie line is expected to be minimal.

### 4.3.2.2 IMPACT TO WILDLIFE MOVEMENT AND NURSERY SITES

The proposed gen-tie line would not inhibit the movement of any wildlife species in and around the gen-tie corridor or surrounding area. No fencing or other terrestrial obstruction would be installed along the gen-tie ROW. Also, the proposed gen-tie line would be located in a designated utility corridor along with several other existing transmission lines and would not represent a unique feature on the landscape that local wildlife would not be accustomed to encountering. Therefore, there is no anticipated impact to wildlife movement or nursery sites, and no additional mitigation would be required.

*Mitigation*

A number of applicant-proposed measures, designed to reduce potential indirect impact to resources as well as restore and/or improve the quality of habitat in the Project Area, will be implemented as part of the Project design. These are identified in Table 2-2. In addition, mitigation measures for specific sensitive biological resources would be implemented in order to further reduce the potential direct and indirect impacts of

project implementation and are identified below (Measures B1 and B2, and some of those in B4 are described previously in the Vegetation section):

#### B3 BURROWING OWL

Burrowing Owls are known to occur in and along the nearby active agricultural fields and some potentially suitable burrows were observed on the native communities crossed by proposed Alternative 2. The following measures are designed to avoid, minimize, or otherwise mitigate potential impact to Burrowing Owls during construction activities:

1. To the extent practicable, initial clearing of obstructions within the project ROW should take place between September 1 and January 31 to avoid impacts to any breeding Burrowing Owls. Occupied burrows should not be removed during the nesting season (February 1 through August 31) unless a qualified biologist approved by CDFG verifies through non-invasive methods that either (a) the birds have not begun egg-laying and incubation; or (b) that juveniles from the occupied burrows are foraging independently and are capable of independent survival. If initial clearing within the project ROW is to begin during the breeding season (February 1 through August 31), the following measures (#2 through #4 below) will be implemented.

2. Within 30-days prior to initiation of initial clearing, pre-construction clearance surveys for this species shall be conducted by qualified and agency-approved biologists to determine the presence or absence of this species within the ROW area. The proposed ROW area shall be clearly demarcated in the field or via GPS by the project engineers and Designated Biologist prior to the commencement of the pre-construction clearance survey. The surveys shall follow the protocols provided in the *Burrowing Owl Survey Protocol and Mitigation Guidelines*.

3. When removal of occupied burrows is unavoidable, the following mitigation measures shall be implemented outside of the breeding season. Passive relocation methods are to be used by the biological monitors to move the owls out of the impact zone. This includes covering or excavating all burrows and installing one-way doors into occupied burrows. This will allow any animals inside to leave the burrow, but will exclude any animals from re-entering the burrow. A period of at least one week is required after the relocation effort to allow the birds to leave the impacted area before excavation of the burrow can begin. The burrows should then be excavated and filled in to prevent their reuse. The removal of active burrows on-site requires construction of new burrows or the enhancement of existing unsuitable burrows (i.e., enlargement or clearing of debris) at a mitigation ratio of 2:1 at least 50 meters from the impacted area and must be constructed as part of the above-described relocation efforts.

4. As the project construction schedule and design details are finalized, an approved biologist shall prepare a Burrowing Owl Mitigation and Monitoring Plan that will detail the approved, site-specific methodology proposed to minimize and mitigate impacts to this species. Passive relocation, destruction of burrows, and construction of artificial burrows can only be completed upon prior approval by and in cooperation with the CDFG.

Compensatory Mitigation

Consultation with CDFG to determine the amount and conditions of compensatory mitigation for foraging habitat lost as a result of project implementation is currently ongoing. A compensatory mitigation plan is currently being developed that could include one or a combination of off-site mitigation or contribution to the National Fish and Wildlife Foundation's Impact-Directed Environmental Accounts program. Specific mitigation will be determined in consultation with CDFG.

### B4 General O&M Mitigation Measures

A number of general mitigation measures, designed to reduce potential direct and indirect impacts to resources in the project area will be implemented after construction as standard Operation and Maintenance protocols. In order to reduce the potential impact to biological resources during operations and maintenance, the following will be implemented:

- A brief report will be submitted to the relevant resource agencies documenting the implementation of the following general measures as well as any resource-specific measures such as habitat restoration and/or compensation for the gen-tie:
- Speed limits along all gen-tie line access roads and unpaved roads within the solar energy facility will not exceed 15 miles per hour. Gen-tie line access for O&M activities shall be kept to the minimum necessary for operations and be accomplished during the winter months when feasible. This limited access and annual timing is designed to prevent FTHL mortality.
- Annual formal Worker Education Training shall be established for all employees and any subcontractors working on the gen-tie to provide instruction on sensitive species identification; measures to avoid contact, disturbance, and injury; and reporting procedures in the case of dead and/or injured wildlife species. The USFWS and the BLM shall be notified per approved guidelines and channels of authority if mortality should occur. Species requiring reporting will be decided in consultation with the BLM and USFWS and will be detailed in the *Wildlife Mortality Reporting Program*.
- A *Raven Control Plan* will be prepared and implemented that details specific measures for storage and disposal of all litter and trash produced by gen-tie construction and the workers. This plan is designed to discourage scavengers that may also prey on wildlife in the vicinity. All employees will be familiar with this plan and littering shall be prohibited. This plan will be approved by the BLM and CDFG.

- A *Wildlife Mortality Reporting Program* will be prepared and implemented to identify and report any dead or injured animals observed by personnel conducting O&M activities along the gen-tie line. An appropriate reporting format for dead or injured special status wildlife observed along the gen-tie line will be developed in coordination with the USFWS and the BLM. In addition, reporting of any dead or injured avian species found along the gen-tie line will follow the existing USFWS Bird Fatality/Injury Reporting Program (https://birdreport.fws.gov/). Species requiring reporting will be decided in consultation with the BLM and USFWS.
- A Bird and Bat Conservation Strategy (BBCS) will be prepared that will outline conservation measures for construction and O&M activities that might reduce potential impacts to bird populations. These measures incorporate Avian Power Line Interaction Committee (APLIC, 2006) design guidelines for overhead utilities by incorporating recommended or other methods that enhance the visibility of the lines to avian species. The BBCS will also address disturbance minimization, timing of construction, minimization of activities that would attract prey and predators, and incorporation of the Wildlife Mortality Reporting Program and Raven Control Plan discussed above.

#### B5 FLAT-TAILED HORNED LIZARD

In accordance with the *FTHL Rangewide Management Strategy* (ICC 2003), the measures proposed below are designed to avoid, minimize, and/or compensate for potential direct and indirect effects construction of the proposed project may have on FTHL. The following will be implemented when conducting construction activities within the creosote bush-white burr sage scrub and other native vegetation types within the gen-tie line ROW:

Construction Mitigation

1. Prior to ground-disturbing activities, an individual shall be designated and approved by the BLM as the Designated Biologist[1] (i.e., field contact representative) along with approved Biological Monitors as needed for construction, particularly within the Yuha MA. The Designated Biologist will be designated for the period during which on-going construction and post-construction monitoring and reporting by an approved biologist is required, such as annual reporting on habitat restoration. Each successive Designated Biologist will be approved by the BLM's Authorized Officer (i.e., BLM field manager, El Centro). The Designated Biologist will have the authority to ensure compliance with the conservation measures for the FTHL and will be the primary agency contact for the implementation of these measures. The Designated Biologist will organize and oversee the work of the biological

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

monitors and have the authority and responsibility to halt activities that are in violation of the conservation measures. An organizational chart shall be provided to BLM prior to ground-disturbing activities with a clear chain of command and contact information (cell phones). A detailed list of responsibilities for the Designated Biologist is summarized below. To avoid and minimize impacts to biological resources, the Designated Biologist will:

- Notify BLM's Authorizing Officer at least 7 calendar days before initiating ground disturbing activities.
- Immediately notify BLM's Authorized Officer in writing if the Project applicant is not in compliance with any conservation measures, including but not limited to any actual or anticipated failure to implement conservation measures within the time periods specified.
- Conduct compliance inspections at a minimum of once per month during on-going construction after clearing, grubbing, and grading are completed, and submit a monthly compliance report to BLM's Authorized Officer until construction is complete.

2. The boundaries of all areas to be disturbed will be delineated with stakes and flagging prior to construction activities. Where feasible, the areas shall be cleared of FTHL and fenced (according to the Strategy) to exclude FTHL from re-entering these construction areas, particularly in high-use construction areas. Spoils from drilling of structure foundations will be stockpiled in disturbed areas lacking native vegetation or where habitat quality is poor, such as the agricultural fields rather than native desert. To the extent possible, disturbance of shrubs and surface soils due to stockpiling will be minimized. All disturbances, vehicles, and equipment will be confined to the flagged and cleared areas. To the extent possible, surface disturbance will be timed to minimize mortality to FTHL (see FTHL Construction Mitigation Measure #7 below).

3. Approved biological monitor(s) will assist the Designated Biologist in conducting pre-construction surveys and in monitoring of mobilization, ground disturbance, grading, construction, operation, closure, and restoration activities. The biological monitor(s) will have experience conducting FTHL field monitoring, have sufficient education and field experience to understand FTHL biology, be able to identify FTHL scat, and be able to identify and follow FTHL tracks, and be authorized by the agencies to handle FTHL. The Designated Biologist will submit the resume, at least three references, and contact information of the proposed biological monitors to the BLM for approval. To avoid and minimize impacts to biological resources, the Biological Monitors will assist the Designated Biologist with the following:
   - Be present during construction (e.g., grubbing, grading, solar panel installation) activities that take place in FTHL habitat to avoid or minimize take of FTHL. Activities include, but are not limited to, ensuring compliance with all impact avoidance and minimization measures, monitoring for FTHLs and removing lizards from harm's

way, and checking avoidance areas (e.g., washes) to ensure that signs, and stakes are intact and that human activities are restricted in these avoidance zones.
    - At the end of each work day, inspect all potential wildlife pitfalls (trenches, bores and other excavations) for wildlife and then backfill. If backfilling is not feasible, all trenches, bores, and other excavations will be contoured at a 3:1 slope at the ends to provide wildlife escape ramps, or completely and securely covered to prevent wildlife access.
    - During construction, examine areas of active surface disturbance periodically, at least hourly, when surface temperatures exceed 29°Celsius (C; 85°F) for the presence of FTHL.

4. Prior to Project initiation, a worker environmental awareness program (WEAP) will be developed and implemented, and will be available in both English and Spanish. Wallet-sized cards summarizing this information will be provided to all construction, operation, and maintenance personnel. The education program will include the following aspects:
    - biology and status of the FTHL,
    - protection measures designed to reduce potential impact to the species,
    - function of flagging designating authorized work areas,
    - reporting procedures to be used if a FTHL is encountered in the field, and driving procedures and techniques, for commuting to, and driving on, the Project site, to reduce mortality of FTHL on roads.

5. Any FTHLs located during pre-construction surveys will be temporaily relocated during all construction activities, per FTHL Construction Mitigation Measure #6 below. To the extent feasible, methods to find FTHLs will be designed to achieve a maximal capture rate and will include, but not be limited to using strip transects, tracking, and raking around shrubs. During construction, the minimum survey effort will be 30 minutes per 0.40 ha (30 minutes per 1 ac). Persons that handle FTHLs will first obtain all necessary permits and authorization from the CDFG. If the species is federally listed, only persons authorized by both CDFG and USFWS will handle FTHLs. FTHL removal surveys will also include:
    - FTHL Observation Data Sheet and a Project Reporting Form, per Appendix 8 of the RMS, will be completed. During construction, quarterly reports describing FTHL removal activity, per the reporting requirements described in Mitigation Measure #1 above, will be submitted to the BLM.

6. The removal of FTHLs out of harm's way will include relocation to nearby suitable habitat in low-impact locations (e.g., away from roads and the gen-tie ROW) of the Yuha MA. Relocated FTHLs will be placed in the shade of a large shrub in undisturbed habitat. If surface temperatures in the sun are less than 24° Celsius (C) 75° Fahrenheit (F) or exceed 38°C (100° F), the Designated Biologist or biological monitor, if authorized, will hold the FTHL

for later release. Initially, captured FTHLs will be held in a cloth bag, cooler, or other appropriate clean, dry container from which the lizard cannot escape. Lizards will be held at temperatures between 75° F and 90° F and will not be exposed to direct sunlight. Release will occur as soon as possible after capture and during daylight hours. The Designated Biologist or biological monitor will be allowed some judgment and discretion when relocating lizards to maximize survival of FTHLs found in the Project area.

7. To the maximum extent practicable, disturbance in FTHL habitat will be conducted during the active season, which is defined as March 1 through September 30, or if ground temperatures are between 24°C (75° F) and 38 °C (100° F). If grading cannot be conducted during this time, any FTHLs found will be removed to low-impact areas (see above) where suitable burrowing habitat exists, (e.g., sandy substrates and shrub cover).

8. Temporarily disturbed areas associated with gen-tie line construction and staging areas on federal lands, will be revegetated according to the Site Reclamation and Revegetation Plan (SRRP) approved by the BLM. The SRRP must be approved in writing by the BLM prior to any vegetation-disturbing activities. Restoration involves recontouring the land, replacing the topsoil (if it was collected), and maintaining (i.e., weeding, replacement planting, supplemental watering, etc.), and monitoring the restored area for a period of 5 years (or less if the restoration meets all success criteria). Components of the SRRP will typically include:
    - The incorporation of Desert Bioregion Revegetation/Restoration Guidance measures. These measures generally include alleviating soil compaction, returning the surface to its original contour, pitting or imprinting the surface to allow small areas where seeds and rain water can be captured, planting seedlings that have acquired the necessary root mass to survive without watering, planting seedlings in the spring with herbivore cages, broadcasting locally collected seed immediately prior to the rainy season, and covering the seeds with mulch.

Operations and Maintenance

In order to reduce the potential impact to FTHL during operations and maintenance (O&M), the following will be implemented when conducting O&M along the Gen-tie line:

9. At least 15 days following completion of construction activities, the Designated Biologist will provide the BLM a Project FTHL Status Report, which will include, at a minimum:
    - A general description of the status of the project site within the MA.
    - A copy of the table in the Project biological monitoring report with notes showing the current implementation status of each conservation measure.

- An assessment of the effectiveness of each completed or partially completed measure in avoiding and minimizing project impacts
- A completed a Project Reporting Form from the Flat-tailed Horned Lizard Rangewide Management Strategy (RMS; ICC 2003)
- A summary of information regarding any FTHL mortality in conjunction with the Project's Wildlife Mortality Reporting Program.
- Recommendations on how conservation measures might be changed to more effectively avoid, minimize, and offset future project impacts on the FTHL.

10. The Designated Biologist or biological monitor(s) will evaluate and implement the best measures to reduce FTHL mortality along access and maintenance roads, particularly during the FTHL active season (March 1 through September 30). These measures will include:

    - A speed limit of 15 miles per hour when driving access roads within suitable FTHL habitat. The Designated Biologist may reduce this speed limit to 10 mph in areas identified as active wildlife corridors as needed to reduced mortality. All vehicles required for O&M within suitable FTHL habitat must remain on the designated access/maintenance roads. Cross country vehicle and equipment use outside of designated work areas in suitable FTHL habitat shall be prohibited.
    - O&M activities occurring within suitable FTHL habitat including weed abatement or any other O&M activity that may result in ground disturbance will be conducted outside of the FTHL active season whenever feasible. If any O&M activities must be conducted during the FTHL active season that may result in ground disturbance within suitable FTHL habitat, such as weed abatement or vehicles requiring access outside of a designated access road, a biological monitor will be present during activities to reduce FTHL impacts.

    Implementation of these measures would be based on annual FTHL activity levels, the best professional judgment of the Designated Biologist, and site specific road utilization. FTHL found on access/maintenance roads will be relocated out of harm's way by the Designated Biologist or qualified FTHL monitor.

11. *Compensation* - In accordance with the *Rangewide Management Strategy*, compensation for permanent and temporary impact to FTHL habitat within the MA will be compensated for based upon the compensation formula outlined in the *Flat-Tailed Horned lizard Rangewide Management Strategy*. Acreages of potential disturbed FTHL habitat by alternative can be found in Section 4.2.

### B6 Nesting Raptors

Construction Mitigation

Raptors and active raptor nests are protected under California Fish and Game Code 3503.5, 3503, 3513. In order to prevent direct and indirect noise impact to nesting raptors such as Red-tailed Hawk, the following measures would be implemented:

- To the extent practicable, initial clearing within the project ROW should take place outside the raptors' breeding season of February 1 to July 15.
- If construction occurs between February 1 and July 15, an approved biologist shall conduct a pre-construction clearance survey for nesting raptors in suitable nesting habitat (e.g., tall trees or transmission towers) that occurs within 500 feet of the survey area. If any active raptor nest is located, the nest area will be flagged, and a 500-foot buffer zone delineated, flagged, or otherwise marked. No work activity may occur within this buffer area, until an approved biologist determines that the fledglings are independent of the nest.

Operations and Maintenance Impact Mitigation

Mitigation for potential impact to raptors and other avian species from collision with the proposed gen-tie line is discussed below in Mitigation Measure B7 (Mitigation for Migratory Birds and Other Sensitive Non-migratory Bird Species), including the development of a BBCS.

### B7 Migratory Birds and Other Sensitive Non-migratory Bird Species

In order to reduce the potential indirect impact to migratory birds, bats and raptors from implementation of the gen-tie, a Bird and Bat Conservation Strategy (BBCS) will be prepared and implemented following USFWS guidelines. This BBCS will outline conservation measures for construction and O&M activities that might reduce potential impacts to bird populations and will be developed in conjunction with and input from the USFWS. The conservation measures are outlined below.

Construction Conservation Measures

Construction conservation measures to be addressed in the BBCS include:

- Minimizing disturbance to vegetation to the maximum extent practicable.
- Clearing vegetation outside of the breeding season. If any needed clearing of the ROW occurs between February 1 and September 15, an approved biologist shall conduct a pre-construction clearance survey for nesting birds in suitable nesting habitat that occurs within the proposed area of impact. Pre-construction nesting surveys will identify any active migratory birds (and other sensitive non-migratory birds) nests. Direct impact to any active migratory bird nest should be avoided.
- Minimize wildfire potential.
- Minimize activities that attract prey and predators.
- Control of non-native plants

- Apply APLIC design guidelines for overhead utilities (APLIC 2006) by incorporating recommended or other methods that enhance the visibility of the lines to avian species.
- Install avian flight diverters to gen-tie crossing at Westside Main Canal

Operations and Maintenance Measures

Operations and maintenance conservation measures to be incorporated into the BBCS include:

- Preparation of a Raven Control Plan that avoids introducing water and food resources in the area surrounding the gen-tie corridor.
- Incorporate APLIC guidelines for overhead utilities as appropriate to minimize avian collisions with Gen-tie Line facilities (APLIC 2006).
- Minimize noise
- Minimize use of outdoor lighting.
- Implement post—construction avian monitoring that will incorporate the Wildlife Mortality Reporting Program

*Residual Impacts*

There would be no residual impacts to wildlife resulting from implementation of this alternative gen-tie after mitigation is applied.

### *4.3.3 Alternative 3 – Alternative Gen-Tie on BLM Land*

*Direct and Indirect Impacts*

#### 4.3.3.1 SPECIAL STATUS WILDLIFE SPECIES

##### *4.3.3.1.1 Federally Listed Species*

###### 4.3.3.1.1.1 SOUTHWESTERN WILLOW FLYCATCHER

The impacts to this species resulting from implementation of this gen-tie alternative would generally be the same as that described for Alternative 2 in Section 4.3.2.1.1.1. Suitable migration habitat in the vicinity of Alternative 3 occurs along the Dixie 3B Drain, approximately 2,000 feet west of the Westside Main Canal crossing associated with this alternative (**Figure 4-1**). Construction of the Alternative 3 gen-tie will not directly disturb acreage inside these habitats nor would the gen-tie be built across any of the drains or wetlands containing potentially suitable migratory habitat for the SWFL.

Potential impacts to the SWFL would appear to be limited to the risk that night-migrating SWFL individuals could collide with the gen-tie line and temporal displacement of migrant willow flycatchers if construction activities temporarily deter foraging in nearby areas. Bird flight diverters will be installed on the gen-tie line along the segments that cross the Westside Main Canal to minimize the potential for collision.

#### 4.3.3.1.1.2 PENINSULAR BIGHORN SHEEP

Impacts to this species would not occur as described for Alternative 2 in Section 4.3.2.1.1.2.

### *4.3.3.1.2 State Listed Species*

As discussed in Section 3.3.1.2.2, the barefoot-banded gecko and greater sandhill crane are not expected to occur in the survey area and will not be impacted by Alternative 3. Peninsular bighorn sheep is discussed above.

### *4.3.3.1.3 BLM Sensitive Species*

#### 4.3.3.1.3.1 COLORADO DESERT FRINGE-TOED LIZARD

The impacts to this species resulting from implementation of this gen-tie alternative would generally be the same as that described for Alternative 2 in Section 4.3.2.1.3.1. Alternative 3 may temporarily impact approximately 5.53 acres of suitable Colorado Desert fringe-toed lizard habitat during construction and permanently impact approximately 0.03 acres of suitable Colorado Desert fringe-toed lizard habitat after construction. The mitigation that will be implemented for FTHL would also act as mitigation for this species because they use the same habitats. Therefore, no additional mitigation is anticipated.

#### 4.3.3.1.3.2 FLAT-TAILED HORNED LIZARD

The impacts to this species resulting from implementation of this gen-tie alternative would be similar to but slightly less than that described for Alternative 2 in Section 4.3.2.1.3.2. Impacts to FTHL habitat from implementation of Alternative 3 would be 5.91 acres of temporary impacts during construction and 0.03 acres of permanent impacts. The mitigation described for Alternative 2 for this species would be implemented.

#### 4.3.3.1.3.3 BURROWING OWL

The impacts to this species resulting from implementation of this gen-tie alternative would be similar to but slightly less than that described for Alternative 2 in Section 4.3.2.1.3.3. As discussed in Section 3.3.1.2.3.3, two suitable but unoccupied Burrowing Owl burrows were observed within the survey area. Direct removal of these burrows is not anticipated as the result of project implementation (they would be spanned), and adjacent suitable foraging habitat for these burrows would not be removed during construction activities. Mitigation measure B3 (Section 4.4.2.3) would be implemented in order to reduce impacts.

#### 4.3.3.1.3.4 PALLID BAT AND CALIFORNIA LEAF-NOSED BAT

The impacts to this species resulting from implementation of this gen-tie alternative would be similar to but slightly less than as that described for Alternative 2 in Section 4.3.2.1.3.4.

#### 4.3.3.1.3.5 MOUNTAIN PLOVER

The impacts to this species resulting from implementation of this gen-tie alternative would be similar to but slightly less than that described for Alternative 2 in Section 4.3.2.1.3.5.

### *4.3.3.1.4 California Species of Special Concern and Fully Protected Species*

The impacts to these species resulting from implementation of this gen-tie alternative would generally be the same as that described for Alternative 2 in Section 4.3.2.1.4. Alternative 3 would affect small areas of the same habitats and the same mitigation measures would be implemented.

## 4.4.3.2 IMPACT TO WILDLIFE MOVEMENT AND NURSERY SITES

The impacts to these areas resulting from implementation of this gen-tie alternative would be the same as that described for Alternative 2 in Section 4.3.2.2. The proposed gen-tie line would not inhibit the movement of any wildlife species in and around the gen-tie corridor or surrounding area and would not impact wildlife movement or nursery sites.

*Mitigation*

The wildlife mitigation that would be applied to this gen-tie alternative would be the same as that described for Alternative 2.

*Residual Impacts*

There would be no residual impacts to wildlife resulting from implementation of this alternative gen-tie after mitigation is applied.

### *4.3.4 Alternative 4 – Private Land Gen-Tie Alternative*

*Direct and Indirect Impacts*

#### 4.3.4.1 SPECIAL STATUS WILDLIFE SPECIES

##### *4.3.4.1.1 Federally Listed Species*

###### 4.3.4.1.1.1 SOUTHWESTERN WILLOW FLYCATCHER

The impacts to this species resulting from implementation of this gen-tie alternative would be similar to that described for Alternative 2 in Section 4.3.2.1.1.1. Suitable migration habitat in the vicinity of Alternative 4 occurs along Dixie Drain 4 and Westside Drain (**Figure 4-2**). Construction of the Alternative 4 gen-tie will not directly disturb acreage inside these habitats, but the gen-tie would be built across this habitat.

Potential impacts to the SWFL would be limited to the risk that night-migrating SWFL individuals could collide with the gen-tie line and temporal displacement of migrant willow flycatchers if nearby construction activities temporarily deter foraging. Bird flight diverters will be installed on the gen-tie line along the segment that crosses Dixie Drain 4, Westside Drain, and the Westside Main Canal.

###### 4.3.4.1.1.2 PENINSULAR BIGHORN SHEEP

Impacts to this species would not occur as a result of Alternative 4 as described for Alternative 2 in Section 4.3.2.1.1.2.

###### 4.3.4.1.1.3 YUMA CLAPPER RAIL

Construction of Alternative 4 is not likely to have an effect on YCR individuals. Because the nearest known occurrence of the YCR is approximately 1.8 miles east of the project area and the quality of YCR habitat in the project area is poor, there is a low potential for YCR to forage or winter in the habitat associated with Dixie Drain 4 and Westside Drain (**Figure 4-2)**. Noise from equipment during construction would have a low probability of temporarily impacting YCR given the low potential for this species to occur within the Alternative 4 area. Minimization and avoidance measures to reduce potential effects to avian species, including YCR, will be implemented according to an approved BBCS, including timing construction to minimize effects to avian species.

Given the low likelihood that YCR forages or winters within the small habitat patches within the project area along with the implementation of impact avoidance and minimization measures, any effects to YCR from construction of Alternative 4 would be minimal and short-term.

The O&M activities associated with the gen-tie are not expected to affect YCR. Any noise during operations will be minimal and the level of human disturbance is not

expected to increase above the agricultural practices that are currently taking place and will continue to take place.

#### *4.3.4.1.2 State Listed Species*

As discussed in Section 3.3.1.2.2, the barefoot-banded gecko is not expected to occur in the survey area and will not be impacted by Alternative 4. Peninsular bighorn sheep is discussed above.

##### 4.3.4.1.2.1 GREATER SANDHILL CRANE

Greater Sandhill Cranes may forage during the winter in the active agricultural habitats adjacent to the Alternative 4 corridor. Approximately 0.4 acres of agricultural land would be affected by implementation of Alternative 4. Given that all of the agricultural lands in Imperial County provide potentially suitable foraging habitat including that in the vicinity of this alternative, it is unlikely that the loss of this small amount of potentially suitable foraging habitat would impact wintering Greater Sandhill Cranes.

Noise from heavy equipment during construction is not expected to adversely modify the behavioral patterns of foraging Sandhill Cranes because the vast amount of foraging habitat in the vicinity will allow them to utilize the area. The Sandhill Crane is a diurnal species and is not expected to be active at night. Minimization and avoidance measures to reduce potential noise effects to avian species, including Sandhill Crane, will be implemented in accordance the BBCS, including timing construction to minimize effects to avian species. Because the Sandhill Crane is relatively tolerant of disturbance on its wintering grounds (Zeiner et al. 1989), the brief periods when they may forage within any given field in the vicinity of the action area, and the implementation of impact avoidance and minimization measures (see Mitigation Measures B4 and B7), disturbance to Sandhill Cranes from noise would be unlikely.

Sandhill Cranes are only active during daylight hours, and no collisions with the proposed gen-tie line are anticipated, as they will be visible and avoidable. In addition, Avian Power Line Interaction Committee (APLIC) measures to avoid and minimize potential collisions (APLIC 2006) will be detailed in the BBCS for implementation.

#### *4.3.4.1.3 BLM Sensitive Species*

##### 4.3.4.1.3.1 COLORADO DESERT FRINGE-TOED LIZARD

There is no habitat for this species in the Alternative 4 gen-tie ROW. Therefore, no impacts to this species are anticipated from implementation of the alternative.

##### 4.3.4.1.3.2 FLAT-TAILED HORNED LIZARD

There is no habitat for this species in the Alternative 4 gen-tie ROW. Therefore, no impacts to this species are anticipated from implementation of the alternative.

#### 4.3.4.1.3.3 BURROWING OWL

The impacts to this species resulting from implementation of this gen-tie alternative would generally be the same as that described for Alternative 2 in Section 4.3.2.1.3.3. As discussed in Section 3.3.1.2.3.3, four suitable but unoccupied Burrowing Owl burrows were observed within the survey area for Alternative 4. Direct removal of these burrows would not occur as the result of construction of the Alternative 4 gen-tie because they would be spanned and adjacent suitable foraging habitat for these burrows would not be removed as a result of construction activities. No impacts would occur during operation and maintenance activities because these activities would use the existing farm roads adjacent to the line. Mitigation measure B3 would be implemented to ensure impacts would be minor.

#### 4.3.4.1.3.4 CALIFORNIA LEAF-NOSED BAT AND PALLID BAT

The impacts to this species resulting from implementation of this gen-tie alternative would be similar to that described for Alternative 2 in Section 4.3.2.1.3.4.

#### 4.3.4.1.3.5 MOUNTAIN PLOVER

There is very little habitat for the Mountain Plover in the area and this species does not nest within the project area or in the Imperial Valley. So there is no risk of destroying nests or eggs, harming chicks, or discouraging parents from returning to nests. Also, this species is naturally evasive and will readily move out of harm's way to avoid construction activities so if in the area during construction, they would likely find suitable fields nearby for foraging. In addition, very little foraging habitat would be removed permanently (0.1 acres). Therefore, the risk of death or injury to Mountain Plover resulting from implementation of Alternative 4 is unlikely.

The Mountain Plover is protected under the MBTA. Therefore, the Applicant would employ avoidance measures as defined in the BBCS which will include measures designed to minimize disturbance to all avian species during construction, including measures to prevent take of MBTA-protected birds during construction and operation of the Project.

Large avian predators such as ravens (genus *Corvus*), Loggerhead Shrikes (*Lanius ludovicianus*), and Prairie Falcon (*Falco mexicanus*) may be drawn to the area due to the increase in nesting/perching areas such as gen-tie structures. This potential increase in avian predators could potentially indirectly affect Mountain Plover within the vicinity of the Alternative 4 gen-tie, but this effect would be minimized by implementation of a Raven Control Plan.

No indirect effects to Mountain Plover due to herbicide use are anticipated. The timing and formula of any herbicide used for control of weeds will be in accordance with the proposed project Weed Management Plan, which conforms to resource agency standards to minimize impacts to sensitive biological resources.

#### *4.3.4.1.4 California Species of Special Concern and Fully Protected Species*

The impacts to these species resulting from implementation of this gen-tie alternative would generally be the same as that described for Alternative 2 in Section 4.3.2.1.4.

### 4.3.4.2 IMPACT TO WILDLIFE MOVEMENT AND NURSERY SITES

The impacts to these areas resulting from implementation of this gen-tie alternative would generally be the same as that described for Alternative 2 in Section 4.3.2.2. The proposed gen-tie line would not inhibit the movement of any wildlife species in and around the gen-tie corridor or surrounding area and would not impact wildlife movement or nursery sites.

*Mitigation*

The wildlife mitigation that would be applied to this gen-tie alternative would include mitigation measures B3, B4, B6, and B7 described for Alternative 2.

*Residual Impacts*

There would be no residual impacts to wildlife resulting from implementation of this alternative gen-tie after mitigation is applied.

## 4.4 Climate Change

The methodology to assess impacts to climate change under NEPA continues to evolve as consensus forms as to how best to evaluate such effects at proposed action-specific and cumulative levels. The Council on Environmental Quality (CEQ) published draft guidance on February 18, 2010, for federal agencies to improve their consideration of the effects of greenhouse gas emissions and climate change in their evaluation of proposals for federal actions under NEPA. This direction proposes that agencies should consider the direct and indirect greenhouse gas emissions from the action and to quantify and disclose those emissions in the environmental document (40 CFR 1508.25). The CEQ further proposes that agencies should consider mitigation measures to reduce proposed action-related greenhouse gas emissions from all phases and elements of the proposed action and alternatives over its/their expected life, subject to reasonable limits based on feasibility and practicality.

The Council on Environmental Quality (CEQ) "Draft NEPA Guidance on Consideration of the Effects of Climate Change and Greenhouse Gas Emissions" (U.S. Council on Environmental Quality, February, 2010) proposed that if a Proposed Action would be reasonably anticipated to cause direct emissions of 25,000 metric tons or more of $CO_2$-equivalent GHG emissions on an annual basis, agencies should consider this an indicator that a quantitative and qualitative assessment may be meaningful to decision makers and the public. While the guidance is in draft form, this indicator of 25,000 metric tons or more of $CO_2$-equivalent ($CO_2e$) GHG emissions on an annual basis can still serve as a

useful benchmark against which to compare a Proposed Action's expected GHG emissions. Each alternative is evaluated against this number in the NEPA analysis below.

### *4.4.1 Alternative 1 – No Action*

Under Alternative 1, the proposed and alternative gen-tie line on federal land managed by BLM would not be approved by the BLM. As a result, a gen-tie on federal land managed by BLM would not be constructed to interconnect the Campo Verde Solar generation facility to the regional transmission grid. The Campo Verde Solar generation facility would obtain gen-tie access via an alternative means that does not involve BLM-managed land or issuance of a separate ROW authorization.

It is expected that the federal lands managed by the BLM would continue to remain in their existing condition, with no new structures or facilities constructed or operated in the locations of the proposed gen-tie lines. As a result, none of the GHG emissions from the proposed gen-ties on federal lands managed by BLM would occur. However, the gen-tie for the Campo Verde Solar generation facility could possibly be built on private land so similar GHG emissions would occur and in the same air basin.

However, because of their location within a designated utility corridor, the federal lands managed by BLM on which the gen-tie lines are proposed would become available to other uses that are consistent with BLM's land use plan, including gen-tie lines for other solar projects. In addition, without this gen-tie line on federal lands managed by BLM, other renewable energy projects may be constructed with gen-ties in other locations to meet state and federal mandates, and those projects would have similar impacts in other locations.

### *4.4.2 Alternatives 2, 3, and 4*

Construction of each of the three gen-tie alternatives would result in the generation of similar GHG emissions and climate change impacts because they are located in close proximity within the same airshed and the construction timeframe and construction equipment for each would be the same. Also, there would be no operational GHG emissions associated with any of the gen-tie options. Therefore, all three action alternatives are discussed collectively below.

As discussed for air quality, construction of the selected gen-tie line alternative would occur over a 2 to 6 month period. Each of the two gen-tie alternatives are relatively short (1.0, 0.8, and 1.75 miles long) and would require approximately 10, 7, and 16 structures respectively that would be located off the solar project sites. Construction activity would progress in a linear fashion along the transmission corridor so only a few acres would be actively disturbed at any one time during construction.

$CO_2$ and $NO_x$ emissions from the construction equipment would be the primary contributors to GHG emissions during construction. The GHG emissions associated with

the construction activities would be very low for the gen-tie. The GHG emissions for the construction of other complete solar projects in Imperial County (including the solar field and associated gen-tie) have been estimated at less than 3,000 metric tons of $CO_2$ per year. Therefore, the construction of the proposed or alternative gen-tie line would result in considerably less GHG emissions and would be well below the NEPA indicator of 25,000 metric tons of $CO_2$ per year.

Additionally, agencies under the U.S. Department of the Interior are required to consider potential impact areas associated with climate change, including potential changes in flood risk, water supply, sea level rise, wildlife habitat and migratory patterns, invasion of exotic species, and potential increases in wildfires. The extremely low GHG emissions associated with development of the gen-tie line would result in no effect to any of these categories of potential impact.

Because the climate change impacts of the gen-tie alternatives are minimal, no mitigation would be necessary to specifically reduce GHG emissions associated with development of the gen-tie line. Those measures identified in the air quality analysis to reduce $NO_x$ emissions would contribute to reducing GHGs.

## 4.5 Cultural Resources

Class I and Class III cultural resource surveys were conducted for the APE that included the proposed right-of-way for the gen-tie routes and a 500-foot buffer on either side to identify the historical properties that could be affected by the proposed or alternative gen-tie lines. Adverse effects to historic properties occur when there is damage or loss of the historic property or its setting. For the purposes of this analysis, the primary indicator for determining if an impact would occur is the effects on cultural resources that are listed on, eligible for listing on, or unevaluated for listing on the National Register of Historic Places (NRHP) or areas of importance to Native American or other traditional communities. Specific indicators include the following:

- Acres and relative depth of ground-disturbing activities permitted, and their potential for affecting known or unknown cultural resources, or areas of importance to Native American or other traditional communities;
- Increased access to, or activity in, areas where resources are present or anticipated. Exposure of cultural resources or access to areas where cultural resources are present can increase the risk of vandalism or unauthorized collection of material. Vandalism or unauthorized collecting can destroy a cultural resource in a single incident;
- The extent to which an action changes the potential for erosion or other natural processes that could affect cultural resources. Natural processes, such as erosion or weathering, can degrade the integrity of many types of cultural resources over time. Human visitation, vehicle use, vegetation treatments, and other activities can increase the rate of deterioration through natural processes. While the effect of a few incidents may be negligible, the effect of repeated

uses or visits over time could increase the intensity of impacts due to natural processes;
- The extent to which an action alters the setting (such as visual and audible factors) of cultural resources; and
- The extent to which an action alters the availability of cultural resources for appropriate uses.

The analysis of impacts on cultural resources has been informed by the criteria of adverse effect in Title 36 CFR Part 800, which are the regulations implementing Section 106 of the National Historic Preservation Act (NHPA). According to 36 CFR §800.5a: "An adverse effect is found when an action may alter the characteristics of a historic property that qualify it for inclusion in the NRHP in a manner that would diminish the integrity of the property's location, design, setting, workmanship, feeling, or association. Adverse effects may include reasonably foreseeable effects caused by the action that may occur later in time, be farther removed in distance, or be cumulative." Assessment of effects involving Native American or other traditional communities, cultural or religious practices, or resources also requires consultation with the affected group.

### *4.5.1 Alternative 1 – No Action*

Under Alternative 1, the proposed and alternative gen-tie line on federal land managed by BLM would not be approved by the BLM. As a result, a gen-tie on federal land managed by BLM would not be constructed to interconnect the Campo Verde Solar generation facility to the regional transmission grid. The Campo Verde Solar generation facility would obtain gen-tie access via an alternative means that does not involve BLM-managed land or issuance of a separate ROW authorization.

It is expected that the federal lands managed by the BLM would continue to remain in their existing condition, with no new structures or facilities constructed or operated in the locations of the proposed gen-tie lines. As a result, no impacts to historic properties resulting from the proposed gen-ties on federal lands managed by BLM would occur.

However, BLM lands located within a designated utility corridor, such as where the gen-tie lines are proposed, could become available to other uses that are consistent with BLM's land use plan, including gen-tie lines for other solar projects. In addition, renewable energy projects may be constructed with gen-ties in other locations to meet state and federal mandates and such projects would have similar impacts to historic properties in those locations.

### *4.5.2 Alternative 2 – Proposed Action*

*Direct and Indirect Impacts*

Cultural resources are considered nonrenewable resources; therefore, physical impacts to them are considered permanent and irreversible. However, temporary impacts to historic

properties, such as temporary visual and auditory impacts occurring during construction phases of an undertaking, are reversible.

Historic properties are subject to direct and indirect impacts associated with an undertaking. Direct impacts can occur during construction of structures within the physical and aesthetic setting of a historic property, affecting the historic significance or traditional values of the historic property. Direct impacts can include ground disturbances within archaeological sites or demolition of historic buildings and structures. Indirect impacts resulting from an undertaking may occur during or after construction and may include disturbance of the viewshed or audible area associated with a sacred site, traditional cultural property (TCP) or traditional use area, or removal of traditional resources used by affected communities. These are sites to which tribes attach religious or cultural significance.

The Class III intensive pedestrian surveys conducted by kp environmental (Mitchell 2012) indicate there are two archaeological sites and nine isolated archaeological occurrences recorded within the proposed action (Alternative 2) and the 500 foot buffered area surveyed for the Project.

One of the archaeological sites recorded within the Alternative 2 APE and the 500-foot buffer is a historic irrigation-related site, the Westside Main Canal (CA-IMP-7834/P-13-008334) and its associated Pump 6 canal. The Westside Main Canal is recommended eligible for the NRHP under Criterion A for its association with events that have made a significant contribution to the broad patterns of our history and in the development of the Imperial Valley history (Davis et al. 2011; Mitchell 2011b). Impacts to the Westside Main Canal and are not expected under Alternative 2 because it would be spanned by the gen-tie line and continue to operate.

Site CA-IMP-11789 is a small ceramic scatter located outside the proposed action ROW but within the 500-foot buffered survey area. No impact to this site is anticipated under Alternative 2 as currently proposed.

Nine of the known cultural resources (P-13-013201, P-13-013844, P-13-013845, P-13-013847, P-13-013849, P-13-013850, P-13-013856, C-iso 1, and C-iso 2) are isolates. Isolates, by definition, lack immediate cultural context and otherwise fail to meet any of the criteria required for eligibility for listing in the NRHP. As a result, project effects to isolates would not be considered adverse under the NHPA, nor would they constitute significant impacts under NEPA; therefore, effects to isolated artifacts do not require mitigation measures.

Although the location of sites visible on the ground surface is known, there is a moderate to high potential for unidentified buried resources to be discovered during construction activities. The potential for buried resources is based on the known potential for buried sites in similar natural contexts in the project area, as well as the geologic characteristics and proximity of the APE to important archaeological site indicators such as water sources and other natural resources.

*Mitigation*

The following mitigation measures would be employed during construction as part of the Applicant's BMPs for the project (described in Table 2-2) to ensure that adverse impacts to cultural resources would be avoided, minimized, or mitigated:

- The gen-tie line will be engineered and designed to avoid historic properties eligible for listing in the National Register of Historic Places (NRHP) and California Register of Historical Resources (CRHR). Such historic properties will be mitigated as specified in accordance with the treatment plan that will be developed for the project.

- Historic properties eligible for listing in the NRHP or CRHR adjacent to project features but not directly impacted by construction would be avoided during construction. Temporary fencing or other approved marking around the perimeter of such sites will be required to ensure historic properties are avoided by project activities.

- The physical limits of construction activities would be predetermined and marked in the field to limit construction impact to within those boundaries. No paint or permanent coloring agents would be applied to rocks or vegetation to achieve such limitations.

- In the event of an unanticipated discovery of archaeological sites, including prehistoric, and historic sites, during construction, all ground disturbance would cease in the area of the discovery, and the find left undisturbed until a qualified professional archaeologist is contacted to evaluate the discovery and make recommendations as to significance, disposition, mitigation, and/or salvage.

- In the event Native American human remains, sacred objects, or items of Native American cultural patrimony would be encountered, protocol would follow the Native American Graves Protection and Repatriation Act (NAGPRA) on federal property and the 36 CFR 800.4. All work wouldl cease at the location and immediate telephone notification would be made to the BLM, followed by written confirmation. All NAGPRA consultation would be carried out by the BLM.

    - A tribal monitor would be present in areas where construction or other surface-disturbing activities would occur on BLM-managed land.

    - If adverse effects to historic properties are identified, a Memorandum of Agreement (MOA) will be developed to resolve the adverse effects.

If an MOA is developed, a Historic Properties Treatment Plan (HPTP) would be prepared in consultation with the BLM and other parties and would be implemented to avoid and mitigate unavoidable direct adverse effects on historic properties. In addition to the items described above, the HPTP may include provisions for archaeological monitoring and

discovery; tribal participation; long-term management; treatment of historic properties: protocols for Class III intensive pedestrian inventory (if revisions to the selected alternative are required): an Unanticipated Discovery Plan; and continued consultation with concerned Native American groups regarding TCPs.

*Residual Impacts*

No residual impacts to cultural resources would occur as a result of Alternative 2 with implementation of the mitigation measures identified above.

### *4.5.3 Alternative 3 – Alternative Gen-Tie on BLM Land*

The Class III intensive pedestrian surveys conducted by the kp environmental (Mitchell 2012) indicate there are seven archaeological sites and nine isolated archaeological occurrences recorded within Alternative 3 of the Project.

Two of the archaeological sites, the Westside Main Canal (CA-IMP-7834/P-13-008334) and its associated Pump 6 canal, and the Fern Check of the Westside Main Canal (P-13-012692), are associated with the early irrigation system of the Imperial Valley and the local historical theme of agricultural development. The Westside Main Canal is recommended eligible for the NRHP under Criterion A for its association with events that have made a major contribution to the broad patterns of our history and in the development of the Imperial Valley history (Davis et al. 2011; Mitchell 2011b). The Fern Check of the Westside Main Canal is recommended not eligible for listing in the NRHP as these features lack integrity (Mutaw et al. 2010). Impacts to the Westside Main Canal and the Fern Check of the Westside Main Canal are not expected under Alternative 3 because they would be spanned by the gen-tie line and continue to operate.

Temporary camp site, CA-IMP-3179, and the three lithic scatter sites (CA-IMP-11753, CA-IMP-13855, and Gen Tie 16) are recommended eligible for the NRHP under Criterion D for their information potential. Ceramic site, CA-IMP-11789, has not been evaluated. All five of the prehistoric sites are located outside the Alternative 3 ROW but within the 500-foot buffered survey area. No impacts to these sites are anticipated under Alternative 3 as currently proposed.

Nine of the known cultural resources are isolated occurrences (P-13-012695, P-13-013846, P-13-013847, P-13-013848, P-13-013849, P-13-013850, P-13-013851, P-13-013856, and C-iso 1) are isolates. As discussed under 4.5.2, isolated occurrences are not eligible for listing in the NRHP, are not subject to adverse impacts under the NRHP or NEPA, and do not require mitigation.

The mitigation and residual impacts for Alternative 3 would be the same as those described for Alternative 2.

### *4.5.4 Alternative 4 – Private Land Gen-Tie Alternative*

The pedestrian survey conducted by kp environmental (Mitchell 2011b) indicate there are five archaeological sites and one isolated archaeological occurrence recorded within Alternative 4 of the Project.

The five sites are historic irrigation-related sites. The Westside Main Canal (CA-IMP-7834/P-13-008334) and the Westside Drain have been recommended eligible for listing in the NRHP under Criterion A for its association with events that have made a major contribution to the broad patterns of our history and in the development of the Imperial Valley history (Davis et al. 2011; Mitchell 2011b). Foxglove Canal (P-13-009980), Dixie Drain 4 (P-13-12688), and Forget-Me-Not Canal and Drain (P-13-12690) are recommended not eligible for listing in the NRHP because they lack integrity (Davis et al. 2011). Impacts to the Westside Main Canal, Westside Drain, Foxglove Canal, Dixie Drain 4, and Forget-Me-Not Canal and Drain are not expected under Alternative 4 because they would be spanned by the gen-tie line and continue to operate.

The isolated occurrence (P-13-13759) is not eligible for listing in the NRHP (see 4.5.2), is not subject to adverse impacts under the NRHP or NEPA, and does not require mitigation.

The mitigation and residual impacts for Alternative 4 would be the same as those described for Alternative 2.

## 4.6 Paleontology

Most impacts on paleontological resources are direct and result from ground–disturbing activities. Indirect impacts include the unauthorized collection of fossils and other paleontological resources resulting from increased access to the resources (e.g., access by construction personnel, other visitors, etc.).

Geologic formations that could be affected by the gen-tie alternatives were evaluated for their potential to yield vertebrate fossils and important non-vertebrate fossils using the BLM's Potential Fossil Yield Classification (PFYC) System (Deméré and Siren 2011).

Mitigation measures to protect paleontological resources have been developed in compliance with guidance provided by the BLM in IM 2009-11. It is the policy of the BLM, that impacts on scientifically important paleontological resources be identified and proper mitigation implemented (BLM 2008).

### *4.6.1 Alternative 1 – No Action*

Under Alternative 1, the proposed and alternative gen-tie line on federal land managed by BLM would not be approved by the BLM. As a result, a gen-tie on federal land managed by BLM would not be constructed to interconnect the Campo Verde Solar generation facility to the regional transmission grid. The Campo Verde Solar generation facility

would obtain gen-tie access via an alternative means that does not involve BLM-managed land or issuance of a separate ROW authorization.

It is expected that the federal lands managed by the BLM would continue to remain in their existing condition, with no new structures or facilities constructed or operated in the locations of the proposed gen-tie lines. As a result, no impacts to paleontological resources resulting from the proposed gen-ties on lands managed by BLM would occur. However, BLM-managed lands located within a designated utility corridor, such as where the gen-tie lines are proposed, could become available to other uses that are consistent with BLM's land use plan, including gen-tie lines for other solar projects. In addition, renewable energy projects may be constructed with gen-ties in other locations to meet state and federal mandates; such projects would have similar impacts to paleontological resources in those locations.

### *4.6.2 Alternatives 2, 3, and 4*

The geologic formations potentially impacted by any of the three gen-tie alternatives are the same. Likewise the potential depth that the structure foundations would be excavated would be the same. Construction of any of these three alternatives would result in similar impacts to paleontological resources. There would be no operational impacts to paleontological resources associated with any of the gen-tie alternatives. Therefore, all three action alternatives are discussed collectively below.

*Direct and Indirect Impacts*

Direct impacts to paleontological resources could occur when earthwork activities, such as structure foundation borehole drilling activities, cut into the geologic deposits (formations) within which fossils are buried. These direct impacts are in the form of physical destruction of fossil remains. Since fossils are the remains of prehistoric animal and plant life they are considered to be nonrenewable resources.

Routine assessment of impacts upon paleontological resources includes a system for categorizing the relative abundance of vertebrate fossils and important non-vertebrate fossils using the BLM's Potential Fossil Yield Classification (PFYC). Under the PFYC, a higher class indicates a higher potential fossil yield.

Class 1 – Very Low
Geologic units with very low yield potential are those that are not likely to contain fossil remains, such as igneous and metamorphic rocks, as well as sedimentary rocks that are older than 542 million years (Precambrian in age). No rock units within the Project site are assigned a Class 1 ranking.

Class 2 – Low
Geologic units with low yield potential are those that are not likely to contain vertebrate fossils or scientifically important non-vertebrate fossils, such as units that are generally younger than 10,000 years old, Recent aeolian deposits, and sediments that have

undergone significant physical and chemical changes. No rock units within the Project site are assigned a Class 2 ranking.

Class 3 – Moderate or Unknown
Geologic units with moderate or unknown yield potential are sedimentary deposits in which fossil discoveries vary in significance, abundance, and predictable occurrence (moderate), or sedimentary units of unproven or unknown fossil potential. Examples of Class 3 deposits include marine sedimentary rock units with sporadic known occurrences of vertebrate fossils, sedimentary rock units containing common invertebrate or plant fossils, or sedimentary rock units that exhibit geologic features and preservational conditions that suggest important fossils could be present, but little information about the paleontological resources of the unit or the area is known. Deposits of Quaternary alluvium within the Project site are assigned a Class 3 ranking.

Class 4 – High
Geologic units with high yield potential are those that contain a high occurrence of important fossils that have been documented, but which may vary in occurrence and predictability. Examples of Class 4 deposits include sedimentary rock units with regular known occurrences of vertebrate fossils from well exposed natural outcrops or sedimentary rock units with scientifically important invertebrate or plant fossils known to vary in occurrence and predictability. The Brawley Formation and Lake Cahuilla sediments within the Project site are assigned a Class 4 ranking.

Class 5 – Very High
Geologic units with very high yield potential are those that consistently and predictably produce vertebrate or scientifically important non-vertebrate fossils. No rock units within the Project site are assigned a Class 5 ranking.

According to the paleontology collection records at SDNHM from previously recorded sites in Imperial County (i.e., those discovered during construction of the Sempra-Intergen transmission line and the Sunrise Powerlink), it has been determined that Quaternary Lake Cahuilla sediments have a high potential fossil yield (Class 4). Most of the recorded localities are within one half mile of the Proposed Action (Alternative 2) and Alternative 3 on federal lands, which extends in part along a segment of the prehistoric high shoreline of Lake Cahuilla (Deméré and Siren 2011).

Although the vertical thickness of the Lake Cahuilla sediments has not been determined for the Project site, drilling operations for the Sempra-Intergen transmission line did encounter fossil-bearing lake sediments from the surface to depths of at least 25 feet. Similar observations were made during substation expansion work at SDG&E's Imperial Valley Substation (Deméré and Siren 2011).

Regional geologic studies (Morton, 1977; Dorsey, 2006) note that Lake Cahuilla sediments are underlain by older strata (e.g., Brawley Formation, Ocotillo Conglomerate, and Palm Spring Group) in Imperial Valley and it is likely that older strata were encountered in the deeper geotechnical boreholes. Alternative 2 extends along the

prehistoric coastline of Lake Cahuilla, and the lake deposits would presumably be thinner in this area. Because of this, there is a potential for the borehole excavation activities associated with the project, which may extend to depths of 40 feet, to impact much older fossiliferous deposits (e.g., Palm Spring Group) that underlie the Lake Cahuilla deposits and / or Brawley Formation at depth (Deméré and Siren 2011).

*Mitigation*

Impacts to paleontological resources can be mitigated through the development and implementation of a BLM-approved paleontological monitoring and discovery treatment plan. The plan would include:

- The treatments recommended for the area of the proposed disturbance
- The level of monitoring
- The types of field personnel
- The methods of fossil and data recovery
- The post-field treatment of recovered paleontological resources
- The designated specimen repository
- The format of the final mitigation report

*Residual Impacts*

No residual impacts to paleontological resources would occur as a resul of Alternatives 2, 3, or 4 with implementation of the mitigation measures identified above.

## 4.7 Soils and Geologic Resources

The potential impact by geologic hazards was evaluated by assessing if there would be life/safety concerns or impacts to proper function of the gen-tie as a result of a seismic event. The potential impact of loss of soils due to erosion by either water or wind was also evaluated.

### *4.7.1 Alternative 1 – No Action*

Under Alternative 1, the proposed and alternative gen-tie line on federal land managed by BLM would not be approved by the BLM. As a result, a gen-tie on federal land managed by BLM would not be constructed to interconnect the Campo Verde Solar generation facility to the regional transmission grid. The Campo Verde Solar generation facility would obtain gen-tie access via an alternative means that does not involve BLM-managed land or issuance of a separate ROW authorization.

It is expected that the federal lands managed by the BLM would continue to remain in their existing condition, with no new structures or facilities constructed or operated in the locations of the proposed gen-tie lines. As a result, none of the soils and geologic resource impacts from the proposed gen-ties on federal lands managed by BLM would occur. However, the gen-tie for the Campo Verde Solar generation facility could possibly be built on private land so soils and geologic resource impacts would occur but on disturbed lands in a nearby location.

However, because of their location within a designated utility corridor, the federal lands managed by BLM on which the gen-tie lines are proposed would become available to other uses that are consistent with BLM's land use plan, including gen-tie lines for other solar projects. In addition, without this gen-tie line on federal lands managed by BLM, other renewable energy projects may be constructed with gen-ties in other locations to meet state and federal mandates, and those projects would have similar impacts in other locations.

### *4.7.2 Alternative 2 – Proposed Action*

*Direct and Indirect Impacts*

The main geology and soils hazards in the area include potential for ground shaking, liquefaction, and expansive soils. Potential direct (e.g. ground shaking, liquefaction) and indirect impacts (e.g. settlement of foundations) are associated with seismic risk. The Gen-tie would be subject to strong ground shaking due to potential fault movements along the faults in the area identified in Chapter 3. Direct impacts to the Gen-tie could occur from strong seismic ground shaking and indirect impacts could occur in the form of damage to equipment that would require replacement. However, potential impacts for these events are expected to be mitigated by implementation of the measures described below.

Soils on the Gen-tie route predominately consist of sands and sandy loams. Therefore, the Gen-tie is not expected to be subject to direct impacts resulting from potential swelling forces and reduction in soil strength resulting from saturation.

The potential for soil erosion during construction would be limited by the very flat topography and small amount of ground disturbance with only about 11 acres disturbed temporarily during construction. Erosion will be controlled on-site by compliance with the mitigation described below. Therefore, the potential soil erosion impact would be minor.

*Mitigation*

The potential effects of ground shaking to the gen-tie structures would be mitigated by adhering to the Uniform Building Code or the standards of care established by the

Structural Engineers Association of California (EGA, 2011) and the recommendations of any subsequent geotechnical investigations during final Project design.

A detailed stormwater pollution prevention plan (SWPPP) would be developed and implemented to minimize erosion during construction in compliance with the National Pollutant Discharge Elimination System (NPDES) General Construction Permit.

*Residual Impacts*

There would be no unavoidable adverse impacts to soils and geologic resources after mitigation is applied.

### *4.7.3 Alternative 3 – Alternative Gen-Tie on BLM Land*

The impacts, mitigation, and unavoidable residual impacts associated with this gen-tie alternative would be similar to those described for Alternative 2.

### *4.7.4 Alternative 4 – Private Land Gen-Tie Alternative*

The impacts, mitigation, and unavoidable residual impacts associated with this gen-tie alternative would be similar to those described for Alternative 2.

## 4.8 Lands and Realty

Impact assessment with respect to NEPA was based on impacts that would result from construction and operation of the proposed gen-tie on other ROWs and land use permits of all types on BLM-administered land.

### *4.8.1 Alternative 1 – No Action*

Under Alternative 1, the proposed and alternative gen-tie line on federal land managed by BLM would not be approved by the BLM. As a result, a gen-tie on federal land managed by BLM would not be constructed to interconnect the Campo Verde Solar generation facility to the regional transmission grid. The Campo Verde Solar generation facility would obtain gen-tie access via an alternative means that does not involve BLM-managed land or issuance of a separate ROW authorization.

It is expected that the federal lands managed by the BLM would continue to remain in their existing condition, with no new structures or facilities constructed or operated in the locations of the proposed gen-tie lines. As a result, none of the land use and realty impacts from the proposed gen-ties on federal lands managed by BLM would occur.

However, because of their location within a designated utility corridor, the federal lands managed by BLM on which the gen-tie lines are proposed would become available to other uses that are consistent with BLM's land use plan, including gen-tie lines for other solar projects. In addition, without this gen-tie line on federal lands managed by BLM,

other renewable energy projects may be constructed with gen-ties in other locations to meet state and federal mandates, and those projects would have similar impacts in other locations.

### *4.8.2 Alternative 2 – Proposed Action*

*Direct and Indirect Impacts*

The private lands associated with the proposed gen-tie (Alternative 2) are zoned Heavy Agriculture (A-3) and transmission lines and substations are permitted uses within the A-3 Zone. Therefore, no land use approval beyond the conditional use permit (CUP) being obtained from Imperial County would be required for the portion of the gen-tie on private lands. A variance would be required if any of the structures would need to be over 120 feet.

This alternative would not impact any agricultural lands not part of the solar generation facility site. It would require a crossing of IID's Westside Main Canal which would be spanned by the line. This will require an encroachment permit from IID.

On BLM lands, construction of Alternative 2 would impact generally undeveloped BLM-administered land within Utility Corridor N for a transmission line ROW. With this gen-tie alternative approaching the Imperial Valley Substation from the northwest, it would be located in the vicinity of the following existing, authorized, or proposed uses:

- The gen-tie for Imperial Solar Energy Center West - CACA-051644 (approved but not built)
- The gen-tie for Imperial Valley Solar Project - CACA-047740 (approved but not built)
- The Imperial Irrigation District (IID) Dixieland to IV transmission line (proposed but not yet approved)

The proposed gen-tie and each of the projects identified above are planning to interconnect to the existing Imperial Valley Substation. The exact location where each will need to enter the substation will be determined by the position inside the substation that is assigned to each by SDG&E.

*Mitigation*

Through the BLM, coordination with the other proposed projects and existing authorized uses in the area will be necessary to minimize potential conflicts with those projects and uses. In the vicinity of the Imperial Valley Substation where each project will need to enter at a specific location, the assigned locations and the relative construction timing of each project will dictate the specific type of coordination that would be necessary.

Likewise, coordination with the IID would be necessary for the crossing of the Westside Main Canal that is managed by the agency.

*Residual Impacts*

Through the coordination identified above, no residual impacts to lands and realty are anticipated as a result of implementing this gen-tie line alternative.

### *4.8.3 Alternative 3 – Alternative Gen-Tie on BLM Land*

The private lands associated with this gen-tie alternative (Alternative 3) are zoned Heavy Agriculture (A-3) and transmission lines and substations are permitted uses within the A-3 Zone. Therefore, no land use approval beyond the conditional use permit (CUP) being obtained from Imperial County would be required for the portion of the gen-tie on private lands.

This alternative would not impact any agricultural lands not part of the solar generation facility site. It would require a crossing of IID's Westside Main Canal which would be spanned by the line.

On BLM lands, construction of Alternative 3 would expand an already developed ROW on BLM-administered land within Utility Corridor N. This gen-tie alternative will parallel the existing IID S-Line and the corridor for the approved upgrade to the S-Line (CACA-13206) to Imperial Valley Substation from the north.

Except for the existing and proposed upgrade to the S-Line, this alternative would not be located near the other existing, authorized, or proposed transmission lines in the area. However, like Alternative 2, since each of these projects are planning to interconnect to the existing Imperial Valley Substation, each will need to enter the substation to connect with position within the substation assigned to each by SDG&E

*Mitigation*

Through the BLM, coordination with the other proposed projects in the area will be necessary to minimize potential conflicts with them. In the vicinity of the Imperial Valley Substation where each will need to enter at a specific location, the assigned locations and the relative construction timing of each project will dictate the specific type of coordination that would be necessary.

Likewise, coordination with the IID would be necessary for the crossing of the Westside Main Canal that is managed by them.

*Residual Impacts*

Through the coordination identified above, no residual impacts to lands and realty are anticipated as a result of implementing this gen-tie line alternative.

### *4.8.4 Alternative 4 – Private Land Gen-Tie Alternative*

The private lands associated with this gen-tie alternative (Alternative 4) are zoned General Agricultural Rural Zone (A-2-R) where facilities relating to the transmission of electrical energy are permitted uses subject to the approval of a Conditional Use Permit. Therefore, no land use approval beyond the conditional use permit (CUP) being obtained from Imperial County would be required for the portion of the gen-tie on private lands.

This alternative would impact agricultural lands for its entire 1.75 mile length. It would be located adjacent to existing field roads for its entire length. Except for the short-term disruption during construction, the existing agricultural uses would continue and not be affected.

This gen-tie alternative would require crossing IID's Westside Main Canal. In addition, it would also cross IID's Westside Drain, Fox Glove Canal, Forget-me-not Drain, Forget-me-not Canal, and the Dixie 4 Drain. Each of these features would be spanned by the line and encroachment permits from IID will be required.

No portion of this alternative would be located on BLM lands.

*Mitigation*

Coordination the IID would be necessary for the crossing of the Westside Main Canal and the other canals and drains that would be spanned by this alternative.

*Residual Impacts*

Through the coordination identified above, no residual impacts to lands and realty are anticipated as a result of implementing this gen-tie line alternative.

## 4.9 Noise and Vibration

To determine noise impacts from construction, types of equipment, noise levels generated by the various equipment, distance from sensitive receptors, and the amount of time the equipment is operating in a given day and over a number of days were used along with estimates of construction traffic. To be conservative, worst case scenarios were developed to compare against significance criteria.

Ground-borne vibrations typically 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 1,000 feet from the vibration source.

NEPA does not specify any specific noise or vibration requirements that would be applicable to the gen-tie alternatives. Imperial County noise standards limit construction noise from a single piece of equipment or a combination of equipment to 75 dB equivalent average sound pressure level (Leq), when averaged over an 8-hour period, and measured at the nearest sensitive receptor. This standard assumes a construction period, relative to an individual sensitive receptor of days or weeks. In cases of extended length construction times, the standard may be tightened so as not to exceed 75 dB Leq when averaged over a 1-hour period. Also, the County has applicable property line sound level limits based on zoning that apply to noise generation from one property to an adjacent property. The standards imply the existence of a sensitive receptor on the adjacent, or receiving, property. In the absence of a sensitive receptor, an exception or variance to the standards may be appropriate. There is no standard for agriculturally zoned lands. The County's most restrictive standard is 45 dBA during night time in residential areas.

### *4.9.1 Alternative 1 – No Action*

Under Alternative 1, the proposed and alternative gen-tie line on federal land managed by BLM would not be approved by the BLM. As a result, a gen-tie on federal land managed by BLM would not be constructed to interconnect the Campo Verde Solar generation facility to the regional transmission grid. The Campo Verde Solar generation facility would obtain gen-tie access via an alternative means that does not involve BLM-managed land or issuance of a separate ROW authorization.

It is expected that the federal lands managed by the BLM would continue to remain in their existing condition, with no new structures or facilities constructed or operated in the locations of the proposed gen-tie lines. As a result, none of the noise and vibration impacts from the proposed gen-ties on federal lands managed by BLM would occur. However, the gen-tie for the Campo Verde Solar generation facility could possibly be built on private land so noise and vibration impacts would occur but in a nearby location on private lands.

However, because of their location within a designated utility corridor, the federal lands managed by BLM on which the gen-tie lines are proposed would become available to other uses that are consistent with BLM's land use plan, including gen-tie lines for other solar projects. In addition, without this gen-tie line on federal lands managed by BLM, other renewable energy projects may be constructed with gen-ties in other locations to meet state and federal mandates, and those projects would have similar impacts in other locations.

### *4.9.2 Alternative 2 – Proposed Action*

*Direct and Indirect Impacts*

Construction noise represents a short-term impact on the ambient noise levels. Noise would be generated by construction equipment associated with construction of the gen-tie line including power augers, cranes, trucks, and other equipment as needed. Grading

activities typically represent one of the highest potential sources for construction noise impacts and no grading is expected for the gen-tie.

The U.S. Environmental Protection Agency (U.S. EPA) has compiled data regarding the noise generating characteristics of specific types of construction equipment. Noise levels generated by heavy construction equipment at a distance of 50 feet can range from 60 dBA for a small tractor up to 100 dBA for rock breakers. The equipment used for the construction of the gen-tie will include power augers or drills, a crane, material trucks, concrete trucks, and wire pulling and tensioning equipment and will generally generate noise in the range from 60 to 80 dBA. However, these noise levels diminish rapidly with distance from the construction site at a rate of approximately 6 dBA per doubling of distance. For example, a noise level of 87 dBA measured at 50 feet from the noise source would be reduced to 81 dBA at 100 feet from the source and be further reduced to 75 dBA at 200 feet from the source.

Construction of the gen-tie is expected to take 2 to 6 months with construction activities moving along the line as it is constructed. As required by County standards, construction equipment operation shall be limited to the hours of 7 AM to 7 PM, Monday through Friday, and 9 AM to 5 PM Saturday unless otherwise approved by the County. No commercial construction operations are permitted on Sunday or holidays. All locations where construction would take would more than 0.5 miles from any occupied properties. Given the spatial separation of the construction activities and their short duration, the small amount of construction traffic associated with the gen-tie, the construction of the line would not result in noise impacts. At a distance as close as 140 feet, based on the noise reduction with distance dicussed in the paragraph above, the noise from the construction activities would result in an anticipated worst case eight-hour average combined noise level of less than 75 dBA. Therefore, noise impacts from construction are anticipated to be minor.

During operation, noise could be generate from what is referred to as the Corona Affect (Corona) - a phenomenon associated with the electrical ionization of the air that occurs near the surface of the energized conductor and suspension hardware due to very high electric field strength. This is audible power line noise that is generated from electric Corona discharge, which is usually experienced as a random crackling or hissing sound. The amount of Corona produced by a transmission line is a function of the voltage of the line, the diameter of the conductors, the locations of the conductors in relation to each other, the elevation of the line above sea level, the condition of the conductors and hardware, and the local weather conditions. Corona noise is primarily audible during wet weather conditions such as fog and rain. Typically for transmission lines, the maximum Corona noise during wet weather conditions is usually less than 40 dBA at the edge of the ROW. During the dry conditions that normally occur in this area, the noise levels from Corona would be low, 20 dBA or less. Therefore, noise impacts from operation would be minor and well below the County's most restrictive nighttime standard of 45 dBA. This is also consistent with previously measured and modeled noise levels on transmission line projects throughout California operating at full capacity.

*Mitigation*

The most effective method of controlling construction noise is through local control of construction hours. Because the gen-tie is not located near any sensitive noise receptors, the construction period is short duration, and operational noise is very low, no mitigation would be necessary.

*Residual Impacts*

There would be no unavoidable adverse noise impacts.

### *4.9.3 Alternative 3 – Alternative Gen-Tie on BLM Land*

The noise impacts associated with this gen-tie alternative would be similar to those described for Alternative 2. Two of the structures associated with this alternative route would be within 300 to 500 feet of a residence at the southern end of Liebert Road. In these locations, the noise from construction would be expected to meet Imperial County's standard for construction noise from a single piece of equipment or a combination of equipment, which is that it should not exceed 75 dB Leq, when averaged over an eight (8) hour period, and measured at the nearest sensitive receptor. In addition, construction at these locations would be of short duration and activities would be limited to normal weekday working hours if the house is occupied. Therefore, construction and operational noise would be minor and there would be no residual adverse noise impacts.

### *4.9.4 Alternative 4 – Private Land Gen-Tie Alternative*

The noise impacts associated with this gen-tie alternative would be similar to those described for Alternative 2. There are no residences or other receptors within 0.5 miles of this gen-tie route. The noise from construction would be expected to meet Imperial County's standard for construction noise from a single piece of equipment or a combination of equipment, which is that it should not exceed 75 dB Leq, when averaged over an eight (8) hour period, and measured at the nearest sensitive receptor. In addition, construction at these locations would be of short duration. Therefore, construction and operational noise would be minor and there would be no residual adverse noise impacts.

## 4.10 Public Health and Safety

Baseline conditions for the impact analysis presented in this section were established in Chapter 3. The indicators applicable to the analysis of potential impacts on public health and safety from a proposed project under NEPA include reportable quantities of hazardous materials under Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). To evaluate impacts from existing hazardous waste within the Project Area, a review was conducted of the Phase I Environmental Site Assessments completed for the Campo Verde Solar generation facility for which the records search covered the gen-tie routes. The Plan of Development (POD) was reviewed to evaluate impacts from hazardous materials that would be used during construction and operations

and maintenance. County maps were reviewed to determine the Project's proximity to schools and airports. The County General Plan was also reviewed for requirements for Emergency Response Plans, hazard management plans, and wildfire potential. The POD was also reviewed with respect to worker health and safety, hazardous materials management, spill prevention and intentionally destructive acts.

### *4.10.1 Alternative 1 – No Action*

Under Alternative 1, the proposed and alternative gen-tie line on federal land managed by BLM would not be approved by the BLM. As a result, a gen-tie on federal land managed by BLM would not be constructed to interconnect the Campo Verde Solar generation facility to the regional transmission grid. The Campo Verde Solar generation facility would obtain gen-tie access via an alternative means that does not involve BLM-managed land or issuance of a separate ROW authorization.

It is expected that the federal lands managed by the BLM would continue to remain in their existing condition, with no new structures or facilities constructed or operated in the locations of the proposed gen-tie lines. As a result, none of the public health and safety impacts from the proposed gen-ties on federal lands managed by BLM would occur. However, the gen-tie for the Campo Verde Solar generation facility could possibly be built on private land so public health and safety impacts would occur but on private lands in a nearby location.

However, because of their location within a designated utility corridor, the federal lands managed by BLM on which the gen-tie lines are proposed would become available to other uses that are consistent with BLM's land use plan, including gen-tie lines for other solar projects. In addition, without this gen-tie line on federal lands managed by BLM, other renewable energy projects may be constructed with gen-ties in other locations to meet state and federal mandates, and those projects would have similar impacts in other locations.

### *4.10.2 Alternative 2, 3, and 4*

Construction and operation of each of the three gen-tie alternatives would result in similar impacts to public health and safety because they are located in close proximity, would be constructed using similar methods and materials, and the construction timeframe and construction equipment for each would be the same. Therefore, all three action alternatives are discussed collectively below.

*Direct and Indirect Impacts*

Construction of any of the proposed gen-tie lines would occur over a 2 to 6 month period. During the construction phase of the gen-tie, small amounts of hazardous materials such as fuels and lubricants would be in use on the ROW. To ensure worker health and safety and no impacts to the environment, no storage of hazardous materials will be allowed on the ROW and fueling or maintenance of construction equipment will not be conducted on

the ROW unless emergency repair is necessary. An Emergency Evacuation and Response Plan would be developed and implemented to provide directions for responding during an emergency for workers on the ROW.

When the gen-tie is brought on-line and starts to transmit electricity, electromagnetic fields (EMF) would be generated in proximity to the line. Currently, there is no agreement among scientists regarding the potential health risk related to EMFs. However, in response to a situation of scientific uncertainty and possible public concerns regarding EMF, an EMF Management Plan would be developed that specifies, where needed and feasible, measures to reduce exposure from the gen-tie.

Following construction, the presence of a transmission line could affect air traffic and present safety hazards at nearby airports. The proposed gen-tie line and alternatives are not located within the airport compatibility zones associated with any of the public airports in Imperial County. The closest public airport is the U.S. Naval Air Facility at El Centro (NAF/EC) military airport located approximately 5.5 to 6.5 miles north of any of the gen-tie alternatives. The project is over 10.5 miles west of the Calexico International Airport. Therefore, no impact to aviation safety would occur.

The risk to workers or the public from damage to gen-tie line as a result of accidental or intentional actions by outside parties during construction is low because on-site workers would reasonably be expected to notify law enforcement authorities of any unauthorized access. In addition, once constructed, the line would be monitored periodically during annual inspections and periodic maintenance. Also, this area will continue to be monitored frequently by the Border Patrol. Accordingly, the construction of the gen-tie line would not increase the risk for environmental impacts from intentionally destructive acts.

*Mitigation*

While the potential risks to public health and safety associated with the gen-tie line would be low, standard mitigation measures will be employed to ensure minimal impacts. These measures would include:

- The Applicant shall develop an Environmental Health and Safety Plan for the construction and operation of the Project to ensure it includes all activities and compliance to all local, state and federal regulatory requirements.

- Appropriate spill containment and clean-up kits shall be kept on the ROW during construction.

- The construction contractor shall supply the local emergency response agencies with a Hazardous Materials Management Plan and an associated emergency response plan and inventory specific to the site. The Applicant shall prepare the plan for approval by the BLM.

- Even though fire risk is low, a Fire Prevention and Response Plan (FPRP) will be developed and implemented during construction, operation, and maintenance of the proposed transmission line.

- During construction, Best Management Practices (BMPs) for hazardous materials shall include:
    - Keeping materials in their original containers with the original manufacturer‘s label and resealed when possible
    - No storing of chemicals or hazardous materials on the ROW
    - Following manufacturer’s recommendation for proper handling and disposal
    - Conducting routine inspections to ensure that all chemicals on site are being used, and disposed of appropriately
    - Performing timely maintenance on vehicles/equipment to avoid leaking oil or other fluids, and placing drip plans under the leak when the vehicle/equipment is parked prior to the maintenance event
    - Ensuring that all personnel dealing with hazardous materials are properly trained in the use and disposal of these materials in accordance with local, state and federal regulations
    - Maintaining Material Safety Data Sheets (MSDSs) available on the site for use during Project construction.

- Develop an EMF Management Plan, if needed, to control EMFs outside the gen-tie ROW.

*Residual Impacts*

Through implementing the mitigation measures identified above, no residual impacts to public health and safety are anticipated as a result of implementing any of the gen-tie line alternatives.

## 4.11 Recreation

The effects of the proposed Project on the recreation environment were assessed based on the following considerations, including whether its construction, operation or decommissioning would directly or indirectly impact recreational opportunities including hiking, backpacking and long-term camping in established federal, state, or local recreation areas and/or wilderness areas.

### *4.11.1 Alternative 1 – No Action*

Under Alternative 1, the proposed and alternative gen-tie line on federal land managed by BLM would not be approved by the BLM. As a result, a gen-tie on federal land managed by BLM would not be constructed to interconnect the Campo Verde Solar generation facility to the regional transmission grid. The Campo Verde Solar generation facility

would obtain gen-tie access via an alternative means that does not involve BLM-managed land or issuance of a separate ROW authorization.

It is expected that the federal lands managed by the BLM would continue to remain in their existing condition, with no new structures or facilities constructed or operated in the locations of the proposed gen-tie lines. As a result, none of the recreation impacts from the proposed gen-ties on federal lands managed by BLM would occur. However, the gen-tie for the Campo Verde Solar generation facility could possibly be built on private land so recreation impacts would occur but on private lands in a nearby location.

However, because of their location within a designated utility corridor, the federal lands managed by BLM on which the gen-tie lines are proposed would become available to other uses that are consistent with BLM's land use plan, including gen-tie lines for other solar projects. In addition, without this gen-tie line on federal lands managed by BLM, other renewable energy projects may be constructed with gen-ties in other locations to meet state and federal mandates, and those projects would have similar impacts in other locations.

### *4.11.2 Alternatives 2 and 3*

Construction and operation of each of the two gen-tie alternatives on BLM land would result in similar impacts to recreation because they are located in close proximity and would be located on similar BLM lands within a designated utility corridor. Therefore, Alternatives 2 and 3 are discussed collectively below.

These two gen-tie alternatives would not negatively impact recreation on the BLM-managed lands or private lands in the area. There are no designated BLM recreation areas located within 10 miles of the two alternatives that cross BLM-managed lands (Alternatives 2 and 3) but roads that provide some access to other BLM-managed lands would be crossed by these two alternative gen-tie lines. These roads and the crossing locations are located within Utility Corridor N where there are several existing, approved, and proposed transmission facilities accessing the existing Imperial Valley Substation also located on the BLM lands in this area. Therefore development of one of the proposed gen-ties in this area would not affect the recreational experience of anyone accessing BLM lands using these roads.

### *4.11.2 Alternative 4*

The private lands in the area are all in agricultural production and could be seasonally used for hunting if permitted by the landowner. Access to the private lands crossed by the Alternative 4 would still be available to the public (with landowner permission) following construction of the line and would not preclude hunting. Therefore, no recreation impacts would occur under this alternative.

## 4.12 Socioeconomics

### *4.12.1 Alternative 1 – No Action*

Under Alternative 1, the proposed and alternative gen-tie line on federal land managed by BLM would not be approved by the BLM. As a result, a gen-tie on federal land managed by BLM would not be constructed to interconnect the Campo Verde Solar generation facility to the regional transmission grid. The Campo Verde Solar generation facility would obtain gen-tie access via an alternative means that does not involve BLM-managed land or issuance of a separate ROW authorization.

It is expected that the federal lands managed by the BLM would continue to remain in their existing condition, with no new structures or facilities constructed or operated in the locations of the proposed gen-tie lines. However, the gen-tie for the Campo Verde Solar generation facility could possibly be built on private land so socioeconomic impacts could.

However, because of their location within a designated utility corridor, the federal lands managed by BLM on which the gen-tie lines are proposed would become available to other uses that are consistent with BLM's land use plan, including gen-tie lines for other solar projects. In addition, without this gen-tie line on federal lands managed by BLM, other renewable energy projects may be constructed with gen-ties in other locations to meet state and federal mandates, and those projects would have similar impacts in other locations.

### *4.12.2 Alternatives 2, 3, and 4*

Implementation of any of the three gen-tie alternatives would impact the same part of Imperial County. Likewise the potential contribution to the local economy would be the same. Therefore, their construction and operation would result in similar potential impacts to socioeconomic resources. Accordingly, all three action alternatives are discussed collectively below.

During project construction activities, the construction workforce would average approximately 20-40 workers over the 2 to 6 month construction period. Some of the construction workforce would be recruited locally and available through the existing labor pool but the majority would be specialized technical workers from outside of the local area.

During construction activities, the gen-tie alternatives would generate the number of workers identified above and would not affect any of the jobs on the nearby agricultural lands or those crossed by the alternatives. So project construction is not anticipated to result in any decrease in the quantity or quality of employment. Therefore, no indirect or direct socioeconomic impacts are anticipated for construction.

Operating and maintaining the Gen-Tie line will not require any permanent full-time employees. Periodic inspection would be conducted on approximately an annual basis and maintenance would be conducted when needed. Underlying land uses within the gen-tie ROW would also continue during operation of the line. Accordingly, there would be no indirect or direct socioeconomic impacts associated with operation and maintenance activities.

## 4.13 Environmental Justice

### *4.13.1 Alternative 1 – No Action*

Under Alternative 1, the proposed and alternative gen-tie line on federal land managed by BLM would not be approved by the BLM. As a result, a gen-tie on federal land managed by BLM would not be constructed to interconnect the Campo Verde Solar generation facility to the regional transmission grid. The Campo Verde Solar generation facility would obtain gen-tie access via an alternative means that does not involve BLM-managed land or issuance of a separate ROW authorization.

It is expected that the federal lands managed by the BLM would continue to remain in their existing condition, with no new structures or facilities constructed or operated in the locations of the proposed gen-tie lines. As a result, none of the impacts from the proposed gen-ties on federal lands managed by BLM would occur. However, the gen-tie for the Campo Verde Solar generation facility could possibly be built on private land so impacts could occur but on private lands in a nearby location.

However, because of their location within a designated utility corridor, the federal lands managed by BLM on which the gen-tie lines are proposed would become available to other uses that are consistent with BLM's land use plan, including gen-tie lines for other solar projects. In addition, without this gen-tie line on federal lands managed by BLM, other renewable energy projects may be constructed with gen-ties in other locations to meet state and federal mandates, and those projects would have similar impacts in other locations.

### *4.13.2 Alternatives 2, 3, and 4*

Implementation of any of the three gen-tie alternatives would impact the same part of Imperial County. Likewise the potential effect on the local community would be the same. Therefore, their construction and operation would result in similar potential impacts to environmental justice. Accordingly, all three action alternatives are discussed collectively below.

The BLM lands in the area are located within Census Tract 123 and the private lands are located within Census Tract 111. Although the residential populations of Census Tracts 111 and 123 have a relatively high percentage of minority population and low income households, it is unlikely that the proposed gen-tie lines would disproportionately adversely affect these residents. While the minority populations of Census Tracts 111

and 123 are high (60 and 45 percent, respectively), this is appreciably lower than the minority population in Imperial County as a whole which is over 80 percent.

Also, there are very few people residing in the project area that would be potentially affected by the gen-tie alternatives. Alternatives 2 and 3 cross a small portion of Census Tract 123 but these are BLM lands and no people reside there. No residences would be affected by Alternative 2 and only one is near the Alternative 3 route. The one residence in the vicinity of the Alternative 4 route on private lands is owned by one of the local landowners.

The proposed Project components would be constructed in accordance with the federal, state, and local plans and policies associated with socioeconomics, public services, and utilities. As described in the other sections of Chapter 4, all potential adverse effects for construction, operations and maintenance, and decommissioning of the gen-tie lines would be reduced to acceptable levels with implementation of the identified mitigation measures. Therefore, there would be no direct or indirect adverse health, environmental, or socioeconomic effects to any population resulting from construction or operation of the proposed gen-tie or alternatives. Therefore, implementation of any of the gen-tie alternatives would not result in high or adverse human health, environmental or socioeconomic effects that would disproportionately affect a minority or low-income population.

## 4.14 Special Designations

This section discusses the special designation impacts that would occur with implementation of the proposed action or alternatives. Direct effects may occur during construction from noise, fugitive dust, and lighting that could affect users in designated ACECs. Direct effects could also occur if activities would disturb resources for which a special designations area was designated.

### *4.14.1 Alternative 1 – No Action*

Under Alternative 1, the proposed and alternative gen-tie line on federal land managed by BLM would not be approved by the BLM. As a result, a gen-tie on federal land managed by BLM would not be constructed to interconnect the Campo Verde Solar generation facility to the regional transmission grid. The Campo Verde Solar generation facility would obtain gen-tie access via an alternative means that does not involve BLM-managed land or issuance of a separate ROW authorization.

It is expected that the federal lands managed by the BLM would continue to remain in their existing condition, with no new structures or facilities constructed or operated in the locations of the proposed gen-tie lines. As a result, none of the impacts from the proposed gen-ties on federal lands managed by BLM would occur. However, the gen-tie for the Campo Verde Solar generation facility could possibly be built on private land so impacts could occur but on private lands in a nearby location.

However, because of their location within a designated utility corridor, the federal lands managed by BLM on which the gen-tie lines are proposed would become available to other uses that are consistent with BLM's land use plan, including gen-tie lines for other solar projects. In addition, without this gen-tie line on federal lands managed by BLM, other renewable energy projects may be constructed with gen-ties in other locations to meet state and federal mandates, and those projects would have similar impacts in other locations.

### *4.14.2 Alternatives 2 and 3*

The Yuha Basin ACEC is the only specially designated area on BLM land potentially affected by the project as discussed in Chapter 3 and, therefore, is the only one discussed in this section.

The proposed and alternative gen-tie lines on BLM-managed land (Alternatives 2 and 3) are located entirely within the Yuha Basin ACEC. This ACEC was developed to provide additional protection to unique cultural resources and wildlife values found in the region while also providing for multiple use management.

This specific portion of the Yuha Basin ACEC is also within a BLM-designated Utility Corridor (N) where new electrical transmission towers and cables of 161-kV or above are determined to be suitable. The ACEC Management Plan acknowledges this and allows for the "traversing of the ACEC by proposed transmission lines and associated facilities if environmental analysis demonstrates that it is environmentally sound to do so".

As indicated in the analysis described in the other sections of Chapter 4, the environmental impacts associated with the implementation of either of these gen-tie alternatives on BLM land would be mitigated to acceptable levels by implementation of the respective mitigation measures identified in those sections. Therefore, they would be consistent with the Yuha Basin ACEC Management Plan.

### *4.14.3 Alternative 4 – Private Land Gen-Tie Alternative*

This gen-tie alternative would be located entirely on private lands and would not impact the Yuha Basin ACEC. However, this gen-tie alternative would cross Prime Farmland, Farmland of Statewide Importance, and Farmland of Local Importance on private lands. However, the presence of the gen-tie line would not impact agriculture on these lands and would not take farmland out of production. Therefore, they would not be impacted.

## 4.15 Transportation and Public Access

This section discusses the transportation and public access impacts that would occur through implementation of the proposed action or alternatives. Effects may occur from physical changes to roads, construction activities, introduction of construction- or operations-related traffic on local roads, or impacts to public land access.

The Imperial County Planning & Development Services Department has identified level of service standards in the *Circulation and Scenic Highways Element* of the General Plan. The County's goal for an acceptable traffic service standard for all County-Maintained Roads is LOS C for all road segment links and intersections.

### *4.15.1 Alternative 1 – No Action*

Under Alternative 1, the proposed and alternative gen-tie line on federal land managed by BLM would not be approved by the BLM. As a result, a gen-tie on federal land managed by BLM would not be constructed to interconnect the Campo Verde Solar generation facility to the regional transmission grid. The Campo Verde Solar generation facility would obtain gen-tie access via an alternative means that does not involve BLM-managed land or issuance of a separate ROW authorization.

It is expected that the federal lands managed by the BLM would continue to remain in their existing condition, with no new structures or facilities constructed or operated in the locations of the proposed gen-tie lines. As a result, none of the impacts from the proposed gen-ties on federal lands managed by BLM would occur. However, the gen-tie for the Campo Verde Solar generation facility could possibly be built on private land so impacts could occur but on private lands in a nearby location.

However, because of their location within a designated utility corridor, the federal lands managed by BLM on which the gen-tie lines are proposed would become available to other uses that are consistent with BLM's land use plan, including gen-tie lines for other solar projects. In addition, without this gen-tie line on federal lands managed by BLM, other renewable energy projects may be constructed with gen-ties in other locations to meet state and federal mandates, and those projects would have similar impacts in other locations.

### *4.15.2 Alternative 2 – Proposed Action*

Construction of the proposed gen-tie is expected to generate very little traffic on local roads. Approximately 20 to 40 construction workers would build the gen-tie line but all likely would not be on the ROW at one time because of the different skills needed at various stages of the construction process (preparation, foundations, structure assembly / erection, stringing, and restoration).

Most workers would likely access the project area via I-8 and Drew Road. Workers would check in at the staging area located on the solar site and then carpool to the BLM lands via either Liebert Road on the north, Lyons Road to the east, or another existing access point to BLM lands. A limited number of personnel, vehicles, and equipment would access each structure location on a given day depending on the work being conducted at each location.

The level of service (LOS) on all of the local roads and intersections in the area is A or B. The small amount of traffic generated by construction of the proposed gen-tie would not change the current LOS and, therefore, would have no impact.

During construction, access to the existing roads on BLM land would be kept available to members of the public who may want to use them to access other nearby BLM lands. After construction, the gen-tie line would be inspected annually and maintenance would be performed on an as-needed basis. Traffic associated with these activities could occur at any time. The small amount of traffic generated by inspection and maintenance of the proposed gen-tie would not change the current LOS and, therefore, would have no impact.

### *4.15.3 Alternative 3 – Alternative Gen-Tie on BLM Land*

The impacts associated with this alternative would be generally the same as those described for Alternative 2.

### *4.15.4 Alternative 4 – Private Land Gen-Tie Alternative*

The impacts associated with this alternative would be generally the same as those described for Alternative 2. However, no portion of this gen-tie alternative would occur on BLM land. In addition to I-8 and Drew Road, construction workers would likely access the structure locations associated with this gen-tie alternative via other existing public roads in the area, including Jeffrey Road and Vaughn Road.

As with the other gen-tie alternatives, the level of service (LOS) on these roads and intersections is A or B. The small amount of traffic generated by construction of the proposed gen-tie would not change the current LOS and, therefore, would have no impact. Similarly, after construction, the gen-tie line would be inspected annually and maintenance would be performed on an as-needed basis. Traffic associated with these activities could occur at any time. The small amount of traffic generated by inspection and maintenance of the proposed gen-tie would not change the current LOS and, therefore, would have no impact.

## 4.16 Visual Resources

Visual resources were analyzed using the BLM's VRM System which is used for analyzing visual resources on BLM administered lands. For consistency, the VRM System was also used to analyze visual resources for components of the Project on non-BLM lands (i.e. private land in Imperial County) as it evaluates both the existing visible physical environmental setting and the anticipated visual change introduced by the proposed Project to the view in the context of viewer sensitivity. A description of BLM's VRM process is provided in **Appendix B**.

Significance under NEPA is defined in terms of both context and intensity. Context means that the significance of an action must be analyzed in several contexts, such as society, the affected region, affected interests, and the local environment. Intensity refers to the severity of impact and includes a variety of factors to be considered (40 CFR 1508.27). Intensity factors potentially relevant to visual impacts include unique characteristics of the geographic area such as proximity to historic or cultural resources,

park lands, degree of controversy, degree of uncertainty about possible effects, degree to which an action may establish a precedent for future actions, and potential for cumulatively major impacts.

The gen-tie lines located in the eastern portion of the Yuha Desert within Utility Corridor N are not subject to intensity factors described above because utilities (including electrical transmission towers) are an allowed use within this corridor. The proposed gen-tie lines are consistent with the provisions of Utility Corridor N and a Plan Amendment to the California Desert Conservation Area (CDCA) Plan is not needed. Thus, only minor impacts are associated with unique characteristics or degree of controversy, degree of uncertainty about possible effects, degree to which an action may establish a precedent for future actions, and potential for cumulatively major impacts based on the provisions of Utility Corridor N.

The level of change to the landscape resulting from the addition of a gen-tie line on BLM land will be moderate and will not dominate the views of the casual observer. NEPA requirements with regard to visual impacts are assessed as part of the discussion of direct and indirect impacts.

### *4.16.1 Alternative 1 – No Action*

Under Alternative 1, the proposed and alternative gen-tie line on federal land managed by BLM would not be approved by the BLM. As a result, a gen-tie on federal land managed by BLM would not be constructed to interconnect the Campo Verde Solar generation facility to the regional transmission grid. The Campo Verde Solar generation facility would obtain gen-tie access via an alternative means that does not involve BLM-managed land or issuance of a separate ROW authorization.

It is expected that the federal lands managed by the BLM would continue to remain in their existing condition, with no new structures or facilities constructed or operated in the locations of the proposed gen-tie lines. As a result, none of the visual impacts from the proposed gen-ties on federal lands managed by BLM would occur. However, the gen-tie for the Campo Verde Solar generation facility could possibly be built on private land so visual impacts could occur but on private lands in a nearby location.

However, because of their location within a designated utility corridor, the federal lands managed by BLM on which the gen-tie lines are proposed would become available to other uses that are consistent with BLM's land use plan, including gen-tie lines for other solar projects. In addition, without this gen-tie line on federal lands managed by BLM, other renewable energy projects may be constructed with gen-ties in other locations to meet state and federal mandates, and those projects would have similar impacts in other locations.

### *4.16.2 Alternative 2 – Proposed Action*

*Direct and Indirect Impacts*

The portions of the gen-tie Alternatives on federal land managed by the BLM have the interim classification of VRM Class III based on its Scenic Quality Classification of C, and High Visual Sensitivity Level, and Viewing Distance Zone of F/M (BLM, 2010 p. B-13 and A-39). The proposed gen-tie (Alternative 2) is located wholly within a portion of BLM land that has been designated as a utility corridor where the BLM encourages the development of transmission lines and other linear utilities.

Construction of the proposed gen-tie will change the look and character of the BLM lands that will be crossed. The structures will be approximately 100 to 125 feet above ground and be spaced approximately 400 to 800 feet apart. The interim VRM Class III area within which the line would be located has as its objective to partially retain the existing character of the landscape. But the level of change to the characteristic landscape from the gen-tie would be weak because while the double-circuit structures would be visible from some distance, they would look similar to the other existing, approved, and proposed electrical facilities in and around the nearby Imperial Valley Substation. This can be seen in **Figure 4-3** that provides a visual simulation of the gen-tie from a point along this alternative where it enters BLM land looking southeast toward the existing substation.

Therefore, while the introduction of the gen-tie line would alter the existing visual character or quality of the immediate area, it would not substantially degrade existing visual quality based on its location in an area unlikely to be seen by many people, it is not in an area with outstanding visual features, and there are multiple existing electric infrastructure features present (consistent with the designation as a utility corridor). Also, the gen-tie would be consistent with the interim Class III VRM designation - the level of change to the characteristic landscape would be moderate because of the presence of the other facilities within the utility corridor, it would not dominate the view of the casual observer, and the changes would repeat the basic elements found in the utility corridor landscape. So, only minor impacts to the existing visual character or quality of the area would occur as a result of construction and operation of the Alternative 2 gen-tie line.

*Mitigation*

To reduce the visibility of the gen-tie structures and conductors, non-specular materials conductor and structure materials will be used to minimize reflections and glare.

*Residual Impacts*

The introduction of the gen-tie to the area would create an unavoidable adverse visual impact. But because of the other existing, approved, and proposed similar facilities within this area, a designated utility corridor, this impact would be minor.

### *4.16.3 Alternative 3 – Alternative Gen-Tie on BLM Land*

The impacts, mitigation, and unavoidable residual visual impacts associated with this gen-tie alternative would be similar to those described for Alternative 2. Like the proposed gen-tie, this alternative is located on BLM lands that have an interim classification as VRM Class III. Likewise, this route is located wholly within a portion of BLM land that has been designated as a utility corridor where the BLM encourages the consolidation of transmission lines and other linear utilities.

This route would parallel IID's existing 230-kV S-line (which has been approved for upgrade to a double-circuit 230-kV line. The interim VRM Class III area within which the line would be located has as its objective to partially retain the existing character of the landscape. But the level of change to the characteristic landscape from this gen-tie alternative would be weak because while the double-circuit structures would be visible from some distance, they would look similar to the adjacent S-line and the other existing, approved, and proposed electrical facilities in and around the nearby Imperial Valley Substation. This can be seen in **Figure 4-4** that provides a visual simulation of this gen-tie from a point along the northern portion of this alternative where it enters BLM land looking south toward the existing substation.

Therefore, while the introduction of the gen-tie line in this location would alter the existing visual character or quality of the immediate area, it would not substantially degrade existing visual quality based on its location in an area unlikely to be seen by many people, it is not in an area with outstanding visual features, and there are multiple existing electric infrastructure features present (consistent with the designation as a utility corridor).

Also, the gen-tie would be consistent with the interim Class III VRM designation - the level of change to the characteristic landscape would be moderate because of the presence of the other facilities within the utility corridor, it would not dominate the view of the casual observer, and the changes would repeat the basic elements found in the utility corridor landscape. Therefore, minor impacts to the existing visual character or quality of the area would occur of the construction and operation of this gen-tie alternative.

### *4.16.4 Alternative 4 – Private Land Gen-Tie Alternative*

The impacts, mitigation, and unavoidable residual visual impacts associated with this gen-tie alternative would be similar to those described for Alternative 2. This alternative gen-tie route is located on private lands currently used for agriculture. At its closest point, this gen-tie route would be within approximately 0.25 miles of I-8.

Development of the gen-tie line in this location would change the existing visual character of the lands crossed from agriculture land to an industrial/utility use with towers and an overhead transmission line introduced to the view. The underlying agricultural use would

continue after the line is constructed. Being relatively close to I-8 with an unobstructed view, the Gen-Tie would be highly visible in this location. However, this area has no outstanding visual features and is similar to the other agricultural lands in the area. Also, I-8 is not a designated as a state scenic highway.

However, if built in this location, it would connect the proposed Campo Verde Solar generation facility site and the approved Imperial Solar Energy Center West Project. This route would parallel and cross similar but smaller existing electrical distribution lines for a portion of its distance. However, the introduction of the gen-tie line in this location would be noticeable and would alter the existing visual character of the immediate area. This can be seen in **Figure 4-5** that provides a visual simulation of this gen-tie alternative from I-8 looking southeast. While visible, development of this gen-tie alternative would not have an adverse effect on a scenic vista.

## 4.17 Water Resources

This section discusses the impacts to water resources that would occur through implementation of the proposed action or alternatives. There would be no groundwater withdrawals associated with the project. Effects to surface water resources could occur from physical changes to drainage patterns, impacts to water quality from construction activities, or impacts to federally protected wetlands as defined by Section 404 of the Clean Water Act through direct removal, filing, hydrological interruption, or other means.

### *4.17.1 Alternative 1 – No Action*

Under Alternative 1, the proposed and alternative gen-tie line on federal land managed by BLM would not be approved by the BLM. As a result, a gen-tie on federal land managed by BLM would not be constructed to interconnect the Campo Verde Solar generation facility to the regional transmission grid. The Campo Verde Solar generation facility would obtain gen-tie access via an alternative means that does not involve BLM-managed land or issuance of a separate ROW authorization.

It is expected that the federal lands managed by the BLM would continue to remain in their existing condition, with no new structures or facilities constructed or operated in the locations of the proposed gen-tie lines. As a result, none of the water resource impacts from the proposed gen-ties on federal lands managed by BLM would occur. However, the gen-tie for the Campo Verde Solar generation facility could possibly be built on private land so water resource impacts could occur but on private lands in a nearby location.

However, because of their location within a designated utility corridor, the federal lands managed by BLM on which the gen-tie lines are proposed would become available to other uses that are consistent with BLM's land use plan, including gen-tie lines for other solar projects. In addition, without this gen-tie line on federal lands managed by BLM, other renewable energy projects may be constructed with gen-ties in other locations to

meet state and federal mandates, and those projects would have similar impacts in other locations.

### *4.17.2 Alternatives 2, 3, and 4*

Implementation of any of the three gen-tie alternatives would result in similar impacts to water resources. They would each span any surface water features and would disturb very few acres during construction which would be mitigated through implementation of the same measures. Therefore, construction and operation of any of the three would result in similar potential impacts to water resources. Therefore, all three action alternatives are discussed collectively below.

*Direct and Indirect Impacts*

Development of any proposed gen-tie alternatives would result in minimal impacts to surface water resources. All existing surface water features in the project area are IID canals and drains and each would be spanned by the proposed line and not directly affected.

Water used during construction for dust control and preparation of concrete for the structure foundations will be extracted from one of the local IID canals. No water will be required during operation and maintenance.

The potential for soil erosion and resulting sediment effects on surface water during construction would be further limited by implementation of a Stormwater Pollution Prevention Plan (SWPPP) in compliance with the National Pollutant Discharge Elimination System (NPDES) Construction General Permit. In addition, hazardous material storage or equipment refueling will not be allowed on the ROW. Therefore, surface water quality impacts would be minimized.

Construction of the line would not require alteration of existing topography and would not affect the porosity of the soils within the ROW. The impervious footprint after construction would be limited to the small area taken up by each transmission structure and footings (approximately 50 feet by 50 feet per structure) which would total less than 0.1 acres under any alternative. Therefore, surface water drainage patterns and flow would be minimally affected.

Groundwater supply and quality in the area will not be affected because the majority of the ROW will maintain a pervious surface. Also, no groundwater would be used during construction or operation.

No wetlands or riparian zones would be affected by the gen-tie lines. As described in Chapter 3, none were located along Alternatives 2 and 3 and those associated with the drains and canals along Alternative 4 would be spanned. Likewise, the one ACOE non-wetland Water of the U.S. and CDFG jurisdictional water of the state (Westside Main Canal) identified along all three gen-tie alternatives and the six additional jurisdictional

features (both ACOE and CDGF jurisdictional) associated with Alternative 4 would also be spanned and not affected.

The gen-tie line would not affect or be affected by floodplains. The entire project area is located in Flood Zone X, outside the 100-year and 500-year floodplains.

*Mitigation*

Even though, minimal impacts to water resources are anticipated as a result of constructing and operating the gen-tie line, several standard mitigation measures will be employed to ensure impacts to water resource will be minimized. The measures include:

- Development and implementation of a stormwater pollution prevention plan (SWPPP) would be prepared as required by the State General Construction Activity Storm Water Permit. The SWPPP will include:
    - A detailed description of all best management practices (BMPs) that will be employed.
    - An outline of the areas onsite that will be disturbed during the construction project.
    - An outline of all areas that will be stabilized by temporary or permanent erosion control measures.
    - A proposed schedule for the implementation of erosion control measures.

- Surface waters (canals/drains) and wells within 1,000 feet of construction activities will be identified. Construction activities will not be carried out within 100 feet of these resources without using BMPs.

- The use or storage of hazardous material near a canal, drain, or well will be prohibited. Additionally, special precautions will be implemented to prevent spills of hazardous materials, discharges of foreign materials, and sedimentation discharges near a canal, drain, or well.

*Residual Impacts*

Through implementing the mitigation measures identified above, no residual impacts to water resources are anticipated as a result of implementing any of the gen-tie line alternatives.

## 4.18 Wastes, Solid and Hazardous

NEPA does not have any requirements specific to solid waste or hazardous waste which would apply to the proposed project. Therefore, this section employs the general approach set forth in the CEQ regulations and evaluates the context and intensity of the environmental effects (40 CFR Part 1508.27) of the Proposed Action and alternatives with regard to creation of solid waste and hazardous waste.

### *4.18.1 Alternative 1 – No Action*

Under Alternative 1, the proposed and alternative gen-tie line on federal land managed by BLM would not be approved by the BLM. As a result, a gen-tie on federal land managed by BLM would not be constructed to interconnect the Campo Verde Solar generation facility to the regional transmission grid. The Campo Verde Solar generation facility would obtain gen-tie access via an alternative means that does not involve BLM-managed land or issuance of a separate ROW authorization.

It is expected that the federal lands managed by the BLM would continue to remain in their existing condition, with no new structures or facilities constructed or operated in the locations of the proposed gen-tie lines. As a result, none of the impacts from the proposed gen-ties on federal lands managed by BLM would occur. However, the gen-tie for the Campo Verde Solar generation facility could possibly be built on private land so impacts could occur but on private lands in a nearby location.

However, because of their location within a designated utility corridor, the federal lands managed by BLM on which the gen-tie lines are proposed would become available to other uses that are consistent with BLM's land use plan, including gen-tie lines for other solar projects. In addition, without this gen-tie line on federal lands managed by BLM, other renewable energy projects may be constructed with gen-ties in other locations to meet state and federal mandates, and those projects would have similar impacts in other locations.

### *4.18.2 Alternatives 2, 3, and 4*

Construction and operation of any of the three gen-tie alternatives would result in similar impacts from solid and hazardous wastes. Therefore, impacts of any of the three action alternatives are discussed collectively below.

As discussed in Chapter 3, no existing hazardous wastes or contamination has been identified within the corridors proposed for any of the gen-tie alternatives. Construction of any of the proposed gen-tie alternatives would generate small amounts of waste materials. Some non-hazardous solid wastes such as packaging, lumber, and worker materials would be generated during construction. These materials would be removed from the ROW for disposal at the end of each work day.

The Project would require the use of some hazardous materials during construction of the Project (fuels in construction equipment, solvents) but none will be stored within the ROW and vehicle refueling will occur off the ROW. No hazardous wastes are expected to be generated during the construction or operation of the gen-tie line. If a fuel leak or spill were to occur during construction or maintenance activities, it would be removed for off-site disposal in accordance with applicable standards.

## 4.19 CDCA Plan Conformance

### *4.19.1 Alternative 1 – No Action*

Under Alternative 1, the proposed and alternative gen-tie line on federal land managed by BLM would not be approved by the BLM. As a result, a gen-tie on federal land managed by BLM would not be constructed to interconnect the Campo Verde Solar generation facility to the regional transmission grid. The Campo Verde Solar generation facility would obtain gen-tie access via an alternative means that does not involve BLM-managed land or issuance of a separate ROW authorization.

It is expected that the federal lands managed by the BLM would continue to remain in their existing condition, with no new structures or facilities constructed or operated in the locations of the proposed gen-tie lines. As a result, none of the impacts from the proposed gen-ties on federal lands managed by BLM would occur and no potential conflicts with the CDCA Plan could occur.

However, because of their location within a designated utility corridor, the federal lands managed by BLM on which the gen-tie lines are proposed would become available to other uses that are consistent with the CDCA Plan, including gen-tie lines for other solar projects.

### *4.19.2 Alternative 2 and 3*

Construction and operation of each of the two gen-tie alternatives on BLM land would result in similar impacts to the CDCA Plan because they are located in close proximity and would be located on similar BLM lands with the same management designations. Therefore, Alternatives 2 and 3 are discussed collectively below.

Portions of Alternatives 2 and 3 gen-tie lines would cross BLM-managed lands that are part of the CDCA. These lands are located entirely within a utility corridor (Corridor N) designated in the CDCA Plan. Designation as a utility corridor indicates that these lands are suitable for the location of transmission infrastructure and linear facilities to facilitate energy transmission. Corridor N has been determined suitable for new electrical transmission towers and cables of 161-kV or above. Therefore, the proposed rights-of-way for the gen-tie facilities on BLM-managed land would be consistent with the CDCA Plan. An amendment to the CDCA Plan would not be required.

### *4.19.3 Alternative 4 – Private Land Gen-Tie Alternative*

Under this alternative, the gen-tie would be located solely on private lands. Accordingly, there would be no impacts to federal lands managed by the BLM and no implication of the CDCA Plan.

## 4.20 Irreversible and Irretrievable Commitment of Resources

NEPA requires the identification of any irreversible or irretrievable commitments of resources that would be caused by the proposal should it be implemented. A resource commitment is considered irreversible when direct and indirect effects from its use limit future use options. Irreversible commitments apply primarily to nonrenewable resources, such as cultural resources and also to those resources that are renewable only over a long period of time such as soil productivity or forest health. A resource commitment is considered irretrievable when the use or consumption of the resource is neither renewable nor recoverable for future use. Irretrievable commitments apply to loss of production or use of natural resources.

As discussed in the Section 4.19, construction and operation of the proposed Project under Alternatives 2 and 3 would not be inconsistent with the CDCA Plan because the entire area where the gen-tie would be located is within a designated utility corridor. The gen-tie line alternatives would result in a long-term change to the views in the project area but would be similar to the other existing, approved, and proposed utilities located in the corridor.

Implementation of any of the gen-tie alternatives would require the permanent loss of less than approximately 0.05 acres of vegetation and habitat. Assuming that the mitigation measures for biological resources outlined in this document are implemented, project-induced loss of vegetation and habitat would be minor. The area within the ROW requested for this Project would no longer be available for other uses, such as other utility ROWs that could be allowed by the BLM. This would be considered an irretrievable commitment of a resource for the term of the ROW.

## 4.21 Relationship Between Short Term Uses Versus Long Term Productivity of the Environment

NEPA also requires consideration of long-term impacts and the effect of foreclosing future options - whether implementation of the proposed Project and its short-term use would sacrifice a resource that might benefit the environment in the long term. The relationship between short-term uses of the environment and long-term productivity of the environment associated with implementation of the proposed Project is presented below.

For purposes of this analysis, short-term refers to the period of time during which the proposed Project is under construction and long-term refers to the period of operation after construction during which impacts from the proposed Project may still affect the environment. Because of the long time period necessary for natural revegetation to occur in the desert, both short-term and long-term impacts are considered permanent on the federal lands managed by BLM for this analysis.

The gen-tie represents a trade-off between direct short-term unavoidable adverse air emissions during facility construction and indirect long-term greenhouse gas emission

reductions during operations of the solar generation facility. Indirect climate change benefits would occur in terms of greenhouse gas emissions avoided by displacing alternative power generation sources (which include fossil fuel combustion sources) with solar energy sources.

Other than the unavoidable impacts described in the earlier sections of this chapter, there would be no permanent loss of the overall productivity of the environment from the implementation of the proposed Project.

## 4.22 Cumulative Impacts

The analysis of cumulative impacts takes into account the effects in common with other past, present, and reasonably foreseeable future actions. The analysis identifies past actions that are closely related either in time (temporal) or space (geographical proximity) to the Proposed Action (the 1.0 mile gen-tie line on BLM-managed land); present actions ongoing concurrently at the time this EA was being prepared; and reasonably foreseeable future actions that are highly likely to occur.

**Tables 3.5 and 3.6** provide a comprehensive listing of all reasonably foreseeable projects within the jurisdiction of BLM and Imperial County in the vicinity of the Proposed Action. Reasonably foreseeable projects are those for which an application has been submitted to the appropriate agency, are currently undergoing environmental review, or will be pursuing environmental review in the near future (1 to 2 years or less). Activity must be occurring in order for the project to be reasonably foreseeable. Projects that may have started the application or environmental review process but have been stalled are not considered reasonably foreseeable.

The direct and indirect effects of the Proposed Action and each alternative together with the effects of the other actions that have a cumulative effect are analyzed for each resource or issue area below. Because the project area for all of the action alternatives is essentially the same, the action alternatives are discussed collectively rather than individually.

The cumulative projects list was reviewed to determine cumulative if "reasonably foreseeable" projects might occur simultaneously with construction of the proposed project. Many of the projects on the list were either speculative, put on hold indefinitely or have been already built. The multiple solar projects that recently submitted project applications and have started the environmental review process were considered in the cumulative analysis because of their proximity to the project site.

As discussed in the section 3.24, the Campo Verde Solar generation facility is considered a cumulative action in this analysis.

**Figure 4-6** shows the location of those potentially cumulative projects that are located in the vicinity of the proposed gen-tie alternatives.

Air Quality

The proposed gen-tie or alternatives would not have any unmitigable construction air quality impacts based on applicable standards. In addition, the Campo Verde Solar generation facility is the only project expected to occur within the same timeframe and within close enough proximity to contribute cumulatively to air quality impacts generated by construction of the gen-tie line. The Campo Verde Solar generation facility would produce potential $PM_{10}$ and $NO_x$ impacts during construction. These impacts would be mitigated through the implementation of the required Imperial County Air Pollution Control Districts (ICAPCD) mitigation measures. Therefore, this solargeneration facility is expected to have no unmitigable construction air quality impacts. No other cumulative project is expected to have peak construction coincide simultaneously with construction of the proposed gen-tie or such construction would not be located in the immediate area where it could contribute cumulatively. This includes the Silverleaf Solar generation facility which is located nearby but is not expected to be constructed within the same timeframe. Therefore, no cumulative construction air quality impacts are anticipated based on timing and location of projects in the planning and environmental process.

The proposed gen-tie line and other cumulative transmission and solar projects would result in only very minor air quality impacts during operation.

Biological Resources

Construction and continued use of the proposed gen-tie and cumulative projects could result in the introduction or increased density of non-native invasive plant species. Implementation of Weed Management Plans by the projects located on nearby BLM-managed land (IID S-line upgrade, the Centinela gen-tie, the C-Solar South gen-tie, Ocotillo Solar Project, IID's Dixieland-Imperial Valley Transmission project) during construction and O&M activities will help prevent the introduction and spread of new weed species that could result from implementation of the projects. Likewise, the nearby solar projects on private lands (Campo Verde and Silverleaf Solar generation facilities) would also be expected to implement weed control measures during construction and operations. The proposed gen-tie when combined with the cumulative projects would not result in a cumulatively adverse impact from invasive and non- native weeds.

The BLM has designated the Yuha Basin Management Area, the area in which the Gen-tie Line would be located, as a Flat-tailed Horned Lizard (FTHL) designated Management Area (MA) to help focus conservation and management of the local FTHL population. The habitat disturbances within this MA are capped at 1% of the area of the MA (57,304 acres). The disturbances that have occurred since the adoption of the FTHL Rangewide Management Strategy (RMS) and those that could result from the project and the reasonably foreseeable projects within the MA are estimated to impact a total approximately 460 acres of the Yuha Basin MA (or about 0.8 percent) according to numbers presented in the Centinela Solar EIR/EA (EGI 2011). These impacts from the proposed project and other projects within the MA will be mitigated in accordance with the RMS to reduce impacts. In light of the fact that the USFWS determined not to list the

FTHL, the success of the mitigation required by the FTHL RMS, and the required compensatory mitigation combine to ensure that the proposed gen-tie, when combined with the cumulative projects, there would not be a cumulatively adverse impact to FTHL. The Campo Verde and Silverleaf Solar generation facilities would not contribute to impacts to the FTHL as they are located entirely on active and fallow agricultural lands that do not provide quality FTHL habitat.

There were 24 potentially suitable burrowing owl burrows observed during surveys of the proposed gen-tie route but they are located within the unstable desert dune habitat and are regularly filled in. Far fewer potentially suitable burrows are associated with the other two gen-tie alternatives. Direct removal of potentially suitable burrows is not anticipated as the result of project implementation because they would be spanned and adjacent suitable foraging habitat for these burrows would not be removed during construction activities. The Campo Verde and Silverleaf Solar generation facilities would contribute potential impacts to the burrowing owl as many suitable and occupied burrows occur on the agricultural lands where these projects would be developed. Impacts to the burrowing owl resulting from these projects would be mitigated by the implementation of the same mitigation measures identified for the gen-tie project in section 4.3.2.2. The number of burrowing owls within the other cumulative project areas is not available for this analysis. Because burrowing owls are protected, mitigation measures will be required to ensure impacts would be minimized. With implementation of mitigation by the proposed project and cumulative projects, no cumulatively adverse impacts to burrowing owl would occur.

The proposed gen-tie and cumulative projects could have direct impacts on raptors or migratory birds as a result of vehicle strikes, nest crushing, or collisions. Indirect impacts could also occur from noise and lighting. Designing the gen-tie line in accordance with APLIC standards will help reduce impacts to raptors and implementing a Bird and Bat Conservation Strategy (BBCS) following the USFWS's guidelines will help reduce potential impacts to bird populations. This will help ensure that the proposed gen-tie, when combined with the cumulative projects, would not result in a cumulatively adverse impact to raptors or migratory birds.

Cultural Resources

The proposed gen-tie would avoid the known cultural resources that have been identified along each of the alternative routes as identified in Section 4.5 and is not expected to contribute to direct impacts on these cultural resources. All known resources would be spanned or are located outside the potential impact area. There is potential for unanticipated damage or inadvertent discoveries of unknown resources that could be encountered during the construction phase of the project. If any unanticipated resources are encountered during construction, measures that have been identified to reduce impacts to these resources would be implemented.

Construction of other projects located in the area could also result in damage to previously unidentified and unknown resources. The Campo Verde and Silverleaf Solar

generation facilities are located on long-disturbed agricultural lands. The results of surveys on the Campo Verde generating facility site indicate that implementation of the Project would not affect any known potentially eligible resources. The same is expected to be true of the Silverleaf generating facility because it is located on similar agricultural lands. As with the proposed gen-tie, these solar generation facilities as well other cumulative projects, whether on BLM-managed or private lands, would also be required to provide similar avoidance and mitigation for any potential impacts to known or unanticipated cultural resources to reduce impacts. With the implementation of mitigation, there would be cumulative loss or displacement of known cultural resources and no net loss of the cumulative value/context of the cultural resources within the geographic scope. Individually and cumulatively, the archaeological surveys and data collection performed for the proposed project and other projects in the cumulative analysis area will contribute to scientific knowledge about the prehistoric and historic uses of the area, including information about prior inhabitants and their cultures.

Paleontology

Cumulative development in the Imperial Valley portion of the Salton Trough physiographic province of Southern California has the potential to directly or indirectly impact paleontological resources. With implementation of proposed mitigation measures, the proposed gen-tie would not make an incremental contribution to a cumulative paleontological resources impact under NEPA. The Campo Verde and Silverleaf solar generation facilities and other cumulative projects in the area, whether on BLM or private lands, would also be required to provide similar avoidance and mitigation for any potential impacts to known or unanticipated paleontological resources to reduce impacts.

Geologic and Soil Resources

The geographic extent of cumulative analysis for soils is limited to the gen-tie right-of-way on private lands and through Utility Corridor N. Multiple projects would be located within Utility Corridor N (IID S-line upgrade, the Centinela gen-tie, the C-Solar South gen-tie, Ocotillo Solar Project, IID's Dixieland-Imperial Valley Transmission project) but the alignments of the transmission lines would be spaced over 100-feet apart. Construction of some of the cumulative projects would most likely utilize the same access roads to Utility Corridor N. However, BMPs and mitigation measures employed by the proposed project and other projects to minimize or avoid potential erosion impacts (as identified in each project's SWPPP to comply with the Construction General NPDES Permit) would reduce the projects' potential temporary direct contribution to cumulative erosion impacts. Therefore, cumulative erosion impacts are not expected to occur after the application of site-specific mitigation.

Compliance with applicable building code requirements by all projects will ensure that potential impacts from geologic hazards would be minor for each project. These impacts would not be related cumulatively to one another.

Lands and Realty

Many of the identified cumulative projects could be developed within the same timeframe as the gen-tie. However, the gen-tie line would not result in complete conversion of rural agricultural and desert land uses because the existing land uses including agriculture, rangeland, and open space would continue on the lands within and adjacent to the proposed gen-tie ROWs. Existing surrounding land uses such as agricultural fields are considered compatible with transmission projects as evidenced by how they are handled in the County zoning ordinance and, with approval of the Conditional Use Permit for the gen-tie, there would be no conflicts with the Imperial County General Plan or zoning. Likewise, the nearby Campo Verde Solar and Silverleaf Solar generation facilities would not conflict with County land use policies and would not be inconsistent with the proposed gen-tie. Therefore, the gen-tie would not contribute to direct or indirect cumulative impacts to land use on private lands.

On BLM-managed lands, the gen-tie line and the other proposed projects in the immediate area (IID S-line upgrade, the Centinela gen-tie, the C-Solar South gen-tie, Ocotillo Solar Project, IID's Dixieland-Imperial Valley Transmission project) are located within Utility Corridor N. These projects would be consistent with existing and planned land uses on BLM-managed lands because the intent of the BLM's designated Utility Corridor is to encourage the colocation of utility projects in that area. However, coordination will be necessary with the multiple other approved and proposed transmission lines within the utility corridor in this area. Each of these projects is also seeking interconnection to the Imperial Valley Substation, so continued coordination, through BLM, will be needed to ensure the timing of each project coupled with their assigned position within the Substation is accommodated in the ROWs grated to each.

Noise and Vibration

Construction of the proposed gen-tie alternatives would not be expected to incrementally add to local noise and vibration or the roadway traffic noise levels of nearly all cumulative projects. The Campo Verde Solar generation facility is the only project expected to occur within the same timeframe and within close enough proximity to contribute cumulatively to noise and vibration impacts generated by construction of the gen-tie line. Like the proposed gen-tie, construction of the Campo Verde Solar generation facility is also not expected to have significant noise and vibration impacts to the local area. Therefore, no direct cumulative construction noise or vibration impacts are anticipated.

Following construction, the proposed project and none of other nearby gen-ties or solar projects would contribute major incremental increases to noise in the local area.

Public Health and Safety

Construction and operation of the proposed gen-tie is not expected to result in impacts to public health and safety. It is difficult to determine the potential health and safety effects

that could result from the other cumulative projects, but it can reasonably be anticipated that during construction, operations, and decommissioning, the cumulative projects on both BLM-managed and private lands could result in potential effects. However, given that these projects would be required to comply with applicable federal, state and local laws and implement required design features and other mitigation measures, such potential effects would be reduced and not result in substantial cumulative impacts.

Recreation

The location of project gen-tie would be consistent with intended land use designations by BLM's CDCA Plan. The transmission line structures associated with this and other projects proposed for the BLM-managed lands in the area (IID S-line upgrade, the Centinela gen-tie, the C-Solar South gen-tie, Ocotillo Solar Project, IID's Dixieland-Imperial Valley Transmission project) will be located in areas designated specifically for utility facilities and structures (Utility Corridor N). Activities for off-highway vehicle (OHV) uses are currently allowed on lands adjacent to this utility corridor and those areas would not be affected by the proposed gen-tie.

The private lands affected by the gen-tie or the Campo Verde and Silverleaf solar generation facilities would not limit recreation opportunities. Therefore, the proposed gen-tie would not contribute to cumulative recreation impacts.

Socioeconomics / Environmental Justice

Construction and operation of the proposed gen-tie is not expected to result in only minor socioeconomic impacts and would not disproportionately affect minority or low income populations. It would provide a small number of construction jobs for specialty trades but would not displace any existing jobs. Development of the Campo Verde and Silverleaf generation facilities and other cumulative solar generation facilties located on private lands within the area could result in a socioeconomic effect through the conversion of agricultural production which is the primary source of employment in the area. While agricultural employment would decrease under cumulative conditions, there would be an increase in short-term employment associated with construction of the various cumulative projects.

While the projects that may be built under cumulative conditions would each provide varying levels of employment, the short-term employment would be comparable to or in excess of the full-time employment currently occurring on the existing agricultural fields. However, there would likely be a decline in peak seasonal employment. While construction workers may come from a broad area, particularly specialists, the potential for a short-term increase in employment is not anticipated to result in any major in-migration, or population growth, in Imperial County due to the high unemployment rate in the County.

Special Designations

Projects on lands under the jurisdiction of the BLM include multiple solar energy projects as well as electrical transmission facilities (the Campo Verde gen-tie, IID S-line upgrade, the Centinela gen-tie, the C-Solar South gen-tie, Ocotillo Solar Project, IID's Dixieland-Imperial Valley Transmission project) are located within the Yuha Basin Area of Critical Environmental Concern (ACEC) and also within Utility Corridor N. The Yuha Basin ACEC includes portions of this utility corridor where past and ongoing development of electrical transmission facilities is allowed and the designated utility corridor encourages the co-location of transmission facilities within it to minimize multiple, separate rights-of-way through the Yuha Basin ACEC. Therefore, the proposed gen-tie and other nearby projects on BLM land would be consistent with the direction of the management plan for the ACEC.

Transportation and Public Access

Construction of the gen-tie line would not contribute appreciably to traffic on any of the roads in the area. Construction of the Campo Verde solar generaltion facility would occur within the same timeframe as the gen-tie but it would not negatively impact any local roads during construction even when combined with construction of the gen-tie. Construction of other projects in the immediate vicinity, such as the Silverleaf Solar generation facility, is not expected to occur with the same timeframe. However, if construction of several of the other proposed projects were to occur at the same time, potential cumulative traffic impacts have been identified for a few of the road intersections in the broader area. If they did occur simultaneously, the potential cumulative traffic impacts would be mitigated through the cumulative impact mitigation identified for the Campo Verde Solar generation facility - payment of each project's fair share contributions based on the traffic generated by each project at each potentially impacted location. Verry little traffic would be generated by operation of the gen-ties or any of the solar projects.

Public access to the BLM-managed lands in the vicinity of the proposed gen-tie is not expected to be affected by the proposed gen-tie or any of the other cumulative projects in the area during or after construction.

Visual Resources

Projects like the proposed gen-tie and solar generation facility introduce highly visible structural elements to the local viewshed. The inclusion of transmission structures and acres of PV panels differ from residential or commercial developments in terms of potential visibility and visual character. The multiple solar energy projects and associated gen-ties in the area would share many of the same visual characteristics of the Proposed Action or alternatives and could be within the same field of view from some viewpoints, including those from the most traveled roads in this portion of Imperial County (I-8, SR 98, and Drew Road).

The proposed gen-tie or an alternative, in combination with the Campo Verde and Silverleaf solar generation facilities and other locally cumulative projects, would result in a moderate increase in industrial character of the area. However, the proposed project, in combination with the cumulative projects, would not otherwise compromise aesthetically distinctive or highly scenic resources. Where the gen-tie crosses BLM-managed land, all potential cumulative projects (the Campo Verde gen-tie, IID S-line upgrade, the Centinela gen-tie, the C-Solar South gen-tie, Ocotillo Solar Project, IID's Dixieland-Imperial Valley Transmission project) would be located within Utility Corridor N, where the visual character of the proposed gen-tie would be consistent with the other existing and proposed electrical infrastructure in the immediate vicinity and also consistent with the intent of the utility corridor.

Water Resources

The construction of the proposed gen-tie is not expected to result in water quality impacts. It is expected that the Campo Verde Solar generation facilitywould be under construction at the same time as the gen-tie line, but compliance with the State Water Resources Control Board's (SWRCB's) National Discharge Pollution Discharge Elimination System (NPDES) general permit for activities associated with construction (Construction General Permit) would reduce water quality impacts. The Campo Verde, Silverleaf, and other solar projects in the local area would be designed to retain most stormwater on-site. As with the proposed gen-tie, these and each of the cumulative projects, whether on BLM-managed or private lands, would be required to comply with the Construction General Permit and the State Water Resources Control Board has determined that the Construction General Permit provides sufficient and appropriate management requirements to protect the quality of receiving waters from discharges of storm water from construction sites. Because the proposed project, and each of the cumulative projects, must comply with the permit, cumulative construction activities will not adversely impact receiving waters.

Based on a review of the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map, the gen-tie project area and the sites for the Campo Verde and Silverleaf Solar generation facilities are within Zone X, an area determined to be outside of the 0.2 percent annual chance floodplain. Most of the cumulative projects are also within Zone X as a result of manmade drains associated with agriculture in the region. The gen-tie would have no impact to floodplains and the cumulative projects will be constructed in a manner that prevents adverse flooding onsite and offsite. Because the projects will not result in long-term flooding impacts, there will be no cumulative impacts.

The proposed gen-tie would only use very small amounts of water for dust control and only during the short construction period. Likewise, the Campo Verde and Silverleaf solar generation facilities would use water for dust control during construction although considerably less than the previous agricultural uses on these lands. These two projects would use very little water during operation and far less than required during construction. The gen-tie and the solar generation facilities will not have impacts to any

USACE jurisdictional waters or CDFG jurisdictional habitats. Because the gen-tie project will not result in impacts to these resources, there will be no cumulative impacts.

## FIGURE 4-1 POTENTIAL SWFL HABITAT – ALTERNATIVES 2 AND 3

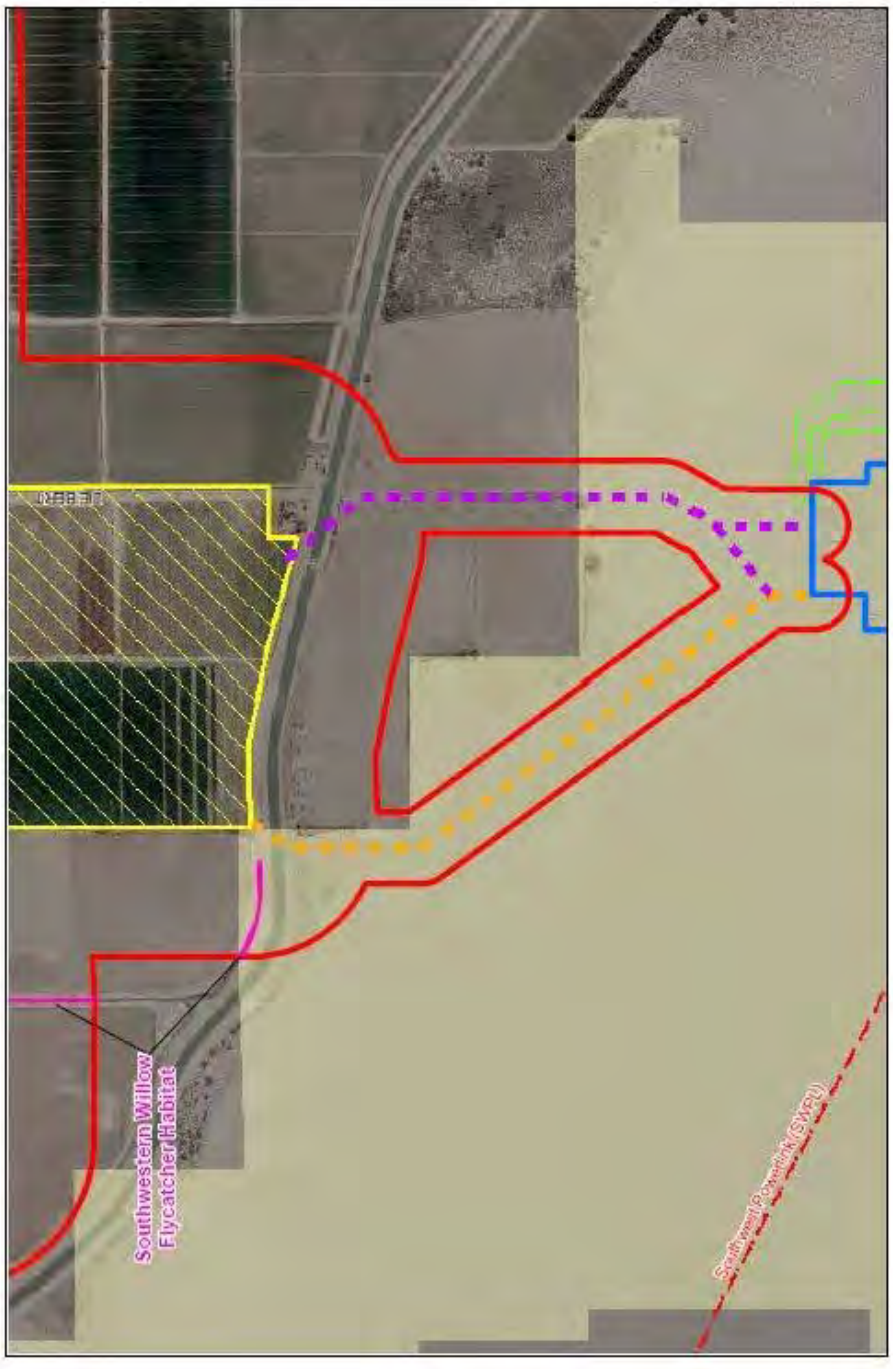



**Figure 4-1**
Potential Southwestern Willow Flycatcher Habitat
Near Alternative 2 and 3 Gen-Tie Routes

## FIGURE 4-2 POTENTIAL SWFL AND YCR HABITAT – ALTERNATIVE 4

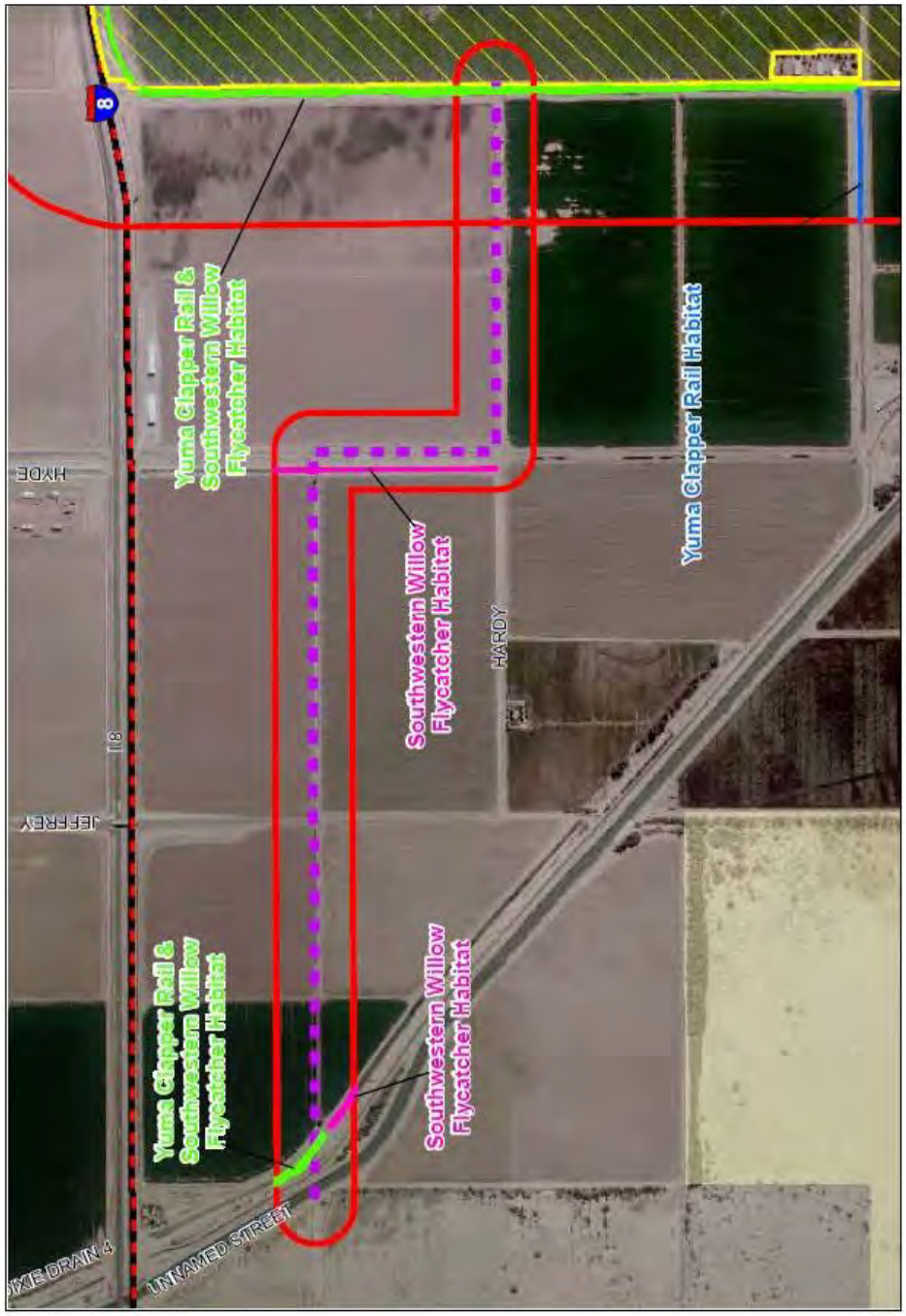



**Figure 4-2**
Potential Southwestern Willow Flycatcher and Yuma Clapper Rail Habitat
Along Alternative 4 Gen-Tie Route

## FIGURE 4-3 VISUAL SIMULATION OF PROPOSED ALTERNATIVE 2 GEN-TIE

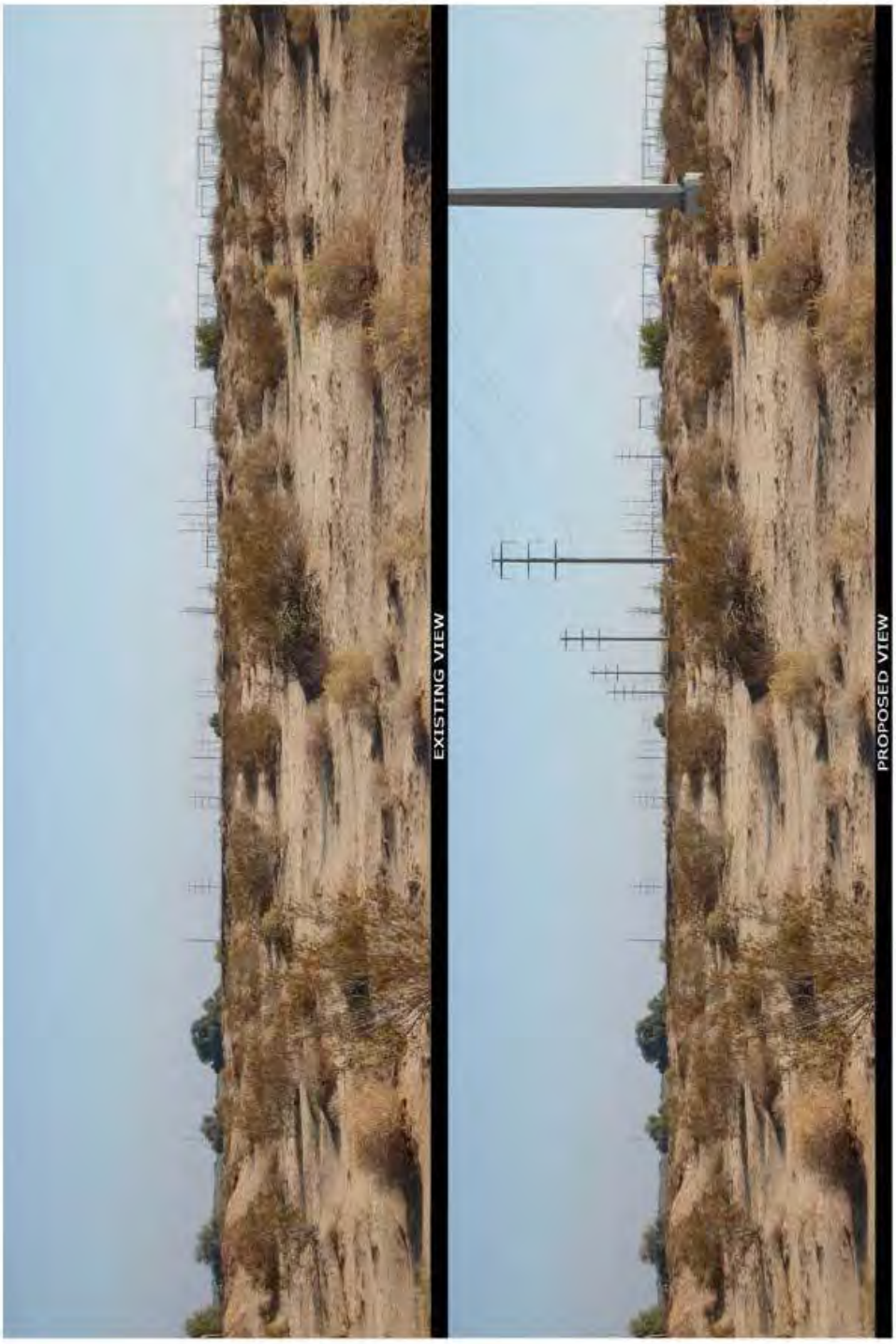



**Figure 4-3**
Visual Simulation of Proposed Alternative 2 Gen-Tie
On BLM Land Looking Southeast Towards Imperial Valley Substation

## FIGURE 4-4 VISUAL SIMULATION OF ALTERNATIVE 3 GEN-TIE

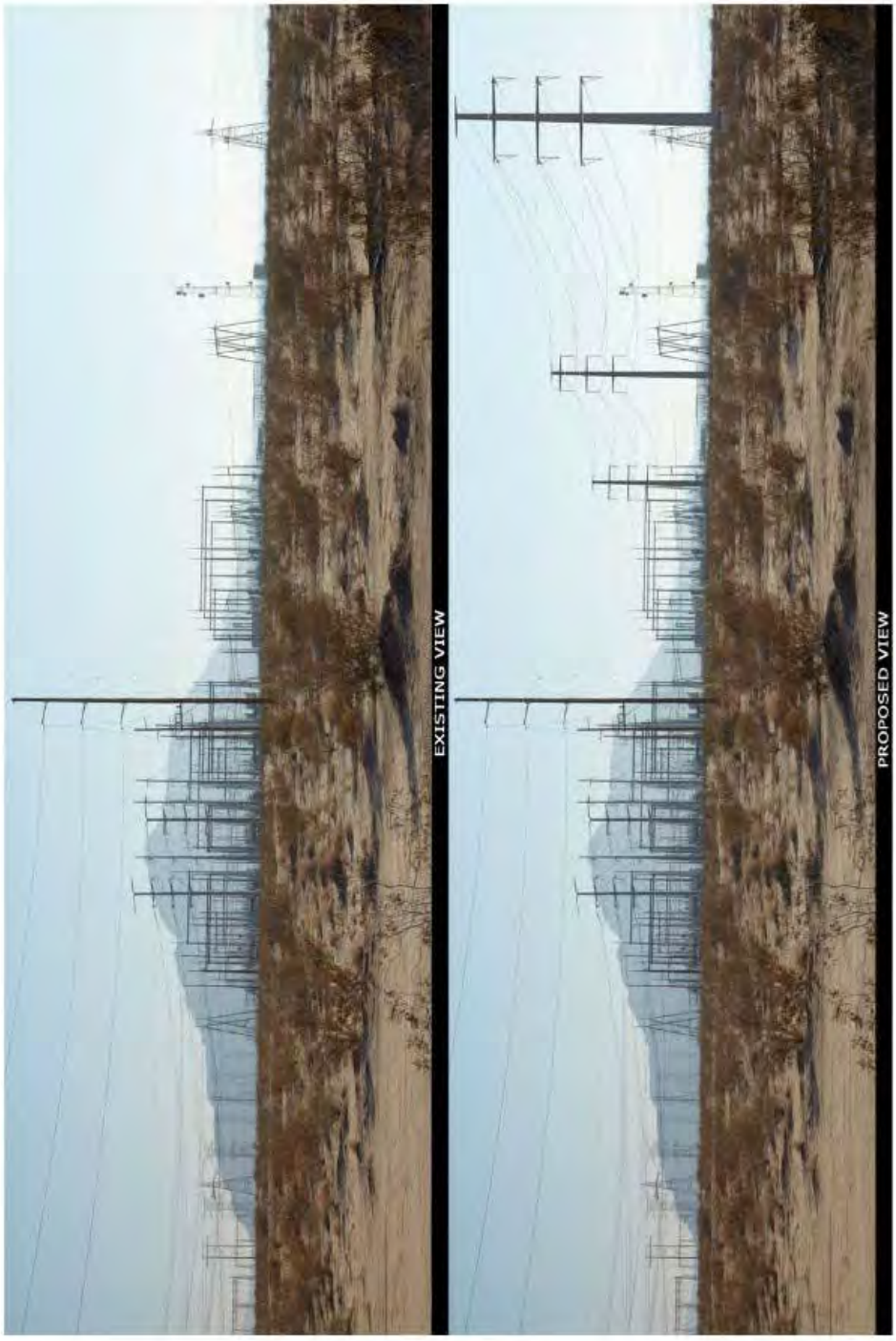



**Figure 4-4**
Visual Simulation of Alternative 3 Gen-Tie
On BLM Land Looking South Towards Imperial Valley Substation

## FIGURE 4-5 VISUAL SIMULATION OF PROPOSED 4 GEN-TIE

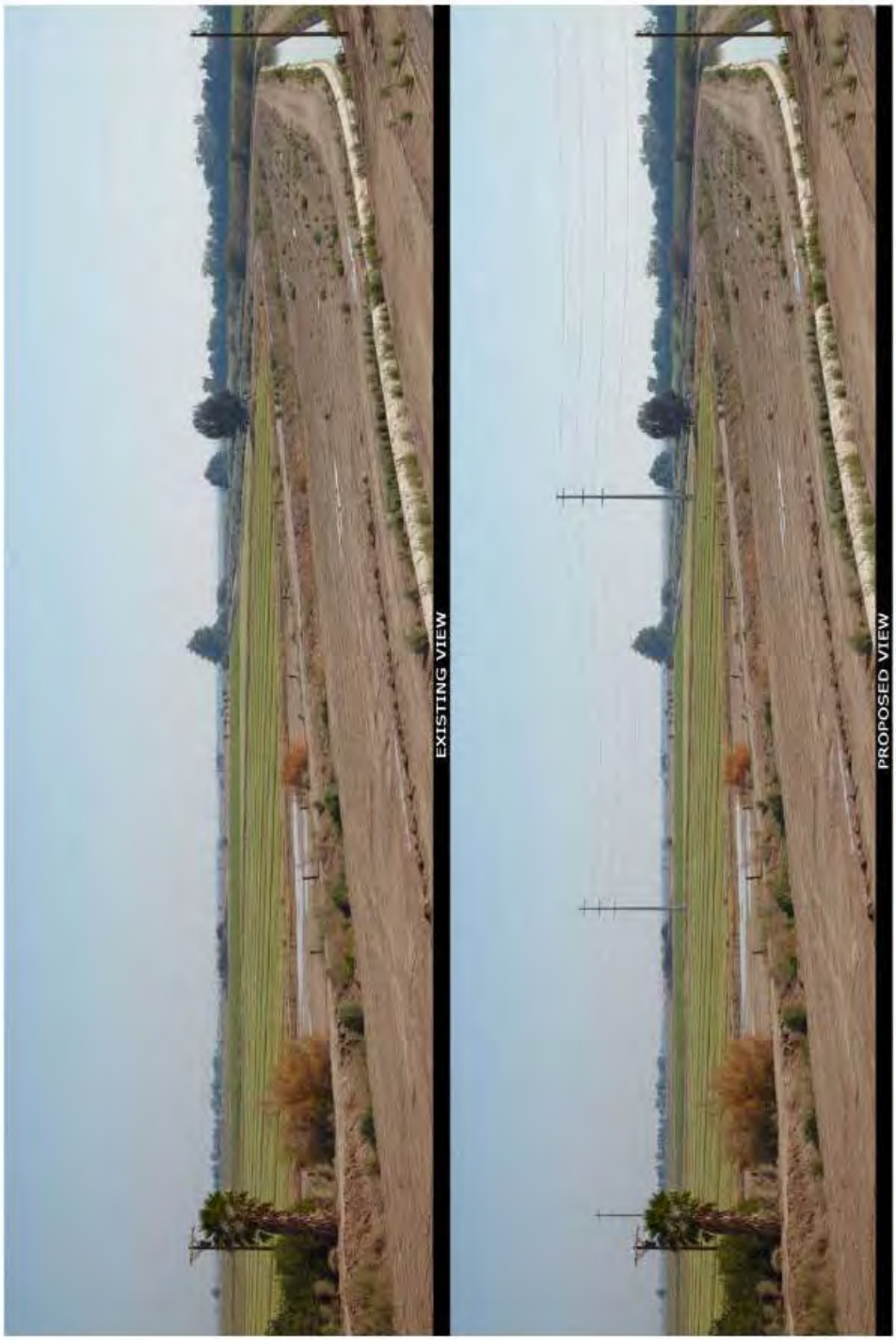



**Figure 4-5**
Visual Simulation of Alternative 4 Gen-Tie
Looking SE from Interstate 8

## FIGURE 4-6 LOCATION OF CUMULATIVE PROJECTS

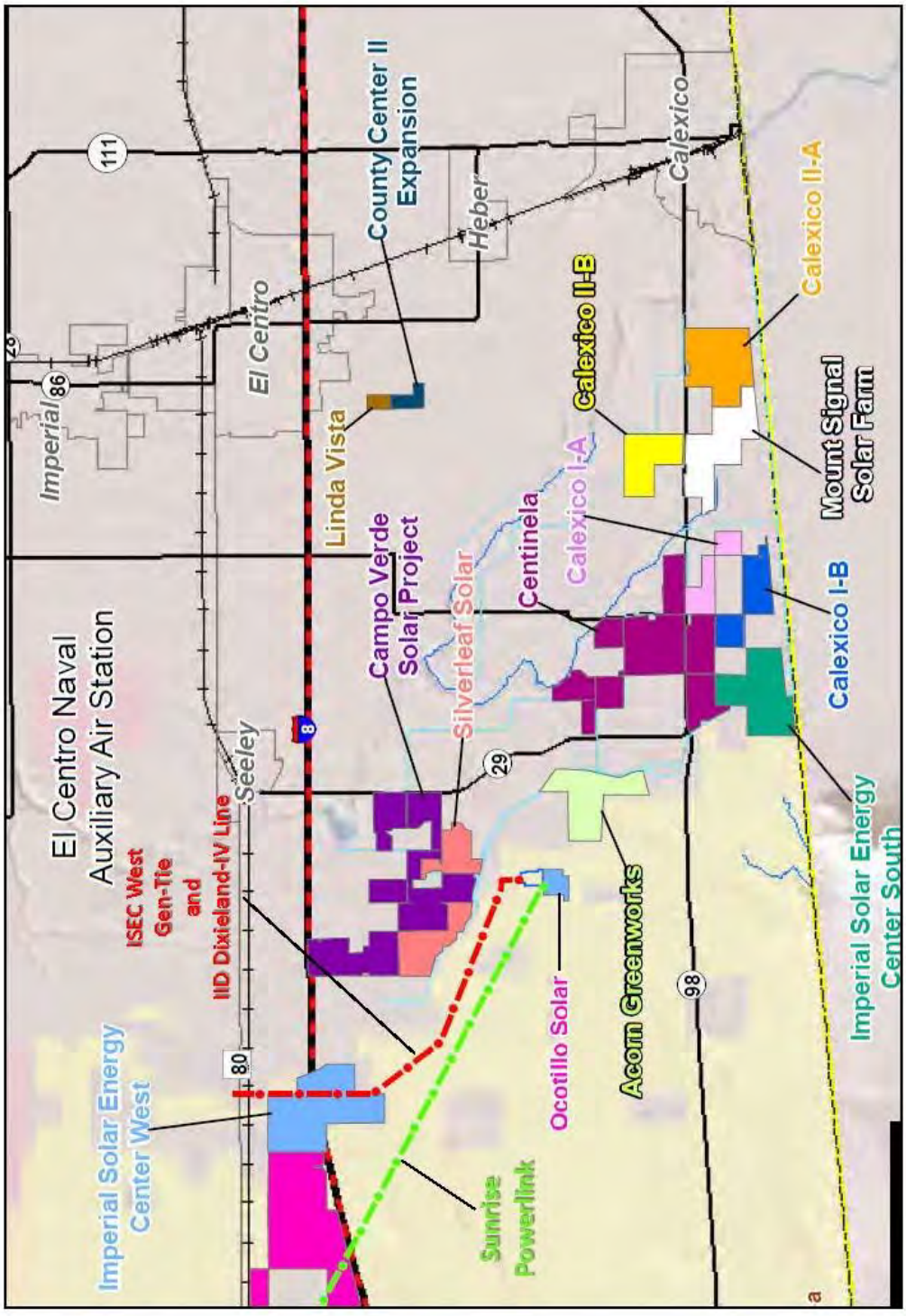



Figure 4-6
Location of Cumulative Projects

# 5.0 CONSULTATION AND COORDINATION

## 5.1 Introduction

This section describes the consultation, coordination and public participation activities that are on-going for the proposed Project.

There are a number of consultations on-going that provide guidance on the relationship between BLM as Lead Agency on the Environmental Assessment and other agencies. These are summarized here.

## 5.2 Interrelationships Between Agencies (Other Federal, State, Local, Native American)

### *5.2.1 Native American Consultation*

The BLM is responsible for consultation with Native American tribes for the purpose of identifying sacred sites and other places of traditional religious and cultural importance, and to incorporate appropriate mitigation measures in the event such sites are located during construction. Consultation with tribes has been initiated and will continue throughout the NEPA and Section 106 compliance processes.

In addition to the BLM's consultation, the Applicant contacted the California Native American Heritage Commission (NAHC) about any issues of cultural concern regarding the Project Area. In particular, inquiry was made as to whether there were any Traditional Cultural Properties, Sacred Sites, resource collecting areas, or any other areas of concern in the Project area. The NAHC conducted a Sacred Lands File search of the project area of potential effect (APE) and found Native American cultural resources were not identified within their inventory. However, they were aware of recorded archaeological sites and Native American cultural resources in close proximity to the APE. The NAHC suggested consultation with the following tribes and interested Native Americans who were each contacted:

- Gwendolyn Parada - Chairperson, La Posta Band of Mission Indians
- Leroy J. Elliott – Chairperson, Manzanita Band of Kumeyaay Nation
- Monique LaChappa – Chairperson, Campo Kumeyaay Nation
- Carmen Lucas (letter sent), Kwaaymii Band of Mission Indians
- Keeny Escalanti, Sr. - President, Fort Yuma Quechan Tribe
- Will Micklin – Executive Director, Ewiiaapaayp Band of Kumeyaay Indians
- Michael Garcia – Vice Chairman, Ewiiaapaayp Band of Kumeyaay Indians
- Jill McCormick – Tribal Archaeologist, Cocopah Indian Tribe
- Bridget Nash-Chrabascz – THPO, Fort Yuma Quechan Tribe
- Preston J. Arrow-Weed, Ah-Mut-Pipa Foundation
- Bernice Paipa – Vice Spokesperson, Kumeyaay Cultural Repatriation Committee

The Applicant also reached out to Tribal leaders in October and November, 2011 and site visits were conducted with representatives of the Kwaaymii Band of Mission Indians and the Cocopah Indian Tribe (on December 6, 2011) and with representatives of the Fort Yuma Quechan Tribe (on January 5, 2012).

### *5.2.2 Coordination with USFWS and CDFG*

The BLM will engage the US Fish and Wildlife Service (USFWS) in the Endangered Species Act (ESA) Section 7 consultation process concurrently with the NEPA review process. Biological surveys for federally-listed species have been conducted for the proposed Project.

California Endangered Species Act (CESA) review and approval will be required for impacts to State-listed species. Focused biological surveys for sensitive species have been conducted for all potential project areas. The California Department of Fish and Game (CDFG) has been consulted in this analysis.

### *5.2.3 Other Agency Coordination*

The Applicant is coordinating with other federal agencies including the US Army Corps of Engineers, National Air Force (NAF) El Centro, and US Border Patrol regarding potential project approvals or project issues. The Applicant is also coordinating with state and local agencies including the Regional Water Quality Control Board, Imperial County Air Pollution Control District, and various departments within Imperial County.

## 5.3 Public Participation Summary

No formal scoping is required for an EA. However, in order to identify any project-specific issues associated with the relevant plans and programs discussed above, the BLM held an interagency meeting in El Centro for the federal, state, and local agencies with potential interest in the Project. This meeting was held on October 12, 2011 in the BLM El Centro Office and was attended by the following agencies:

- BLM *technical specialists*
- US Fish and Wildlife Service
- US Border Patrol
- NAF El Centro
- California Department of Fish and Game
- Imperial County Planning and Development Services

The issues identified were consistent with the missions of each agency and the issues addressed above in the relevant plans and programs. Biological and cultural resources were identified as the primary issues associated with the portions of the project on BLM land.

# 6.0 LIST OF PREPARERS

***Bureau of Land Management***

BLM personnel from theRenewable Energy Coordinating Office (RECO), California Desert District Office involved in the preparation and review of the EA are listed here.

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Tiffany Thomas, Project Archeologist, California Desert District Office

Kim Marsden, Project Biologist, California Desert District Office

***ENValue***

The Preliminary Draft EA was prepared by ENValue. Team members are listed below.

| **Name** | **Role/Responsibility** |
|---|---|
| Randy Schroeder | Principal |
| Kenda Pollio | Project Planner |
| Pat Golden | Project Biologist |
| Scott Yanco | Project Biologist |
| Patricia Mitchell | Project Archeologist |
| Heather Thompson | Field Archeologist |
| Mark Button | Visual Simulations |
| Susan Westhouse | GIS |
| Derrik Berg | Project Planner |

***Other Contractors***

| | |
|---|---|
| EGA Consultants | Geotechnical Study |
| Ldn Consulting | Air and Noise Reports |

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# APPENDICES

# APPENDIX A – WEED MANAGEMENT PLAN

# Weed Management Plan

# Campo Verde Solar Project Gen-tie Line on Federal Lands

# Imperial County, California

## March 2012

Submitted to:

Bureau of Land Management
Renewable Energy Coordinating Office
California Desert District
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# 1.0 Introduction

## 1.1 Project Description and Weed Management Area

On September 12, 2011, Campo Verde Solar, LLC ("Applicant") submitted a SF-299 application to the Bureau of Land Management (BLM) for a right-of-way (ROW) under the Federal Land Policy and Management Act (FLPMA) for a generation interconnection (gen-tie) transmission line across federal lands administered by BLM. The gen-tie line would transport renewable electrical energy from the proposed Campo Verde Solar Project to San Diego Gas and Electric's (SDG&E's) Imperial Valley Substation ("Imperial Valley Substation") located on BLM land in Imperial County, California about 8 miles southwest of the city of El Centro. The Campo Verde Solar Project is a proposed photovoltaic (PV) solar project that would generate nominally 140+ megawatts of alternating current ($MWs_{AC}$) of renewable energy. The Campo Verde Solar generation facility is located on approximately 1,990 acres of disturbed private land that are currently used for agriculture.

The Applicant submitted a FLPMA SF-299 right-of-way application for a proposed and alternative route for a double-circuit 230-kV gen-tie line across public lands administered by the BLM. The proposed gen-tie route would be built along one of two routes on BLM-managed lands, each approximately 1.0 mile long. It would proceed south from the solar generation facility site, following existing roads south across BLM-managed land to a point where it would turn southeast to SDG&E's Imperial Valley Substation. An alternative route for the gen-tie across BLM-managed land would be approximately 0.8 miles long, with approximately 0.4 miles on BLM-managed land and the remainder on private land. It would generally parallel the existing Imperial Irrigation District's (IID's) 230-kV S-Line south from the project sites (note: the BLM approved the S-Line to be upgraded to a double-circuit 230-kV line in Grant CACA-13206 Amended March 26, 2010). **Figure 1** shows the locations of each of the proposed and alternative gen-tie routes.

The Weed Management Area (WMA) addressed in this plan consists of the portion of the gen-tie lines on federal land managed by the BLM that would be temporarily and permanently disturbed during construction.

## 1.2 Plan Purpose

The term "weed" refers to invasive, non-native plant species and weeds listed on federal and state noxious weed lists. In recent years, there has been an expansion of invasive, non-native (or "alien") plant species across the United States, including California. New invasive weed species arrive in California every year. Invasive species create substantial economic losses for agriculture in both cropland and rangeland areas, and they often provide poorer habitat for wildlife than native vegetation. Proliferation of invasive plant species alters ecosystem processes and threatens certain native species with extirpation. Unchecked, these species can create economic impacts and disrupt native ecosystems.

Invasive species are becoming one of the most pressing issues for land managers. Most natural areas contain alien plant species. Due to constraints on management resources, managers must prioritize which species to control and which control methods to implement.

This plan is submitted to address weed management for those portions of the gen-tie line located on BLM-administered lands. The purpose of the plan is to provide (1) monitoring, preventative, and management strategies for weed control during construction activities; (2) control and management of weeds in areas temporarily disturbed during construction where restoration and revegetation efforts will be focused; and (3), a long-term strategy for noxious weed control and management during the operation of the Gen-tie line.

## 1.3 Noxious Weed Definition

The term ‘‘noxious weed’’ is defined in the federal Plant Protection Act (7 *U.S. Code* [U.S.C.] 7701 *et seq*.) as any plant or plant product that can directly or indirectly injure or cause damage to crops (including nursery stock or plant products); livestock, poultry, or other interests of agriculture; irrigation; navigation; the natural resources of the U.S.; the public health; or the environment. Noxious weeds are typically characterized as non-native plants that aggressively colonize new areas and can dominate native plant communities if not controlled. Noxious weeds often alter physical or chemical soil conditions, out-compete native vegetation, and dominate the landscape to the detriment of native plants and wildlife. Noxious weeds may also preempt ground and surface water resources, compromise agricultural operations, conflict with recreational values, create fire hazards, and compromise aesthetic values of native or urban landscapes. Noxious weeds are often quick to colonize disturbed areas, including construction sites, roadsides, irrigated sites, or any other area with altered hydrology, soil structure, or soil chemistry. Noxious weeds are only those species listed on federal (USDA 2012) or State of California lists (CDFA 2010).

## 1.4 Approach to Weed Management

This plan is focused on the persistence of desired plant species and communities, rather than on simply eliminating weeds. Preventive programs are implemented to keep management areas free of species that are not yet established but that are known to be problematic in the vicinity. Priorities are set to reduce or eradicate weeds that have already established in the WMA, according to their actual and potential impacts on the land management goals for the WMA, and according to the ability to control them now versus in the future. Weed control actions will be taken only when careful consideration indicates a lack of action would result in more damage than controlling it with the best available methods.

Weed management plans should be structured to provide a logical approach to weed management based on the best available information. This plan follows an adaptive management approach:

- Weed species are identified through an inventory of the property and by gathering information from other sources;
- Land management goals and weed management objectives are established and recorded for the property;
- Priorities are assigned to the weed species and weed infestations based on the severity of their impacts, while considering the ability to control them;

- Methods are considered for controlling weeds or otherwise diminishing their impacts and, if necessary, are reprioritized based on likely impacts on target and non-target species;
- Integrated Weed Management (IWM) plans are developed and implemented based on this information;
- Results of management actions are monitored, evaluated, and compared to weed management objectives for the management area;
- The information is used to modify and improve weed management objectives, control priorities, and IWM plans, thereby starting the cycle again.

## 1.5 Plan Objectives

This plan includes a list and an assessment of noxious weeds and other invasive plant species that occur, or could potentially occur, in the project vicinity; a target list of weeds that will be controlled; survey methods for weed presence during construction and operation; weed control methods; and reporting requirements. **Figure 1** shows the Campo Verde project area. **Figure 2** shows the WMA and weed infestation locations in the survey area. Certain considerations will be made in regards to wide-spread weed species (e.g. Arabian schismus [*Schismus arabicus*]) and Sahara mustard [*Brassica tournefortii*] because removal of widespread and naturalized species is impractical. Appropriate objectives will be defined on a case-by case basis by evaluating weed infestations in the survey area.

Weed management objectives are important to specify before project initiation, and need to be consistent with existing and proposed future site conditions, biology of the existing weed species, and environmental context of the project. Weed management objectives for the project include the following, applicable to temporary disturbance areas and new access roads during construction:

- Eradication: This objective involves the elimination of individuals of a particular species within a specified area. This method is generally not feasible in the WMA; it is more appropriate where the weed is of considerable economic and environmental concern and the population size is manageable (the ROW is too small to manage weed populations).

- Suppression: This objective involves reducing current infestation density, but not necessarily reducing the total area or boundary of the infestation. This applies to many widely distributed, high-density weeds where eradication is not feasible.

- Containment: This objective involves preventing infestation expansion and spread, and may be conducted with or without attempts to reduce infestation density. Containment involves stopping spread until suppression or eradication can be implemented, and is practical only to the extent that the spread of seeds or vegetative propagules can be prevented. This is the primary goal for the WMA.

## 1.6 Management Roles

The ROW grant-holder is ultimately responsible for implementing this plan. It is anticipated that grant-holder's contractors and other designees responsible for implementing components of this plan will include the following:

- Contractor(s) – Contractual language may be included in construction documents and maintenance contracts to ensure that contractors, subcontractors, vendors, maintenance personnel and other parties, performing either construction, maintenance or repairs at the project site, abide by and implement the provisions of this plan. Implementing the construction provisions of this plan may be a part of construction contracts. Restoration contractors, landscape contractors, and other specialists may implement specific provisions of this plan either as subcontractors to the general construction contractor, or through independent contracts with the grant-holder.

- Construction Manager – The construction manager will have ultimate oversight of the construction contractor to ensure compliance with the provisions of this plan.

- Environmental Compliance Manager – The grant-holder will designate an environmental compliance manager (ECM) to provide oversight of construction practices and ensure compliance with the provisions of this plan. The ECM (including support staff as needed) will be contracted directly by the grant-holder and coordinate with the construction manager to ensure contractor compliance with environmental requirements for construction.

- BLM – As the administering land management agency, the BLM will provide ultimate approval of the contents of this plan and compliance oversight of its provisions. BLM will provide timely review of work products including this plan, modifications or amendments to this plan, and subsequent reports as required in this plan.

## 1.7 Summary of Weed Management Actions

The table below summarizes the activities that must be implemented to manage weeds on the BLM-managed lands. The remainder of this plan and the appendices provide the detail associated with each of these requirements.

| SUMMARY OF WEED MANAGEMENT ACTIONS / ACTIVITIES | | |
|---|---|---|
| **ACTION / ACTIVITY** | **TIMING** | **REPORTING / NOTES** |
| **Pre-Construction** | | |
| Site weed inventory | Completed | Included in Weed Management Plan |
| Flag weed-infested areas | Before construction | GIS mapping of weed areas |
| Control/treatment of infested areas | Before construction | Record location, type of treatment, time |
| **Construction** | | |
| Worker training | Before starting work | Weeds included in environmental training |
| Construction equipment washing | Before they enter the site | Keep log |
| Avoidance of flagged areas | Before areas are initially treated | To avoid spreading existing weeds |
| Use weed-free straw | If used for erosion control | Document |

| | | |
|---|---|---|
| Monitoring of construction areas for weeds | Part of daily environmental inspection | Included in daily environmental log / report |
| Control /treatment of infested areas | Throughout construction as needed | Document control. If used, herbicides applied by licensed applicators, herbicides and applicators pre-approved by BLM |
| Final construction report | 30 days after construction complete | Report to BLM |
| **Post- Construction** | | |
| Implement revegetation plan | After completion of construction | Per approved plan |
| Must use weed-free seed | | Provide certification |
| Control/treatment of infested areas | As needed | Document control. If used, herbicides applied by licensed applicators, herbicides and applicators pre-approved by BLM |
| **Operation** | | |
| Monitoring | Annually | |
| Control/treatment of infested areas | As needed | Document control. If used, herbicides applied by licensed applicators, herbicides and applicators pre-approved by BLM |
| Monitoring report | Annually | Report to BLM |

# 2.0 Applicable Laws, Ordinances, Regulations, and Standards

## 2.1 Federal Laws and Regulations

### 2.1.1 Federal Noxious Weed Act of 1974

The Noxious Weed Act of 1974 (the "Act"; 7 U.S.C. §§ 2801-2814, January 3, 1975, as amended 1988 and 1994) provides for the control and management of non-indigenous weeds that injure, or have the potential to injure, the interests of agriculture and commerce, wildlife resources, or public health. It gives the Secretary of Agriculture broad powers in regulating transactions and movement of noxious weeds. The Act states that no person may import or move any noxious weed identified by regulations of the Secretary of Agriculture into or through the U.S., except in compliance with the regulations, which may require that permits be obtained. The Act also requires each federal agency to develop a management program to control undesirable plants on federal lands under the agency's jurisdiction, and establish and adequately fund the program. Some of the provisions of the Act were repealed by the Plant Protection Act of 2000, including U.S.C. 2802 through 2813. However, Section 2814 was not repealed (7 U.S.C. 2801 note; 7 U.S.C. 2814).

### 2.1.2 Plant Protection Act of 2000

The Plant Protection Act ("PPA") as amended (7 U.S.C. 7701-7786), Section 402 states that the detection, control, eradication, suppression, prevention, or retardation of the spread of plant pests or noxious weeds is necessary for the protection of the agriculture, environment, and economy of the U.S. The PPA defines the term ‘‘noxious weed’’ (7 U.S.C. 7702 § 403) to mean any plant or plant product that can directly or indirectly injure or cause damage to crops (including nursery stock or plant products), livestock, poultry, or other interests of agriculture, irrigation, navigation, the natural resources of the U.S., public health, or the environment. The PPA specifies that the Secretary of Agriculture may prohibit or restrict the importation, entry, exportation, or movement in interstate commerce of any noxious weed if it is determined “that the prohibition or restriction is necessary to prevent the introduction into the [U.S.] or the dissemination of a plant pest or noxious weed within the [U.S.],” and authorizes the issuance of implementing regulations.

### 2.1.3 Noxious Weed Control and Eradication Act of 2004

The Noxious Weed Control and Eradication Act ("NWCEA") of 2004 (P.L. 108-412) amended the PPA by adding a new subtitle, “Subtitle E--Noxious Weed Control and Eradication" (7 U.S.C. 7781- 7786), which authorizes the Secretary of Agriculture to establish a program to provide financial and technical assistance to public and private landowners for the control or eradication of noxious weeds.

Under the NWCEA, grants are available to weed management entities for the control or eradication of noxious weeds, and agreements may be made with weed management entities to provide financial and technical assistance for the control or eradication of noxious weeds.

### 2.1.4 Executive Order 13112 of 1999

Executive Order 13112 defines “alien species”, “invasive species”, and other terms. It also defines federal agency duties such as preventing the introduction of invasive species, detecting

and controlling infestations, monitoring, research, and public education. The EO established the Invasive Species Council and defines the duties of the Council, including a requirement to prepare the Invasive Species Management Plan.

## 2.2 State and Local Laws and Regulations

### 2.2.1 Native Plant Protection Act

The Native Plant Protection Act ("NPPA") of the 1977 Fish and Game Code (Sections 1900 through 1913) directed the California Department of Fish and Game (CDFG) to carry out the Legislature's intent to "preserve, protect and enhance rare and endangered plants in this State." The NPPA gave the California Fish and Game Commission the power to designate native plants as "endangered" or "rare" and protect endangered and rare plants from take.

### 2.2.2 California Food and Agricultural Code

Various portions of this code pertain to noxious weed management. Specifically, Food and Agricultural Code Section 403 states that the Department of Food and Agriculture should prevent the introduction and spread of injurious insect or animal pests, plant diseases, and noxious weeds. The California Commissioner of Agriculture is granted the authority to investigate and control noxious weeds, and specifically to provide funding, research, and assistance to weed management entities, including eligible weed management areas or county agricultural commissioners, for the control and abatement of noxious weeds according to an approved integrated weed management plan.

California Food and Agriculture Code Section 5004 defines noxious weeds. Sections 5101 and 5205 provide for the certification of weed-free forage, hay, straw, and mulch. This portion of the code recognizes that many noxious weeds are spread through hay, straw, and mulch, used for both forage and ground covers. The code allows for in-field inspection and certification of crops to ensure that live roots, rhizomes, stolons, seeds, or other propagative plant parts of noxious weeds are not present in the crop to be harvested. Certified weed-free forage, hay, straw, and mulch are required on BLM land. Mulch and/or hay bale materials used for erosion control at the project will be required to meet this certification.

### 2.2.3 Imperial County General Plan

Imperial County has a General Plan which requires that proposed development projects are compatible with policies set forth in the Conservation and Open Space Element, which provide for the protection, maintenance, and use of the County's natural resources with particular emphasis on scarce resources, and to prevent wasteful exploitation, destruction, and neglect of the state's natural resources (County of Imperial 1993). Imperial County does not have jurisdiction over BLM-managed land, and the applicant will adhere to the applicable requirements of the General Plan on those portions of the project on private lands.

### 2.2.4 Imperial County Land Use Ordinance (Title 9)

Imperial County has a County Land Use Ordinance (Title 9) to provide comprehensive land-use regulations for unincorporated areas of Imperial County. These regulations promote and protect the public health, safety, and general welfare through the orderly regulation of land uses throughout the unincorporated areas of Imperial County (County of Imperial 1998). Imperial

County does not have jurisdiction over BLM-managed land, and the applicant will adhere to the applicable requirements of Title 9 on those portions of the project on private lands.

## 2.3 Standards

Several existing conservation and management plans are relevant to weed control for the project. These plans were created in response to regulatory mandates or internal agency guidance.

### 2.3.1 Conservation and Management Plans

#### Bureau of Land Management

BLM prepared the Vegetation Treatments Using Herbicides on Bureau of Land Management Lands in 17 Western States Programmatic Environmental Impact Statement (PEIS; DOI 2007) to address the use of chemical vegetation treatments. That document is the result of extensive public involvement and outlines the specific decisions, standard operating procedures, and mitigation measures for the use of herbicides on BLM-managed lands. The selected alternative of the PEIS identifies the active herbicidal ingredients approved for use on BLM-managed land, and the herbicidal ingredients that are no longer approved for use. The Record of Decision for the PEIS defers to approved land use plans for the determination of areas to be treated through BLM's integrated pest management program, and makes no land use or resource allocations in this regard.

Herbicide Treatment Standard Operating Procedures in the ROD specify management of noxious weeds and application of pesticides on BLM land (**Appendix 2**). Table B-1 (**Appendix 2**), Prevention Measures specify avoidance measures to limit noxious weed infestation, and Table B-2 (**Appendix 2**), Standard Operating Procedures for Applying Herbicides, provides details on herbicide application. These procedures are incorporated as requirements of this plan.

#### California Desert Conservation Area Plan

The California Desert Conservation Area (CDCA) is one of two national conservation areas established by Congress at the time of the passage of the Federal Land and Policy Management Act (FLPMA). The FLPMA outlines how BLM will manage public lands. Congress specifically provided guidance for the management of the CDCA and directed the development of the 1980 CDCA Plan (BLM 1980, as amended). The document provides no specifics about noxious weed or invasive species management, but specifies management strategies for broad areas of the plan boundary.

# 3.0 Weed Assessment

## 3.1 Inventory of Weed Species

The weed (noxious weeds and invasive species) inventory was compiled from several sources. A target weed species list was assembled from previous surveys conducted by the BLM and other botanists in the area. Targeted species also included those noxious weeds identified by the USDA, California Department of Food and Agriculture (CDFA 2010), the California Invasive Plant Council (Cal-IPC 2006), and those weeds of special concern identified by BLM. **Table 1** lists noxious weeds and other invasive species that occur or could potentially occur in the project vicinity.

### 3.1.1 Field Survey Methodology

Weed surveys were conducted from October 23 – 24, 2011, February 28, 2012, and March 3 – 4, 2012. Surveys were conducted at a time when most weeds would be observable. The survey area included the preferred and alternative gen-tie line routes and adjacent buffer areas on BLM-managed lands. Transects were spaced approximately 100 feet apart. Wide-spread weeds were mapped on aerial photographs. Population polygons were assigned a cover class (0-5 percent cover; 5-25 percent cover or >25 percent cover). Isolated individuals (e.g. athel and tamarisk) were also mapped.

## 3.2 Known and Potential Weed Occurrences

Several weeds are known to occur in the project vicinity. The weeds of highest concern in the general area include Sahara mustard, athel, and tamarisk. Arabian grass is another wide-spread weed that is also present; however, because of the widespread nature of this species, control is considered impracticable. **Table 1** lists potentially occurring invasive species, and identifies which species were observed during site surveys. Each invasive species has a rating based on the California Invasive Species Council rating system and the CDFA.

## 3.3 Noxious Weed Risk Rating

A Noxious Weed Risk Assessment was conducted for the Campo Verde project on BLM-managed lands based on the BLM Manual 9015 Integrated Weed Management (BLM 1992). This assessment was conducted only for the species observed on BLM-managed lands within the survey area boundaries and adjacent areas; invasive plant species were also evaluated. **Table 2** provides the results of the assessment. Each species in **Table 2** is assessed for the likelihood of spreading to the survey area and the consequence of establishment in the survey area. These two factors are used to determine each species risk rating.

# 4.0 Weed Management Areas

Weed management will occur site-wide; however, different areas will require different specific management considerations depending on a range of factors described in this section.

## 4.1 Temporary Disturbance Areas

The Campo Verde Project will be designed to minimize ground disturbance and environmental impacts wherever practicable. The existing access roads will be used and no new roads will be constructed.

The gen-tie line will be constructed in Sonoran creosote bush scrub and/or disturbed stabilized desert dune habitats. Construction will involve some temporary disturbance along with permanent tower placement. **Figure 2** shows the temporary work areas. (structure locations, pull sites, splicing sites, work areas, etc.) Temporary work areas will result in up to approximately 29.83 acres of temporary disturbance for the proposed Gen-tie line route. (Note: disturbance acreages presented in this report are current as of the date of the report. For updated acreage values as applicable, refer to the final Plan of Development (POD).

Weed management issues at temporary construction areas include soil disturbance during construction and temporary use will create habitat well suited to disturbance-adapted invasive species and, therefore, measures to minimize the potential for weed introduction by personnel and equipment will be needed. Areas temporarily disturbed will be revegetated in accordance with the Site Reclamation and Revegetation Plan (SRRP), but revegetated areas may continue to be susceptible to weed invasion and establishment, and ongoing monitoring and management will be required. Weed management measures for these areas, including monitoring frequency, target weed species, and control methods, are included in Section 6.

## 4.2 Permanently Developed Areas

Permanently developed areas are more likely to support weedy species along the periphery of disturbed areas, and function as seed reservoirs to adjacent natural habitats if not managed.

### Structure Footings / Permanent Facilities

Peripheral areas surrounding structure footings are suitable for weed establishment. This may include soils that have been cleared, compacted, or otherwise disturbed; areas where hydrology is altered, such as from increased drainage from developed areas; or areas where continued vehicle or foot traffic persist. Ongoing weed management will focus on these areas for management to avoid creation of weed seed reservoir areas, which could affect adjacent undisturbed habitats. Structure footings will result in approximately 0.04 acres of permanent disturbance for the proposed gen-tie line route and configuration.

# 5.0 Monitoring and Survey Methods

## 5.1 Weed Identification

Monitoring and removal of weeds requires skill and training in plant identification. Training and field manuals with photographs of native desert plants and common weeds will be provided as necessary to field staff including biological monitors, weed abatement contractors, plant operators and staff, and construction workers. Online resources are available and include:

- The University of California digital library (http://www.calflora.org/) contains species information and an extensive photo collection.
- The California Invasive Plant Council website (http://www.cal-ipc.org) contains an invasive plant database, plant profiles, and other information on invasive plants and control.
- The U.S. Department of Agriculture (USDA) National Invasive Species Information Center (http://www.invasivespeciesinfo.gov/) has information on invasive species and links to the extensive USDA PLANTS database (http://plants.usda.gov/), with species profiles and photographs.
- The Mojave Weed Management Area has weed management goals to protect and enhance biodiversity, water resources, reduce fire hazards, and protect agricultural interests. The website is at http://www.mojavewma.org/, and has information on the common weeds in the area.
- The California Native Plant Society maintains information including a database on California vegetation including rare, threatened, and endangered plants (http://www.cnps.org/).
- BLM also maintains a website with useful information on noxious weeds, including management strategies for weeds in California (http://www.blm.gov/weeds/).
- The Center for Invasive Plant Management maintains a website with useful information and resources, including plant profiles (http://www.weedcenter.org/).
- *Weeds of the West* by Tom D. Whitson is also a valuable resource (available at many online book suppliers).

## 5.2 Monitoring

Monitoring is the repeated collection and analysis of information to evaluate progress in meeting resource management objectives. Periodic observation of the weeds being managed is necessary to evaluate the effectiveness of a weed control program. If management objectives are not being met, weed control actions need to be modified. Monitoring will ensure timely detection and prompt eradication of weed infestations, which are essential to a long-term strategy for weed management.

### 5.2.1 Monitoring Methods

#### Construction Areas

The ECM will oversee biological monitors who will be present during site clearing and construction activities. Biological monitors will be responsible for inspecting construction areas, identifying the presence of weeds, and inspecting equipment-cleaning facilities for weed seed

removal. The ECM will be responsible for prescribing management activities consistent with this plan if weeds become established. Monitoring of construction areas will be conducted concurrently with the other duties of the ECM/Designated Biologist, and will consist of walking or driving slowly through construction areas and searching for weed species. This will continue on a regular basis while construction crews are conducting ground-disturbing construction activities.

#### Revegetation Areas

Monitoring of revegetated sites will occur after revegetation activities are complete. Monitoring will be required to determine the condition of the reclaimed areas versus the performance targets specified in the SRRP, with the ultimate goal of re-establishing natural vegetation communities.

#### Known Infestation Areas

Areas infested with weeds where treatment has been implemented will be monitored to ensure that treatments are effective and that management goals have been achieved. Known infestation areas will be visited until noxious weeds in the area are controlled in accordance with the procedures specified in Section 6.

### 5.2.2 Database and Mapping

Locations of weed occurrences, species, detection date, growth stage, infestation extent, treatments implemented, results of treatment, and current status data will be maintained during the construction phase. This will not be a requirement for the previously designated wide-spread invasives (Arabian schismus and Sahara mustard). A geographic information system (GIS) will be used to map and store data. The priority of infestation areas will be established based on species, vulnerability of the site to invasion, growth stage, and effectiveness of treatment. Areas mapped as vulnerable to weed invasions will also be included. Vulnerability will be assessed based on: (1) availability of weed propagule sources, such as along roadsides, (2) disturbed areas, including land clearing and earthwork; or (3) nearby areas with known or treated weed infestations or existing infestations that are located outside of the managed area and pose a risk to the management area. During the operating phase, records will be kept in accordance with the procedures specified in the SRRP.

# 6.0 Weed Management

## 6.1 Species Descriptions

Descriptions of the more common or potentially harmful noxious weeds occurring or potentially occurring in the Campo Verde survey area are provided in this section, along with the basic weed management strategy applicable to each. **Table 1** provides a complete list of the weed species of concern in this area, and **Table 3** provides additional information on management strategy and control methods for observed and potentially occurring noxious weed species. The management strategies and control methods listed in this section apply during both the construction period and the long-term monitoring period specified in the SRRP.

Not all invasive plant species can or should be eradicated. Certain wide-spread weed species (e.g. *Schismus arabicus*) will be monitored but not controlled. Control of these aggressive colonizers is impractical, and would likely slow site rehabilitation by slowing the rate of secondary succession and surface stabilization. In addition, these species can play a beneficial role in accelerating surface stabilization and reducing soil erosion caused by sheet flow or high winds. Complete eradication of large areas where infestations are already established would negatively impact other pioneer species, and would be impractical because the area would likely be re-invaded by individuals or infestations from adjacent lands in the absence of physical barriers.

The following list provides brief descriptions of the weed species of particular concern within the Campo Verde Project Area. Additional weed species are listed in **Table 1.**

- **Sahara mustard** or **African mustard** (*Brassica tournefortii*) was observed in the survey area. Cal-IPC has declared this plant highly invasive (Cal-IPC 2006). BLM and other agencies recognize that, because of the widespread distribution of Sahara mustard, this species is not considered feasible to control, especially is small areas such as the Campo Verde ROW; therefore, weed abatement efforts for Sahara mustard will not be required.
- **Arabian grass** (*Schismus arabicus*) was widespread throughout the proposed gen-tie route. Cal-IPC has determined that this plant has a limited invasiveness rating in California (Cal-IPC 2006). BLM and other agencies recognize that, because of the widespread distribution of Arabian grass, this species is not considered feasible to control, especially is small areas such as the Campo Verde ROW; therefore, weed abatement efforts for Arabian grass will not be required.
- **Athel (***Tamarix aphylla)* was observed in the survey area. This species has been planted as a windscreen along the edges of fallow agricultural fields along the boundary of the BLM-managed lands. This species is invading the BLM-managed lands in this area, often at very high densities (**Figure 2**). Over time it is anticipated that more individuals will invade the survey area. Though Cal-IPC has rated this species as Limited, it is obvious that this species could have a large impact on the native desert scrub ecosystem by eliminating desert vegetation communities. Known individuals of this species will be mechanically removed as necessary, and occurrences of this species should be mechanically treated where observed within the WMA.

### New Weeds

Weeds that were not included in the descriptions above could also potentially colonize or invade the site, both during construction and during operation. During construction, the ECM will be required to update the list of potential noxious weeds if new potential threats are identified. This will include developing a management strategy and management methods appropriate to the plant species and nature of the potential invasion.

## 6.2 Management Objectives and Strategy

The proposed Gen-tie line is on BLM-managed land within a designated energy corridor. The IV Substation is a hub for existing transmission line corridors entering the substation from the east and south and exiting from the north and west. The survey area contains native desert habitat, and adjacent areas also provide habitat for a number of plant and animal species; it is also within the Yuha Desert flat-tailed horned lizard (*Phrynosoma mcalli*) management area. Therefore, although this is within a designated energy corridor, noxious weeds and other invasive species should be controlled to the extent practicable in accordance with the performance targets.

The weed management objectives are:

1. Eliminate weeds that pose a threat to the energy corridor primarily through increased fuel loads, which could lead to higher fire frequency that could adversely impact the existing energy apparatus within the corridor.

2. Eliminate weed populations that could act as a continued source of propagules that would repeatedly invade the adjacent habitats and degrade those habitats compromising the long-term persistence of native plants and animals adjacent to the project site.

Integrated weed management plans for high priority weed species known to occur in the survey area are included in **Appendix 1**.

## 6.3 Priorities for Weed Management

### 6.3.1 Prevention

The most effective weed management action is to prevent weeds from becoming established in the first place. This is the most cost efficient method because, once noxious weeds become established on a site, eradication and/or control methods can be expensive, labor intensive, and potentially ineffective. **Section 6.4.1** details methods that will be employed to prevent the establishment of noxious weeds on site. These include, but are not limited to: minimizing the area of land disturbance, re-establishing native vegetation in disturbed areas as quickly as possible, washing equipment, and regularly monitoring for new noxious weed populations.

### 6.3.2 Weed Species Priorities

Weed management priorities are based on the actual or potential threat that weeds pose to the management goals for the property. Two factors are used to set priorities, namely the weed species and the locations of weed infestations. Weed species are important because they vary considerably in the threat they pose to the resource values of the property. In addition, weed species vary greatly in their susceptibility to control measures. Weed species that pose the

greatest threat to achieving the management goals for the property and that need to be controlled immediately are the highest priority for management.

### 6.3.3 Weed Infestation Priorities

One important component of any weed management strategy is to prioritize areas of infestation based upon patch size, species, and location. The highest priority weed patches are typically those that are small and isolated from larger infestations of the same high-priority weed species, and which occur on or could affect the highest-valued resource on the property.

Arabian schismus and Sahara mustard are present throughout the survey area and adjacent areas at varying densities. Highest densities are located within the disturbed desert dunes habitat (**Figure 2**). Densities are lower for the remainder of the survey area. The species is wide-spread throughout the area; therefore, high-priority areas should be those areas outside of the dunes where this species may be easier to control.

Athel in the survey area occurs as isolated individuals and a higher density patch just south of the Westside Main Canal. All individuals and patches of this species would qualify as high priority areas.

## 6.4 Weed Management Actions

Two general treatments methods will be employed for weeds, mechanical removal, and chemical treatments.

Sahara mustard

Mechanical removal of Sahara mustard should be conducted prior to seed set and dispersal to limit further spread. Mechanical removal will entail removal of the entire plant (stems, flowers and roots) by hand pulling and placing material in appropriate containers for proper disposal. Seedlings are easier to remove; hand pulling can commence after germination in the fall as soon as this species is detectable and identifiable. Chemical treatments for Sahara mustard should also be applied prior to seed set and dispersal. Seed set occurs as early as February in most years. Weed management for Sahara mustard will occur within temporarily disturbed areas and along the periphery of permanently disturbed areas on BLM-managed lands during the construction and long-term monitoring period specified in the SRRP.

Athel

Mechanical removal of seedlings and saplings of tamarisk and athel can occur at any time; however, late summer to late winter are the preferred times to target seedlings from the previous year before they have time grow because shoots can grow to heights of 3-4 meters in one growing season (Bossard et al. 2000). Small shrubs and large trees will be controlled by a combination of cutting the main trunk above the soil surface and applying herbicide to the cut surfaces. In California, triclopyr is most commonly used; this technique usually results in a 90% mortality rate (Bossard et al. 2000). It is assumed that treatments should be applied during late summer (post-flowering) when most plants are translocating nutrients, and herbicides to the root system Weed management for tamarisk and athel will occur within temporarily disturbed areas and along the periphery of permanently disturbed areas on BLM-managed lands during the construction long-term monitoring period specified in Chapter 4 of the SRRP.

This plan is a comprehensive, adaptive Weed Management Plan for pre-construction and long-term invasive weed abatement. It includes specific weed abatement methods, practices and treatment timing incorporating all BLM national requirements for vegetation management. Weed control treatments will include all legally permitted chemical, manual and mechanical methods applied with the authorization of the BLM.

The application of herbicides will be in compliance with all state and federal laws and regulations under the prescription of a Pest Control Advisor (PCA) and implemented by a Licensed Qualified Applicator. For the lifespan of the Project (i.e., as long as the Project is physically present), long-term measures to control the introduction and spread of invasive weeds in the Project area will include annual surveying for new and spreading invasive weed populations and monitoring identified and treated populations in the project areas to ascertain the effectiveness of weed control measures.

To avoid impacts to vegetation other than noxious weeds or other invasive species, the Licensed Qualified Applicator will:

- follow application guidelines for each herbicide;
- spray in low-wind situations;
- concentrating nozzles to avoid overspray and the subsequent spreading of the herbicide by the wind.

### 6.4.1 Preventative Measures

The prevention of invasive plants from colonizing new areas is far more cost-effective than eradication and control (Davies and Sheley 2007). General measures to control the spread of weed propagules and inhibit germination will include the following:

- Limit disturbance areas during construction to the smallest required to perform the work; confine ingress and egress to designated access routes. This measure will keep soil crusts found onsite intact and minimize the amount of surface disturbance onsite
- Document washing of construction equipment before entering the site and closely monitor the types of materials brought onto the site to minimize the potential for weed introduction.
- Implement reclamation and restoration as quickly as practicable on disturbed sites in accordance with the SRRP.
- Regular monitoring to quickly detect new infestations of weeds, coupled with rapid implementation of control measures to prevent further infiltration.

#### *6.4.1.1 Construction*

##### Worker Environmental Training

Environmental training for contractors or related personnel working on the site during construction will include noxious weed and invasive species management awareness training. Personnel will include contractors, subcontractors, inspection personnel, construction managers, construction personnel, and individuals bringing construction equipment onto the site. Training will include weed identification and training on the impacts of noxious weeds on agriculture, wildlife, and fire hazard. Required measures to prevent the spread of weeds in unaffected areas, and controls on their proliferation when present, will also be explained.

### Construction Equipment Washing

Prevention is the most cost-effective way to deal with invasive plant species early; therefore, construction equipment will be washed to remove mud and dirt prior to entering BLM-managed lands. This will prevent the spread of weed seeds into new habitats as construction equipment with mud and dirt are one of the most common ways weed seeds are spread to new environments. Construction equipment entering from offsite locations will be required to be cleaned before entering BLM lands. Heavy equipment entering the site on trailers will also require cleaning. This cleaning will occur at locations off BLM-managed lands. The construction contractor, with ECM oversight, will ensure that equipment is free of soil and debris capable of transporting noxious weed seeds, roots, or rhizomes before the equipment are allowed to use access roads. Construction equipment will be reasonably dry before entering the site because some weeds, such as Sahara mustard, require water for germination. Therefore, wet equipment leaving the station could promote recruitment of Sahara mustard along access roads.

Construction equipment will be washed with high-pressure water equipment or compressed air before entering the construction site. The wash down will concentrate on tracks, feet, or tires and on the undercarriage, with emphasis on axles, frame, cross members, motor mounts, and on and underneath steps, running boards, and front bumper/brush guard assemblies. Equipment cabs will be swept out and refuse will be disposed of in waste receptacles. Equipment will be washed on private lands near the site or at commercial car-washes elsewhere before being allowed on the site.

When equipment is washed, a log will be kept stating the location, date and time, type of equipment, and methods used. The crewmember that washed the equipment will sign the log. Written logs will be included in the monitoring reports.

### Infestation Containment and Control

During construction, areas of concern will be identified and flagged in the field by biological monitors prior to the initiation of ground-disturbing activities. The flagging will alert construction personnel that weeds are present and will indicate the areas for which the noxious weed management control measures must be implemented. Contractors will avoid or minimize travel through these weed-infested areas until such time as required preconstruction weed treatment activities are complete. Control measures will be implemented as soon as practicable as described in the sections below. The contractor will begin project operations in weed-free areas whenever feasible before operating in weed-infested areas, until the ECM has verified completion of weed treatments within weed-infested areas.

### Site Soil Management

The contractor will limit the size of ground disturbance to the minimum necessary to perform the activity safely and as designed. The contractor will also avoid creating soil conditions that promote weed germination and establishment to the greatest extent practicable. Soil conditions that promote weed germination and establishment include soil excavation/disturbance, vegetation removal, soil compaction, loss or removal of topsoil and introduction of chemical compounds, including fertilizer, and soil stockpiling.

During grading or excavation activities, the contractor will minimize transporting soil within the site to limit the potential spread of noxious weed seeds onsite. In areas where weed infestations are identified, the contractor will stockpile cleared vegetation and salvaged topsoil adjacent to the

area from which they are stripped to eliminate the transport of soil-borne noxious weed seeds, roots, or rhizomes.

#### Weed-free Products

Straw or hay bales used for sediment barrier installations, gravel, mulch, and soil have the potential to carry noxious weed seeds. The contractor will ensure that straw or hay bales used for sediment barrier installations are obtained from certified sources that are free of noxious weed seeds. Additional products such as gravel, mulch, and soil, also have the potential to carry weed seeds. If needed, such products should be obtained from suppliers who can provide weed-free certified materials. To the greatest extent feasible, mulch will be generated from native vegetation cleared from the site itself. At no time will soil be imported onto the site.

#### Weed-free Seed

It is not anticipated that seed application will be necessary for effective reclamation and revegetation of temporarily disturbed areas. However, if seed application becomes necessary, weed-free seed meeting the following criteria should be used. Seed purchased from commercial vendors for site revegetation will be labeled in compliance with the relevant provisions of the California Agriculture Code. In addition to having the correct label, the seed should be required to be free of noxious weeds and the label should identify the seed as such.

#### *6.4.1.2 Operations*

Weed management during operations will be conducted in accordance with the SRRP.

#### *6.4.1.3 Site Closure*

Site closure and reclamation will be conducted in accordance with the Termination/Restoration Plan that will be developed at the time of closure.

### 6.4.2 Eradication and Control Methods

#### *6.4.2.1 Mechanical Removal of Weeds*

The type of mechanical control methods will depend upon the size and extent of weed species targeted for removal as well as the root structures of these plants. Mechanical control methods range from manually pulling weeds to the use of hand tools to provide enough leverage to pull out the entire plant and associated root systems. Hand or power tools can also be used to uproot, girdle, or cut plants. The Root Talon and Weed Wrench are handheld tools designed to grip the plant stems and provide enough leverage to remove roots; they may be used to pull out woody shrubs such as tamarisk. This effort should be focused on weed species that have a single-root mass, facilitating easy removal. Hand removal by pulling is appropriate when the plants are large enough that they will not break and leave the root structures behind. For localized weed control, this is the most effective method. Hand pulling is less effective in large areas and with weed species that spread through an underground root system.

In small areas, hoeing and weed whipping can be used to control weeds. However, care must be taken when using these methods adjacent to native plants to prevent damage to native plants. Hoeing or weed whipping must only be implemented prior to a plant setting seed, otherwise this disturbance would only serve to further disperse and promote the establishment of the weed species. Pertinent considerations for hoeing and weed whipping include the following:

- Hoeing works best on patches of small weeds and with weeds that have a single-root mass. It is less effective on larger weeds that can regenerate from cut roots. It should not be used on weeds approaching maturity, as seeds can mature and be released on cut plants. Hoed plant material should be bagged and removed offsite.
- Weed whipping can be used for weed removal in limited upland areas with herbaceous plant cover; however, it should not be used on weeds approaching maturity, as seeds can mature and be released on cut plants, and care must be employed when weed whipping adjacent to native plants. Cut plant material should be bagged and removed offsite.

#### *6.4.2.2 Chemical Methods for Weed Removal*

Herbicide application is a widely employed, effective control method for removing invasive weed species. One consideration is the possible inadvertent application of herbicide to adjacent native plants. Herbicide application can become a challenge when weeds are interspersed with native cover.

##### Permitting and Regulatory Requirements

Contractors will be required to obtain required permits from state and local authorities prior to herbicide application. Permits may contain additional terms and conditions that go beyond the scope of this plan. Only a State of California and federally certified contractor, who is also approved by BLM, will be permitted to perform herbicide applications. Herbicides will be applied in accordance with applicable laws, regulations, and permit stipulations. Only herbicides and adjuvants approved by the State of California and BLM for use on public lands will be used within or adjacent to the project site. A list of approved herbicides and adjuvants is available in **Appendix 3**.

The *Final Environmental Impact Statement on Vegetation Treatment on BLM Lands in Seventeen Western States* lists 10 herbicides acceptable for use on BLM-managed lands (DOI 2007). Guidelines for the use of chemical control of vegetation on BLM-managed lands are presented in the *Chemical Pest Control Manual* (BLM n.d.). These guidelines require submittal of a pesticide use proposal (PUP) and pesticide application records (PAR) for the use of herbicides on BLM-managed lands. A sample form required for the submittal of a PUP is included in **Appendix 6**.

Applicant or its agent will submit PARs for each use of herbicides on BLM-managed lands within 24 hours of application. A sample form required for submittal of PARs is included in **Appendix 6**. The occurrence of noxious weeds within the project footprint or adjacent areas will be reported to the BLM district office. The appropriate weed control procedures, including target species, timing of control, and method of control, will be determined in consultation with BLM personnel. Applicant will be responsible for providing the necessary trained personnel or hiring a contractor to implement the required weed control procedures.

##### Types of Herbicides

Herbicides are characterized by the way in which they inhibit plant growth. Herbicides are characterized as pre-emergent, post-emergent, selective and nonselective. A pre-emergent herbicide controls ungerminated seeds by inhibiting germination, while a post-emergent herbicide is lethal to emerged plants. Some herbicides have both pre- and post-emergent activity. A selective herbicide is only effective on some species of plants, usually distinguishing between

grasses (monocots) and broadleaf plants (dicots). A non-selective herbicide is one that is lethal to any plant species to which it is applied.

Herbicides kill plants through either contact or systemic action. Contact herbicides are most effective against annual weeds and kill only the plant parts on which the chemical is deposited. Systemic herbicides are absorbed either by roots or foliar parts of a plant and are then translocated within the plant system to tissues that are away from the point of application. Although systemic herbicides can be effective against annual and perennial weeds, they are particularly effective against established perennial weeds.

Pre-emergent herbicides inhibit germination of annuals from seed, but generally do not control perennial plants that germinate from bulbs, corms, rhizomes, stolens, or other vegetative structures. Common pre-emergent herbicide classes include the following:

- Dinitroaniline Type**:** Examples of this class are pendimethalin (e.g., Weedgrass™), trifluralin (e.g., Treflan™), benefin (e.g., Balan™), and combinations of these. These herbicides provide for pre-emergence control of annual grasses and other annuals. They are mitotic (cell division) inhibitors and are primarily effective in inhibiting root growth of germinating seeds. Selectivity is physiological or chemical in nature. Some of these herbicides are volatile, and should not be applied in temperatures above 90 degrees Fahrenheit (°F). These herbicides need to be watered into the soil for proper activation. Some can persist for several months.
- Dithiopyr (e.g., Dimension™) belongs to a new class of herbicide known as pyridines. It is 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. It inhibits cell division and cell growth of meristematic regions (growing points of roots and shoots). Dithiopyr is lost from soil bychemical and microbial degradation.

The most commonly used post-emergent, non-selective herbicides contain a family of chemicals called glyphosates (N-[phosphonomethyl] glycine). Glyphosate (e.g., Rodeo™, Roundup™, and Accord™) is a non-selective, systemic herbicide that is effective on many annual and perennial plants. It works by blocking an enzyme pathway that is important for plant protein synthesis, which is most effective with full coverage of plant leaves. However, because of systemic action, even partial coverage can result in plant mortality. The herbicide is typically used in conjunction with linseed oil or another surfactant, which aids in spreading an even layer across the surface of the leaves. Glyphosate is also volatile and should not be applied when the temperatures exceed 90°F.

The United States Environmental Protection Agency (EPA 1993) has determined that glyphosate has a relatively low degree of oral and dermal acute toxicity. It is considered to be immobile in soil and readily degraded by soil microbes to the metabolite aminomethyl phosphonic acid and then to carbon dioxide. EPA states that it is minimally toxic to birds, fish, aquatic invertebrates, and honeybees (EPA 1993).

### Application and Handling

The following general precautions will be implemented for pesticide application:

- It is the responsibility of the pesticide user to observe the directions, restrictions, and precautions on pesticide labels.

- Store pesticides in original containers with labels intact and behind locked doors.
- Keep pesticides out of the reach of children.
- Use pesticides at correct label dosage and intervals to avoid injury to plants and animals.
- Use pesticides carefully to avoid drift or contamination of non-target areas.
- Surplus pesticides and containers should be disposed of in accordance with label instructions to prevent contamination of water and other hazards.
- Follow directions on the pesticide label regarding restrictions as required by state or federal laws and regulations.
- Avoid action that may threaten a rare, threatened, or endangered species or its habitat.
- Only the minimum amount of herbicides necessary to control noxious weeds will be used in order to prevent the contamination of ground water

### Limitations

Herbicide applications must follow EPA label instructions. Application of herbicides will be suspended when any of the following conditions exists:

- Wind velocity exceeds 6 miles per hour (mph) during application of liquids or 15 mph during application of granular herbicides.
- Precipitation is occurring or is imminent.
- Air temperatures exceed 90°F.

### Transport and Mixing

During the construction phase, herbicides will be transported to the project site daily as necessary with the following provisions:

- Only the needed quantity for that day's work will be transported.
- Concentrate will be transported in approved containers only and in a manner that will prevent tipping or spilling, and in a location that is isolated from the vehicle's driving compartment, food, clothing, and safety equipment.
- Mixing will be done offsite, over a drip-catching device, and at a distance greater than 200 feet from open or flowing water, wetlands, or other sensitive resources. No herbicides will be applied at these areas unless authorized by appropriate regulatory agencies.
- Herbicide equipment and containers will be inspected for leaks daily. Disposal of spent containers will be in accordance with the herbicide label.
- During the operations phase of the project, herbicides will be stored in areas with the required secondary containment and security provisions implemented.

### Herbicide Spills and Cleanup

Reasonable precautions will be taken to avoid herbicide spills. In the event of a spill, immediate cleanup will be initiated. Contractors will keep spill kits in their vehicles and in herbicide storage areas to allow for quick and effective response to spills.

The following items are typically to be included in the spill kit:

- protective clothing and gloves;
- absorptive clay, "kitty litter," or other commercial adsorbent;

- plastic bags and bucket;
- shovel;
- fiber brush and screw-in handle;
- dust pan;
- caution tape;
- highway flares (use on established roads only); and
- detergent.

Response to herbicide spills will vary with the size and location of the spill, but general procedures include the following, as needed:

- BLM notification;
- traffic control;
- dressing the cleanup team in protective clothing;
- stopping the leaks;
- containing the spilled material;
- cleaning up and removing the spilled herbicide or contaminated adsorptive material and soil, and
- transporting the spilled pesticide and contaminated material to an authorized disposal site.

### Spray Methods

Hand application methods (*e.g.*, backpack spraying) that target individual plants will be used to treat small or scattered weed populations in rough terrain. Calibration checks of equipment will be conducted at the beginning of spraying and periodically throughout treatment to ensure that proper application rates are achieved.

### Controlling Post-emergent Herbaceous Vegetation

To control herbaceous weedy vegetation, implement the following measures:

- Apply a foliar application of approved herbicide on each plant.
- Provide applications on a spray-to-wet basis with coverage uniform and complete.
- Avoid contact with established native shrub and grass species.
- Temporarily discontinue work in the event of gusty winds or winds in excess of 6 mph.
- Temporarily discontinue in the event of rainfall.
- Ensure applicators possess current pest control licenses valid in the State of California and wear appropriate personal protective equipment.
- Leave sprayed vegetation undisturbed for 7 days or until visible effects of herbicide application are present consisting of wilted and brown foliage and disintegration of root material. The ECM will determine when adequate time has been allowed for this.
- Remove treated plant materials using a flail mower or other appropriate means, and dispose of offsite at an appropriate landfill site.
- Cover loads while removing vegetation using a tarpaulin or equivalent cover.

### Controlling Woody Vegetation

Woody vegetation should be controlled using the cut and paint method of removal. To control woody vegetation, implement the following measures:

- Cut sprouts or woody stems to a height of 12 inches or less above ground and remove aboveground debris for disposal at a suitable landfill.
- Apply approved herbicide at a 100 percent rate to the cut stem within 2 minutes of cutting the stem. If more than 2 minutes elapses, the cut stem should be re-cut a few inches below the original cut and herbicide can then be applied.
- Apply Rodeo™ (or equivalent) in areas that are in immediate contact with wetlands and/or other water bodies; Round-up™ (or equivalent) will be used elsewhere. The ECM will determine the appropriate herbicide to use at each location.
- Cover loads while removing vegetation using a tarpaulin or equivalent cover.
- Apply follow-up foliar applications as described in the previous section to stem re-growth that occurs after initial control effort.
- Continue monitoring and treating cut stems for as long as necessary to ensure complete mortality.

#### Controlling Pre-emergent Vegetation

Generally, it is anticipated that there are few areas where pre-emergent vegetation control would be required. Pre-emergent herbicides work only on vegetation reproducing from seed, and are not effective on other types of propagules, such as resprouts from root crowns which have been cut, rhizomes, or other material. Use of pre-emergent herbicides might be appropriate in areas that have repeated weed problems with annual plants, with evidence of a robust weed seed crop in the seed bank. Such areas will be sprayed with pre-emergent herbicides during appropriate pre-germination periods.

Generally, pre-emergent herbicides would not be appropriate for revegetation areas or other native habitats because they are likely to inhibit the germination and growth of desirable native plant seed being used for restoration.

### *6.4.2.3 Competitive Vegetation*

The use of native plants to out-compete invasive weed species is an effective, long-term weed control strategy incorporated for this project site. Revegetation of temporarily disturbed areas will be conducted in accordance with the procedures in the SRRP. Establishment of native species as the result of implementation of the SRRP has the potential to exclude weed invasion, and over time, weed control will require less effort.

# 7.0 Reporting Requirements

## 7.1 Report Content

Implementation of the noxious weed management plan will include the following data collection and reporting guidelines applicable during construction.

### 7.1.1 Construction Reports

During the project construction phases, reporting for noxious weed management will be included in construction weed monitoring reports. Construction weed monitoring reports will include the following information:

- Monitoring results: location, type, extent, and density of noxious weeds. These data will include mapping and photographs, as appropriate, as well as textual and tabular data content to fully describe conditions on the project site.
- Management efforts: date, location, type of treatment implemented, and results. Ongoing evaluation of success of treatment will be included.
- Information on implementation and success of preventative measures: status of equipment wash facilities, summary of use data, and data for worker environmental training program, including participants.
- Summary description of revegetation efforts undertaken and their current status.

### 7.1.2 Long-term Monitoring Reports

After implementation of reclamation and revegetation measures in accordance with the SRRP, long-term monitoring reports will be focused on the success of those measures with respect to the performance targets specified in the SRRP. Noxious weed management performance will be documented in the long-term monitoring reports as specified.

## 7.2 Reporting Periods

### 7.2.1 Construction Period

It is anticipated that records will be kept as frequently as daily by the ECM and the monitoring team. These records will be summarized into a final construction report to be submitted to BLM within 30 days of the conclusion of gen-tie line construction period, which is expected to be approximately three to four months in duration.

### 7.2.2 Long-term Monitoring Reports

Annual monitoring reports will be produced for the duration of the monitoring period.

# 8.0 References


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## Tables

| **Table 1: Weeds (Noxious and Other Invasive Species) Occurring and Potentially Occurring in the Campo Verde Gen-tie line Survey Area** | | |
|---|---|---|
| **Noxious Weeds (on federal or state list)** | | |
| **Species** | **Noxious Weed Rating[1]** | **Observed or Potential for Occurrence Within Project Area on BLM-Managed Lands** |
| Silver-leaf horse-nettle (*Solanum elaeagnifolium*) | CDFA: B<br>Cal-IPC: Evaluated but not listed D-B-B | Observed in survey area on agricultural non-BLM-managed lands. Primarily an agricultural weed but escaping to Wildlands in other countries. Could be more important in future (Cal-IPC 2006). |
| Puncture vine (*Tribulus terrestris*) | CDFA: C<br>Not listed in Cal-IPC | Observed in survey area in desert scrub on non-BLM-managed lands. |
| **Other Invasive Species (Cal-IPC List)** | | |
| Arabian schismus (*Schimus arabicus*) | Cal-IPC: Limited, B-C-A | Observed in survey area on BLM-managed lands. Widespread in desert (Cal-IPC 2006). |
| Sahara mustard (*Brassica tournefortii*) | Cal-IPC: High, A-A-B | Observed in survey area on BLM-managed lands. |
| Athel (*Tamarix aphylla*) | Cal-IPC: Limited, C-B-B | Observed in survey area on BLM-managed lands. |
| Oleander (*Nerium oleander*) | Cal-IPC: Evaluated but not listed D-B-D | Observed in survey area on BLM-managed lands. Not known to be invasive but reported from riparian areas in Central Valley and San Bernardino Mountains (Cal-IPC 2006). |
| Bassia (*Bassia hyssopifolia*) | Cal-IPC: Limited, C-C-B | Observed in survey area on agricultural non-BLM-managed lands. Weed of agriculture and disturbed sites. Minor impacts to Wildlands (Cal-IPC 2006). |
| | | |
| **Weeds (Noxious and Other Invasive Species) Not Observed But Reported from the Vicinity of the Project** | | |
| **Noxious Weeds (on federal or state list)** | | |
| Giant reed (*Arundo donax*) | CDFA: B<br>Cal-IPC: High, A-B-A | Reported from Imperial Solar Energy Center South Project. |
| Russian thistle (*Salsola tragus*) | CDFA: B<br>Cal-IPC: Limited, C-B-B | Reported from Imperial Solar Energy Center South Project. Widespread, impacts minor in wildlands (Cal-IPC 2006). |
| Johnson grass (*Sorghum halepense*) | CDFA: B<br>Not listed in Cal-IPC | Reported from Imperial Solar Energy Center South Project. |
| **Other Invasive Species (Cal-IPC List)** | | |

| | | |
|---|---|---|
| London rocket (*Sisymbrium irio*) | Cal-IPC: Moderate, B-B-A | Reported from Imperial Solar Energy Center South Project. Widespread, primarily in disturbed sites. Impacts vary locally (Cal-IPC 2006). |
| Red-stem filaree (*Erodium cicutarium*) | Cal-IPC: Limited, C-C-A | Reported from Imperial Solar Energy Center South Project. Widespread in many habitats. Impacts minor in wildlands. High-density populations are transient (Cal-IPC 2006). |
| Brome (*Bromus madritensis* ssp. *rubens*) | Cal-IPC: Limited, A-B-A | Reported from Imperial Valley Solar Project. Impacts most severe in desert washes |
| Prickly sow thistle (*Sonchus asper*) | Cal-IPC: Evaluated but not listed D-B-B | Reported from Imperial Valley Solar Project. Primarily an agriculture weed (Cal-IPC 2006). |
| Crystaline ice plant (*Mesembryanthemum crystallinum*) | Cal-IPC: Moderate, B-B-C | Reported from Imperial Valley Solar Project. Locally problematic, especially in southern California (Cal-IPC 2006). |
| Prickly lettuce (*Lactuca serriola*) | Cal-IPC: Evaluated but not listed D-C-B | Reported from Imperial Solar Energy Center South Project. Primarily an agriculture and roadside weed (Cal-IPC 2006). |
| Annual beard grass (*Polypogonmon speliensis*) | Cal-IPC: Limited, C-C-B | Reported from Imperial Solar Energy Center South Project. Widespread, impacts seem to be minor (Cal-IPC 2006) |

[1] **CDFA Ratings**

A - A pest of known economic or environmental detriment and is either not known to be established in California or it is present in a limited distribution that allows for the possibility of eradication or successful containment. A-rated pests are prohibited from entering the state because, by virtue of their rating, they have been placed on the of Plant Health and Pest Prevention Services Director's list of organisms "detrimental to agriculture" in accordance with the FAC Sections 5261 and 6461. The only exception is for organisms accompanied by an approved CDFA or USDA live organism permit for contained exhibit or research purposes. If found entering or established in the state, A-rated pests are subject to state (or commissioner when acting as a state agent) enforced action involving eradication, quarantine regulation, containment, rejection, or other holding action.

B - A pest of known economic or environmental detriment and, if present in California, it is of limited distribution. B-rated pests are eligible to enter the state if the receiving county has agreed to accept them. If found in the state, they are subject to state endorsed holding action and eradication only to provide for containment, as when found in a nursery. At the discretion of the individual county agricultural commissioner they are subject to eradication, containment, suppression, control, or other holding action.

C - A pest of known economic or environmental detriment and, if present in California, it is usually widespread. C-rated organisms are eligible to enter the state as long as the commodities with which they are associated conform to pest cleanliness standards when found in nursery stock shipments. If found in the state, they are subject to regulations designed to retard spread or to suppress at the discretion of the individual county agricultural commissioner. There is no state enforced action other than providing for pest cleanliness.

Q - An organism or disorder suspected to be of economic or environmental detriment, but whose status is uncertain because of incomplete identification or inadequate information.

D - An organism known to be of little or no economic or environmental detriment, to have an extremely low likelihood of weediness, or is known to be a parasite or predator. There is no state enforced action.

**Cal-IPC Overall Ratings**

High – These species have severe ecological impacts on physical processes, plant and animal communities, and vegetation structure. Their reproductive biology and other attributes are conducive to moderate to high rates of dispersal and establishment. Most are widely distributed ecologically.

Moderate – These species have substantial and apparent—but generally not severe—ecological impacts on physical processes, plant and animal communities, and vegetation structure. Their reproductive biology and other attributes are conducive to moderate to high rates of dispersal, though establishment is generally dependent upon ecological disturbance. Ecological amplitude and distribution

may range from limited to widespread.

Limited – These species are invasive but their ecological impacts are minor on a statewide level or there was not enough information to justify a higher score. Their reproductive biology and other attributes result in low to moderate rates of invasiveness. Ecological amplitude and distribution are generally limited, but these species may be locally persistent and problematic.

Ecological Impact, Invasive Potential and Distribution Codes

A= High; B= Moderate, C=Limited, D=None, U= Unknown

| Table 2: Noxious Weed Risk Assessment | | | | |
|---|---|---|---|---|
| **Noxious Weeds (on federal or state list) - NONE** | | | | |
| **Species** | **Likelihood of Spreading to Project Area[1]** | **Consequence of Establishment in Project Area[2]** | **Risk Rating[3]** | **Action[3]** |
| **Other Invasive Species (Cal-IPC List)** | | | | |
| Arabian schismus (*Schismus arabicus*) | High = 10<br><br>High density populations already present within the project area. | Moderate=5<br>Populations already in high densities within project area, adverse effects already present, cumulative effects from project not likely to increase effects that are present already | 50 | Project must be modified to reduce risk level through preventative management measures including controlling existing infestation of weeds prior to project activity. Project must also provide for control of newly established populations of noxious weeds and follow-up treatment for previously treated infestations. |
| Sahara mustard (*Brassica tournefortii*) | High = 10<br>High density populations already present within the project area. | Moderate=5<br>Populations already in high densities within project area, adverse effects already present, cumulative effects from project not likely to increase effects that are present already | 50 | Project must be modified to reduce risk level through preventative management measures including controlling existing infestation of weeds prior to project activity. Project must also provide for control of newly established populations of weeds and follow-up treatment for previously treated infestations. |
| Athel (*Tamarisk aphylla*) | High = 10<br>Low density populations present within the project area; high density populations adjacent to project area. | High = 10<br><br>Species appears to be actively expanding its range from adjacent areas into the project area. Anticipated that project could result in | 100 | Project must be modified to reduce risk level through preventative management measures controlling existing infestation of weeds prior to project activity. Project must also provide for control of newly established populations of weeds and |

| | | | | |
|---|---|---|---|---|
| | | further expansion | | follow-up treatment for previously treated infestations. |
| Oleander (*Nerium oleander*) | Moderate = 5<br><br>Species present in one small, confined area, planted as a windbreak | None = 0<br><br>Species, though present in project area does not appear to be invasive. In most areas within its range this species is not considered highly invasive. | 0 | None |

**BLM Risk Assessment Factors and Ratings (BLM 1992)**

[1] Likelihood of Spread to Project Area
None (0): Noxious weed species not located within or adjacent to the project area. Project activity is not likely to result in the establishment of noxious weed species in the project area;
Low (1): Noxious weed species present in areas adjacent to but not within the project area. Project activities can be implemented and prevent the spread of noxious weeds into the project area;
Moderate (5): Noxious weed species located immediately adjacent to or within the project area. Project activities are likely to result in some areas becoming infested with noxious weed species even when preventative management actions are followed. Control measures are essential to prevent the spread on noxious weeds within the project area;
High (10): heavy infestations of noxious weeds are located within or immediately adjacent to the project area. Project activities, even with preventative management actions are likely to result in the establishment and spread of noxious weeds on disturbed sites throughout much of the project area.

[2] Consequence of Establishment in Project Area
Low to Non-Existent (1): None. No cumulative effects expected.
Moderate (5): Possible adverse effects on site and possible expansion of infestation within project area. Cumulative effects on native plant community are likely but limited.
High (10): Obvious adverse effects within the project area and probable expansion of noxious weed infestations to areas outside the project area. Adverse cumulative effects on native plant community are probable.

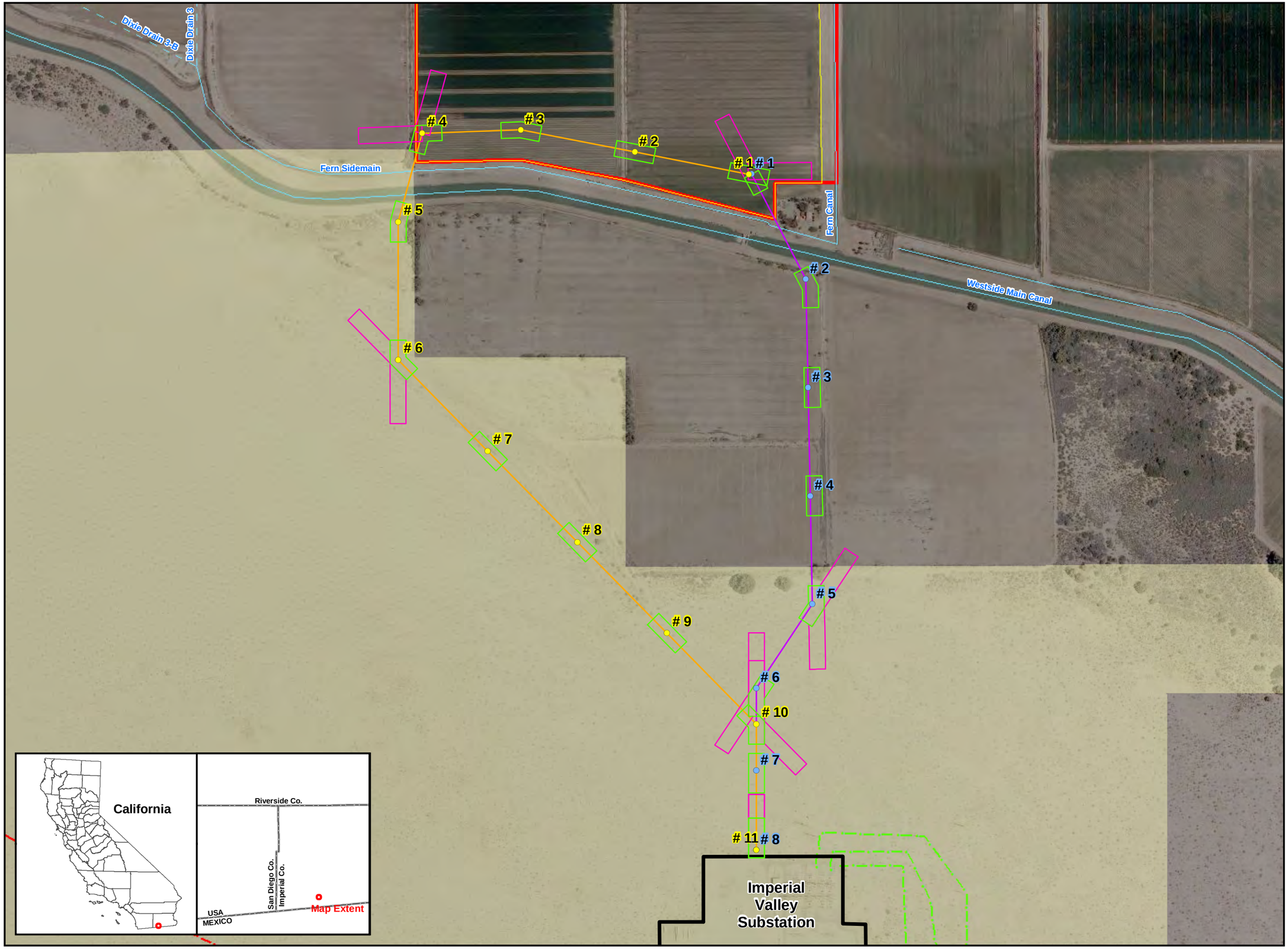
[3] Risk Rating/Action:
0 = None: Proceed as planned,
1-10 = Low: Proceed as planned. Initiate control treatment on noxious weed populations that get established in the area.
25 = Moderate: Develop preventative management measures for the proposed project to reduce the risk of introduction or spread of noxious weeds into the area. Preventative management measures should include modifying the project to include seeding the area to occupy disturbed sites with desirable species. Monitor area for at least 3 consecutive years and provide for control of newly established populations of noxious weeds and follow-up treatment for previously treated infestations.
50-100 = High: Project must be modified to reduce risk level through preventative management measures including seeding with desirable species to occupy disturbed sites and controlling existing infestations of noxious weeds prior to project activity. Project must provide at least 5 consecutive years of monitoring. Projects must also provide for control of newly established populations of noxious weeds and follow-up treatment for previously treated infestations.
Note: Although horizontal mulch techniques will be implemented as part of the reclamation and revegetation process, native seed application is not proposed throughout the project alignment (except as a remedial measure if necessary) due to low native plant cover values within the impact areas, a predominance of creosote bush in most sites which has been shown to inhibit root development in competing shrub species, and extremely arid and generally unfavorable conditions for seed germination onsite. For additional information, refer to the SRRP (Appendix B of the POD).

| Table 3: Management Strategy and Control Methods | | |
|---|---|---|
| **Species** | **Management Strategy** | **Control Method** |
| Arabian schismus (*Schismus arabicus*) | No action | N/A. Species is too wide-spread for control. |
| Sahara mustard (*Brassica tournefortii*) | Monitor for occurrence and mechanically treat if present. | Remove entire plant (stems, flowers and roots) by hand pulling place in appropriate containers and dispose of properly. Consider using chemical treatments based on UCCE (UCCE n.d.). |
| Athel (*Tamarisk aphylla*) | Monitor for occurrence and mechanically treat if present. | Mature trees: cut trunk(s) above soil surface and apply herbicide treatments to cut surfaces. Saplings and seedlings remove entire plant (stems, flowers and roots) by hand pulling place in appropriate containers and dispose of properly. |
| Oleander (*Nerium oleander*) | Monitor for occurrence and eradicate if present. | Remove entire plant (stems, flowers and roots) by hand pulling place in appropriate containers and dispose of properly. |
| **Noxious Weeds Observed Adjacent To BLM-Managed Lands** | | |
| **Noxious Weed** | **Management Strategy** | **Control Method** |
| Bassia (*Bassia hyssopifolia*) | Monitor for occurrence and eradicate if present. | Remove entire plant (stems, flowers and roots) by hand pulling place in appropriate containers and dispose of properly. Removal should occur prior to flowering and seed set. |
| Cheeseweed (*Malva parviflora*) | Monitor for occurrence and eradicate if present. | Remove entire plant (stems, flowers and roots) by hand pulling place in appropriate containers and dispose of properly. Removal should occur prior to flowering and seed set. |
| Silver-leaf horse-nettle (*Solanum elaeagnifolium*) | Monitor for occurrence and eradicate if present. | Remove entire plant (stems, flowers and roots) by hand pulling place in appropriate containers and dispose of properly. Large stands can be treated chemically with post-emergent, broadleaf, systemic herbicide. Pull individuals post-mortality. Both treatments should occur prior to flowering and seed set. |
| Puncture vine (*Tribulus terrestris*) | Monitor for occurrence and eradicate if present. | Remove entire plant (stems, flowers and roots) by hand pulling place in appropriate containers and dispose of properly. Large stands can be treated chemically with post-emergent, broadleaf, systemic |

| | | |
|---|---|---|
| | | herbicide. Pull individuals post-mortality. Both treatments should occur prior to flowering and seed set. |
| **Noxious Weeds Not Observed Adjacent To BLM-Managed Lands But Reported from the Vicinity of the Project** | | |
| **Noxious Weed** | **Management Strategy** | **Control Method** |
| Giant reed (*Arundo donax*) | Monitor for occurrence and eradicate if present. | Combination of physical removal and chemical control. Minor infestations can be eradicated by physical methods as long as the entire rhizome is removed. Large stands require cutting of culms and direct application of herbicide (glyphosate either Rodeo in wetlands or Round-Up in non-wetland areas) to the cut culms. Most effective application is post-flowering and pre-dormancy usually late August to early November when plants are translocating nutrients to roots and rhizomes (Bossard et al. 2000). |
| London rocket (*Sisymbrium irio*) | Monitor for occurrence and eradicate if present. | Remove entire plant (stems, flowers and roots) by hand pulling place in appropriate containers and dispose of properly. Large stands can be treated chemically with post-emergent, broadleaf, systemic herbicide. Pull individuals post-mortality. |
| Tumble mustard (*Sisymbrium altissimum*) | Monitor for occurrence and eradicate if present. | Remove entire plant (stems, flowers and roots) by hand pulling place in appropriate containers and dispose of properly. Large stands can be treated chemically with post-emergent, broadleaf, systemic herbicide. Pull individuals post-mortality. |
| Russian thistle (*Salsola tragus*) | Monitor for occurrence and eradicate if present. | Remove entire plant (stems, flowers and roots) by hand pulling place in appropriate containers and dispose of properly. Large stands can be treated chemically with post-emergent, broadleaf, systemic herbicide. Pull individuals post-mortality. |
| Red-stem filaree (*Erodium cicutarium*) | Monitor for occurrence and eradicate if present. | Remove entire plant (stems, flowers and roots) by hand pulling; place in appropriate containers and dispose of properly. |
| Brome (*Bromus madritensis rubens*) | Monitor for occurrence and eradicate if present. | Remove entire plant (stems, flowers and roots) by hand pulling place in appropriate containers and dispose of properly. Large stands can be treated chemically with post-emergent, non-broadleaf, systemic herbicide. Pull individuals post-mortality. |
| Prickly sow thistle (*Sonchus asper*) | Monitor for occurrence and eradicate if present. | Remove entire plant (stems, flowers and roots) by hand pulling; place in appropriate containers and dispose of properly. |
| Common sow thistle (*Sonchus* | Monitor for occurrence and | Remove entire plant (stems, flowers and roots) by hand pulling; place |

| | | |
|---|---|---|
| *oleraceus*) | eradicate if present. | in appropriate containers and dispose of properly. |
| Crystaline ice plant (*Mesembryanthemum crystallinum*) | Monitor for occurrence and eradicate if present. | Remove entire plant (stems, flowers and roots) by hand pulling; place in appropriate containers and dispose of properly. |
| Prickly lettuce (*Lactuca serriola*) | Monitor for occurrence and eradicate if present. | Remove entire plant (stems, flowers and roots) by hand pulling; place in appropriate containers and dispose of properly. |
| Barnyard grass (*Echinochloa* sp.) | Monitor for occurrence and eradicate if present. | Remove entire plant (stems, flowers and roots) by hand pulling place in appropriate containers and dispose of properly. Large stands can be treated chemically with post-emergent, non-broadleaf, systemic herbicide. Pull individuals post-mortality. |
| Annual beard grass (*Polypogonmon speliensis*) | Monitor for occurrence and eradicate if present. | Remove entire plant (stems, flowers and roots) by hand pulling place in appropriate containers and dispose of properly. Large stands can be treated chemically with post-emergent, non-broadleaf, systemic herbicide. Pull individuals post-mortality. |
| Little seed canary grass (*Phalaris minor*) | Monitor for occurrence and eradicate if present. | Remove entire plant (stems, flowers and roots) by hand pulling place in appropriate containers and dispose of properly. Large stands can be treated chemically with post-emergent, non-broadleaf, systemic herbicide. Pull individuals post-mortality. |
| Johnson grass (*Sorghum halepense*) | Monitor for occurrence and eradicate if present. | Remove entire plant (stems, flowers and roots) by hand pulling place in appropriate containers and dispose of properly. Large stands can be treated chemically with post-emergent, non-broadleaf, systemic herbicide. Pull individuals post-mortality. |

## Figures




**Legend**

- Structure Along Proposed Gen-Tie
- Structure Along Alternative Gen-Tie
- Existing 230 kV Transmission Line
- Interstate
- Major Road
- Major Canal
- Irrigation Canal
- County Boundary
- Proposed Gen-Tie
- Gen-Tie Alternative
- Campo Verde Facility
- Campo Verde Facility Disturbance Area
- Temporary Work Area
- Pulling and Tensioning Area

Jurisdictional Land Ownership

- Bureau of Land Management Land

0 250 500 750 1,000
Feet

0 0.1 0.2
Miles

State Plane Coordinate System
California Zone 6, NAD 83
Lambert Conformal Conic Projection
1983 North American Datum
Linear Unit: Foot US

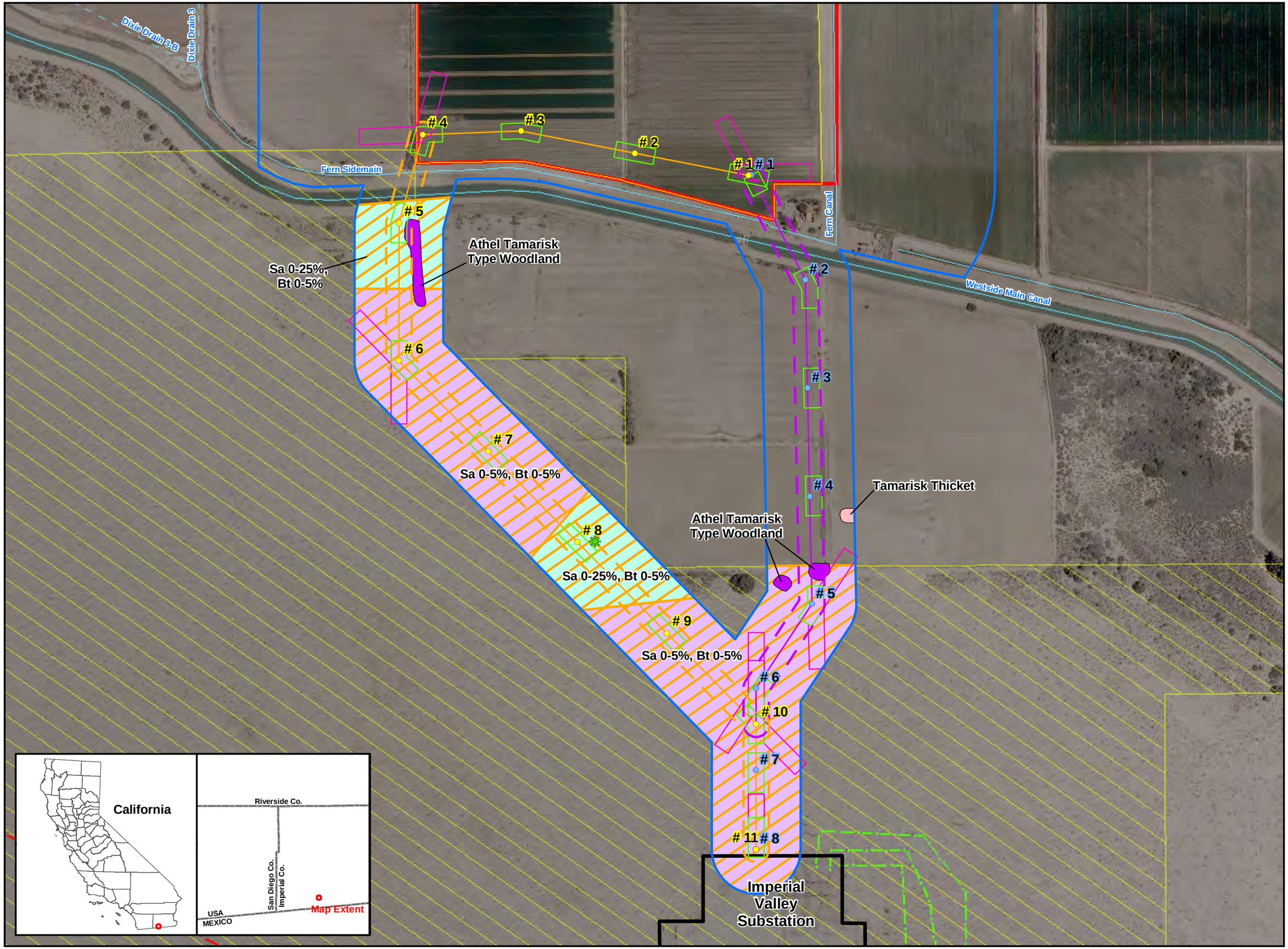
**CAMPO VERDE SOLAR PROJECT**

***FIGURE 1 - PROPOSED ACTION AND ALTERNATIVES***

Map Extent: Imperial County, California

Date: 03.01.12 | Author: djb

...Maps\Figure 1 Proposed Action and Alternatives




**Legend**

- Structure Along Proposed Gen-Tie
- Structure Along Alternative Gen-Tie
- Existing 230 kV Transmission Line
- Interstate
- Major Road
- Major Canal
- Irrigation Canal
- County Boundary
- Proposed Gen-Tie
- Gen-Tie Alternative
- 160' Proposed Gen-Tie ROW
- 160' Gen-Tie Alternative ROW
- Campo Verde Facility
- Campo Verde Facility Disturbance Area
- Campo Verde Study Area
- Temporary Work Area
- Pulling and Tensioning Area

Jurisdictional Land Ownership

- Bureau of Land Management Land

Species and Weed Coverage Classes

- Ta - Athel
- Sa - Arabian Grass (0-5%) Bt - Sahara Mustard (0-5%)
- Sa - Arabian Grass (5-25%) Bt - Sahara Mustard (0-5%)
- Athel Tamarisk Type Woodland
- Tamarisk Thicket

0 250 500 750 1,000
Feet

0 0.1 0.2
Miles

State Plane Coordinate System
California Zone 6, NAD 83
Lambert Conformal Conic Projection
1983 North American Datum
Linear Unit: Foot US

**CAMPO VERDE SOLAR PROJECT**

***FIGURE 2 - SITE PLAN, MANAGEMENT AREAS, AND WEED INFESTATIONS***

Map Extent: Imperial County, California

Date: 03.01.12 | Author: djb

...Maps\Figure 1 Proposed Action and Alternatives

# Appendix 1
# Integrated Weed Management Plans for High Priority Weed Species

**INTEGRATED WEED MANAGEMENT PLANS FOR HIGH-PRIORITY WEED SPECIES**

**Scientific name:** *Brassica tournefortii*

**Common name:** Sahara mustard

**Date _____ Updated _____**

**A. PRIORITY:** High

**B. DESCRIPTION**

Sahara mustard is an annual herb with stems 4-40 inches in length. Plants flower early, but flowers are small and dull yellow and blooms from January-July (Bossard et al. 2000; Baldwin et al. 2002). Plants flower or fruit as early as December or January and set seed by February. Most plants are in fruit or dead by April. Leaves are usually in a well developed basal rosette and quickly reduce in size upward on the stems so that in the inflorescence only minute bracts are present. Basal leaves are 3-12 inches long and deeply lobed. The fruit is a dehiscent silique between 1.4-2.6 inches in length with an obvious terete beak. Saharan mustard is an abundant annual weed at low elevations throughout the southwestern deserts of North America. It is most common in wind-blown sand deposits and in disturbed sites such as roadsides and abandoned fields. It is scarce on alluvial fans and rocky hillsides (Bossard et al. 2000).

**C. CURRENT DISTRIBUTION ON THE PROPERTY**

Sahara mustard is present throughout the survey area on BLM lands. Densities range from very low to over 25%cover. For most of the survey area on BLM lands densities range from 0-5%. Within the wash habitats and adjacent to the agricultural fields where conditions are more mesic, densities range from 5-25%. These latter areas are along Pinto Wash south of the IV Substation, a tributary of Pinto Wash south of Hwy 98 and the edges of the desert scrub habitats adjacent to the agricultural fields between Mt Signal Road and the West Side Main Canal.

**D. DAMAGE & THREATS**

Dense stands of this species suppress native wildflowers. Because of its early phenology this species seems to extract all the available soil moisture, grows to a mature plant, and set seed before most native species have started to flower. Sahara mustard increases fuel loads and fire hazards in desert scrub (Bossard et al. 2000).

**E. WEED MANAGEMENT OBJECTIVE**

The objective is to contain and reduce the spread of Sahara mustard within the project corridor on BLM lands to reduce the threat of fire to the energy structures within the corridor and to reduce the threats of species displacements in the habitats adjacent to the corridor.

**F. MANAGEMENT OPTIONS**
Viable control options are:

1) Hand-Weeding Treatments
2) Chemical Treatments
3) Equipment Inspection

| Month | Priority Weed or Project | Treatment Dates | Monitoring Dates |
|---|---|---|---|
| | | | |

**G. CONTROL ACTIONS PLANNED**

1) Hand-Weeding Treatments

Remove entire plant (stems, flowers and roots) by hand pulling place in appropriate containers and dispose of properly. With this method native plants can thrive. In test plots conducted by the UCCE (n.d.) almost 30% of the hand-weeded plots were covered with other annuals which was twice as much area compared to any other treatment, including untreated plots. Bossard et al. (2000) suggest that hand pulling might be effective in limited areas when seed pools have been suppressed which is not likely the scenario on the project site where this species is ubiquitous onsite and large offsite areas that are contiguous with the project site. Plants should be removed prior to seed set and dispersal. Seedlings are easier to remove so hand pulling can commence after germination in the fall as soon as this species is detectable and identifiable.

2) Chemical Treatments

Chris MacDonald and Carl Bell from the University of California Cooperative Extension (UCCE n.d.) have conducted herbicide trial experiments on Brassica tournefortii in Borrego Springs and Palm Desert. Triclopyr had the greatest control of Sahara mustard, with reductions in mustard over 99%, and Chlorsulfuron exhibited reductions over 95%. However, these two chemicals do not control invasive grasses (e.g. Schismus species), which dominate after broadleaved plants were removed. These two chemicals also removed most of the native wildflowers in the research plots and should be used with caution if management goals are to preserve established wildflowers. The high Pelargonic acid and both Glyphosate treatments exhibited acceptable control of Sahara mustard with greater than 85% reduction. The low Pelargonic acid treatment only had a 40% reduction. Glyphosate and Pelargonic acid also had the greatest post-treatment survival of native plants at 35-85% survival compared to control plots. However control plots had a low cover of native wildflowers (avg. 7% cover) because of competition with Sahara mustard. Treatments should be applied prior to seed set and dispersal. Since seed set occurs as early as February treatments in most years. After the soils chill in fall, small rainfall events can initiate mass germination.

## H. MONITORING

Monitoring for this species within the corridor will occur monthly in year 1; quarterly in year 2 and semi-annually thereafter for the remainder of the monitoring period. Monitoring periods, at a minimum should occur:

1) after the first fall rains with allowances for seedling germination and development to establish the baseline condition for that season and to determine appropriate action(s). the timing of this period is dependent on fall rains and could occur from October to January depending on rainfall events which vary considerably from year to year;

2) after eradication treatments to determine success of treatments (anticipated in most years to occur after February).

Monitoring for presence of this species within the corridor will allow for an assessment of the objectives of the weed management plan. Successful eradication within the corridor would reduce fire frequency (Goal #1 from Section 7.2 of plan) and ensure that the corridor/project does not provide source populations to invade and degrade the adjacent habitats (Goal # from Section 7.2 of plan).

## I. RESULTS OF EVALUATION

(fill in data after monitoring has been completed)

**INTEGRATED WEED MANAGEMENT PLANS FOR HIGH-PRIORITY WEED SPECIES**

**Scientific name:** *Tamarix aphylla*

**Common name:** Athel

**Date _____ Updated _____**

**A. PRIORITY:** High

**B. DESCRIPTION**

Tamarisk is a multi-stemmed shrub or tree usually less than 20 feet in height. Leaves are ovate in shape and very small (less than 0.14 inch) with salt glands. Flowers are white to pink and are arranged in a raceme which flower from April-August. The species is common along desert washes and streambanks in native habitats, as well as drains, canals and ditches on agricultural lands. The species can reproduce both sexually (by seed) and asexually as plants can regenerate from cuttings that fall on moist soils as well as resprouting following control treatments. Seed production occurs over a 5.5-month period and germination can occur within 24 hours in warm, moist soils (Bossard et al. 2000).

**C. CURRENT DISTRIBUTION ON THE PROPERTY**

Several individuals were observed on the north end of both alternatives (**Figure 2, Pages 1 and 2**). High numbers in high density patches of this species occur directly east of the site and east of the substation.

**D. DAMAGE & THREATS**

It is assumed that since *T. ramosissima* and *T. aphylla* are very similar in their damage and threats. Though Bossard et al., 2000 discuss threats for *T. ramosissima,* because of similar morphological, physiological and ecological traits, it is assumed that damage and threats from *T. aphylla* are very similar to those discussed by these authors for *T. ramosissima*. Causes dramatic changes in geomorphology, groundwater availability, soil chemistry, fire frequency, plant community composition and native wildlife diversity. Geomorphical impacts include trapping and stabilizing alluvial sediments which results in narrowing of stream channels and more frequent flooding. This species also lowers water tables because of its high evapotranspiration rate. Soil salinities increase as a result of salt from the glands of its leaves which increase soil salinity as these leaves abscise. Increased salinity inhibits germination and growth of native riparian species. Leaf litter from drought-deciduous leaves increases frequency of fire. Species has little value to native wildlife (Bossard et al. 2000).

**E. WEED MANAGEMENT OBJECTIVE**

The objective is to control athel within the project corridor on BLM lands to reduce the threat of fire to the energy structures within the corridor and to reduce the threats of species displacements in the habitats adjacent to the corridor,

**F. MANAGEMENT OPTIONS**
Viable control options are:

1) Mechanical/Hand-Weeding Treatments
2) Chemical Treatments

| Month | Priority Weed or Project | Treatment Dates | Monitoring Dates |
|---|---|---|---|
| | | | |

**G. CONTROL ACTIONS PLANNED**

1) Hand-Weeding Treatments

Mechanical treatments would include cutting the trunk approximately one-foot above the ground. Hand weeding treatments are effective for seedlings and saplings. Remove entire plant (stems, flowers and roots) by hand pulling place in appropriate containers and dispose of properly. Hand weeding should be done when plants are small. Hand weeding can be conducted at any time of the year. However, late summer to late winter are probably best times to target seedlings from previous year before they have time grow as under favorable conditions shoots can grow to heights of 3-4 meters in one growing season (Bossard et al., 2000).

2) Chemical Treatments

Tamarisk is difficult to control with manual/mechanical methods as it vigourously resprouts after cutting or burning. Root plowing and cutting are effective initially but only when combined with follow up application of herbicides. Six herbicides are commonly used to control this species including: imazapyr, triclopyr and glyphosate. The most common method used in California is to cut the shrub off near the ground and apply triclopyr. This technique usually results in a 90% plus mortality rate (Bossard et al. 2000). Mature trees should be cut just above the soil surface with herbicides applied to the cut surfaces. It is assumed that treatments should be applied late summer (post-flowering) when most plants are translocating nutrients, and herbicides, to the root system.

**H. MONITORING**

Monitoring for this species within the corridor will occur monthly in year 1; quarterly in year 2 and semi-annually thereafter for the remainder of the monitoring period. Monitoring periods, at a minimum should occur:

1) Early to late summer to determine presence/establishment of seedlings;

2) After eradication treatments to determine success of treatments (most likely late summer).

Monitoring for presence of this species within the corridor will allow for an assessment of the objectives of the weed management plan. Successful eradication within the corridor would reduce fire frequency (Goal #1 from Section 7.2 of plan) and ensure that the corridor/project does not provide source populations to invade and degrade the adjacent habitats (Goal # from Section 7.2 of plan).

## I. RESULTS OF EVALUATION

(fill in data after monitoring has been completed)

# Appendix 2
# Herbicide Treatment Standard Operating Procedures
# (Appendix B of the Vegetation Treatments Using Herbicides on Bureau of Land Management Lands in 17 Western States PEIS)

## APPENDIX B

# HERBICIDE TREATMENT STANDARD OPERATING PROCEDURES

# APPENDIX B

# HERBICIDE TREATMENT STANDARD OPERATING PROCEDURES

This section identifies standard operating procedures (SOPs) that will be followed by the U.S. Department of the Interior Bureau of Land Management (USDI BLM) under all alternatives to ensure that risks to human health and the environment from herbicide treatment actions will be kept to a minimum. Standard operating procedures are the management controls and performance standards required for vegetation management treatments. These practices are intended to protect and enhance natural resources that could be affected by future vegetation treatments.

## Prevention of Weeds and Early Detection and Rapid Response

Once weed populations become established, infestations can increase and expand in size. Weeds colonize highly disturbed ground and invade plant communities that have been degraded, but are also capable of invading intact communities. Therefore, prevention, early detection, and rapid response are the most cost-effective methods of weed control. Prevention, early detection, and rapid response strategies that reduce the need for vegetative treatments for noxious weeds should lead to a reduction in the number of acres treated using herbicides in the future by reducing or preventing weed establishment.

As stated in the BLM's *Partners Against Weeds: An Action Plan for the BLM*, prevention and public education are the highest priority weed management activities. Priorities are as follows:

- Priority 1: Take actions to prevent or minimize the need for vegetation control when and where feasible, considering the management objectives of the site.
- Priority 2: Use effective nonchemical methods of vegetation control when and where feasible.
- Priority 3: Use herbicides after considering the effectiveness of all potential methods or in combination with other methods or controls.

Prevention is best accomplished by ensuring the seeds and vegetatively reproductive plant parts of new weed species are not introduced into new areas.

The BLM is required to develop a noxious weed risk assessment when it is determined that an action may introduce or spread noxious weeds or when known habitat exists. If the risk is moderate or high, the BLM may modify the project to reduce the likelihood of weeds infesting the site, and to identify control measures to be implemented if weeds do infest the site.

To prevent the spread of weeds, the BLM takes actions to minimize the amount of existing non-target vegetation that is disturbed or destroyed during project or vegetation treatment actions (Table B-1). During project planning, the following steps are taken:

- Incorporate measures to prevent introduction or spread of weeds into project layout, design, alternative evaluation, and project decisions.
- During environmental analysis for projects and maintenance programs, assess weed risks, analyze potential treatment of high-risk sites for weed establishment and spread, and identify prevention practices.
- Determine prevention and maintenance needs, to include the use of herbicides if needed, at the onset of project planning.
- Avoid or remove sources of weed seed and propagules to prevent new weed infestations and the spread of existing weeds.

During project development, weed infestations are prioritized for treatment in project operating areas and along access routes. Weeds present on or near the site are identified, a risk assessment is completed, and weeds are controlled as necessary. Project staging areas are weed free, and travel through weed infested areas is avoided or minimized. Examples of prevention actions to be followed during project activities include cleaning all equipment and clothing before entering the project site; avoiding soil disturbance and the creation of other

soil conditions that promote weed germination and establishment; and using weed-free seed, hay, mulch, gravel, soil, and mineral materials on public lands where there is a state or county program in place.

Conditions that enhance invasive species abundance should be addressed when developing mitigation and prevention plans for activities on public lands. These conditions include excessive disturbance associated with road maintenance, poor grazing management, and high levels of recreational use. If livestock grazing is managed to maintain the vigor of native perennial plants, particularly grasses, the chance of weeds invading rangeland is much less. By carefully managing recreational use and educating the public on the potential impacts of recreational activities on vegetation, the amount of damage to native vegetation and soil can be minimized at high use areas, such as campgrounds and off-highway vehicle (OHV) trails. Early detection in recreation areas is focused on roads and trails, where much of the weed spread occurs.

The BLM participates in the National Early Warning and Rapid Response System for Invasive Plants (Figure B-1). The goal of this System to minimize the establishment and spread of new invasive species through a coordinated framework of public and private processes by:

- Early detection and reporting of suspected new plant species to appropriate officials;
- Identification and vouchering of submitted specimens by designated specialists;
- Verification of suspected new state, regional, and national plant records;
- Archival of new records in designated regional and plant databases;
- Rapid assessment of confirmed new records; and
- Rapid response to verified new infestations that are determined to be invasive.

## Herbicide Treatment Planning

BLM Manual 9011 (*Chemical Pest Control*) outlines the policies, and BLM Handbook H-9011-1 (*Chemical Pest Control*) outlines the procedures, for use of herbicides on public lands. As part of policy, the BLM is required to thoroughly evaluate the need for chemical treatments and their potential for impact on the environment. The BLM is required to use only U.S. Environmental Protection Agency (USEPA)-registered herbicides that have been properly evaluated under National Environmental Policy Act (NEPA), and to carefully follow label directions and additional BLM requirements.

An operational plan is developed and updated for each herbicide project. The plan includes information on project specifications, key personnel responsibilities, and communication, safety, spill response, and emergency procedures. For application of herbicides not approved for aquatic use, the plan should also specify minimum buffer widths between treatment areas and water bodies. Recommended widths are provided in BLM Handbook H-9011-1 (*Chemical Pest Control*), but actual buffers are site and herbicide active ingredient specific, and are determined based on a scientific analysis of environmental factors, such as climate, topography, vegetation, and weather; timing and method of application; and herbicide risks to humans and non-target species. Table B-2 summarizes important SOPs that should be used when applying herbicides to help protect resources of concern on public lands.

## Revegetation

Disturbed areas may be reseeded or planted with desirable vegetation when the native plant community cannot recover and occupy the site sufficiently.

Determining the need for revegetation is an integral part of developing a vegetation treatment. The most important component of the process is determining whether active (seeding/planting) or passive (natural recovery) revegetation is appropriate.

U.S. Department of the Interior policy states, “Natural recovery by native plant species is preferable to planting or seeding, either of natives or non-natives. However, planting or seeding should be used only if necessary to prevent unacceptable erosion or resist competition from non-native invasive species” (620 Departmental Memorandum 3 2004). This policy is reiterated in the USDI *Burned Area Emergency Stabilization and Rehabilitation* Manual, the BLM *Burned Area Emergency Stabilization and Rehabilitation* Manual (BLM H-1742-1), and the *Interagency Burned Area Rehabilitation Guidebook.*

**TABLE B-1**
**Prevention Measures**

| BLM Activity | Prevention Measure |
|---|---|
| Project Planning | • Incorporate prevention measures into project layout and design, alternative evaluation, and project decisions to prevent the introduction or spread of weeds.<br>• Determine prevention and maintenance needs, including the use of herbicides, at the onset of project planning.<br>• Before ground-disturbing activities begin, inventory weed infestations and prioritize areas for treatment in project operating areas and along access routes.<br>• Remove sources of weed seed and propagules to prevent the spread of existing weeds and new weed infestations.<br>• Pre-treat high-risk sites for weed establishment and spread before implementing projects.<br>• Post weed awareness messages and prevention practices at strategic locations such as trailheads, roads, boat launches, and public land kiosks.<br>• Coordinate project activities with nearby herbicide applications to maximize the cost-effectiveness of weed treatments. |
| Project Development | • Minimize soil disturbance to the extent practical, consistent with project objectives.<br>• Avoid creating soil conditions that promote weed germination and establishment.<br>• To prevent weed germination and establishment, retain native vegetation in and around project activity areas and keep soil disturbance to a minimum, consistent with project objectives.<br>• Locate and use weed-free project staging areas. Avoid or minimize all types of travel through weed-infested areas, or restrict travel to periods when the spread of seeds or propagules is least likely.<br>• Prevent the introduction and spread of weeds caused by moving weed-infested sand, gravel, borrow, and fill material.<br>• Inspect material sources on site, and ensure that they are weed-free before use and transport. Treat weed-infested sources to eradicate weed seed and plant parts, and strip and stockpile contaminated material before any use of pit material.<br>• Survey the area where material from treated weed-infested sources is used for at least 3 years after project completion to ensure that any weeds transported to the site are promptly detected and controlled.<br>• Prevent weed establishment by not driving through weed-infested areas.<br>• Inspect and document weed establishment at access roads, cleaning sites, and all disturbed areas; control infestations to prevent weed spread within the project area.<br>• Avoid acquiring water for dust abatement where access to the water is through weed-infested sites.<br>• Identify sites where equipment can be cleaned. Clean equipment before entering public lands.<br>• Clean all equipment before leaving the project site if operating in areas infested with weeds.<br>• Inspect and treat weeds that establish at equipment cleaning sites.<br>• Ensure that rental equipment is free of weed seed.<br>• Inspect, remove, and properly dispose of weed seed and plant parts found on workers' clothing and equipment. Proper disposal entails bagging the seeds and plant parts and incinerating them. |
| Revegetation | • Include weed prevention measures, including project inspection and documentation, in operation and reclamation plans.<br>• Retain bonds until reclamation requirements, including weed treatments, are completed, based on inspection and documentation.<br>• To prevent conditions favoring weed establishment, reestablish vegetation on bare ground caused by project disturbance as soon as possible using either natural recovery or artificial techniques.<br>• Maintain stockpiled, uninfested material in a weed-free condition. |

**TABLE B-1 (Cont.)**
**Prevention Measures**

| BLM Activity | Prevention Measure |
|---|---|
| Revegetation (Cont.) | • Revegetate disturbed soil (except travel ways on surfaced projects) in a manner that optimizes plant establishment for each specific project site. For each project, define what constitutes disturbed soil and objectives for plant cover revegetation. Revegetation may include topsoil replacement, planting, seeding, fertilization, liming, and weed-free mulching, as necessary.<br>• Where practical, stockpile weed-seed-free topsoil and replace it on disturbed areas (e.g., road embankments or landings).<br>• Inspect seed and straw mulch to be used for site rehabilitation (for wattles, straw bales, dams, etc.) and certify that they are free of weed seed and propagules.<br>• Inspect and document all limited term ground-disturbing operations in noxious weed infested areas for at least 3 growing seasons following completion of the project.<br>• Use native material where appropriate and feasible. Use certified weed-free or weed-seed-free hay or straw where certified materials are required and/or are reasonably available.<br>• Provide briefings that identify operational practices to reduce weed spread (for example, avoiding known weed infestation areas when locating fire lines).<br>• Evaluate options, including closure, to regulate the flow of traffic on sites where desired vegetation needs to be established. Sites could include road and trail rights-of-way (ROW), and other areas of disturbed soils. |

In addition to these handbooks and policy, use of native and non-native seed in revegetation and restoration is guided by BLM Manual 1745 (*Introduction, Transplant, Augmentation and Reestablishment of Fish, Wildlife and Plants)*. This manual states that native species shall be used, unless it is determined through the NEPA process that: 1) suitable native species are not available; 2) the natural biological diversity of the proposed management area will not be diminished; 3) exotic and naturalized species can be confined within the proposed management area; 4) analysis of ecological site inventory information indicates that a site will not support reestablishment of a species that historically was part of the natural environment; or 5) resource management objectives cannot be met with native species.

When natural recovery is not feasible, revegetation can be used to stabilize and restore vegetation on disturbed sites and to eliminate or reduce the conditions that favor invasive species. Reseeding or replanting may be required when there is insufficient vegetation or seed stores to naturally revegetate the site.

To ensure revegetation success, there must be adequate soil for root development and moisture storage, which provides moisture to support the new plants. Chances for revegetation success are improved by selecting seed with high purity and percentage germination; selecting native species or cultivars adapted to the area; planting at proper depth, seeding rate, and time of the year for the region; choosing the appropriate planting method; and, where feasible, removing competing vegetation. Planting mixtures are adapted for the treatment area and site uses. A combination of forbs, perennial grasses, and shrubs is typically used on rangeland sites, while shrubs and trees might be favored for riparian and forestland sites. A mixture of several native plant species and types or functional groups enhances the value of the site for fish and wildlife and improves the health and aesthetic character of the site. Mixtures can better take advantage of variable soil, terrain, and climatic conditions, and thus are more likely to withstand insect infestations and survive adverse climatic conditions.

The USDI BLM Native Seed program was developed in response to Congressional direction to supply native plant material for emergency stabilization and longer-term rehabilitation and restoration efforts. The focus of the program is to increase the number of native plant species for which seed is available and the total amount of native seed available for these efforts. To date, the program has focused on native plant material needs of emergency stabilization and burned area rehabilitation in the Great Basin, but is expanding to focus on areas such as western Oregon, the Colorado Plateau, and most recently the Mojave Desert. The Wildland Fire Management Program funds and manages the effort.

The National Seed Warehouse is a storage facility for the native seed supply. Through a Memorandum of

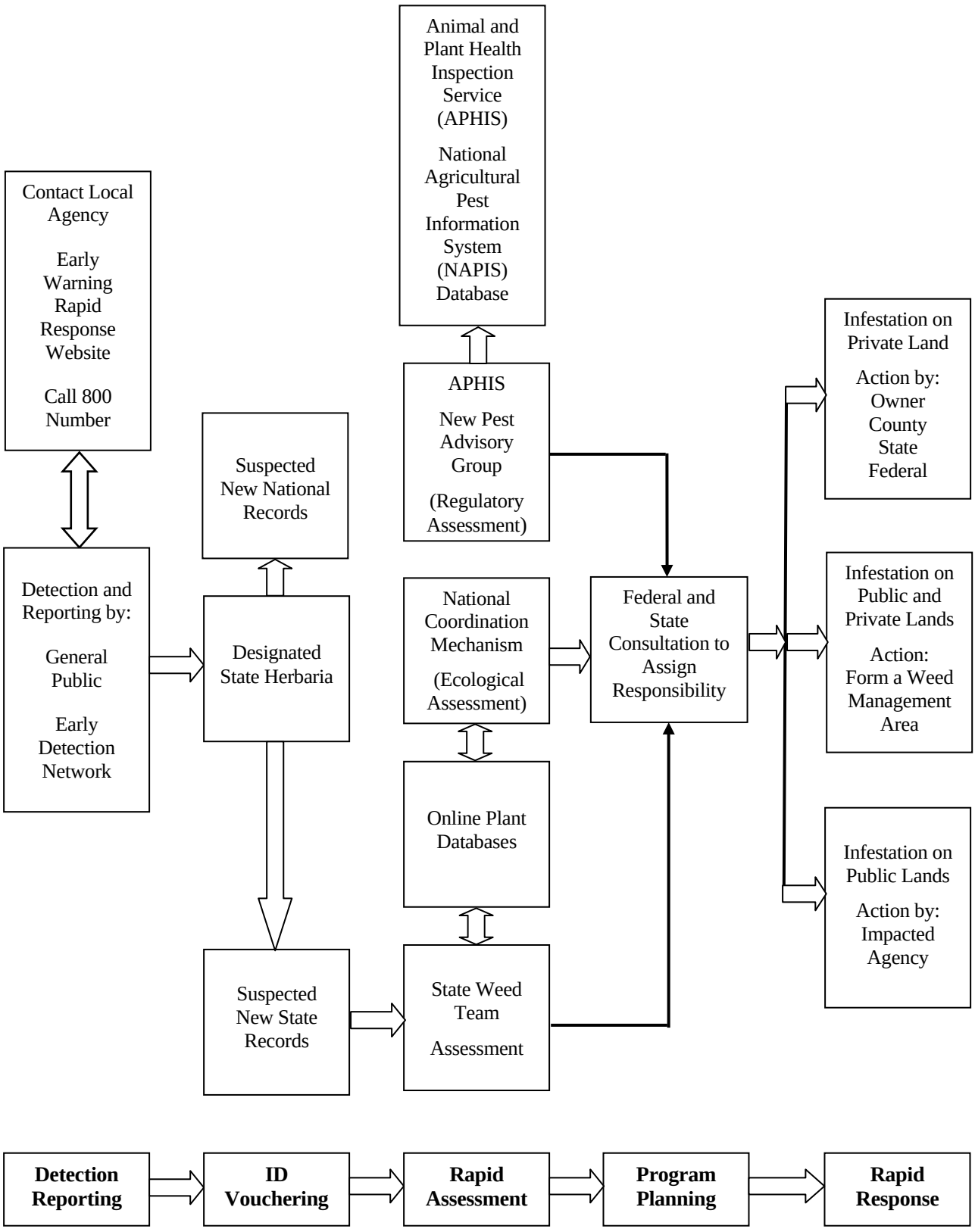



**Figure B-1. National Early Warning and Rapid Response System for Invasive Plants.**

Understanding with the BLM Idaho State Director, each state (Idaho, Oregon, Nevada, Utah and Colorado) can reserve an annual seed supply for purchase based on a reasonable projection of annual acreage to be stabilized or rehabilitated over a 5-year period.

The Great Basin Restoration Initiative (GBRI) grew out of concern for the health of the Great Basin after the wildfires of 1999. The goal of GBRI is to implement treatments and strategies to maintain functioning ecosystems and to proactively restore degraded ones at strategic locations. Native plants are emphasized in restoration projects where their use is practical and the potential for success is satisfactory. Monitoring is recommended to measure treatment success. To increase the availability of native plants, especially native forbs, the GBRI has established a collaborative native plant project, the Great Basin Native Plant Selection and Increase Project, to increase native plant availability and the technology to successfully establish these plants. This project is supported by funding from the BLM's Native Plant Initiative.

The BLM will follow the following SOPs when revegetating sites:

- Cultivate previously disturbed sites to reduce the amount of weed seeds in the soil seedbank.
- Revegetate sites once work is completed or soon after a disturbance.
- When available, use native seed of known origin as labeled by state seed certification programs.
- Use seed of non-native cultivars and species only when locally adapted native seed is not available or when it is unlikely to establish quickly enough to prevent soil erosion or weed establishment.
- Use seed that is free of noxious and invasive weeds, as determined and documented by a seed inspection test by a certified seed laboratory.
- Limit nitrogen fertilizer applications that favor annual grass growth over forb growth in newly seeded areas, especially where downy brome (cheatgrass) and other invasive annuals are establishing.
- Use clean equipment, free of plants and plant parts, on revegetation projects to prevent the inadvertent introduction of weeds into the site.
- Where important pollinator resources exist, include native nectar and pollen producing plants in the seed mixes used in restoration and reclamation projects. Include non-forage plant species in seed mixes for their pollinator/host relationships as foraging, nesting, or shelter species. Choose native plant species over manipulated cultivars, especially of forbs and shrubs, since natives tend to have more valuable pollen and nectar resources than cultivars. Ensure that bloom times for the flowers of the species chosen match the activity times for the pollinators. Maintain sufficient litter on the soil surfaces of native plant communities for ground-nesting bees.
- Where feasible, avoid grazing by domestic and wild animals on treatment sites until vegetation is well established. Where total rest from grazing is not feasible, efforts should be made to modify the amount and/or season of grazing to promote vegetation recovery within the treatment area. Reductions in grazing animal numbers, permanent or temporary fencing, changes in grazing rotation, and identification of alternative forage sources are examples of methods that could be used to remove, reduce or modify grazing impacts during vegetation recovery.

# Special Precautions

## Special Status Species

Federal policies and procedures for protecting federally-listed threatened and endangered plant and animal species, and species proposed for listing, were established by the Endangered Species Act of 1973 and regulations issued pursuant to the Act. The purposes of the Act are to provide mechanisms for the conservation of threatened and endangered species and their habitats. Under the Act, the Secretary of the Interior is required to determine which species are threatened or endangered and to issue recovery plans for those species.

Section 7 of the Act specifically requires all federal agencies to use their authorities in furtherance of the Act to carry out programs for the conservation of listed

species, and to ensure that no agency action is likely to jeopardize the continued existence of a listed species or adversely modify critical habitat. Policy and guidance (BLM Manual 6840; *Special Status Species*) also stipulates that species proposed for listing must be managed at the same level of protection as listed species.

The BLM state directors may designate special status in cooperation with their respective state. These special status species must receive, at a minimum, the same level of protection as federal candidate species. The BLM will also carry out management for the conservation of state-listed species, and state laws protecting these species will apply to all BLM programs and actions to the extent that they are consistent with Federal Land Policy and Management Act (FLPMA) and other federal laws.

The BLM consulted with the U.S. Fish and Wildlife Service (UFWS) and National Marine Fisheries Service (NMFS) during development of the *Final Vegetation Treatments Using Herbicides on Bureau of Land Management Lands in 17 Western States Programmatic Environmental Impact Statement* (PEIS) as required under Section 7 of the Endangered Species Act. As part of this process, the BLM prepared a formal consultation package that included a description of the program; species listed as threatened or endangered, species proposed for listing, and critical habitats that could be affected by the program; and a Biological Assessment (BA) that evaluated the likely impacts to listed species, species proposed for listing, and critical habitats from the proposed vegetation treatment program. Over 300 species were evaluated in the BA. The BA also provides broad guidance at a programmatic level for actions that will be taken by the BLM to avoid adversely impacting species or critical habitat.

Before any vegetation treatment or ground disturbance occurs, BLM policy requires a survey of the project site for species listed or proposed for listing, or special status species. This is done by a qualified biologist and/or botanist who consults the state and local databases and visits the site at the appropriate season. If a proposed project may affect a proposed or listed species or its critical habitat, the BLM consults with the USFWS and/or NMFS. A project with a "may affect, likely to adversely affect" determination requires formal consultation and receives a Biological Opinion from the USFWS and/or NMFS. A project with a "may affect, not likely to adversely affect" determination requires informal consultation and receives a concurrence letter from USFWS and/or NMFS, unless that action is implemented under the authorities of the alternative consultation agreement pursuant to counterpart regulations established for *National Fire Plan* projects.

## Wilderness Areas

Wilderness areas, which are designated by Congress, are defined by the Wilderness Act of 1964 as places "where the earth and its community of life are untrammeled by man, where man himself is a visitor who does not remain." The BLM manages 175 Wilderness Areas encompassing over 7.2 million acres.

Activities allowed in wilderness areas are identified in wilderness management plans prepared by the BLM. The BLM does not ordinarily treat vegetation in wilderness areas, but will control invasive and noxious weeds when they threaten lands outside wilderness area or are spreading within the wilderness and can be controlled without serious adverse impacts to wilderness values.

Management of vegetation in a wilderness area is directed toward retaining the natural character of the environment. Tree and shrub removal is usually not allowed, except for fire, insect, or disease control. Reforestation is generally prohibited except to repair damage caused by humans in areas where natural reforestation is unlikely. Only native species and primitive methods, such as hand planting, are allowed for reforestation.

Tools and equipment may be used for vegetation management when they are the minimum amount necessary for the protection of the wilderness resource. Motorized tools may only be used in special or emergency cases involving the health and safety of wilderness visitors, or the protection of wilderness values.

Habitat manipulation using mechanical or chemical means may be allowed to protect threatened and endangered species and to correct unnatural conditions, such as weed infestations, resulting from human influence.

The BLM also manages a total of 610 Wilderness Study Areas (WSAs) encompassing nearly 14.3 million acres. These are areas that have been determined to have wilderness characteristics worthy of consideration for wilderness designation. The BLM's primary goals in WSAs are to manage them so as to not impair their wilderness values and to maintain their suitability for

preservation as wilderness until Congress makes a determination on their future.

In WSAs, the BLM must foster a natural distribution of native species of plants and animals by ensuring that ecosystems and processes continue to function naturally.

## Cultural Resources

The effects of BLM actions on cultural resources are addressed through compliance with the National Historic Preservation Act, as implemented through a national Programmatic Agreement (*Programmatic Agreement among the Bureau of Land Management, the Advisory Council on Historic Preservation, and the National Conference of State Historic Preservation Officers Regarding the Manner in Which BLM Will Meet Its Responsibilities Under the National Historic Preservation Act*) and state-specific protocol agreements with State Historic Preservation Officers (SHPOs). The BLM's responsibilities under these authorities are addressed as early in the vegetation management project planning process as possible.

The BLM meets its responsibilities for consultation and government-to-government relationships with Native American tribes by consulting with appropriate tribal representatives prior to taking actions that affect tribal interests. The BLM's tribal consultation policies are detailed in BLM Manual 8120 (*Tribal Consultation Under Cultural Resource Authorities)* and Handbook H-8120-1 (*Guidelines for Conducting Tribal Consultation).* The BLM consulted with Native American tribes and Alaska Native groups during development of the PEIS. Information gathered on important tribal resources and potential impacts to these resources from herbicide treatments is presented in the analysis of impacts.

When conducting vegetation treatments, field office personnel consult with relevant parties (including tribes, native groups, and SHPOs), assess the potential of the proposed treatment to affect cultural and subsistence resources, and devise inventory and protection strategies suitable to the types of resources present and the potential impacts to them.

Herbicide treatments, for example, are unlikely to affect buried cultural resources, but might have a negative effect on traditional cultural properties comprised of plant foods or materials significant to local tribes and native groups. These treatments require inventory and protection strategies that reflect the different potential of each treatment to affect various types of cultural resources.

Impacts to significant cultural resources are avoided through project redesign or are mitigated through data recovery, recordation, monitoring, or other appropriate measures. When cultural resources are discovered during vegetation treatment, appropriate actions are taken to protect these resources.

**TABLE B-2**
**Standard Operating Procedures for Applying Herbicides**

| Resource Element | Standard Operating Procedure |
|---|---|
| Guidance Documents | BLM Handbook H-9011-1 (*Chemical Pest Control*); and manuals 1112 (*Safety*), 9011 (*Chemical Pest Control*), 9012 (*Expenditure of Rangeland Insect Pest Control Funds*), 9015 (*Integrated Weed Management)*, and 9220 (*Integrated Pest Management*). |
| General | • Prepare operational and spill contingency plan in advance of treatment.<br>• Conduct a pretreatment survey before applying herbicides.<br>• Select herbicide that is least damaging to the environment while providing the desired results.<br>• Select herbicide products carefully to minimize additional impacts from degradates, adjuvants, inert ingredients, and tank mixtures.<br>• Apply the least amount of herbicide needed to achieve the desired result.<br>• Follow herbicide product label for use and storage.<br>• Have licensed applicators apply herbicides.<br>• Use only USEPA-approved herbicides and follow product label directions and "advisory" statements.<br>• Review, understand, and conform to the "Environmental Hazards" section on the herbicide product label. This section warns of known pesticide risks to the environment and provides practical ways to avoid harm to organisms or to the environment.<br>• Consider surrounding land use before assigning aerial spraying as a treatment method and avoid aerial spraying near agricultural or densely populated areas.<br>• Minimize the size of application area, when feasible.<br>• Comply with herbicide-free buffer zones to ensure that drift will not affect crops or nearby residents/landowners.<br>• Post treated areas and specify reentry or rest times, if appropriate.<br>• Notify adjacent landowners prior to treatment.<br>• Keep a copy of Material Safety Data Sheets (MSDSs) at work sites. MSDSs are available for review at http://www.cdms.net/.<br>• Keep records of each application, including the active ingredient, formulation, application rate, date, time, and location.<br>• Avoid accidental direct spray and spill conditions to minimize risks to resources.<br>• Consider surrounding land uses before aerial spraying.<br>• Avoid aerial spraying during periods of adverse weather conditions (snow or rain imminent, fog, or air turbulence).<br>• Make helicopter applications at a target airspeed of 40 to 50 miles per hour (mph), and at about 30 to 45 feet above ground.<br>• Take precautions to minimize drift by not applying herbicides when winds exceed >10 mph (>6 mph for aerial applications), or a serious rainfall event is imminent.<br>• Use drift control agents and low volatile formulations.<br>• Conduct pre-treatment surveys for sensitive habitat and special status species within or adjacent to proposed treatment areas.<br>• Consider site characteristics, environmental conditions, and application equipment in order to minimize damage to non-target vegetation.<br>• Use drift reduction agents, as appropriate, to reduce the drift hazard to non-target species.<br>• Turn off applied treatments at the completion of spray runs and during turns to start another spray run.<br>• Refer to the herbicide product label when planning revegetation to ensure that subsequent vegetation would not be injured following application of the herbicide.<br>• Clean OHVs to remove seeds. |

**TABLE B-2 (Cont.)**
**Standard Operating Procedures for Applying Pesticides**

| Resource Element | Standard Operating Procedure |
|---|---|
| Air Quality<br>See Manual 7000 (*Soil, Water, and Air Management*) | • Consider the effects of wind, humidity, temperature inversions, and heavy rainfall on herbicide effectiveness and risks.<br>• Apply herbicides in favorable weather conditions to minimize drift. For example, do not treat when winds exceed 10 mph (>6 mph for aerial applications) or rainfall is imminent.<br>• Use drift reduction agents, as appropriate, to reduce the drift hazard.<br>• Select proper application equipment (e.g., spray equipment that produces 200- to 800-micron diameter droplets [spray droplets of 100 microns and less are most prone to drift]).<br>• Select proper application methods (e.g., set maximum spray heights, use appropriate buffer distances between spray sites and non-target resources). |
| Soil<br>See Manual 7000 (*Soil, Water, and Air Management*) | • Minimize treatments in areas where herbicide runoff is likely, such as steep slopes when heavy rainfall is expected.<br>• Minimize use of herbicides that have high soil mobility, particularly in areas where soil properties increase the potential for mobility.<br>• Do not apply granular herbicides on slopes of more than 15% where there is the possibility of runoff carrying the granules into non-target areas. |
| Water Resources<br>See Manual 7000 (*Soil, Water, and Air Management*) | • Consider climate, soil type, slope, and vegetation type when developing herbicide treatment programs.<br>• Select herbicide products to minimize impacts to water. This is especially important for application scenarios that involve risk from active ingredients in a particular herbicide, as predicted by risk assessments.<br>• Use local historical weather data to choose the month of treatment. Considering the phenology of the target species, schedule treatments based on the condition of the water body and existing water quality conditions.<br>• Plan to treat between weather fronts (calms) and at appropriate time of day to avoid high winds that increase water movements, and to avoid potential stormwater runoff and water turbidity.<br>• Review hydrogeologic maps of proposed treatment areas. Note depths to groundwater and areas of shallow groundwater and areas of surface water and groundwater interaction. Minimize treating areas with high risk for groundwater contamination.<br>• Conduct mixing and loading operations in an area where an accidental spill would not contaminate an aquatic body.<br>• Do not rinse spray tanks in or near water bodies. Do not broadcast pellets where there is danger of contaminating water supplies.<br>• Maintain buffers between treatment areas and water bodies. Buffer widths should be developed based on herbicide- and site-specific criteria to minimize impacts to water bodies.<br>• Minimize the potential effects to surface water quality and quantity by stabilizing terrestrial areas as quickly as possible following treatment. |
| Wetlands and Riparian Areas | • Use a selective herbicide and a wick or backpack sprayer.<br>• Use appropriate herbicide-free buffer zones for herbicides not labeled for aquatic use based on risk assessment guidance, with minimum widths of 100 feet for aerial, 25 feet for vehicle, and 10 feet for hand spray applications. |
| Vegetation<br>See Handbook H-4410-1 (*National Range Handbook*), and manuals 5000 (*Forest Management*) and 9015 (*Integrated Weed Management*) | • Refer to the herbicide label when planning revegetation to ensure that subsequent vegetation would not be injured following application of the herbicide.<br>• Use native or sterile species for revegetation and restoration projects to compete with invasive species until desired vegetation establishes.<br>• Use weed-free feed for horses and pack animals. Use weed-free straw and mulch for revegetation and other activities.<br>• Identify and implement any temporary domestic livestock grazing and/or supplemental feeding restrictions needed to enhance desirable vegetation recovery following treatment. Consider adjustments in the existing grazing permit, to maintain desirable vegetation on the treatment site. |

**TABLE B-2 (Cont.)**
**Standard Operating Procedures for Applying Pesticides**

| Resource Element | Standard Operating Procedure |
|---|---|
| Pollinators | • Complete vegetation treatments seasonally before pollinator foraging plants bloom.<br>• Time vegetation treatments to take place when foraging pollinators are least active both seasonally and daily.<br>• Design vegetation treatment projects so that nectar and pollen sources for important pollinators and resources are treated in patches rather than in one single treatment.<br>• Minimize herbicide application rates. Use typical rather than maximum rates where there are important pollinator resources.<br>• Maintain herbicide free buffer zones around patches of important pollinator nectar and pollen sources.<br>• Maintain herbicide free buffer zones around patches of important pollinator nesting habitat and hibernacula.<br>• Make special note of pollinators that have single host plant species, and minimize herbicide spraying on those plants (if invasive species) and in their habitats. |
| Fish and Other Aquatic Organisms<br>See manuals 6500 (*Wildlife and Fisheries Management*) and 6780 (*Habitat Management Plans*) | • Use appropriate buffer zones based on label and risk assessment guidance.<br>• Minimize treatments near fish-bearing water bodies during periods when fish are in life stages most sensitive to the herbicide(s) used, and use spot rather than broadcast or aerial treatments.<br>• Use appropriate application equipment/method near water bodies if the potential for off-site drift exists.<br>• For treatment of aquatic vegetation, 1) treat only that portion of the aquatic system necessary to achieve acceptable vegetation management, 2) use the appropriate application method to minimize the potential for injury to desirable vegetation and aquatic organisms, and 3) follow water use restrictions presented on the herbicide label. |
| Wildlife<br>See manuals 6500 (*Wildlife and Fisheries Management*) and 6780 (*Habitat Management Plans*) | • Use herbicides of low toxicity to wildlife, where feasible.<br>• Use spot applications or low-boom broadcast operations where possible to limit the probability of contaminating non-target food and water sources, especially non-target vegetation over areas larger than the treatment area.<br>• Use timing restrictions (e.g., do not treat during critical wildlife breeding or staging periods) to minimize impacts to wildlife. |
| Threatened, Endangered, and Sensitive Species<br>See Manual 6840 (*Special Status Species*) | • Survey for special status species before treating an area. Consider effects to special status species when designing herbicide treatment programs.<br>• Use a selective herbicide and a wick or backpack sprayer to minimize risks to special status plants.<br>• Avoid treating vegetation during time-sensitive periods (e.g., nesting and migration, sensitive life stages) for special status species in area to be treated. |
| Livestock<br>See Handbook H-4120-1 (*Grazing Management*) | • Whenever possible and whenever needed, schedule treatments when livestock are not present in the treatment area. Design treatments to take advantage of normal livestock grazing rest periods, when possible.<br>• As directed by the herbicide product label, remove livestock from treatment sites prior to herbicide application, where applicable.<br>• Use herbicides of low toxicity to livestock, where feasible.<br>• Take into account the different types of application equipment and methods, where possible, to reduce the probability of contamination of non-target food and water sources.<br>• Avoid use of diquat in riparian pasture while pasture is being used by livestock.<br>• Notify permittees of the herbicide treatment project to improve coordination and avoid potential conflicts and safety concerns during implementation of the treatment.<br>• Notify permittees of livestock grazing, feeding, or slaughter restrictions, if necessary.<br>• Provide alternative forage sites for livestock, if possible. |

**TABLE B-2 (Cont.)**
**Standard Operating Procedures for Applying Pesticides**

| Resource Element | Standard Operating Procedure |
|---|---|
| Wild Horses and Burros | • Minimize using herbicides in areas grazed by wild horses and burros.<br>• Use herbicides of low toxicity to wild horses and burros, where feasible.<br>• Remove wild horses and burros from identified treatment areas prior to herbicide application, in accordance with herbicide product label directions for livestock.<br>• Take into account the different types of application equipment and methods, where possible, to reduce the probability of contaminating non-target food and water sources. |
| Cultural Resources and Paleontological Resources<br><br>See handbooks H-8120-1 (*Guidelines for Conducting Tribal Consultation*) and H-8270-1 (*General Procedural Guidance for Paleontological Resource Management*), and manuals 8100 (*The Foundations for Managing Cultural Resources*), 8120 (*Tribal Consultation Under Cultural Resource Authorities*), and 8270 (*Paleontological Resource Management*)<br><br>See also: *Programmatic Agreement among the Bureau of Land Management, the Advisory Council on Historic Preservation, and the National Conference of State Historic Preservation Officers Regarding the Manner in Which BLM Will Meet Its Responsibilities Under the National Historic Preservation Act* | • Follow standard procedures for compliance with Section 106 of the National Historic Preservation Act as implemented through the *Programmatic Agreement among the Bureau of Land Management, the Advisory Council on Historic Preservation, and the National Conference of State Historic Preservation Officers Regarding the Manner in Which BLM Will Meet Its Responsibilities Under the National Historic Preservation Act* and state protocols or 36 Code of Federal Regulations Part 800, including necessary consultations with State Historic Preservation Officers and interested tribes.<br>• Follow BLM Handbook H-8270-1 (*General Procedural Guidance for Paleontological Resource Management*) to determine known Condition I and Condition 2 paleontological areas, or collect information through inventory to establish Condition 1 and Condition 2 areas, determine resource types at risk from the proposed treatment, and develop appropriate measures to minimize or mitigate adverse impacts.<br>• Consult with tribes to locate any areas of vegetation that are of significance to the tribe and that might be affected by herbicide treatments.<br>• Work with tribes to minimize impacts to these resources.<br>• Follow guidance under Human Health and Safety in the PEIS in areas that may be visited by Native peoples after treatments. |
| Visual Resources<br><br>See handbooks H-8410-1 (*Visual Resource Inventory*) and H-8431-1 (*Visual Resource Contrast Rating*), and manual 8400 (*Visual Resource Management*) | • Minimize the use of broadcast foliar applications in sensitive watersheds to avoid creating large areas of browned vegetation.<br>• Consider the surrounding land use before assigning aerial spraying as an application method.<br>• Minimize off-site drift and mobility of herbicides (e.g., do not treat when winds exceed 10 mph; minimize treatment in areas where herbicide runoff is likely; establish appropriate buffer widths between treatment areas and residences) to contain visual changes to the intended treatment area.<br>• If the area is a Class I or II visual resource, ensure that the change to the characteristic landscape is low and does not attract attention (Class I), or if seen, does not attract the attention of the casual viewer (Class II).<br>• Lessen visual impacts by: 1) designing projects to blend in with topographic forms; 2) leaving some low-growing trees or planting some low-growing tree seedlings adjacent to the treatment area to screen short-term effects; and 3) revegetating the site following treatment.<br>• When restoring treated areas, design activities to repeat the form, line, color, and texture of the natural landscape character conditions to meet established Visual Resource Management (VRM) objectives. |

**TABLE B-2 (Cont.)**
**Standard Operating Procedures for Applying Pesticides**

| Resource Element | Standard Operating Procedure |
|---|---|
| Wilderness and Other Special Areas<br><br>See handbooks H-8550-1 (*Management of Wilderness Study Areas (WSAs)*), and H-8560-1 (*Management of Designated Wilderness Study Areas*), and Manual 8351 (*Wild and Scenic Rivers*) | • Encourage backcountry pack and saddle stock users to feed their livestock only weed-free feed for several days before entering a wilderness area.<br>• Encourage stock users to tie and/or hold stock in such a way as to minimize soil disturbance and loss of native vegetation.<br>• Revegetate disturbed sites with native species if there is no reasonable expectation of natural regeneration.<br>• Provide educational materials at trailheads and other wilderness entry points to educate the public on the need to prevent the spread of weeds.<br>• Use the "minimum tool" to treat noxious and invasive vegetation, relying primarily on the use of ground-based tools, including backpack pumps, hand sprayers, and pumps mounted on pack and saddle stock.<br>• Use chemicals only when they are the minimum method necessary to control weeds that are spreading within the wilderness or threaten lands outside the wilderness.<br>• Give preference to herbicides that have the least impact on non-target species and the wilderness environment.<br>• Implement herbicide treatments during periods of low human use, where feasible.<br>• Address wilderness and special areas in management plans.<br>• Maintain adequate buffers for Wild and Scenic Rivers (¼ mile on either side of river, ½ mile in Alaska). |
| Recreation<br><br>See Handbook H-1601-1 (*Land Use Planning Handbook, Appendix C*) | • Schedule treatments to avoid peak recreational use times, while taking into account the optimum management period for the targeted species.<br>• Notify the public of treatment methods, hazards, times, and nearby alternative recreation areas.<br>• Adhere to entry restrictions identified on the herbicide product label for public and worker access.<br>• Post signs noting exclusion areas and the duration of exclusion, if necessary.<br>• Use herbicides during periods of low human use, where feasible. |
| Social and Economic Values | • Consider surrounding land use before selecting aerial spraying as a method, and avoid aerial spraying near agricultural or densely-populated areas.<br>• Post treated areas and specify reentry or rest times, if appropriate.<br>• Notify grazing permittees of livestock feeding restrictions in treated areas, if necessary, as per herbicide product label instructions.<br>• Notify the public of the project to improve coordination and avoid potential conflicts and safety concerns during implementation of the treatment.<br>• Control public access until potential treatment hazards no longer exist, per herbicide product label instructions.<br>• Observe restricted entry intervals specified by the herbicide product label.<br>• Notify local emergency personnel of proposed treatments.<br>• Use spot applications or low-boom broadcast applications where possible to limit the probability of contaminating non-target food and water sources, especially vegetation over areas larger than the treatment area.<br>• Consult with Native American tribes and Alaska Native groups to locate any areas of vegetation that are of significance to the tribes and Native groups and that might be affected by herbicide treatments.<br>• To the degree possible within the law, hire local contractors and workers to assist with herbicide application projects and purchase materials and supplies, including chemicals, for herbicide treatment projects through local suppliers.<br>• To minimize fears based on lack of information, provide public educational information on the need for vegetation treatments and the use of herbicides in an integrated pest management program for projects proposing local use of herbicides. |

**TABLE B-2 (Cont.)**
**Standard Operating Procedures for Applying Pesticides**

| Resource Element | Standard Operating Procedure |
|---|---|
| Rights-of-way | • Coordinate vegetation management activities where joint or multiple use of a ROW exists.<br>• Notify other public land users within or adjacent to the ROW proposed for treatment.<br>• Use only herbicides that are approved for use in ROW areas. |
| Human Health and Safety | • Establish a buffer between treatment areas and human residences based on guidance given in the HHRA, with a minimum buffer of ¼ mile for aerial applications and 100 feet for ground applications, unless a written waiver is granted.<br>• Use protective equipment as directed by the herbicide product label.<br>• Post treated areas with appropriate signs at common public access areas.<br>• Observe restricted entry intervals specified by the herbicide product label.<br>• Provide public notification in newspapers or other media where the potential exists for public exposure.<br>• Have a copy of MSDSs at work site.<br>• Notify local emergency personnel of proposed treatments.<br>• Contain and clean up spills and request help as needed.<br>• Secure containers during transport.<br>• Follow label directions for use and storage.<br>• Dispose of unwanted herbicides promptly and correctly. |

# Appendix 3
# Herbicides Approved for Use on BLM-Managed Lands

# *Herbicides Approved for Use on BLM Lands**

**Update September 30, 2010**

| ACTIVE INGREDIENT | STATES WITH APPROVAL BASED UPON CURRENT EIS/ROD & COURT INJUNCTIONS | TRADE NAME | MANUFACTURER | EPA REG. NUMBER | CA REG. ** |
|---|---|---|---|---|---|
| **Bromacil** | AK, AZ, CA, CO, ID, MT, ND, | Bromacil 80DF | Alligare, LLC | 81927-4 | Y |
| | NE, NM, NV, OK, SD, TX, UT, | Hyvar X | DuPont Crop Protection | 352-287 | Y |
| | WA, WY | Hyvar XL | DuPont Crop Protection | 352-346 | Y |
| **Bromacil +** | AK, AZ, CA, CO, ID, MT, ND, | Bromacil/Diuron 40/40 | Alligare, LLC | 81927-3 | Y |
| **Diuron** | NE, NM, NV, OK, SD, TX, UT, | Krovar I DF | DuPont Crop Protection | 352-505 | Y |
| | WA, WY | Weed Blast Res. Weed Cont. | Loveland Products Inc. | 34704-576 | N |
| | | DiBro 2+2 | Nufarm Americas Inc. | 228-227 | Y |
| | | DiBro 4+4 | Nufarm Americas Inc. | 228-235 | N |
| | | DiBro 4+2 | Nufarm Americas Inc. | 228-386 | N |
| | | Weed Blast 4G | SSI Maxim | 34913-19 | N |
| **Chlorsulfuron** | AK, AZ, CA, CO, ID, MT, ND, | Alligare Chlorsulfuron | Alligare, LLC | 81927-43 | N |
| | NE, NM, NV, OK, SD, TX, UT, | Telar DF | DuPont Crop Protection | 352-522 | Y |
| | WA, WY | Telar XP | DuPont Crop Protection | 352-654 | Y |
| | | NuFarm Chlorsulf SPC 75 WDG Herbicide | Nufarm Americas Inc. | 228-672 | N |
| | | Chlorsulfuron E-Pro 75 WDG | Nufarm Americas Inc. | 79676-72 | N |
| **Clopyralid** | AK, AZ, CA, CO, ID, MT, ND, | Spur | Albaugh, Inc. | 42750-89 | N |
| | NE, NM, NV, OK, SD, TX, UT, | Pyramid R&P | Albaugh, Inc. | 42750-94 | N |
| | WA, WY | Clopyralid 3 | Alligare, LLC | 42750-94-81927 | Y |
| | | Cody Herbicide | Alligare, LLC | 81927-28 | Y |
| | | Reclaim | Dow AgroSciences | 62719-83 | N |
| | | Stinger | Dow AgroSciences | 62719-73 | Y |
| | | Transline | Dow AgroSciences | 62719-259 | Y |
| | | CleanSlate | Nufarm Americas Inc. | 228-491 | Y |

| | STATES WITH APPROVAL | | | | |
|---|---|---|---|---|---|
| | BASED UPON CURRENT | | | | |
| ACTIVE | EIS/ROD & COURT | | | EPA REG. | CA |
| INGREDIENT | INJUNCTIONS | TRADE NAME | MANUFACTURER | NUMBER | REG. ** |
| **Clopyralid +** | AK, AZ, CA, CO, ID, MT, ND, | Commando | Albaugh, Inc. | 42750-92 | N |
| **2,4-D** | NE, NM, NV, OK, SD, TX, UT, | Curtail | Dow AgroSciences | 62719-48 | N |
| | WA, WY | Cutback | Nufarm Americas Inc. | 71368-72 | N |
| | | | | | |
| **2,4-D** | AK, AZ, CA, CO, ID, MT, ND, | Agrisolution 2,4-D LV6 | Agriliance, L.L.C. | 1381-101 | N |
| | NE, NM, NV, OK, OR, SD, TX, | Agrisolution 2,4-D Amine 4 | Agriliance, L.L.C. | 1381-103 | N |
| | UT, WA, WY | Agrisolution 2,4-D LV4 | Agriliance, L.L.C. | 1381-102 | N |
| | | 2,4-D Amine 4 | Albaugh, Inc./Agri Star | 42750-19 | Y |
| | | 2,4-D LV 4 | Albaugh, Inc./Agri Star | 42750-15 | Y |
| | | Solve 2,4-D | Albaugh, Inc./Agri Star | 42750-22 | Y |
| | | 2,4-D LV 6 | Albaugh, Inc./Agri Star | 42750-20 | N |
| | | Five Star | Albaugh, Inc./Agri Star | 42750-49 | N |
| | | D-638 | Albaugh, Inc./Agri Star | 42750-36 | N |
| | | Alligare 2,4-D Amine | Alligare, LLC | 81927-38 | N |
| | | 2,4-D LV6 | Helena Chemical Company | 4275-20-5905 | N |
| | | 2,4-D Amine | Helena Chemical Company | 5905-72 | N |
| | | 2,4-D Amine 4 | Helena Chemical Company | 42750-19-5905 | N |
| | | Opti-Amine | Helena Chemical Company | 5905-501 | N |
| | | Barrage HF | Helena Chemical Company | 5905-529 | N |
| | | HardBall | Helena Chemical Company | 5905-549 | N |
| | | Unison | Helena Chemical Company | 5905-542 | N |
| | | Clean Amine | Loveland Products Inc. | 34704-120 | N |
| | | Low Vol 4 Ester Weed Killer | Loveland Products Inc. | 34704-124 | N |
| | | Low Vol 6 Ester Weed Killer | Loveland Products Inc. | 34704-125 | N |
| | | Saber | Loveland Products Inc. | 34704-803 | N |
| | | Salvo | Loveland Products Inc. | 34704-609 | N |
| | | Savage DS | Loveland Products Inc. | 34704-606 | Y |
| | | Aqua-Kleen | Nufarm Americas Inc. | 71368-4 | N |
| | | Aqua-Kleen | Nufarm Americas Inc. | 228-378 | N |
| | | Esteron 99C | Nufarm Americas Inc. | 62719-9-71368 | N |
| | | Weedar 64 | Nufarm Americas Inc. | 71368-1 | Y |
| | | Weedone LV-4 | Nufarm Americas Inc. | 228-139-71368 | Y |
| | | Weedone LV-4 Solventless | Nufarm Americas Inc. | 71368-14 | Y |

| | STATES WITH APPROVAL | | | | |
|---|---|---|---|---|---|
| | BASED UPON CURRENT | | | | |
| ACTIVE | EIS/ROD & COURT | | | EPA REG. | CA |
| INGREDIENT | INJUNCTIONS | TRADE NAME | MANUFACTURER | NUMBER | REG. ** |
| **2,4-D - cont.** | AK, AZ, CA, CO, ID, MT, ND, | Weedone LV-6 | Nufarm Americas Inc. | 71368-11 | Y |
| | NE, NM, NV, OK, OR, SD, TX, | Formula 40 | Nufarm Americas Inc. | 228-357 | Y |
| | UT, WA, WY | 2,4-D LV 6 Ester | Nufarm Americas Inc. | 228-95 | Y |
| | | Platoon | Nufarm Americas Inc. | 228-145 | N |
| | | WEEDstroy AM-40 | Nufarm Americas Inc. | 228-145 | Y |
| | | Hi-Dep | PBI Gordon Corp. | 2217-703 | N |
| | | 2,4-D Amine | Setre (Helena) | 5905-72 | N |
| | | Barrage LV Ester | Setre (Helena) | 5905-504 | N |
| | | 2,4-D LV4 | Setre (Helena) | 5905-90 | N |
| | | 2,4-D LV6 | Setre (Helena) | 5905-93 | N |
| | | Clean Crop Amine 4 | UAP-Platte Chem. Co. | 34704-5 CA | Y |
| | | Clean Crop Low Vol 6 Ester | UAP-Platte Chem. Co. | 34704-125 | N |
| | | Salvo LV Ester | UAP-Platte Chem. Co. | 34704-609 | N |
| | | 2,4-D 4# Amine Weed Killer | UAP-Platte Chem. Co. | 34704-120 | N |
| | | Clean Crop LV-4 ES | UAP-Platte Chem. Co. | 34704-124 | N |
| | | Savage DS | UAP-Platte Chem. Co. | 34704-606 | Y |
| | | Cornbelt 4 lb. Amine | Van Diest Supply Co. | 11773-2 | N |
| | | Cornbelt 4# LoVol Ester | Van Diest Supply Co. | 11773-3 | N |
| | | Cornbelt 6# LoVol Ester | Van Diest Supply Co. | 11773-4 | N |
| | | Amine 4 | Wilbur-Ellis Co. | 2935-512 | N |
| | | Lo Vol-4 | Wilbur-Ellis Co. | 228-139-2935 | N |
| | | Lo Vol-6 Ester | Wilbur-Ellis Co. | 228-95-2935 | N |
| | | Base Camp Amine 4 | Wilbur-Ellis Co. | 71368-1-2935 | N |
| | | Broadrange 55 | Wilbur-Ellis Co. | 2217-813-2935 | N |
| | | Agrisolution 2,4-D LV6 | Winflied Solutions, LLC | 1381-101 | N |
| | | Agrisolution 2,4-D Amine 4 | Winfield Solutions, LLC | 1381-103 | N |
| | | Agrisolution 2,4-D LV4 | Winfield Solutions, LLC | 1381-102 | N |
| | | | | | |
| **Dicamba** | AK, AZ, CA, CO, ID, MT, ND, | Dicamba DMA | Albaugh, Inc./Agri Star | 42750-40 | N |
| | NE, NM, NV, OK, OR, SD, TX, | Vision | Albaugh, Inc. | 42750-98 | N |
| | UT, WA, WY | Cruise Control | Alligare, LLC | 42750-40-81927 | N |
| | | Banvel | Arysta LifeScience N.A. Corp. | 66330-276 | Y |
| | | Clarity | BASF Corporation | 7969-137 | Y |

| | STATES WITH APPROVAL | | | | |
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| | BASED UPON CURRENT | | | | |
| ACTIVE | EIS/ROD & COURT | | | EPA REG. | CA |
| INGREDIENT | INJUNCTIONS | TRADE NAME | MANUFACTURER | NUMBER | REG. ** |
| **Dicamba - cont.** | AK, AZ, CA, CO, ID, MT, ND, | Rifle | Loveland Products Inc. | 34704-861 | Y |
| | NE, NM, NV, OK, OR, SD, TX, | Banvel | Micro Flo Company | 51036-289 | Y |
| | UT, WA, WY | Diablo | Nufarm Americas Inc. | 228-379 | Y |
| | | Vanquish Herbicide | Nufarm Americas Inc. | 228-397 | Y |
| | | Vanquish | Syngenta | 100-884 | N |
| | | Sterling Blue | Winfield Solutions, LLC | 7969-137-1381 | Y |
| | | | | | |
| **Dicamba +** | AK, AZ, CA, CO, ID, MT, ND, | Range Star | Albaugh, Inc./Agri Star | 42750-55 | N |
| **2,4-D** | NE, NM, NV, OK, OR, SD, TX, | Weedmaster | BASF Ag. Products | 7969-133 | Y |
| | UT, WA, WY | Outlaw | Helena Chemical Company | 5905-574 | N |
| | | Rifle-D | Loveland Products Inc. | 34704-869 | N |
| | | KambaMaster | Nufarm Americas Inc. | 71368-34 | N |
| | | Veteran 720 | Nufarm Americas Inc. | 228-295 | Y |
| | | Weedmaster | Nufarm Americas Inc. | 71368-34 | N |
| | | Brash | Winfield Solutions, LLC | 1381-202 | N |
| | | | | | |
| **Dicamba +** | AZ, CO, ID, MT, ND, NE, NM, | Distinct | BASF Corporation | 7969-150 | N |
| **Diflufenzopyr** | NV, OK, SD, TX, UT, WA, WY | Overdrive | BASF Corporation | 7969-150 | N |
| | | | | | |
| **NOTE: In accordance with the Record of Decision for the *Vegetation Treatments Using Herbicides on Bureau of Land Management Lands in 17 Western States Programmatic Environmental Impact Statement* (PEIS), the aerial application of this herbicide is prohibited.** | | | | | |
| | | | | | |
| **Diquat** | AK, AZ, CA, CO, ID, MT, ND, NE, | Alligare Diquat | Alligare, LLC | 81927-35 | Y |
| | NM, NV, OK, SD, TX, UT, WA, WY | NuFarm Diquat SPC 2 L Herbicide | Nufarm Americas Inc. | 228-675 | N |
| | | Diquat SPC 2 L Herbicide | Nufarm Americas Inc. | 79676-75 | Y |
| | | Diquat E-Ag 2L | Nufarm Americas Inc. | 79676-75 | Y |
| | | Reward | Syngena Professional Products | 100-1091 | Y |
| | | | | | |
| **Diuron** | AK, AZ, CA, CO, ID, MT, ND, | Diuron 80DF | Agriliance, L.L.C. | 9779-318 | N |
| | NE, NM, NV, OK, SD, TX, UT, | Diuron 80DF | Alligare, LLC | 81927-12 | Y |
| | WA, WY | Karmex DF | DuPont Crop Protection | 352-692 | Y |
| | | Karmex XP | DuPont Crop Protection | 352-692 | Y |
| | | Karmex IWC | DuPont Crop Protection | 352-692 | Y |

| | STATES WITH APPROVAL | | | | |
|---|---|---|---|---|---|
| | BASED UPON CURRENT | | | | |
| ACTIVE | EIS/ROD & COURT | | | EPA REG. | CA |
| INGREDIENT | INJUNCTIONS | TRADE NAME | MANUFACTURER | NUMBER | REG. ** |
| **Diuron - cont.** | AK, AZ, CA, CO, ID, MT, ND, | Direx 4L | DuPont Crop Protection | 352-678 | Y |
| | NE, NM, NV, OK, SD, TX, UT, | Direx 80DF | Griffin Company | 1812-362 | Y |
| | WA, WY | Direx 4L | Griffin Company | 1812-257 | Y |
| | | Diuron 4L | Loveland Products Inc. | 34704-854 | Y |
| | | Diuron 80 WDG | Loveland Products Inc. | 34704-648 | N |
| | | Diuron 4L | Makteshim Agan of N.A. | 66222-54 | N |
| | | Diuron 80WDG | UAP-Platte Chem. Co. | 34704-648 | N |
| | | Vegetation Man. Diuron 80 DF | Vegetation Man., LLC | 66222-51-74477 | N |
| | | Diuron-DF | Wilbur-Ellis | 00352-00-508-02935 | N |
| | | Diuron 80DF | Winfield Solutions, LLC | 9779-318 | N |
| | | | | | |
| **Fluridone** | AK, AZ, CA, CO, ID, MT, ND, | Avast! | SePRO | 67690-30 | Y |
| | NE, NM, NV, OK, SD, TX, UT, | Sonar AS | SePRO | 67690-4 | Y |
| | WA, WY | Sonar Precision Release | SePRO | 67690-12 | Y |
| | | Sonar Q | SePRO | 67690-3 | Y |
| | | Sonar SRP | SePRO | 67690-3 | Y |
| | | | | | |
| **Glyphosate** | AK, AZ, CA, CO, ID, MT, ND, | Aqua Star | Albaugh, Inc./Agri Star | 42750-59 | Y |
| | NE, NM, NV, OK, OR, SD, TX, | Forest Star | Albaugh, Inc./Agri Star | 42570-61 | Y |
| | UT, WA, WY | GlyStar Gold | Albaugh, Inc./Agri Star | 42750-61 | Y |
| | | Gly Star Original | Albaugh, Inc./Agri Star | 42750-60 | Y |
| | | Gly Star Plus | Albaugh, Inc./Agri Star | 42750-61 | Y |
| | | Gly Star Pro | Albaugh, Inc./Agri Star | 42750-61 | Y |
| | | Glyphosate 4 PLUS | Alligare, LLC | 81927-9 | Y |
| | | Glyphosate 5.4 | Alligare, LLC | 81927-8 | Y |
| | | Glyfos | Cheminova | 4787-31 | Y |
| | | Glyfos PRO | Cheminova | 67760-57 | Y |
| | | Glyfos Aquatic | Cheminova | 4787-34 | Y |
| | | ClearOut 41 Plus | Chem. Prod. Tech., LLC | 70829-3 | N |
| | | Accord Concentrate | Dow AgroSciences | 62719-324 | Y |
| | | Accord SP | Dow AgroSciences | 62719-322 | Y |
| | | Accord XRT | Dow AgroSciences | 62719-517 | Y |
| | | Accord XRT II | Dow AgroSciences | 62719-556 | Y |

| | STATES WITH APPROVAL | | | | |
|---|---|---|---|---|---|
| | BASED UPON CURRENT | | | | |
| ACTIVE | EIS/ROD & COURT | | | EPA REG. | CA |
| INGREDIENT | INJUNCTIONS | TRADE NAME | MANUFACTURER | NUMBER | REG. ** |
| **Glyphosate - cont.** | AK, AZ, CA, CO, ID, MT, ND, | Glypro | Dow AgroSciences | 62719-324 | Y |
| | NE, NM, NV, OK, OR, SD, TX, | Glypro Plus | Dow AgroSciences | 62719-322 | Y |
| | UT, WA, WY | Rodeo | Dow AgroSciences | 62719-324 | Y |
| | | Mirage | Loveland Products Inc. | 34704-889 | Y |
| | | Mirage Plus | Loveland Products Inc. | 34704-890 | Y |
| | | Aquamaster | Monsanto | 524-343 | Y |
| | | Roundup Original | Monsanto | 524-445 | Y |
| | | Roundup Original II | Monsanto | 524-454 | Y |
| | | Roundup Original II CA | Monsanto | 524-475 | Y |
| | | Honcho | Monsanto | 524-445 | Y |
| | | Honcho Plus | Monsanto | 524-454 | Y |
| | | Roundup PRO | Monsanto | 524-475 | Y |
| | | Roundup PRO Concentrate | Monsanto | 524-529 | Y |
| | | Roundup PRO Dry | Monsanto | 524-505 | Y |
| | | Roundup PROMAX | Monsanto | 524-579 | Y |
| | | Aqua Neat | Nufarm Americas Inc. | 228-365 | Y |
| | | Credit Xtreme | Nufarm Americas Inc. | 71368-81 | Y |
| | | Foresters | Nufarm Americas Inc. | 228-381 | Y |
| | | Razor | Nufarm Americas Inc. | 228-366 | Y |
| | | Razor Pro | Nufarm Americas Inc. | 228-366 | Y |
| | | GlyphoMate 41 | PBI/Gordon Corporation | 2217-847 | Y |
| | | AquaPro Aquatic Herbicide | SePRO Corporation | 62719-324-67690 | Y |
| | | Rattler | Setre (Helena) | 524-445-5905 | Y |
| | | Buccaneer | Tenkoz | 55467-10 | Y |
| | | Buccaneer Plus | Tenkoz | 55467-9 | Y |
| | | Mirage Herbicide | UAP-Platte Chem. Co. | 524-445-34704 | Y |
| | | Mirage Plus Herbicide | UAP-Platte Chem. Co. | 524-454-34704 | Y |
| | | Glyphosate 4 | Vegetation Man., LLC | 73220-6-74477 | Y |
| | | Agrisolutions Cornerstone | Winfield Solutions, LLC | 1381-191 | Y |
| | | Agrisolutions Cornerstone Plus | Winfield Solutions, LLC | 1381-192 | Y |
| | | Agrisolutions Rascal | Winfield Solutions, LLC | 1381-191 | N |
| | | Agrisolutions Rascal Plus | Winfield Solutions, LLC | 1381-192 | N |
| | | | | | |

| | STATES WITH APPROVAL | | | | |
|---|---|---|---|---|---|
| | BASED UPON CURRENT | | | | |
| ACTIVE | EIS/ROD & COURT | | | EPA REG. | CA |
| INGREDIENT | INJUNCTIONS | TRADE NAME | MANUFACTURER | NUMBER | REG. ** |
| **Glyphosate +** | AK, AZ, CA, CO, ID, MT, ND, | Landmaster BW | Albaugh, Inc./Agri Star | 42570-62 | N |
| **2,4-D** | NE, NM, NV, OK, OR, SD, TX, | Campaign | Monsanto | 524-351 | N |
| | UT, WA, WY | Landmaster BW | Monsanto | 524-351 | N |
| | | | | | |
| **Hexazinone** | AK, AZ, CA, CO, ID, MT, ND, | Velpar ULW | DuPont Crop Protection | 352-450 | N |
| | NE, NM, NV, OK, SD, TX, UT, | Velpar L | DuPont Crop Protection | 352-392 | Y |
| | WA, WY | Velpar DF | DuPont Crop Protection | 352-581 | Y |
| | | Pronone MG | Pro-Serve | 33560-21 | N |
| | | Pronone 10G | Pro-Serve | 33560-21 | Y |
| | | Pronone 25G | Pro-Serve | 33560-45 | N |
| | | | | | |
| **Hexazinone +** | AK, AZ, CO, ID, MT, ND, NE, | Westar | DuPont Crop Protection | 352-626 | Y |
| **Sulfometuron methyl** | NM, NV, OK, SD, TX, UT, WA, WY | Oustar | DuPont Crop Protection | 352-603 | Y |
| | | | | | |
| **NOTE: In accordance with the Record of Decision for the *Vegetation Treatments Using Herbicides on Bureau of Land Management Lands in 17 Western States Programmatic Environmental Impact Statement* (PEIS), the aerial application of these herbicides is prohibited.** | | | | | |
| | | | | | |
| **Imazapic** | AZ, CO, ID, MT,ND, NE, NM, | Panoramic 2SL | Alligare, LLC | 66222-141-81927 | N |
| | NV, OK, SD, TX, UT, WA, WY | Plateau | BASF | 241-365 | N |
| | | | | | |
| **Imazapic +** | AZ, CO, ID, MT,ND, NE, NM, | Journey | BASF | 241-417 | N |
| **Glyphosate** | NV, OK, SD, TX, UT, WA, WY | | | | |
| | | | | | |
| **Imazapyr** | AK, AZ, CA, CO, ID, MT, ND, | Imazapyr 2SL | Alligare, LLC | 81927-23 | N |
| | NE, NM, NV, OK, SD, TX, UT, | Imazapyr 4SL | Alligare, LLC | 81927-24 | N |
| | WA, WY | Ecomazapyr 2SL | Alligare, LLC | 81927-22 | N |
| | | Arsenal Railroad Herbicide | BASF | 241-273 | N |
| | | Chopper | BASF | 241-296 | Y |
| | | Arsenal Applicators Conc. | BASF | 241-299 | N |
| | | Arsenal | BASF | 241-346 | N |
| | | Arsenal PowerLine | BASF | 241-431 | N |
| | | Stalker | BASF | 241-398 | N |
| | | Habitat | BASF | 241-426 | Y |

| | STATES WITH APPROVAL | | | | |
|---|---|---|---|---|---|
| | BASED UPON CURRENT | | | | |
| ACTIVE | EIS/ROD & COURT | | | EPA REG. | CA |
| INGREDIENT | INJUNCTIONS | TRADE NAME | MANUFACTURER | NUMBER | REG. ** |
| **Imazapyr - cont.** | AK, AZ, CA, CO, ID, MT, ND, | Polaris | Nufarm Americas Inc. | 228-534 | Y |
| | NE, NM, NV, OK, SD, TX, UT, | Polaris AC | Nufarm Americas Inc. | 241-299-228 | Y |
| | WA, WY | Polaris AC | Nufarm Americas Inc. | 228-480 | Y |
| | | Polaris AQ | Nufarm Americas Inc. | 241-426-228 | Y |
| | | Polaris RR | Nufarm Americas Inc. | 241-273-228 | N |
| | | Polaris SP | Nufarm Americas Inc. | 228-536 | Y |
| | | Polaris SP | Nufarm Americas Inc. | 241-296-228 | Y |
| | | Polaris Herbicide | Nufarm Americas Inc. | 241-346-228 | N |
| | | SSI Maxim Arsenal 0.5G | SSI Maxim Co., Inc. | 34913-23 | N |
| | | Ecomazapyr 2 SL | Vegetation Man., LLC | 74477-6 | N |
| | | Imazapyr 2 SL | Vegetation Man., LLC | 74477-4 | N |
| | | Imazapyr 4 SL | Vegetation Man., LLC | 74477-5 | N |
| | | | | | |
| **Imazapyr +** | AK, AZ, CA, CO, ID, MT, ND, NE, | Mojave 70 EG | Alligare, LLC | 74477-9-81927 | N |
| **Diuron** | NM, NV, OK, SD, TX, UT, WA, WY | Sahara DG | BASF | 241-372 | N |
| | | Imazuron E-Pro | Etigra, LLC | 79676-54 | N |
| | | SSI Maxim Topsite 2.5G | SSI Maxim Co., Inc. | 34913-22 | N |
| | | | | | |
| **Imazapyr +** | AK, AZ, CA, CO, ID, MT, ND, | Lineage Clearstand | DuPont Crop Protection | 352-766 | N |
| **Metsulfuron methyl** | NE, NM, NV, OK, SD, TX, UT, | | | | |
| | WA, WY | | | | |
| | | | | | |
| **Imazapyr +** | AK, AZ, CA, CO, ID, MT, ND, | Lineage HWC | DuPont Crop Protection | 352-765 | N |
| **Sulfometuron methyl +** | NE, NM, NV, OK, SD, TX, UT, | Lineage Prep | DuPont Crop Protection | 352-767 | N |
| **Metsulfuron methyl** | WA, WY | | | | |
| | | | | | |
| **NOTE: In accordance with the Record of Decision for the *Vegetation Treatments Using Herbicides on Bureau of Land Management Lands in 17 Western States Programmatic Environmental Impact Statement* (PEIS), the aerial application of these herbicides is prohibited.** | | | | | |
| | | | | | |
| **Metsulfuron methyl** | AK, AZ, CO, ID, MT, ND, NE, | MSM 60 | Alligare, LLC | 81927-7 | N |
| | NM, NV, OK, SD, TX, UT, WA, | Escort DF | DuPont Crop Protection | 352-439 | N |
| | WY | Escort XP | DuPont Crop Protection | 352-439 | N |
| | | Patriot | Nufarm Americas Inc. | 228-391 | N |

| | STATES WITH APPROVAL | | | | |
|---|---|---|---|---|---|
| | BASED UPON CURRENT | | | | |
| ACTIVE | EIS/ROD & COURT | | | EPA REG. | CA |
| INGREDIENT | INJUNCTIONS | TRADE NAME | MANUFACTURER | NUMBER | REG. ** |
| **Metsulfuron methyl - cont.** | AK, AZ, CO, ID, MT, ND, NE, | PureStand | Nufarm Americas Inc. | 71368-38 | N |
| | NM, NV, OK, SD, TX, UT, WA, | Metsulfuron Methyl DF | Vegetation Man., L.L.C. | 74477-2 | N |
| | WY | | | | |
| | | | | | |
| **Metsulfuron methyl +** | AK, AZ, CO, ID, MT, ND, NE, | Cimarron Extra | DuPont Crop Protection | 352-669 | N |
| **Chlorsulfuron** | NM, NV, OK, SD, TX, UT, WA, | Cimarron Plus | DuPont Crop Protection | 352-670 | N |
| | WY | | | | |
| | | | | | |
| **Metsulfuron methyl +** | AK, AZ, CO, ID, MT, ND, NE, NM | Cimarron MAX | DuPont Crop Protection | 352-615 | N |
| **Dicamba + 2,4-D** | NV, OK, SD, TX, UT, WA, WY | | | | |
| | | | | | |
| **Picloram** | AZ, CO, ID, MT, ND, NE, NM, | Triumph K | Albaugh, Inc. | 42750-81 | N |
| | NV, OK, OR, SD, TX, UT, WA, | Triumph 22K | Albaugh, Inc. | 42750-79 | N |
| | WY | Picloram K | Alligare, LLC | 42750-81-81927 | N |
| | | Picloram K | Alligare, LLC | 81927-17 | N |
| | | Picloram 22K | Alligare, LLC | 42750-79-81927 | N |
| | | Picloram 22K | Alligare, LLC | 81927-18 | N |
| | | Grazon PC | Dow AgroSciences | 62719-181 | N |
| | | OutPost 22K | Dow AgroSciences | 62719-6 | N |
| | | Tordon K | Dow AgroSciences | 62719-17 | N |
| | | Tordon 22K | Dow AgroSciences | 62719-6 | N |
| | | Trooper 22K | Nufarm Americas Inc. | 228-535 | N |
| | | | | | |
| **Picloram +** | AZ, CO, ID, MT, ND, NE, NM, | GunSlinger | Albaugh, Inc. | 42750-80 | N |
| **2,4-D** | NV, OK, OR, SD, TX, UT, WA, | Picloram + D | Alligare, LLC | 42750-80-81927 | N |
| | WY | Picloram + D | Alligare, LLC | 81927-16 | N |
| | | Tordon 101M | Dow AgroSciences | 62719-5 | N |
| | | Tordon 101 R Forestry | Dow AgroSciences | 62719-31 | N |
| | | Tordon RTU | Dow AgroSciences | 62719-31 | N |
| | | Grazon P+D | Dow AgroSciences | 62719-182 | N |
| | | HiredHand P+D | Dow AgroSciences | 62719-182 | N |
| | | Pathway | Dow AgroSciences | 62719-31 | N |
| | | Trooper 101 | Nufarm Americas Inc. | 228-561 | N |

| | STATES WITH APPROVAL | | | | |
|---|---|---|---|---|---|
| | BASED UPON CURRENT | | | | |
| ACTIVE | EIS/ROD & COURT | | | EPA REG. | CA |
| INGREDIENT | INJUNCTIONS | TRADE NAME | MANUFACTURER | NUMBER | REG. ** |
| **Picloram +** | AZ, CO, ID, MT, ND, NE, NM, | Trooper P + D | Nufarm Americas Inc. | 228-530 | N |
| **2,4-D - cont.** | NV, OK, OR, SD, TX, UT, WA, | | | | |
| | WY | | | | |
| | | | | | |
| **Picloram +** | AZ, CO, ID, MT, ND, NE, NM, | Trooper Extra | Nufarm Americas Inc. | 228-586 | N |
| **2,4-D +** | NV, OK, OR, SD, TX, UT, WA, | | | | |
| **Dicamba** | WY | | | | |
| | | | | | |
| **Sulfometuron methyl** | AK, AZ, CA, CO, ID, MT, ND, | SFM 75 | Alligare, LLC | 81927-26 | Y |
| | NE, NM, NV, OK, SD, TX, UT | Oust DF | DuPont Crop Protection | 352-401 | N |
| | WA, WY | Oust XP | DuPont Crop Protection | 352-601 | Y |
| | | SFM E-Pro 75EG | Etigra, LLC | 79676-16 | Y |
| | | Spyder | Nufarm Americas Inc. | 228-408 | Y |
| | | SFM 75 | Vegetation Man., L.L.C. | 72167-11-74477 | Y |
| | | | | | |
| **NOTE: In accordance with the Record of Decision for the *Vegetation Treatments Using Herbicides on Bureau of Land Management Lands in 17 Western States Programmatic Environmental Impact Statement* (PEIS), the aerial application of these herbicides is prohibited.** | | | | | |
| | | | | | |
| **Sulfometuron methyl +** | AK, AZ, CA, CO, ID, MT, ND, | Landmark XP | DuPont Crop Protection | 352-645 | Y |
| **Chlorsulfuron** | NE, NM, NV, OK, SD, TX, UT | | | | |
| | WA, WY | | | | |
| | | | | | |
| **NOTE: In accordance with the Record of Decision for the *Vegetation Treatments Using Herbicides on Bureau of Land Management Lands in 17 Western States Programmatic Environmental Impact Statement* (PEIS), the aerial application of this herbicide is prohibited.** | | | | | |
| | | | | | |
| **Sulfometuron methyl +** | AK, AZ, CA, CO, ID, MT, ND, | Oust Extra | DuPont Crop Protection | 352-622 | N |
| **Metsulfuron methyl** | NE, NM, NV, OK, SD, TX, UT | | | | |
| | WA, WY | | | | |
| | | | | | |
| **NOTE: In accordance with the Record of Decision for the *Vegetation Treatments Using Herbicides on Bureau of Land Management Lands in 17 Western States Programmatic Environmental Impact Statement* (PEIS), the aerial application of this herbicide is prohibited.** | | | | | |
| | | | | | |
| | | | | | |

| | STATES WITH APPROVAL | | | | |
|---|---|---|---|---|---|
| | BASED UPON CURRENT | | | | |
| ACTIVE | EIS/ROD & COURT | | | EPA REG. | CA |
| INGREDIENT | INJUNCTIONS | TRADE NAME | MANUFACTURER | NUMBER | REG. ** |
| **Tebuthiuron** | AZ, CA, CO, ID, MT, ND, NE, | Alligare Tebuthiuron 80 WG | Alligare, LLC | 81927-37 | Y |
| | NM, NV, OK, SD, TX, UT, WA, | Alligare Tebuthiuron 20 P | Alligare, LLC | 81927-41 | Y |
| | WY | Spike 20P | Dow AgroSciences | 62719-121 | Y |
| | | Spike 80DF | Dow AgroSciences | 62719-107 | Y |
| | | SpraKil S-5 Granules | SSI Maxim Co., Inc. | 34913-10 | Y |
| | | | | | |
| **Tebuthiuron +** | AZ, CA, CO, ID, MT, ND, NE, | SpraKil SK-13 Granular | SSI Maxim Co., Inc. | 34913-15 | Y |
| **Diuron** | NM, NV, OK, SD, TX, UT, WA, | SpraKil SK-26 Granular | SSI Maxim Co., Inc. | 34913-16 | Y |
| | WY | | | | |
| | | | | | |
| **Triclopyr** | AK, AZ, CA, CO, ID, MT, ND, | Triclopyr 4EC | Alligare, LLC | 72167-53-74477 | Y |
| | NE, NM, NV, OK, SD, TX, UT | Triclopyr 3 | Alligare, LLC | 81927-13 | Y |
| | WA, WY | Triclopry 4 | Alligare, LLC | 81927-11 | Y |
| | | Element 3A | Dow AgroSciences | 62719-37 | Y |
| | | Element 4 | Dow AgroSciences | 62719-40 | Y |
| | | Forestry Garlon XRT | Dow AgroSciences | 62719-553 | Y |
| | | Garlon 3A | Dow AgroSciences | 62719-37 | Y |
| | | Garlon 4 | Dow AgroSciences | 62719-40 | Y |
| | | Garlon 4 Ultra | Dow AgroSciences | 62719-527 | Y |
| | | Remedy | Dow AgroSciences | 62719-70 | Y |
| | | Remedy Ultra | Dow AgroSciences | 62719-552 | Y |
| | | Pathfinder II | Dow AgroSciences | 62719-176 | Y |
| | | Relegate | Nufarm Americas Inc. | 228-521 | Y |
| | | Relegate RTU | Nufarm Americas Inc. | 228-522 | Y |
| | | Tahoe 3A | Nufarm Americas Inc. | 228-384 | Y |
| | | Tahoe 3A | Nufarm Americas Inc. | 228-518 | Y |
| | | Tahoe 3A | Nufarm Americas Inc. | 228-520 | Y |
| | | Tahoe 4E | Nufarm Americas Inc. | 228-385 | Y |
| | | Tahoe 4E Herbicide | Nufarm Americas Inc. | 228-517 | Y |
| | | Renovate 3 | SePRO Corporation | 62719-37-67690 | Y |
| | | Renovate OTF | SePRO Corporation | 67690-42 | Y |
| | | Ecotriclopyr 3 SL | Vegetation Man., LLC | 72167-49-74477 | N |
| | | Triclopyr 3 SL | Vegetation Man., LLC | 72167-53-74477 | N |

| | STATES WITH APPROVAL | | | | |
|---|---|---|---|---|---|
| | BASED UPON CURRENT | | | | |
| ACTIVE | EIS/ROD & COURT | | | EPA REG. | CA |
| INGREDIENT | INJUNCTIONS | TRADE NAME | MANUFACTURER | NUMBER | REG. ** |
| **Triclopyr +** | AK, AZ, CA, CO, ID, MT, ND, | Everett | Alligare, LLC | 81927-29 | Y |
| **2,4-D** | NE, NM, NV, OK, SD, TX, UT, | Crossbow | Dow AgroSciences | 62719-260 | Y |
| | WA, WY | Candor | Nufarm Americas Inc. | 228-565 | Y |
| | | | | | |
| **Triclopyr +** | AK, AZ, CA, CO, ID, MT, ND, | Prescott Herbicide | Alligare, LLC | 81927-30 | Y |
| **Clopyralid** | NE, NM, NV, OK, SD, TX, UT, | Redeem R&P | Dow AgroSciences | 62719-337 | Y |
| | WA, WY | Brazen | Nufarm Americas Inc. | 228-564 | Y |
| | | | | | |
| | | | | | |
| | | | | | |
| *** Refer to the complete label prior to considering the use of any herbicide formulation. Label changes can impact the intended use through, such things as,** | | | | | |
| **creation or elimination of Special Local Need (SLN) or 24 (c) registrations, changes in application sites, rates and timing of application, county restrictions, etc.** | | | | | |
| | | | | | |
| **** Just because a herbicide has a Federal registration, and is approved under the current EIS, it may or may not be registered for use in California. This** | | | | | |
| **column identifies those formulations for which there is a California registration.** | | | | | |
| | | | | | |
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**Appendix 4**
**Herbicide Use Protocols**
**(*insert information if herbicide use is planned and when specific herbicides are known*)**

**Appendix 5**
**Herbicide Labels**
**(*insert information if herbicide use is planned and when specific herbicides are known*)**

**Appendix 6**
**Example California BLM Pesticide Use Form**
**Example California BLM Pesticide Application Records Form**

**EXHIBIT 3**
**Example California BLM Herbicide Use Proposal**

PROPOSAL NUMBER:
REFERENCE NUMBER:

**FIELD OFFICE** _____ **COUNTY** _____

**LOCATION**:

_____

**DURATION OF PROPOSAL**:

_____

**I. HERBACIDE APPLICATION** (including mixtures and surfactants):

| | Trade Names | Common Names | EPA Registration No. | Manufacturer | Formulations (Liquid or Granular) | Method of Application |
|---|---|---|---|---|---|---|
| 1 | | | | | | |
| 2 | | | | | | |
| 3 | | | | | | |

| **MAXIMUM RATE OF APPLICATION:** | |
|---|---|
| **USE UNIT ON LABEL:** | **POUNDS ACID EQUIVALENT/ACRE:** |
| 1. | 1. |
| 2. | 2. |

**INTENDED RATE OF APPLICATION:**

**APPLICATION DATES**:

**NUMBER OF APPLICATIONS:**

**II. PEST** (List specific pest(s) and reason(s) for application):

**III. MAJOR DESIRED PLANT SPECIES PRESENT:**

**IV. TREATMENT SITE:** (Describe land type or use, size, stage of growth of target species, slope and soil type).

**EXHIBIT 3 (Cont.)**
**Example California BLM Herbicide Use Proposal**

**ESTIMATED ACRES**

**V. SENSITIVE ASPECTS AND PRECAUTIONS:** (Describe sensitive areas [e.g., marsh, endangered, threatened, candidate and sensitive species habitat] and distance to treatment site. List measures taken to avoid impact to sensitive areas).

**VI. NON-TARGET VEGETATION:** (Describe the impacts, cumulative impacts, and mitigations to non-target vegetation that will be lost as a result of this chemical application).

**VII. INTEGRATED PEST MANAGEMENT:** (Describe how this chemical application fits into your overall integrated pest management program for the treatment area.)

**Originator:** _____ Date: _____
**Company Name:** _____
**Phone:** _____

**Certified Herbicide Applicator:**

_____ Date: _____
(Signature)

**Field Office Pesticide/Noxious Weed Coordinator**

_____ Date: _____
(Signature)

**APPROVALS:**

_____ Date: _____
BLM Assistant Field Manager
Renewable Resources
(Signature)

**APPROVALS (State Office Use Only):**

_____ Date: _____
BLM State Pesticide Coordinator
(Signature)

_____ Date: _____
Deputy State Director, Natural Resources,
Lands and Planning
(Signature)

___ CONCUR OR APPROVED
___ NOT CONCUR OR DISAPPROVED
___ CONCUR OR APPROVED WITH MODIFICATIONS

**EXHIBIT 3 (Cont.)**
**Example California BLM Herbicide Application Records Form**

**1. General Information**
a. Project Name: _____
b. Operator: _____
c. Herbicide Use Proposal Number: _____
d. Reference Number: _____

**2. Name of Applicator or Employee(s) Applying the Herbicide:**
_____
_____

**3. Date(s) of Application:** _____ _____ _____
(MONTH, DAY, YEAR)

**4. Time Frame of Application:** _____

**5. Location of Application:** T_____ , R_____ , and Sec. _____
County _____

**6. Type of Equipment Used:** _____
_____

**7. Herbicide(s) Used:** _____
Company or Manufacturer's Name: _____
_____
Trade Name: _____
_____

Type of Formulation: Liquid ____/ Granular ____/

**8. Rate of Application Used:**
a. Active Ingredient per Acre_____
b. Volume of Formulation per Acre_____

**9. Treatment Area**
a. Actual Area Treated: _____
b. Total Project Area: _____

**10. Primary Pest(s) Involved**: _____
_____

**11. Stage of Pest Development:** _____
_____

**12. Site Treated:** ____/ Native Vegetation ____/ Seeded Vegetation ____/ Other

**13. Weather Conditions:**
a. Wind velocity:_____ b. Wind direction _____ c. Temperature _____

**14.Monitoring Record** (IF INSUFFICIENT SPACE-CONTINUE ON BACK):

**This record is required and must be completed, except for monitoring within 24 hours after completion of application of herbicides. This record must be maintained for minimum of 10 years.**

# APPENDIX B – WILDLIFE SPECIES OBSERVED/DETECTED IN STUDY AREA

| ***Common Name*** | ***Scientific Name*** |
|---|---|
| **Birds** | |
| American Coot | *Fulica americana* |
| American Kestrel | *Falco sparverius* |
| Barn Swallow | *Hirundo rustica* |
| Black Phoebe | *Sayornis nigricans* |
| Blue-gray Gnatcatcher | *Polioptila caerulea* |
| Burrowing Owl | *Athene cunicularia* |
| California Gull | *Larus californicus* |
| Cattle Egret | *Bubulcus ibis* |
| Cliff Swallow | *Petrochelidon pyrrhonota* |
| Common Ground Dove | *Columbia passerina* |
| Common Raven | *Corvus corax* |
| European Starling | *Sturnus vulgaris* |
| Gambel's Quail | *Callipepla gambelii* |
| Great-tailed Grackle | *Quiscalus mexicanus* |
| Greater Roadrunner | *Geococcyx californianus* |
| Horned Lark | *Eremophila alpestris* |
| Killdeer | *Charadrius vociferus* |
| Loggerhead Shrike | *Lanius ludovicianus* |
| Long-billed Curlew | *Numenius americanus* |
| Mourning Dove | *Zenaida macroura* |
| Northern Harrier | *Circus cyaneus* |
| Northern Mockingbird | *Mimus polyglottos* |
| Prairie Falcon | *Falco mexicanus* |
| Red-tailed Hawk | *Buteo jamaicensis* |
| Red-winged Blackbird | *Agelaius phoeniceus* |
| Rock Dove | *Columbia livia* |
| Rufous-crowned Sparrow | *Aimophila ruficeps* |
| Savannah Sparrow | *Passerculus sandwichensis* |
| Say's Phoebe | *Sayornis saya* |
| Snowy Egret | *Egretta thula* |
| Song Sparrow | *Melospiza melodia* |
| Turkey Vulture | *Cathartes aura* |
| Western Kingbird | *Tyrannus verticalis* |
| Western Meadowlark | *Sturnella neglecta* |

| ***Common Name*** | ***Scientific Name*** |
|---|---|
| White-crowned Sparrow | *Zonotrichia leucophrys* |
| White-faced Ibis | *Plegadis chihi* |
| White-winged Dove | *Zenaida asiatica* |
| Yellow-rumped Warbler (Audubon's) | *Dendroica coronata auduboni* |
| **Mammals** | |
| Bobcat | *Lynx rufus* |
| Coyote | *Canis latrans* |
| Desert cottontail | *Sylvilagus audubonii* |
| Kangaroo rat | *Dipodomys* sp. |
| Round-tailed Ground Squirrel | *Xerospermophilus tereticaudus* |
| **Reptiles** | |
| Desert Iguana | *Dipsosaurus dorsalis* |
| Flat-tailed Horned Lizard | *Phrynosoma mcallii* |
| Gecko | *Coleonix* sp. |
| Western whiptail | *Cnemidophorus tigris* |

# APPENDIX C – BLM VISUAL MANAGEMENT SYSTEM

The primary means to determine visual resource values is to conduct a Visual Resource Inventory (VRI) as described in *Manual H-8410-1 – VRI.* (Manual H-8410-1) (BLM, 1986a) The VRI is a process to determine visual (scenic) values within the Field Office at a specific point in time. The area in which the proposed Gen-tie Alternatives are located on BLM land is the responsibility of the El Centro Field Office. VRI Classes provide the basis for considering visual values in the Resource Management Planning process and incorporate several factors including scenic quality, viewer sensitivity and viewing distance. They do not establish management direction but do provide a basis for analyzing impacts and developing mitigating measures for projects. They are considered the baseline data for existing conditions.

Visual resource values are determined through a systematic process that documents the landscape's scenic quality, public sensitivity and visibility. Rating units for each of the three factors are mapped individually, evaluated, and then combined through an over-layering analysis.

There are three primary components to a VRI: Scenic Quality Evaluation; Sensitivity Level Analysis, and Delineation of Distance Zones. The three considerations are briefly described below.

**Scenic Quality.** Scenic Quality is a measure of the overall impression or appeal of an area created by the physical features of the landscape, such as natural features (landforms, vegetation, water, color, adjacent scenery, and scarcity) and built features (roads, buildings, railroads, agricultural patterns, and utility lines). These features create the distinguishable form, line, color, and texture of the landscape composition that can be judged for scenic quality using criteria such as distinctiveness, contrast, variety, harmony, and balance. Scenic quality rating components are evaluated to arrive at one of three scenic quality ratings (A, B, or C) for a given landscape

**Viewer Sensitivity.** Viewer Sensitivity is a factor used to represent the value of the visual landscape to the viewing public, including the extent to which the landscape is viewed. For example, a landscape may have high scenic qualities but be remotely located and, therefore, seldom viewed. Sensitivity considers such factors as visual access (including duration and frequency of view), type and amount of use, public interest, adjacent land uses, and whether the landscape is part of a special area (e.g., CDCA or ACEC).

**Viewing Distance Zones.** Viewing Distance Zones describe how far from a specific vantage point a feature is visible. Landscapes are generally subdivided into three distance zones based on relative visibility from travel routes or observation points. The Foreground/Middleground (F/M) zone includes areas that are less than three to five miles from the viewing location. The F/M zone defines the area in which landscape details transition from readily perceived to outlines and patterns. The background (B) zone is generally greater than 5, but less than 15, miles from the viewing location. The B zone includes areas where landforms are the most dominant element in the landscape, and color and texture become subordinate. In order to be included within this distance zone, vegetation should be visible at least as patterns of light and dark. The seldom-seen (S/S) zone includes areas that are usually hidden from view as a result of topographic or vegetative screening or atmospheric conditions. In some cases, atmospheric and lighting conditions can reduce visibility and shorten the distances normally covered by each zone (BLM 1986b).

Based on a scenic quality, sensitivity level, and distance zones, federal lands managed by the BLM are placed into one of four VRI Classes that represent the relative value of the visual resources. There are four VRI Classes (I to IV). These inventory classes represent the relative value of the visual resources.

Class I is assigned to all special areas where the current management situations require maintaining a natural environment essentially unaltered by man. This class includes areas such as congressionally designated wildernesses, wild sections of national wild and scenic rivers, and other areas designated congressionally and administratively to preserve a natural landscape.

Classes II, III, and IV are assigned based on a combination of scenic quality, sensitivity level, and distance zones as shown in **Table 1-1**. These assignments are based on combining the three overlays (scenic quality, sensitivity levels, and distance zones) and using the guidelines summarized in **Table 1-2** (and Illustration 11 of Manual 8410). The end product is a VRI class overlay (Illustration12 of Manual 8410). Inventory classes are informational in nature and provide the basis for considering visual values in the Resource Management Plan (RMP) process. They do not establish management direction but do provide a basis for analyzing impacts and developing mitigating measures for projects. The portions of the Gen-tie Alternatives on federal land managed by the BLM falls into VRI Class III based on its Scenic Quality Classification of C, and High Visual Sensitivity Level, and Viewing Distance Zone of F/M (BLM, 2010 p. B-13 and A-39). Moreover, the Yuha Desert is depicted in Class III in Map 5-1- VRI as part of the El Centro Field Office VRI (BLM, 2010, p.44).

**TABLE 1-1 DETERMINING VISUAL RESOURCE INVENTORY CLASSES**

<table>
<tr><td></td><td colspan="8">Visual Sensitivity Levels</td></tr>
<tr><td></td><td colspan="4">High</td><td colspan="3">Medium</td><td>Low</td></tr>
<tr><td>Special Areas</td><td></td><td>I</td><td>I</td><td>I</td><td>I</td><td>I</td><td>I</td><td>I</td></tr>
<tr><td rowspan="6">Scenic Quality</td><td>A</td><td>II</td><td>II</td><td>II</td><td>II</td><td>II</td><td>II</td><td>II</td></tr>
<tr><td>B</td><td rowspan="2">II</td><td rowspan="2">III</td><td>III*</td><td rowspan="2">III</td><td rowspan="2">IV</td><td rowspan="2">IV</td><td rowspan="2">IV</td></tr>
<tr><td>C</td><td>IV*</td></tr>
<tr><td></td><td>III</td><td>IV</td><td>IV</td><td>IV</td><td>IV</td><td>IV</td><td>IV</td></tr>
<tr><td></td><td>F/M</td><td>B</td><td>S/S</td><td>F/M</td><td>B</td><td>S/S</td><td>S/S</td></tr>
<tr><td></td><td colspan="8">Distance Zones</td></tr>
</table>

Source: BLM, 1986a.

* If adjacent areas are Class III or lower assign Class III, if higher assign Class IV

Classes I and II are the most valued, Class III represents a moderate value, and Class IV is of the least value for visual resources.

### Visual Resources Management

VRI classes are not intended to automatically become VRM class designations and can in some cases be different than the VRI classes assigned in the inventory. VRM classes should reflect a balance between protection of visual values while meeting energy and other land use, or commodity needs.

The BLM determines VRM classes through careful analyses of multiple land uses and natural resources, including visual resources, for all BLM-administered lands through the RMP process. The VRM classes are a land use plan decision that guides future site-specific management actions for implementing the RMP. Boundaries of visual inventory classes may be adjusted as necessary to reflect resource allocation decisions made in RMPs. For example, the BLM may assign an area with a VRI Class II designation a VRM Class IV designation, based on its overriding value for mineral resource extraction, or its designation as a utility corridor.

**Table 1-2** shows the VRM Objectives that have been established for each class in Manual H-8410-1.

**TABLE 1-2 VISUAL RESOURCE MANAGEMENT OBJECTIVES BY CLASS**

| VRM Class | Objective |
|---|---|
| Class I | The objective of this class is to preserve the existing character of the landscape. This class provides for natural ecological changes; however, it does not preclude very limited management activity. The level of change to the characteristic landscape should be very low and must not attract attention. |
| Class II | The objective of this class is to retain the existing character of the landscape. The level of change to the characteristic landscape should be low. Management activities may be seen, but should not attract the attention of the casual observer. Any changes must repeat the basic elements of form, line, color, and texture found in the predominant natural features of the characteristic landscape. |
| Class III | The objective of this class is to partially retain the existing character of the landscape. The level of change to the characteristic landscape should be moderate. Management activities may attract attention but should not dominate the view of the casual observer. Changes should repeat the basic elements found in the predominant natural features of the characteristic landscape. |
| Class IV | The objective of this class is to provide for management activities that 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. |

The applicable resource management policy for the Project is the CDCA Plan. However, the CDCA Plan does not contain a visual resource element, and has not established VRM Classes. When a project is in an area without Resource Management Policy-approved VRM objectives,

Interim VRM (IVRM) Classes for baseline analysis only. These classes may be restricted in geographic scope to areas affected by the Project.

**Visual Contrast Rating**

Manual H-8431 - Visual Resource Contrast Rating (Manual H-8431) (BLM, 1986b) states:

> *The contrast rating system is a systematic process used by the BLM to analyze potential visual impact of proposed projects and activities….The basic philosophy underlying the system is: The degree to which a management activity affects the visual quality of a landscape depends on the visual contrast created between a project and the existing landscape. The contrast can be measured by comparing the project features with the major features in the existing landscape. The basic design elements of form, line, color, and texture are used to make this comparison and to describe the visual contrast created by the project. This assessment process provides a means for determining visual impacts and for identifying measures to mitigate these impacts.*

The contrast rating system is not the only means of resolving potential visual impacts. Rather it serves as a guide to ensure that potential visual impacts are minimized. The contrast rating is done from KOPs, the most critical viewpoints in the project area. These typically occur along commonly traveled routes or at other likely observation points. Factors considered in selecting KOP's include angle of observation, number of viewers, length of time the project is in view, relative project size, season of use, and light conditions.